



DUCKS UNLIMITED CANADA

Cumberland Marshes Rehabilitation Environmental Impact Assessment - Terms of Reference

EASB File #2021-005

Date: October 18, 2023

EXECUTIVE SUMMARY

The Cumberland Marshes are part of the Saskatchewan River Delta, a 900,000 Hectare (ha) expanse of wetlands and associated uplands. The Cumberland Marshes water levels started to change in the late 1800's when the Saskatchewan River began to avulse, creating a network of new and re-occupied channels flowing eastwards into the Cumberland Lake via this "New Channel". As a result, the frequency of inundating floods in the Cumberland Marshes from the "Old Channel" dropped sharply, as approximately 90% of the flows in the Saskatchewan River were now being diverted away from the Cumberland Marshes. This change in natural hydrology, inundation, and flooding affected the plants, fish, wildlife, and their habitat in the area. In the 1930's the Hudson Bay Company made the first attempts to manage habitat for aquatic furbearers in the Cumberland Marshes by excavating a canal from the Old Channel to supply water into the Cumberland Marshes.

Ducks Unlimited Canada (DUC) has worked in the Saskatchewan River Delta area since the 1930s and in the 1960s became involved in management of the Cumberland Marshes. Work completed by DUC allowed the management of water levels on 31,174 ha of the Cumberland Marshes for waterfowl, furbearers, and public land use activities. Most of the 44 existing water control structures in the Cumberland Marshes Rehabilitation Project (the Project) have reached the end of their engineered design lifespan, and DUC has committed to implement a redesigned approach for water management within the marshes to preserve or enhance the current state of the associated wetlands and adjacent upland habitat. It is DUC's intention to complete the Project using a different control structure approach to regulating water within the marshes by consolidating some segments, removing some structures, repairing and maintaining one existing structure, and finally, replacing those considered necessary to maintain the current hydrology of most wetlands in the system. Activities would also include dredging sediment from the water supply canal (dragline canal) to allow flow rates similar to the original design.

Of the 44 current variable water control structures, the proposed Project would result in removal of 25 structures and reopening of channels, installation of 11 earthen channel plugs to direct flows between wetlands in the system, transitioning of seven manually operated water control structures to fixed crest weirs, and modifying one existing control structure along with associated channel maintenance. The removal of the most downstream water control structure (Birch River Dam) will provide fish access into the Birch River Marsh from which they have been excluded since the dam was constructed in 1961. Equipment access to the structures would require re-establishment of winter access roads used for the original construction that had since revegetated. It is expected that vegetation would re-establish similar to what is currently present following the original road construction in the 1960s.

Throughout the Cumberland Marsh wetlands, with the exception of Birch River Marsh, the proposed Project is designed to maintain water in the marsh system similar to current levels. By implementing a simplified water control regime that returns water flows in the Cumberland Marshes to a more naturalized state, DUC intends to sustain habitat for wildlife, improve fish habitat connectivity, and continue to allow land use for traditional and commercial purposes, while simplifying future operations and maintenance of the rehabilitated water control infrastructure. This approach will support DUC's philosophy of minimal ecological management with limited intervention. To complete this rebuild, access roads construction and activities associated with the water control structure removal or rebuild will take place in the winter outside of open water and migratory bird nesting periods. Access roads will only be constructed along previous access roads used to install the original (current) control structures. While the Project start date has not yet been

identified, construction is expected to take place over a period of four winter construction seasons (December to March).

In October, 2021, DUC submitted an Environmental Project Proposal (Technical Project Proposal; TPP) to the Saskatchewan Environmental Assessment and Stewardship Branch (EASB) for review and determination in accordance with the Saskatchewan Environmental Assessment Act (SK EAA). On March 15, 2022, DUC was advised that the proposed Project was deemed a Development under the SK EAA because it triggered criteria under section 2(d) of the act and thus requires undergoing an Environmental Impact Assessment (EIA). Subsequently, in May, 2022, DUC was assigned the procedural aspects of the Duty to Consult with potentially affected First Nations and Métis communities including:

- Cumberland House Cree Nation (CHCN)
- Red Earth Cree Nation
- Shoal Lake Cree Nation
- Opaskwayak Cree Nation
- Cumberland House Métis Local #42
- The Pas Region Inc. Red River Métis (Manitoba Métis Federation)

This Terms of Reference (TOR) document was developed in accordance with the *Guidelines for the Terms of Reference and Environmental Impact Statement* (the Guidelines; Government of Saskatchewan 2021a) to detail how the EIS of the Project will be prepared in accordance with the Guidelines and to meet the requirements of the SK EAA. The TOR focuses on potentially affected Valued Environmental Components where there is a potential real effects pathway, given the proposed Project design, the steps taken in accordance with the mitigation hierarchy (In preferential order: avoid, reduce, restore, offset), and the environmental and social context of the region.

The TOR also outlines the consultation and engagement plan designed to meet DUC's Duty to Consult procedural aspect assignment. DUC recognizes that this Government of Saskatchewan regulatory approval process may not meet the needs and expectations of the six potentially affected First Nations and Métis communities listed above. DUC has and will continue to consult with each of the Indigenous communities to determine if additional processes and information are required to meet their expectations of meaningful consultation including listening, discussing and being open to accommodating the concerns of the Indigenous communities. As such, DUC has incorporated some of those concerns into this TOR, and will continue to incorporate any concerns that can reasonably be accommodated in this process and in the design and implementation of the Project.

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ACRONYMS AND ABBREVIATIONS

CEA	Cumulative Effects Assessment
CMAC	Cumberland Marsh Advisory Committee
CMAB	Cumberland Marsh Administrative Boundary (defined as Parcel A in the Construction and Management Lease Agreement)
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
DOST	Developers' Online Screening Tool
DUC	Ducks Unlimited Canada
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EASB	Environmental Assessment and Stewardship Branch
ECCC	Environment and Climate Change Canada
GHG	Greenhouse Gas
HABISask	Hunting, Angling and Biodiversity Information of Saskatchewan
HRIA	Heritage Resource Impact Assessment
HCB	Heritage Conservation Branch
IBA	Important Bird Area
IAA	<i>Impact Assessment Act</i>
LOA	Letter of Advice
LSA	Local Study Area
PDA	Project Development Area
the Project	Cumberland Marsh Rehabilitation Project
RSA	Regional Study Area
CHCN IR No. 20.	Cumberland House Cree Nation Indian Reserve No. 20
SARA	<i>Species at Risk Act</i>
SARG	Saskatchewan Activity Restriction Guidelines for Sensitive Species

SaskPower	Saskatchewan Power Corporation
SK CDC	Saskatchewan Conservation Data Centre
SK ENV	Saskatchewan Ministry of Environment
SOCC	Species of Conservation Concern
SOIC	Species of Indigenous Concern
TP	Technical Proposal (Saskatchewan Environmental Assessment context)
TOR	Terms of Reference
VC(s)	Valued Component(s)
SK WSA	Saskatchewan Water Security Agency
WMA	Water Management Area

1.0 PREAMBLE

This Terms of Reference (TOR) document is based upon the guidelines set out in the *Guidelines for the Terms of Reference and Environmental Impact Statement* (Government of Saskatchewan, 2021a). That guideline document was prepared by the Environmental Assessment and Stewardship Branch of the Saskatchewan Ministry of Environment (SK ENV) to provide “information to assist proponents in developing a TOR and Environmental Impact Statement (EIS) for a proposed project determined to be a Development pursuant to section 2(d) of the Environmental Assessment Act” (Government of Saskatchewan, 2021a). For easy reference, the sections in this TOR mirror those used Appendix A of the Guidelines, which should be consulted alongside this TOR. Appendix A of the Guidelines also contains tables that differentiate the minimum information requirements for a TOR (i.e., this document) and for an EIS, which will be based on this TOR. DUC has chosen to include in this TOR information that exceeds the minimum requirements in some sections, to provide a more comprehensive TOR that will guide preparation of the EIS.

2.0 INTRODUCTION

2.1 The Proponent

The proponent is Ducks Unlimited Canada (DUC) and the primary proponent contact for this Project is:

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2.2 Development Justification

The Saskatchewan River Delta, the largest inland freshwater delta in North America, has long been important to First Nations and Métis communities and local stakeholders for sustenance and income. The marshes in this region, including the Cumberland Marsh complex, are integral to Treaty and Aboriginal Rights to trap, hunt, and fish for food, and carry out other traditional land uses. Several local community members also rely on the marshes for commercial activities such as trapping, outfitting, and wild rice harvesting. Commercial fishing was once active in Cut Beaver Lake, but no commercial harvesting has occurred since 2000; commercial fishing is presently an opportunistic activity at Cut Beaver Lake. The region is also used by non-indigenous peoples for recreation and regulated harvesting of fish, wildlife and plants.

The Saskatchewan River is the primary source of water for the Cumberland Marsh complex. In the 1870s, a natural avulsion to the river system occurred creating a new channel to the Saskatchewan River in this active delta. This event resulted in the redirection of approximately 90% of the flow to the Cumberland Marsh complex. The first attempts to return water flow rates to previous levels into the marshes occurred

in the 1930's when the Hudson's Bay Company leased the area from the Province of Saskatchewan and constructed the original Dragline Channel and Birch River Dam for the primary purpose to secure adequate water levels for semi-aquatic furbearers such as muskrat (the initial intervention of what has come to be known as the Cumberland Marsh Project). After the Hudson's Bay Company relinquished their lease in the 1960's, DUC took over the lease of the area to continue to sustain marsh habitat at a secure water level to maintain or improve waterfowl habitat in addition to furbearer habitat, and to sustain recreational uses of the area as identified during engagement with local residents. The Canadian Wildlife Service and Saskatchewan Wildlife Branch made a joint presentation to the Saskatchewan River Delta Development Committee in 1967 including engineering proposals by DUC which became the basis for the extensive water control structures currently in place. By managing water flows and level within the marshes through a network of dykes, channels, and water control structures, DUC has been able to maintain surface water in the marshes and attempt to manage the vegetation communities to provide habitat to target species.

DUC currently manages and operates water control structures and conducts land management activities in the Cumberland Marshes through a provincial Construction and Management Agreement dated January 1, 1976. Under this agreement DUC is responsible for maintenance of all infrastructure and management of habitat within the areas for nesting migratory waterfowl and other wildlife in general, per the agreement. Recent estimates suggest that if the DUC infrastructure were completely removed then surface water area would be reduced by 41%, resulting in a substantial change in land cover and habitat types for various species (DUC, 2021).

Much of the current infrastructure in the Cumberland Marshes has reached the end of its engineered design lifespan, and DUC has committed to implement a redesigned approach for water management within the marshes to preserve or enhance the current state of the associated wetlands and adjacent upland habitat (the Project). The Project design is intended to maintain conditions of the area to support traditional uses of the area by First Nation and Métis communities and local stakeholders.

2.3 Land Controls

The Project is situated on Saskatchewan Provincial Crown Land, also located within Treaty #5 (1875) and Treaty #6 (1876) territories and the traditional homeland of the Métis. As mandated by the existing agreement with SK ENV, the current operation of Cumberland House Marshes is managed by DUC, receiving input from the community of Cumberland House from annual meetings and input from both the Delta Stewardship Committee and Delta Dialogue Group. These groups consist of, but not limited to, Saskatchewan Water Security Agency (SK WSA), SK ENV, DUC, N90 Trappers Association, N28 Trappers Association, University of Saskatchewan staff members, Cumberland Fisheries COOP, Village of Cumberland House, Delta Outfitters, and Saskatchewan Power Corporation (SaskPower).

2.4 Regulatory Requirements

The Project must comply with all applicable federal and provincial acts, regulations, and where appropriate, relevant policies. The following sub-sections outline the applicability of legislation to the Project.

2.4.1 FEDERAL AND PROVINCIAL ENVIRONMENTAL IMPACT ASSESSMENT LEGISLATION

The Federal *Impact Assessment Act*, 2019

The Federal *Impact Assessment Act* (IAA) applies to a Designated project described in the *Physical Activities Regulations* SOR/2019-285 that may trigger the federal environmental assessment process. The IAA is administered through the Impact Assessment Agency of Canada.

A review of the Physical Activities Regulations was completed as well as engagement directly with the Impact Assessment Agency of Canada on October 21, 2022. This determined that the Project did not meet criteria to be a Designated project under IAA and a federal Environmental Impact Assessment (EIA) is not required (Appendix A). This legislation and requirements will not be carried forward further in this document, but as per Section 9(1) of the IAA, it may be addressed later during the provincial EIA process.

The *Environmental Assessment Act* of Saskatchewan

If a proposed project has potential for significant environmental impacts, *The Environmental Assessment Act* in Saskatchewan requires a proponent to submit a Technical Proposal (TP) to the Environmental Assessment and Stewardship Branch (EASB) for Ministerial Determination. The EASB assesses whether the project is considered a Development based on criteria in section 2(d) of the Act and is therefore subject to an EIA. DUC submitted a TP in October, 2021. A Reasons for Determination was issued by the Minister of Environment in March, 2022, indicating that the Project triggered criteria 2(d)(a), 2(d)(d), and 2(d)(f), and is required to undergo an EIA with submission of an Environmental Impact Statement (EIS) for review and Ministerial Approval (File# EASB 2021-005, CRM#10054646) (Government of Saskatchewan, 2021d).

When an EIA is required, the proponent must submit a Terms of Reference (TOR) to the EASB that identifies the framework for carrying out the EIA. This document is submitted to fulfill this EIA requirement for the Project. This TOR was completed to meet or exceed the information requirements of the *Guidelines for the Terms of Reference and Environmental Impact Statement* (Government of Saskatchewan, 2021a).

2.4.2 OTHER LEGISLATION, GUIDANCE OR CONSTITUTIONAL REQUIREMENTS

In addition to federal and provincial EIA requirements, other federal and provincial acts, regulations, agreements and policies have been identified that may be applicable to the Project (Table 2-1).

Table 2-1: Project Relevant Federal and Provincial Acts, Regulations, Guidelines and Policies

Acts, Regulations, Policies	Administrative Body	Approval or Permit Required	Type of Permit	Relevance
Federal				
<i>Canadian Navigable Waters Act</i>	Transport Canada	Yes	Approval to Construct or Submit Project Information and Publish a Public Notice	Project will adhere to requirements under the Navigation Protection Program's legislation.
<i>Fisheries Act</i>	Fisheries and Oceans Canada (DFO)	Yes	Letter of Advice or Authorization (to be determined by DFO)	<p>Project mitigation measures will avoid harm to fish and fish habitat.</p> <p>Critical Habitat and species listed on Schedule 1 as Extirpated, Endangered, or Threatened are not present within the spatial boundaries of the Project.</p> <p>The Project will also comply with Aquatic Invasive Species Regulations and requirements to prevent the spread of aquatic invasive species.</p>
<i>Migratory Birds Convention Act</i>	Environment and Climate Change Canada (ECCC)	No	Not applicable	Project mitigation measures will avoid harm to migratory birds, nests, and eggs.

Acts, Regulations, Policies	Administrative Body	Approval or Permit Required	Type of Permit	Relevance
<i>Species at Risk Act</i>	ECCC	No	Not applicable	<p>Project mitigation measures will address potential impacts to Species at Risk.</p> <p>The Project overlaps Woodland Caribou (SARA- Threatened; SK2 herd) critical habitat, though this critical habitat occurs outside of federal jurisdiction on provincial lands. This critical habitat will be considered in the context of the Canada-Saskatchewan Agreement on Endangered Species (Government of Canada, 2007).</p> <p>Note that species listed as endangered, threatened, or special concern under the Committee on the Status of Endangered Species in Canada (COSEWIC) will be considered as Species of Conservation Concern (SOCC) for this TOR. Lake Sturgeon (Saskatchewan-Nelson River population) are listed as endangered under COSEWIC and overlap the Project area.</p>
Provincial				
Duty to Consult	EASB, SK ENV	No	Not applicable	Legal duty to consult and accommodate First Nation and Métis communities during the EIA.
<i>The Environmental Management and Protection Act</i>	SK ENV or SK WSA	Yes	Aquatic Habitat Protection Permit	Required for in water works and shoreline works.
<i>The Environmental Management and Protection Act</i>	SK ENV or SK WSA	Yes	Drainage Permit	Drainage Permit may be required for alterations to surface drainage areas of the Project.

Acts, Regulations, Policies	Administrative Body	Approval or Permit Required	Type of Permit	Relevance
<i>The Fisheries Act</i>	Fish, Wildlife and Lands Branch, SK ENV	Yes	Special Collection Permit for Fish Salvage	Potential to encounter fish in isolated work areas that require a fish salvage. Project mitigation measures will be applied to comply with this Act and its regulations.
<i>The Forest Resources Management Act</i>	SK ENV	Yes	Forest Product Permit	Required to harvest trees that have regrown along previous access roads routes and along the dragline channel to provide access for dredging.
<i>The Heritage Property Act</i>	Heritage Conservation Branch (HCB), Ministry of Parks Culture and Sport	No	Clearance Letter	A referral was submitted to the HCB September 2022; the HCB responded November 2022, that the Project has low Heritage and Archaeological potential and no further assessment is required.
<i>The Northern Municipalities Act</i>	Northern Saskatchewan Administration District	Yes	Construction and Management Agreement	Annual license issued to operate and maintain water control structures and manage habitats for waterfowl and furbearers.
<i>The Weed Control Act</i>	Crops and Irrigation Branch, The Ministry of Agriculture	No	Not applicable	Project mitigation measures will be applied to comply with this Act and its regulations.
<i>The Wildlife Act</i>	Fish, Wildlife and Lands Branch, SK ENV	Yes	Species Detection Research Permit	Research Permit required to conduct species detection surveys to support the EIA. Project mitigation measures will be applied to comply with this Act and its regulations.

3.0 DEVELOPMENT DESCRIPTION

Between 1974 and 1981, DUC designed and constructed major works under provincial and federal approvals to provide water management throughout 32 wetland segments known as the Cumberland Marshes (Figure 3-1). Most of the structures have now reached the end of their lifespan and need to be repaired, replaced, or removed. It is the proponents' intention to implement a redesigned approach to how water within the marshes will be managed following a simplified water control regime that maintains current water levels through the majority of the wetlands, and returns water flows to a more naturalized state in the Birch River and Birch River Marsh.

The redesigned water management approach will remove all variable control structures and replace them with either natural channels, natural earthen embankments, or fixed crest weirs. Based on preliminary design considerations, DUC anticipates that post construction water levels across the Cumberland Marsh will remain within existing operating levels, except for Birch River Marsh, due to the removal of the most downstream structure in the Cumberland Marshes (Birch River Dam). Decommissioning of the Birch River Dam is expected to result in a naturalization of approximately 3,529 ha of the Birch River Marsh to habitat conditions present prior to DUC involvement. Water levels in Birch River Marsh are anticipated to reduce in depth and extent but are still expected to have deep water marsh zones that remain suitable for waterfowl and furbearers (DUC, 2021).

This design is intended to sustain current wildlife habitat, increase fish passage in the Birch River and Marsh to pre-1930 levels, and continues to allow land use by local stakeholders such as the N90 Trappers Association whose Fur Block aligns with the Cumberland Marshes (DUC, 2021).

3.1 Siting

The Project is located in the Saskatchewan River Delta south of the village of Cumberland House in east central Saskatchewan (Figure 3-1). This Project consists of maintenance, upgrades, and decommissioning of existing water control structures, dykes, and channels, and therefore has no alternative geographic siting options. Siting of access roads for the Project was driven by the preference to minimize environmental effects and potential effects to heritage resources by using previous access road routes created during the initial construction of the Project.



Figure 3-1. Location of the Cumberland Marsh Administrative Boundary and lakes within it, Indian Reservations and Birch River Dam to provide context to the Project landscape.

3.2 Infrastructure

The current water management network within the Cumberland Marshes includes various structure components consisting of 62.4 km of dykes, 88.1 km of water conveyance channels, and 44 water control structures (6 different types) that manages water levels and flow throughout 32 interconnected wetland segments (Figure 3-2). Of the 44 control structures currently in place, the proposed redesigned approach for water management will include 7 structures replaced with fixed crest weirs (3 different types) that allow for overland crossing, and the remaining structures decommissioned by earthen plugs (11), transition to open channels (25), or modified with channel maintenance (1) (Dragline inlet and associated channel). All components will be installed at existing structure locations including the temporary winter access roads using existing road routes. Sample pictures of the structures and their condition are presented in Images 1-4 below.

3.3 Activities

The planned activities to decommission 37 of the 44 existing water control structures will be described under the Site Preparation and Construction Phase (Section 3.3.2). Because the remaining seven water control structures will be rebuilt, resulting in the retention of water levels similar to current ones throughout the majority of the Cumberland Marshes system, the Decommissioning and Reclamation Phase (Section 3.3.4) will consider activities required to fully decommission the seven remaining water control structures proposed to be rebuilt. It is important to differentiate between individual structure decommissioning and the final decommissioning of the entire Project at the end of its operational life, should that be moved forward in the future.

3.3.1 GENERAL

Pending regulatory approvals and availability of funding, construction is proposed to start in the winter season of 2023/2024 and is anticipated to be completed over a 4-year period. Most of the proposed works are scheduled for winter construction to reduce or avoid potential environmental effects on breeding fish and wildlife, and also due to seasonal access limitations (Table 1). Construction will only occur for approximately 4 months (December to March) each year following freeze-up of lakes and wetlands, conditions permitting. Other mitigation measures, including monitoring, will take place during construction periods as well as throughout the intermittent down periods and post-construction. A comprehensive list of mitigation measures will be identified in the EIS.

Based on the expected activities of the Project activity descriptions in the Saskatchewan Activity Restriction Setback Guidelines for Sensitive Species (SARGs), the disturbance category is predicted to be Medium and any related setback distances will be applied.

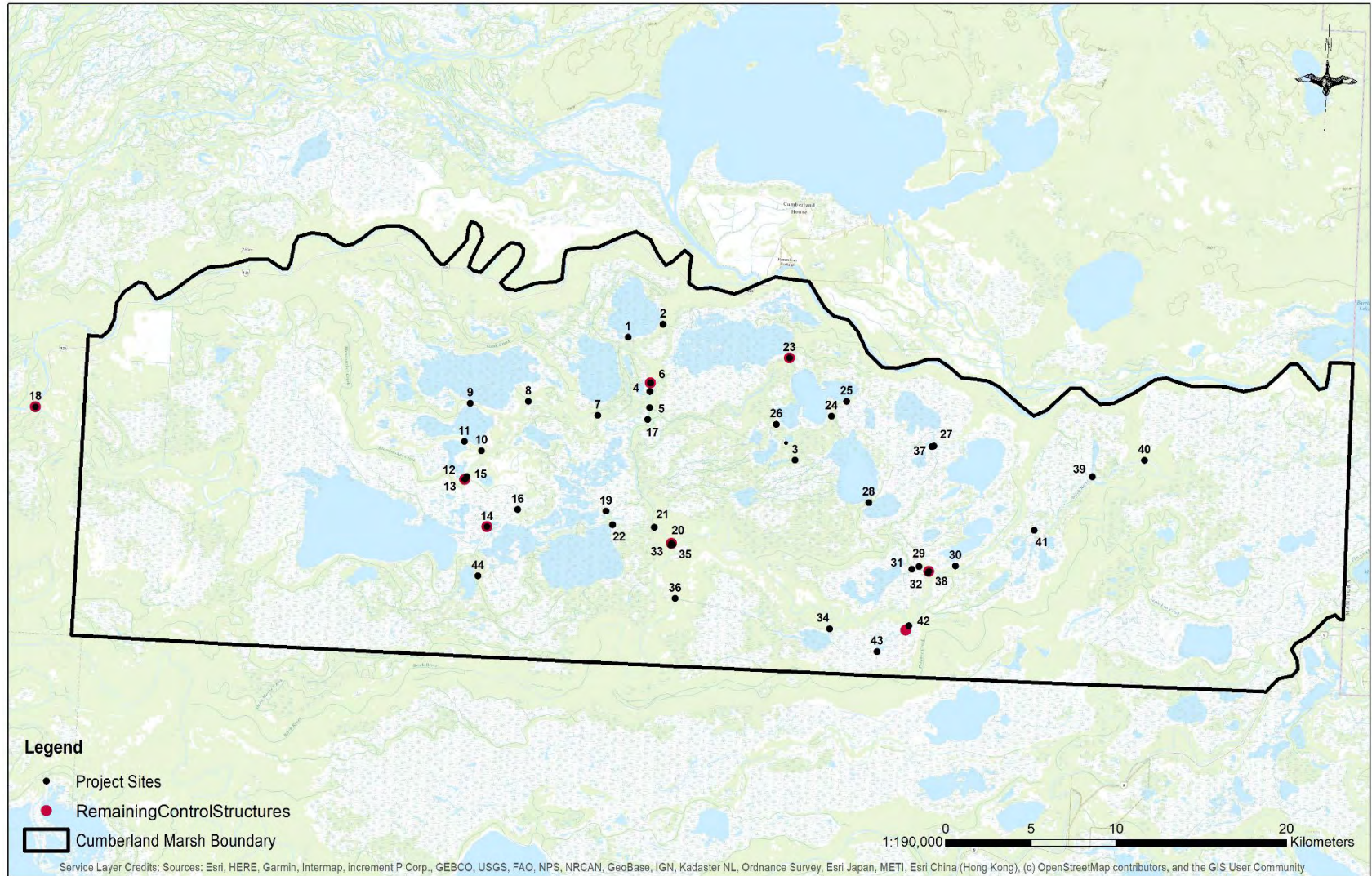


Figure 3-2. Location of the Project water control structures in relation lakes of the Cumberland Marsh. Red structure locations will remain following Project activities. Note that structure 40 is the Birch River Dam and structure 18 is the inlet to the Dragline Channel on the Old Channel of the Saskatchewan River.



Image 1. Birch River Dam (structure #40 on Figure 3-2), the largest of the water control structures in the Cumberland Marsh system and approaching end of life.



Image 2. Water retention structure (location #3 on Figure 3-2) with sheet piling and walkway damaged due to frost heaving.



Image 3. Water control structure (location #5 on Figure 3-2) with overgrown vegetation choking the structure and preventing proper function.



Image 4. Crest of the water control structure (Location #3 on Figure 3-2) showing damaged walkway and overgrown vegetation.

Table 1. Proposed construction, operation and decommissioning schedule for the Cumberland Marshes Rebuild Project.

Activity (Annual Window – Multi-Year Schedule)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Construction												
Winter access route vegetation clearing and construction	X	X	X								X	X
• Vegetation clearing	X	X	X								X	X
• Grading and other construction	X	X	X								X	X
Vegetation removal at structure locations and laydown areas	X	X	X									X
Site water management and isolation (i.e., coffer dams) at structures	X	X	X									X
Fish salvage in isolated work areas where feasible	X	X	X									X
Excavation and placement of borrow materials at borrow pit	X	X	X						X	X	X	X
Wetland drawdown (Birch River Marsh – multi-year)									X	X	X	
Construction of fish passage or fish exclusion measures	X	X	X									X
Decommissioning of water control structures	X	X	X									X
Construction of fixed crest weir structures	X	X	X									X
Vegetation clearing for channel access dragline									X	X	X	
Dredging of the Dragline Channel	X	X	X						X	X	X	X
Soil material handling, storage, and distribution	X	X	X						X	X	X	X
Removal and disposal of all construction wastes	X	X	X									X
Site stabilization/reclamation/restoration	X	X	X								X	X
Erosion and Sediment Control System construction	X	X	X								X	X
Equipment fueling and servicing	X	X	X								X	X

Activity (Annual Window – Multi-Year Schedule)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Operation												
Water management – monitoring of water levels	X	X	X	X	X	X	X	X	X	X	X	X
Fixed crest weir vegetation management (debris clearing)	X	X	X	X	X	X	X	X	X	X	X	X
Winter access road decommissioning, as required		X	X	X								
Dyke and channel maintenance (beaver dam clearing)	X	X	X	X	X	X	X	X	X	X	X	X
Decommissioning												
Winter access route vegetation clearing and construction	X	X	X								X	X
• Vegetation clearing	X	X	X								X	X
• Grading and other construction	X	X	X								X	X
Vegetation removal at structure locations and laydown areas	X	X	X									X
Site water management and isolation (i.e., coffer dams) at structures	X	X	X									X
Fish salvage in isolated work areas	X	X	X									X
Wetland drawdown									X	X	X	
Decommissioning of fixed crest weir structures	X	X	X									X
Plugging of the Dragline Channel	X	X	X						X	X	X	X
Soil material handling, storage, and distribution	X	X	X						X	X	X	X
Removal and disposal of all construction wastes	X	X	X									X
Site stabilization/reclamation/restoration	X	X	X								X	X
Erosion and Sediment Control System construction	X	X	X								X	X
Equipment fueling and servicing	X	X	X								X	X

3.3.2 SITE PREPARATION AND CONSTRUCTION

As part of the Site Preparation and Construction process for the project, key activities will include:

- Winter access route vegetation clearing and construction
- Vegetation removal at structure locations and laydown areas
- Site water management and isolation (i.e., coffer dams) at structure locations
- Fish salvage in isolated work areas where feasible – note that amphibian salvage is not permitted in the winter (SK ENV 2020)
- Excavation and placement of borrow materials
- Shoreline alterations and wetland drainage alterations/modifications
- Construction of fish passage or fish exclusion measures
- Decommissioning of water control structures
- Construction of fixed crest weir structures
- Dredging of the Dragline Channel
- Soil material handling, storage, and distribution
- Removal and disposal of all construction wastes
- Site stabilization/reclamation/restoration
- Erosion and Sediment Control
- Equipment fueling and servicing
- Transportation and housing of employees

Detailed descriptions of the nature and locations of all activities, focusing particularly on those likely to create ecological, social or economic disturbances, and the appropriate mitigation measures for this phase will be provided in the EIS.

3.3.3 OPERATION

When the Project is complete and operations commence, key activities will include:

- Water management – monitoring of water levels in each of the 7 marsh complexes
- Fixed crest weir vegetation management (existing maintenance program will continue)
- Winter access road decommissioning, as required
- Dyke and channel maintenance (existing maintenance program will continue)

A detailed description of the activities occurring in the phase, focusing particularly on those likely to create ecological, social, or economic disturbances will be provided in the EIS.

3.3.4 DECOMMISSIONING AND RECLAMATION

In the context of the proposed Project, the Decommissioning and Reclamation Phase will consider the activities necessary for the complete removal of the water control structures that are proposed in the construction phase of the Project. These activities will largely be the same as the construction activities related to building the water control structures, but the intention of removing the structures. Note that this differs from the decommissioning of individual water control structures during the construction phase of this Project. As part of the EIA process, DUC will develop a decommissioning plan that will describe the steps

necessary to decommission infrastructure constructed as part of this Project. This plan will be conceptual in nature because it is expected that an additional environmental assessment would be required for the future decommissioning of water control structures being proposed in this Project. Their decommissioning would likely include the following key activities, among others identified through ongoing consultation and engagement:

- Removal or abandonment of all water control structures, channels, and dykes
- Recontouring of decommissioned areas
- Disturbed site revegetation planning and implementation
- Sediment and soil erosion prevention
- Release/non-renewal of active water licenses
- Post reclamation monitoring

Decommissioning will use contemporary measures of the time, following provincial, federal, and other regulatory requirements as well as partner commitments to reclaim the site back to near pre-disturbance condition. Mitigation measures will be employed to eliminate or reduce negative effects that the decommissioning of the Project may have on the environment.

3.4 Inputs and Outputs

As part of the EIS, detailed descriptions of materials and quantities of inputs and outputs for the Project will be included. Inputs and outputs will be evaluated regarding potential effects on identified Valued Components (VC). The following sub-sections outline anticipated inputs and outputs based on the Project as proposed.

3.4.1 PRODUCTS

There are no products produced from this Project. The Project is anticipated to result in the maintenance and enhancement of ecosystem services provided by the Cumberland Marshes and continue to provide access for traditional land use and economic opportunities.

3.4.2 RESOURCE USE

The Project does not generate a product or services in the traditional sense, and thus does not require primary or secondary resources to function.

3.4.3 BY-PRODUCTS, REAGENTS AND EMISSIONS

There are no waste streams to this Project outside of the construction phase. All waste will be disposed of in appropriate manner and when required in a licensed waste facility.

Any potential changes in air emissions will be evaluated in the EIS.

3.4.4 SENSORY OUTPUTS

Acoustic, vibrational, and visual disturbance will occur during the construction phases of the Project. These will be temporary and localized in nature, and will fall within all existing regulatory frameworks for construction equipment.

There will be zero sensory outputs during the operations phase of the Project.

3.5 Alternative Means of Carrying out the Development

Most of the current water control structures in the Cumberland Marshes have reached the end of their operational lifespan. DUC will identify and evaluate alternatives in the EIS to achieve the desired objectives of maintaining as much as possible current habitat conditions for wildlife, including waterfowl, and enabling the continued use of the Cumberland Marshes by First Nations and Métis rights holders, and other stakeholders. For example, alternatives for analysis may include: 1) not completing any repairs or replacement of structures, 2) decommissioning all the structures and naturalizing the entire system, or 3) implementing strategic changes to existing structures. To complete the analysis of alternatives in the EIS, the following key parameters will be examined to determine the preferred approach:

- water retention and wetland area
- control structure design (including modification or removal), number, and location
- changes to landcover and plants
- net greenhouse gas emission and sequestration changes
- changes to fish and wildlife habitat conditions and area
- ability to access the area by local users
- implications to traditional use of the area for First Nations and Métis rights holders

The assessment of alternatives will compare the cost-benefit trade-offs evaluated using the above key parameters and will be discussed in detail in the EIS.

4.0 INTEREST-BASED ENGAGEMENT PLAN

DUC developed an engagement strategy for the Project that was initiated in 2019 as part of the effort to prepare a TP for submission to the SK EASB. This strategy includes, among others, participation of, and input from, local residents, First Nations Communities, Red River Métis and various regulatory agencies. Engagement for the Project has been on-going since 2019, gathering local and regional information at multiple levels that has been incorporated into the current proposed Project design. A summary of DUC stakeholder and rights holder engagement implementation to date is included in the following sub-sections.

In 2019, DUC held informational meetings in Cumberland House Saskatchewan (SK), Red Earth (SK), Nipawin (SK), Opaskwayak Cree Nation Manitoba (MB), The Pas (MB), and Winnipeg (MB) to discuss the concept design and collect initial feedback from communities whose Traditional territory overlaps with the Project and from various Provincial contacts. Meeting attendees included members or representatives of:

- members of the Northern Village of Cumberland House
- Cumberland House Cree Nation Chief and Council
- N90 Trappers Association
- Saskatchewan Métis Local 42
- Opaskwayak Cree Nation Natural Resource Council

- Opaskwayak Chief and Council Portfolio Councilors
- Rural Municipality of Kelsey
- Manitoba Sustainable Development
- Saskatchewan Ministry of Environment
- Water Security Agencies
- Red Earth First Nation Chief and Council
- Manitoba Métis Federation

During these early engagement meetings DUC presented an early Project design and documented concerns, questions, and important landscape features within the Project area that participants identified. These early engagement activities helped shape the current proposed Project plan. Preliminary input from engagement activities to date are identified under five overarching themes identified below. Items 1-3 have been incorporated into the latest Project design and approach, while items 4 and 5 are acknowledged as broader system wide concerns and will be considered during the EIA as well as monitoring, reclamation and decommissioning plans:

1. A flow-through system with limited operating capacity is preferred – this would include the Dragline Inlet remaining open year around.
2. Structures would be easier to manage without culverts.
3. Continued access on DUC dykes and in marshes very important to local users.
4. The river is important as a source of nutrients and fresh water to the wetlands.
5. Concerns about losing long term river connection to the Cumberland Marshes from the Saskatchewan River.

In 2022, the Delta Outfitters owner reached out to DUC with questions regarding the Project. Delta Outfitter concerns were related to what would happen to the temporary access roads after the project was reconstructed, if the roads would be decommissioned, and if their cabin site could be slightly relocated during the time of construction. Conversations with Delta Outfitters is ongoing.

In August and October 2022, DUC contacted via email the representatives from Cumberland House Cree Nation, Opaskwayak Cree Nation, Red Earth Cree Nation, Shoal Lake Cree Nation, Métis Local 42 and Manitoba Métis Federation. This correspondence resulted in scheduling in-person meetings that are currently ongoing. These meetings are being used to present the Cumberland Marsh Rehabilitation Project, document concerns and questions, and create a path forward on how each right holder wishes to be engaged. This process is providing information that is feeding future consultation planning.

DUC has been working in a partnership approach over the past seven years with the N90 Trappers Association in the Cumberland Marshes and in preparation of the draft rebuild proposal. Two community liaisons were hired in 2021 and into 2022 from Cumberland House who helped distribute the DUC Project information to various groups including the Cumberland House Fisheries Coop, Village of Cumberland House, Métis Local 42 and Cumberland House Cree Nation. DUC continues to have an active role in both the Delta Stewardship Committee and Delta Dialogue Group. DUC also organizes bi-annual Carrot River Triangle Working Group Meetings in The Pas, with membership consisting of Opaskwayak Cree Nation Natural Resource Council, Manitoba Métis Federation, Rural Municipality of Kelsey and various Manitoba Provincial representatives.

It is anticipated additional stakeholders will be identified as engagement activities continue. Moving forward it is anticipated that interest-based engagement will continue using the following tools or a combination of these tools:

- News releases on online, print and radio media as applicable
- Mail out information packages to local and regional residents
- Local and regional community meetings
- Direct meetings with specific stakeholder and rights holder groups
- Site tours with specific stakeholder and rights holder groups
- Project presentations
- Continued active role in the Delta Stewardship Committee
- Continued active role in the Delta Dialogue Group
- Carrot River Triangle Working Group
- Community liaisons in Cumberland House

To continue informing Project design, the proposed environmental baseline design and data collection, and the EIS, DUC is working to collect additional input from multiple rights holder and stakeholder groups both locally and regionally. The goal of this ongoing engagement is to further inform:

- baseline environmental data collection design particularly for traditionally important flora and fauna,
- VC selection refinement used during the EIS, and
- proposed mitigation measures in the context of engagement participants and the level of concern expressed by participants on activities that may not be mitigated,

such that they align with the values and interests of the First Nation Communities and the Red River Métis.

All engagement activities will be documented in the Interest Based Engagement section of the EIS and will include a communication log that tracks date, nature of each communication, place, participants, key issues addressed and key findings.

5.0 FIRST NATIONS AND MÉTIS CONSULTATION PLAN

The Duty to Consult is triggered when Crown decisions have the potential to affect the ability of First Nations and Métis rights holders to exercise Treaty rights and traditional land uses. Upon submission of the TP and receipt of the Letter of Determination from SK EASB that the proposed Project is a Development under *The Environmental Assessment Act*, DUC received an Assignment of Procedural Aspects of the Duty to Consult for the Proposed Cumberland Marshes Rebuild Project (EASB File # 2021-005; CRM # 10054646). This letter states that four (4) First Nations and two (2) Métis communities have been identified as having potential to be affected by the proposed Project. These include, in alphabetical order:

- Cumberland House Cree Nation
- Cumberland House Métis Local #42
- Opaskwayak Cree Nation
- Red Earth Cree Nation

- Shoal Lake Cree Nation
- The Pas Region Inc. Métis (Manitoba Métis Federation).

DUC recognizes the importance and legal requirement to consult First Nation and Métis communities and peoples that may be affected by the Project. In addition to the identified communities above DUC will include the following communities:

- Village of Cumberland House
- Rural Municipality of Kelsey

This list may be updated at any time during the EIA as additional information or comments are received.

DUC has a long history of working with First Nation and Métis Communities throughout Canada, including since commencing work in the Saskatchewan River Delta in the 1930s, and understands the importance of an inclusive and respectful consultation process.

Through the engagement process, DUC will seek to identify the preferred engagement approach of each First Nation and Métis community to be consulted and will continue to consult with each indigenous partner throughout the EIA process in accordance with their preferences.

6.0 EIA BOUNDARIES

The effects of a project on VCs will depend on the activities completed as part of the Project, the effects pathways and the VC receptors. The extents of space and time over which effects are assessed are defined as the Spatial Boundaries and Temporal Boundaries, respectively. These boundaries differ from the duration and extent characteristics used to determine the significance of an effect (see Effects Assessment) and are instead the boundaries defined by the timing and nature of the project activities.

6.1 Spatial Boundaries

The EIS will include spatial boundaries directly related to anticipated Project effects on the environment, VC selection, Consultation inputs and engagement inputs. The geographic extent of each study area may vary depending on the VC, SOCC and SOIC specific sensitivities, and other VC specific criterion.

The three spatial boundaries considered in the EIA include the Project Development Area (PDA), the Local Study Area (LSA) and the Regional Study Area (RSA). The general approach to determining the spatial extent of each of these boundaries is outlined as follows. The tentative VC-specific boundaries that will be used in the EIA are presented in Section 9.1. Final spatial boundaries and justification for their selection will be presented in the EIS, and determination of spatial boundaries will consider on local community interests and traditional land use by First Nation and Métis Communities and residents.

6.1.1 PROJECT DEVELOPMENT AREA

The PDA is defined as the area where Project physical activities occur. It is within the PDA that physical construction, maintenance, and decommissioning activities occur. Not all potential direct effects of the

Project on the environment occur within the PDA; it does not include the area where direct sensory (sound and sight) disturbances may be perceived by receptors, as these are captured in the LSA.

For the Project, the PDA is anticipated to include the following areas:

- All 44 water control structure locations (work is planned at all of them)
- Areas where ditch plugs may be installed and/or ditch maintenance is required
- Dragline Channel dredging limits and spoils disposal areas
- Borrow sites
- Winter access roads along previous routes created during the initial construction of the Project
- Laydown areas and equipment storage areas
- Temporary work camps

6.1.2 LOCAL STUDY AREA

The LSA is defined as the area where there is reasonable potential for direct Project-related effects on VCs to occur. This spatial boundary will vary by VC, as the potential direct and indirect effect pathways vary among each VC as well as species specific sensitivities.

For the Project, the LSA will be variable depending on each VC that is assessed. Considerations that will be included while determining study areas includes but is not limited to:

- The extent to which project activities could affect environmental components through direct physical or sensory disturbance
- The traits (e.g., mobility, sensitivity, range size, habitat requirements) of potential VC receptors on the landscape
- Anticipated Project interactions with the environment and anticipated changes based on the proposed design and experience with other similar disturbance regimes and intensity as presented in the submitted TP (DUC, 2021)
- Presence or absence of identified species at risk critical habitat where critical habitat is defined by provincial or federal agencies
- SOCC, SOIC or taxa specific Saskatchewan Activity Restriction Guidelines for Sensitive Species (SARG; Government of Saskatchewan, 2017)
- Indigenous and local input collected during voluntary engagement and formal consultation activities

Although each VC will have independent review and scoping for their representative LSA, it is anticipated the LSA for many of the VC will include:

- The PDA;
- The Water Management Areas (WMA) as identified in the submitted Environmental Project Proposal (DUC, 2021);
- Portions of the Saskatchewan River “Old Channel” extending from the Dragline Channel Inlet downstream to the confluence with the “new Channel”;
- Portions of the wetted width of the Birch River to 300m downstream of the Birch River Dam; and/or,
- Selected SARG buffers when applicable.

6.1.3 REGIONAL STUDY AREA

The RSA is defined as the area with reasonable potential for cumulative effects of the Project with other past, present and reasonably foreseeable future activities to occur. The cumulative effects assessment (CEA) will only be completed where there are predicted residual effects of the Project on a VC (see Section 9.3).

For the Project, the RSA will vary by VC depending on the specific effects pathways, receptors and other characteristics of the VC. Considerations that will be included while determining RSA boundaries includes but is not limited to:

- Extent of likely Project interaction with the environment
- The use of natural biophysical boundaries when possible and practical
- Likely cumulative effects contributors
- Provincial policy
- Indigenous participation and input

6.2 Temporal Boundaries

The period of time over which effects are assessed are the Temporal Boundaries of the EIA, and will cover the entire expected life of the Project. Temporal boundaries will be defined for the key project phases, including Construction, Operations, and Decommissioning.

The construction phase is anticipated to last four years with active construction activities limited to the winter periods of December to March, annually. The operations phase is anticipated to last 50 years, post construction with maintenance activities being conducted throughout this period. There is no anticipated temporal boundary for the decommissioning phase, as it will depend on a decommissioning plan that will be developed in the context of the conditions at the time, rightsholder and stakeholder consultation and any advances in knowledge or management objectives for the Cumberland Marshes.

There are no proposed future developments or ancillary projects required to enable this Project to be completed and operate as designed, nor are there any reasonably foreseen changes in land use beyond current uses.

Based on the above the temporal boundary of 50 years will be used during the EIA. The detailed methods and rationale for selecting final temporal boundaries for the Project will be presented in detail in the EIS.

7.0 EXISTING ENVIRONMENT

Characterizing the existing environment provides the baseline framework for evaluating how the current conditions of the project area might be impacted by the development (positively and negatively). A general overview of the existing environmental components which have potential to be affected is summarized in this section. The high-level description of the current understanding of environmental components is based on a desktop review of relevant background information from existing data sources, databases, and mapping available for the Cumberland Marsh Administrative Boundary (CMAB). For the purposes of characterizing the

existing environment for the TOR, the CMAB was used for the assessment as it represents the boundary where current water management activities are focused.

The following biophysical, socio-economic, and human components were identified for desktop evaluation:

- Topography and Soils
- Vegetation
- Wildlife and Wildlife Habitat
- Fish and Fish Habitat
- Species of Conservation Concern
- Surface Water
- Groundwater
- Geology and Geochemistry
- Atmospheric and Sensory Environment
- Social, Economic, and Health
- Archaeology and Heritage
- First Nations and Métis Land Use

More detailed, site-specific baseline information will be gathered during preparation of the EIS. The anticipated studies, methods, and timeline for baseline data collection are discussed individually in this section for each biophysical, socio-economic, and human component.

7.1 Biophysical

7.1.1 TOPOGRAPHY AND SOILS

The Cumberland Marsh is situated in the Saskatchewan Delta, a flood plain of the Saskatchewan River and its tributaries. The delta is an alluvial and lacustrine plain and is gently sloping and poorly drained. The bedrock is Paleozoic dolomite and dolomitic limestone, of which occasional outcrops are visible. The landscape is predominantly level with elevations ranging from 265 m to 280 m above sea level. Surface drainage occurs via the Saskatchewan, Carrot, Birch, and Saskeram rivers and their tributaries (Acton et al., 1998).

The soils of the Cumberland Marshes are the result of the dynamic nature of the Saskatchewan River's path as it flows through the region. The Saskatchewan Delta is subjected periodically to deposition of alluvial materials carried by waters flowing through the Sipanok and Dragline channels. Changing river patterns of the Saskatchewan River, with at least eight abandoned flow paths in addition to the present watercourse, have resulted in a complex deposition pattern in the area. New sediment is added onto the existing substrates with each change in channel location, and each overbank flood.

Approximately 20% of the Saskatchewan Delta has Regosolic soils, which are found on the fine-textured, stratified deposits along rivers and streams and have resulted from more recent substrate deposits. The remaining 80% of the Saskatchewan Delta is characterized predominantly by peaty Gleyzolic soils. Those near Cumberland House are formed on shallow, clayey, calcareous alluvial materials over glacial till (Acton et al., 1998). The material underlying the Cumberland Marshes is consistent with these soil types and is characterized by till with a mix of peat, sand, silt, and clay layers resulting from the flooding, sedimentation,

and changes in the river’s course. The soil is generally a silty sand, sandy silt or clayey silt with admixed organics. In most cases, the soils are saturated with water and generally have low strength due to reduced soil structure.

Organic deposits are often found in, and above, surface soils. A soil bore hole may find multiple buried peat layers indicating that at one time these layers were surface soils for many years. The majority of surface organic deposits are fens, due to the high nutrient content of the water moving through the Saskatchewan Delta. Fens in the Saskatchewan Delta are frequently saturated by water near or at the surface (Acton et al, 1998).

Baseline Data Collection

Project activities have limited localized potential to result in complete effect pathways on soils and topography in the areas of excavating borrow material and dredging of the dragline channel, due to winter construction timing. Baseline data used to assess this VEC will be obtained from desktop sources with sampling of sediment to confirm sediment quality before dredging. Best management practices and mitigation will be identified as commitments in the EIS.

7.1.2 VEGETATION AND WETLANDS

The Cumberland Marsh is situated in the Saskatchewan Delta Landscape Area, which is located within the Mid-Boreal Lowland Ecoregion of the Boreal Plain Ecozone of Saskatchewan. The Cumberland Marsh is dominated by wetlands, which are largely treeless, with a surface cover of cattails, rushes, reeds, sedges, willows, and other submergent and emergent vegetation (Acton et al., 1998).

The following sub-sections provide a desktop review of available literature and datasets pertaining to vegetative resources that have potential to be impacted by the Project. They also describe the land cover classifications, sensitive habitats, regulated weeds, culturally important plant taxa, and proposed baseline data collection methods and standards for the preparation of the EIS.

Vegetation Land Cover Classification

Land cover within the Cumberland Marshes has been mapped and classified by DUC into five major wetland classes (open water, marsh, fen, bog, and swamp) following the Canadian Wetland Classification System (National Wetlands Working Group, 1997). DUC has also mapped and classified land cover within the Cumberland Marshes using 25 minor land cover classes following an Enhanced Wetland Classification system developed by the proponent (DUC, 2022a). The land cover classes and their prevalence within the Cumberland Marshes are presented in Table 7-1.

Table 7-1: Approximate Area and Percent Cover of Land Cover Classes in the Cumberland Marshes

Land Cover Type	Hectares (ha)	Percent of Total Area
<i>Wetland Minor Classes</i>		
Open Water	10,939	7%
Aquatic Bed	6,985	5%

Land Cover Type	Hectares (ha)	Percent of Total Area
Mudflats	195	<1%
Emergent Marsh	8,791	6%
Meadow Marsh	16,600	11%
Graminoid Rich Fen	5,303	3%
Graminoid Poor Fen	24	<1%
Shrubby Rich Fen	27,418	18%
Shrubby Poor Fen	351	<1%
Treed Rich Fen	4,895	3%
Treed Poor Fen	10	<1%
Open Bog	0	0%
Shrubby Bog	116	<1%
Treed Bog	675	<1%
Shrub Swamp	44,166	29%
Hardwood Swamp	4,864	3%
Mixedwood Swamp	2,033	1%
Tamarack Swamp	285	<1%
Conifer Swamp	2,083	1%
<i>Upland Minor Classes</i>		
Upland Conifer	699	<1%
Upland Deciduous	14,835	10%
Upland Mixedwood	1,140	1%
Upland Other	24	<1%

Land Cover Type	Hectares (ha)	Percent of Total Area
Upland Pine	8	<1%
Agriculture	941	1%
<i>Other Classes</i>		
Cloud Shadow	14	<1%
TOTAL	153,392	100%

Source: Ducks Unlimited Canada, 2022a. Enhanced Wetland Classification Mapping.

Note: Total land cover subject to rounding errors.

The CMAB spans a total area of 153,392 ha. Of that area, 17,660 ha were identified as upland land cover, representing 12% of the total area. The remaining 135,732 ha, representing 88% of the total CMAB, was identified as wetland land cover (DUC, 2022a).

Sensitive Habitats

Land cover types including wetlands, native vegetation, and riparian areas, among others, are considered more sensitive compared to anthropogenically disturbed areas because they provide habitat for a proportionally higher number of SOCC (SK CDC, 2022a; 2022b). Considering 88% of the Cumberland Marsh has been mapped as wetland habitat, the majority of the Project area has potential to be sensitive habitat (DUC, 2022a). Habitat in the PDA in particular will be investigated to determine whether any sensitive habitats occur within this area and whether any sensitive habitats have potential to be impacted by the Project.

Regulated Weeds

A desktop search using the provincial data platform iMapInvasives indicated that no regulated weed species have been previously reported within 1 km of the CMAB. This is likely due to limited surveys completed in the Cumberland Marshes rather than a lack of weed presence. Potential still exists for regulated weeds to exist within the CMAB. Reed grass (*Phragmites australis*) has been observed within the Cumberland Marshes complex. Although not identified in the Saskatchewan in the *Weed Control Act* as a prohibited, noxious or nuisance weed this species is known to be highly invasive in wetlands. DUC and its partners are currently investigating local initiatives such as burn programs to control this species (S. Greer, Head of Habitat Asset Management, Pers. Comm.) As part of the EIA, field studies will establish a baseline record of regulated weeds species occurring within the PDA, as these areas are where project activities will occur and where increased potential exists for regulated weeds to be introduced. A species list of existing regulated weeds will be prepared for use during the decommissioning phase of the Project, as it will provide a record of pre-disturbance conditions to which the PDA will be restored.

Culturally Important Plant Taxa

At least 546 plant taxa are reportedly used for traditional medicine purposes by First Nations or Métis in the boreal forest of Canada (Uprety et al., 2012). Additional plant taxa have other traditional uses including ceremony, food sources, hide preparation, food preservation, and childcare, among others (Clavelle, 1997).

According to the procedural aspects of the Duty to Consult for the Project, four First Nations and two Métis communities have been identified as having potential to be affected by the proposed Project; Cumberland House Cree Nation, Red Earth Cree Nation, Shoal Lake Cree Nation, Opaskwayak Cree Nation, Cumberland House Métis Local #42, and The Pas Region Inc. Métis (Manitoba Métis Federation). To identify potential existing relationships between local First Nations and Métis communities and plants potentially occurring within the PDA and likely to be of cultural importance, existing publicly available literature was reviewed with a focus on traditional plant use by Cree and Métis communities. In 1997 as part of a Master's Thesis, local First Nations in the defined RSA and surrounding area (Shoal Lake Cree Nation,) shared traditional knowledge pertaining to traditional plant use. Through these communications, 42 plant taxa were identified as having current or historical use by members of First Nations or Métis within the RSA (Clavelle, 1997). The EIS will consider how the proposed Project may impact culturally important plant taxa populations and access to these plants by the groups or individuals who use them, under post-Project conditions compared to existing conditions.

DUC acknowledges that only a limited sample of the peoples with potential to be affected by the Project have been represented in the publicly available literature on culturally important plant taxa and that 25 years have elapsed since the data was collected. With this understanding, additional plant taxa with current or historical importance may occur in the Project area. Additional information will be sought during ongoing engagement and consultation.

Baseline Data Collection

Baseline land use and vegetation data will be collected for the EIA using available data and during the 2024 field season. Rare plant and weed surveys are proposed for all PDA locations to identify populations of species of indigenous or conservation concern that will require avoidance. Surveys will be conducted using SK ENV-approved survey protocols and timing windows (Government of Saskatchewan, 2021b) or alternative methods will be identified and vetted through SK ENV and approved in advance, prior to commencing field studies. Surveys will be completed by a qualified person with knowledge of local botany along the proposed access roads and where vegetation clearing (i.e., borrow pit and along the dragline channel). The EIS will further investigate culturally important plant taxa and will be informed by ongoing engagement and Consultation with all potentially-affected Indigenous peoples.

7.1.3 WILDLIFE AND WILDLIFE HABITAT

The Cumberland Marshes provide suitable habitat for numerous wildlife species that are historically known for their importance in supporting migratory birds, particularly waterfowl, and local furbearer populations, among others. The EIS will consider how the construction, operations and decommissioning activities and redesigned approach to water management in the marshes may cause significant adverse effects to existing habitat for different wildlife species, including SOCC and SOIC, and if they are acceptable in terms of traditional Treaty and Aboriginal Rights, public and stakeholder interests, and provincial wildlife management

objectives and strategies. The following sub-sections provide a desktop overview of wildlife resources that have potential to be impacted by the Project and the approach for baseline data collection.

Birds

The Cumberland Marshes are recognized provincially, nationally, and globally for providing important habitat for birds. Provincially, the marshes have seven lakes designated as Migratory Bird Concentration Sites for waterfowl and other waterbirds during breeding, moulting, and staging periods (Big, Bewley, Bloodsucker, Egg, McGregor, Wapisew, and Waterhen Lakes; Poston et al., 1990 and SK CDC, 2022d). In Canada and North America, the Cumberland Marshes are designated as an Important Bird and Biodiversity Area (IBA) where globally significant congregations (i.e., 1% or more of the global population) of several waterfowl and waterbird species have historically been documented during both breeding and migration seasons (IBA Canada, 2022; BirdLife International, 2022).

The marshes also provide habitat for other breeding bird species, including several that are provincially considered sensitive (Government of Saskatchewan, 2017). For example, nesting colonies of black tern (*Chlidonias niger*), Forster's tern (*Sterna forsteri*), and eared grebe (*Podiceps nigricollis*) have been documented in the marshes and other colonial nesting species such as American white pelican (*Pelecanus erythrorhynchos*) and great blue heron (*Ardea Herodias*) have been observed. Sensitive solitary nesting species such as American bittern (*Botaurus lentiginosus*) and two SARA-listed species, barn swallow (*Hirundo rustica*) and horned grebe (*Podiceps auratus*), have also been detected during the breeding season (DUC, 2008-2010). Other federally listed avian species that may have suitable habitat associated with the Project area and will potentially require consideration in the EIS include bank swallow (*Riparia riparia*), Canada warbler (*Cardellina canadensis*), chimney swift (*Chaetura pelagica*), eastern Whip-poor-will (*Antrostomus vociferus*), evening grosbeak (*Coccothraustes vespertinus*), olive-sided flycatcher (*Contopus cooperi*), rusty blackbird (*Euphagus carolinus*), western grebe (*Aechmophorus occidentalis*), and yellow rail (*Coturnicops noveboracensis*).

Furbearers

The Cumberland Marshes have historically provided an abundance of furbearer habitat and have been managed accordingly to sustain furbearer production, most notably for muskrat (*Ondatra zibethicus*). Muskrat, beaver (*Castor canadensis*), and other furbearer species that occupy the marshes continue to be important to trappers and hunters in the Cumberland House community and local area. Concerns have been raised by local stakeholder groups regarding how previous water management strategies and control structures may have been detrimental to semi-aquatic mammal populations that continue to be trapped and hunted in the area. The EIS will investigate furbearer populations and in what way the proposed changes to water management may impact existing habitat conditions for furbearer species, particularly for semi-aquatic mammals such as muskrat and beaver. Wolf (*Canis lupus*) is also a furbearer that will be specifically included the EIS given its predator-prey relationship with moose (*Alces alces*) that are hunted by user groups in the project area, and at the request of the Red River Métis.

Ungulates

Ungulates are known to occupy the project area such as deer (*Odocoileus* sp.), moose, and woodland caribou (*Rangifer tarandus caribou*). For caribou, the CMAB overlaps critical habitat identified in a federal recovery strategy, however, the entire Boreal Plain Ecozone was coarsely identified as critical habitat in Saskatchewan

which offers no insight into the importance of the existing habitat within the CMAB (ECCC, 2020). Fortunately, a provincial Range Plan for woodland caribou (SK2 East) has identified the CMAB to be entirely within Tier 3 caribou habitat which currently have the lowest management and mitigation requirements. Tier 3 Caribou Habitat Management Areas in Saskatchewan are considered general habitat for caribou that provide connectivity between more important Tier 1 and 2 areas that have higher habitat potential (Government of Saskatchewan, 2021c). Habitat suitability mapping completed by DUC for the CMAB also found little to no habitat value for caribou (DUC, 2022b). This information suggests the Project will likely not impact caribou, however, other ungulates such as moose that continue to be hunted in the area and have local stakeholder interest may need further evaluation. For example, concerns raised about declining forest-zone moose populations will be investigated to determine the potential for the project to interact with other moose population stressors.

Amphibians

The Cumberland Marshes have potential to support four amphibian species such as boreal chorus frog (*Pseudacris maculate*), wood frog (*Lithobates sylvaticus*), and two SOCC; Canadian toad (*Anaxyrus hemiophrys*) and northern leopard frog (*Lithobates pipiens*). The presence and prevalence of the two potential amphibian SOCC within the Cumberland Marshes is unclear. If amphibian SOCC are found to occupy habitat within the Cumberland Marshes, appropriate measures will be identified in the EIS to mitigate potential project effects to these species. For example, an amphibian salvage may be required in isolated work areas if overwintering amphibian SOCC are encountered during winter construction activities; DUC recognizes that salvage of amphibians in the winter period has a low potential for success.

Wildlife Habitat

A small portion of the CMAB overlaps the Lobstick Lake Representative Area Ecological Reserve. The Cumberland Marshes are also part of the Saskatchewan River Delta that is currently under consideration for designation as a RAMSAR site (a wetland area of international importance under the Ramsar Convention on Wetlands). Although currently these land designations do not have legal protections, they highlight the ecological importance of the Cumberland Marshes in the context of providing regionally, nationally, and internationally recognized habitat for several wildlife species.

Baseline Data Collection

Baseline information on wildlife and wildlife habitat will focus primarily on available desktop information and will be supplemented as needed with field surveys in the 2023 field season. The wildlife surveys anticipated to be completed and rationale for their completion or use of existing baseline information is provided in Table 2. Due to the winter construction constraints of the Project (see Table 1), there are limited complete effect pathways for wildlife, where the Project activities occur outside of the activity restriction windows in the SARGs for species occurring in the area. As the location and timing of the structure replacement is fixed (winter at the existing structure locations, along the dragline channels and at the borrow pit site), DUC will assume there is the potential for aquatic and resident terrestrial wildlife (i.e., frogs, muskrat, beaver, moose, bear, etc.) to occur at the sites and all available mitigation will be considered and applied during construction as appropriate. Baseline surveys will be focused on the PDA with the applicable buffer distance for those surveys and the appropriate SARG setback distance.

Baseline data collection approach, sampling effort, and survey locations will continue to be updated from ongoing engagement and consultation and incorporating traditional knowledge provided by First Nations and the Red River Métis. Data collection of relevant wildlife baseline information will follow SK ENV survey protocols, methods, and timing windows, when available, or alternative methods will be identified and vetted through SK ENV and approved in advance prior to field studies commencing.

Table 2. Saskatchewan species detection survey protocols applicable to the Project, and rationale for the anticipated completion of each survey.

SK ENV - SDSP	Completion Anticipated	Rationale
1.0 Amphibian Auditory SDSP	No	<p>DUC is aware that amphibians occur in the area, including northern leopard frogs (NLFR). This survey protocol is conducted during the spring breeding season and would not necessarily reflect the distribution of NLFR during the winter because some species do not use the same waterbodies for breeding and wintering. As such, DUC will assume NLFR and other amphibians with ranges that overlap the Project are present in the systems where winter construction will occur. As the timing of construction will be limited to the winter period for technical (access) and environmental reasons (limiting overall effects), amphibian salvage will not be possible as per the SK ENV (2020) amphibian salvage checklist.</p> <p>As such, data obtained from completing this survey protocol would not provide value to the EIS in identifying effects that would require mitigation beyond what will be included as commitments. DUC will review available literature and consider all other potential mitigation in development of the EIS to reduce or avoid effects on amphibians.</p>
2.0 Amphibian Visual SDSP	No	<p>See also rationale in Amphibian Auditory SDSP above.</p> <p>Note that during any pre-construction visits to the locations where activities will occur in the year leading up to construction, DUC staff will note the presence of any amphibians and document these observations as incidental observation.</p>
10.0 Forest Birds SDSP	No	<p>The construction, including vegetation clearing, activities are planned to occur outside the bird nesting windows for this region. Effects, therefore, would not occur on individual birds or their nests, as forest birds typically do not reuse nests from one year to the next. As such, data obtained from completing this survey protocol would not provide value to the EIS in identifying</p>

		<p>effects that would require mitigation beyond what will be included as commitments. The effects on bird nesting habitat will be completed through change in vegetation as a result of the Project activities. DUC will describe the breeding bird community through existing data sources (Breeding Bird Atlas, HabiSask predictive models, most current Agriculture and Agri-food Canada Annual Crop Inventory landcover database).</p> <p>DUC will commit to completing pre-clearing surveys to identify any large stick nests, nesting structures of species that would re-use nests, or other wildlife features and those will be avoided during clearing to access the dragline channel or for re-establishment of roads to the water control structures.</p>
12.0 Western Grebe SDSP	No/Yes (see waterfowl/ waterbirds)	<p>Project activities, including drawdown of the Birch River and Birch River Marsh, will occur in the fall and winter outside of the nesting season, and will not directly affect individuals of this species during the summer nesting period.</p> <p>DUC will assess the effects on colonial nesting waterbird community through changes in habitat suitability as a result of the changes on the landscape from Project activities, and using historic information about the Cumberland Marshes. DUC will also complete colonial nesting waterbird surveys of the Birch River Marsh as detailed in the waterfowl/waterbird response below.</p>
14.0 Yellow Rail SDSP	No	<p>Project construction activities, including drawdown of the Birch River and Birch River Marsh, will occur in the fall and winter outside of the nesting season, and will not directly affect individuals of this species during the summer nesting period.</p> <p>DUC will assess the effects on bird community through changes in habitat suitability as a result of the changes on the landscape from Project activities.</p> <p>As such, data obtained from completing this survey protocol would not provide value to the EIS in identifying effects that would require mitigation beyond what will be included as commitments.</p>
15.0 Common Nighthawk SDSP	No	<p>Common nighthawks will not be present in the area during Project construction activities.</p> <p>As such, data obtained from completing this survey protocol would not provide value to the EIS in identifying effects that would require mitigation beyond what will be included as</p>

		<p>commitments. DUC will assess potential changes in habitat suitability of this species based on changes to land cover as a result of the Project activities.</p> <p>See also rationale in Forest Bird SDSP.</p>
8.0 Boreal and Foothills Raptors SDSP	No (Yes - winter stick nest survey instead)	<p>Project activities will not occur during the raptor nesting period. Raptors often switch nest structures between years, thus species identification of nests in one year may not be accurate in future years. As such, data obtained from completing this survey protocol would not provide value to the EIS in identifying effects that would require mitigation beyond what will be included as commitments.</p> <p>However, as large stick nest structures are often reused, DUC will commit to completing pre-clearing surveys to identify any large stick nests or nesting structures of species that would reuse nests, and those will be avoided during clearing to access the dragline channel or for re-establishment of roads to the water control structures. DUC will not survey during the nesting period to avoid disturbance of the nests.</p>
16.0 Bat SDSP	No	<p>DUC activities will occur during the fall and winter period when migratory bats are not present, and when resident bats have migrated to hibernacula (caves, wells, mines, and similar features), which do not occur in the PDA. No blasting will be required for removal of any structures.</p> <p>As such, data obtained from completing this survey protocol would not provide value to the EIS in identifying effects that would require mitigation beyond what will be included as commitments.</p>
19.0 Snow Track SDSP	No	<p>DUC will assess the potential effects on resident wildlife populations through habitat suitability assessments resulting from a change in land cover from the project. DUC will describe the baseline populations and historic populations of furbearers and other wildlife from Indigenous knowledge obtained from the N90 trappers.</p> <p>See also rationale for Large Ungulates below.</p>
Waterfowl/Waterbirds	Yes	<p>DUC will complete a surveys of the Birch River Marsh to determine the presence, size, and location of any colonial nesting species that may be affected by a reduction in water</p>

		<p>level in that marsh as a result of the Project.</p> <p>See also rational for Western Grebe SDSP.</p>
Furbearers	No	See response to Snow Track SDSP
Large Ungulates Aerial Surveys (Moose/Caribou)	No (Yes - pre-construction aerial surveys)	<p>DUC will complete winter surveys of moose/caribou as the Project LSA is known to hold populations of moose and is within the boundaries of Critical Habitat for woodland caribou. These surveys will inform DUC about the extent these species use areas surrounding the PDA in winter, which will help plan for mitigation. Effects of the Project on habitat suitability will also be assessed through expected changes in land cover under an assumption of species occurrence.</p> <p>See also response to Snow Track SDSP.</p>

7.1.4 FISH AND FISH HABITAT

Available aerial imagery was used to assess the potential for permanent, intermittent, and seasonal connectivity of the PDA to fish-bearing waterbodies and watercourses. A desktop review of fish species within the CMAB and a 1 km buffer was conducted using HABISask (SKCDC 2022d). The results were reviewed and compared to existing information on known fish species present within the PDA (Royer, 1966; Phillips, 2019; North/South, 2021). The list was further investigated for SOCC using SK CDC (2022c).

The Cumberland Marshes has connectivity to the Saskatchewan River through the Dragline Inlet in Saskatchewan and re-connects through two channels to the Saskatchewan River, just west of The Pas, Manitoba. The proximity of the marshes to the Saskatchewan River could also increase connectivity to other watercourses during flood years. The Birch River in the southern limits of the PDA has connectivity to the Carrot River drainage during flood stage. The Birch River watercourse is expected to be available for fish movement into the Cumberland Marshes following the proposed decommissioning of the Birch River Dam which has acted as a barrier to fish passage since the 1960's.

According to HABISask and available historical documentation, 32 fish species have potential to be found within the project area (Appendix B). Of the 32 fish species, all are found within the Saskatchewan River and 17 were previously reported in the CMAB (Royer, 1966; Phillips, 2019; North/South, 2021). Seven species are listed as SOCC within the area: blacknose dace (*Rhinichthys obtusus*), river shiner (*Notropis blennius*), flathead chub (*Platygobio gracilis*), northern redbelly dace (*Chrosomus eos*), central mudminnow (*Umbra limi*), mooneye (*Hiodon tergisus*), and lake sturgeon (*Acipenser fulvescens*). Three of the SOCC have previously been reported within the CMAB limits: lake sturgeon (within the Dragline Channel), mooneye (Cut Beaver Lake), and central mudminnow (within the Birch River). The lakes within the PDA (excluding Cut Beaver Lake) are oxygen limited and are likely unsuitable for fish during winter months. As a result, four species are expected to overwinter within the Project area: northern pike (*Esox lucius*), white sucker (*Catostomus commersonii*), brook stickleback (*Culaea inconstans*), and fathead minnow (*Pimephales promelas*) (Phillips, 2019; DUC 2008-2010). According to DFO's Species at Risk Map, no Critical Habitat or species listed on Schedule 1 as Extirpated, Endangered, or Threatened are present within the CMAB (DFO, 2022). Lake sturgeon are listed as endangered under COSEWIC, and a decision is pending on inclusion of this species under Schedule 1 of SARA.

Given the species likely to occur in the PDA during times when Project activities would occur, the Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat in Central Saskatchewan listed for spring spawning fish (April 16 to June 30) would apply (DFO, 2023).

Commercial and subsistence fishing has taken place within the Cumberland Marshes on Cut Beaver Lake, though largely opportunistic due to variable fish habitat conditions. No commercial fishing has occurred since 1999 (North/South, 2021).

Baseline Data Collection

Baseline data collection for the EIS will rely on extensive existing fish and fish habitat information on the Cumberland Marshes system and inputs from DFO on the submitted Request for Review, as well traditional

knowledge from First Nations and Red River Métis. Collected data will be used to characterize fish habitats within the Cumberland Marshes and potential project effects evaluated within the EIS.

7.1.5 SPECIES OF INDIGENOUS OR CONSERVATION CONCERN

7.1.5.1 Species of Conservation Concern (SOCC)

SOCC are defined as species that meet any of the following criteria (Government of Saskatchewan, 2021a):

- listed by the SK CDC as extremely rare (S1) or very rare (S2)
- listed in the Wild Species at Risk Regulations as endangered or threatened
- listed in Schedules 1, 2 and 3 of the *Species at Risk Act*, as endangered, threatened, or special concern
- assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered, threatened, or special concern that are not listed under SARA
- other sensitive species listed in the SARGs that may or may not meet the above criteria (Government of Saskatchewan, 2017)

Following these criteria, several species of flora and fauna have been identified that are known to occur or have potential to occur within the Project area (see Sections 7.1.2 to 7.1.4 and Appendix B). Baseline data collection efforts for the EIA will focus on identifying habitat use and habitat suitability for vegetation, wildlife, and fish SOCC given their sensitivity and importance for developing informed management and mitigation strategies. Potential effects of the Project on SOCC will be evaluated within each specific environmental component, i.e., Wildlife and Wildlife Habitat, Fish and Fish Habitat, and Vegetation.

7.1.5.2 Species of Indigenous Concern (SOIC)

SOIC are species that are identified specifically by First Nations and Métis during consultation and engagement that have importance for medicinal, subsistence, cultural or other purposes. SOIC identified to date through consultation include medicinal (e.g., sweet grass and chaga) and food plants (e.g., mushrooms, fiddleheads, and wild rice), fish, moose, caribou, and furbearers, including beavers, muskrat, bears, and wolf, among others. A complete list of SOIC will be provided in the EIS following consultation with the Indigenous communities of the region, and consideration of Indigenous knowledge shared with DUC.

Baseline Data Collection

Baseline data on SOIC will be obtained primarily through consultation with First Nations and Métis (see Section 5.0) and supplemented through existing data sources and during planned field programs.

7.1.6 SURFACE WATER

A desktop review of surface waters within the CMAB was completed using satellite imagery available on the HabiSask tool and Google Earth (ESRI, 2022). Connectivity to other major waterbodies was evaluated using similar methods.

The Cumberland Marshes is a wetland system comprised of 31,174 hectares of aquatic habitat and semi-aquatic habitats, including numerous wetlands, lakes, rivers, and creeks. The Marshes are made up of 20 interconnected wetland/lake complexes (from upstream to downstream): Cut Beaver Lake, Paul Lake, Brown Lake, Wapisew Lake, Junction Lake, Cow Lake, Deep Lake, Moose Jaw Lake, Bloodsucker Lake, Highbank Lake, Waterhen Lake, Egg Lake, Little Egg Lake, Big Lake, McGregor Lakes, Cheeseman Lake, Corner Lake, Brewley Lakes, Beaton Lake, Bog Lake and the Petabec Lakes. Three large rivers flow through the system; Dragline

Channel, Cut Beaver River, and the Birch River. In addition to the large rivers, the Cumberland Marshes are transected by many small streams, creeks and man-made channels that flow between the wetlands.

Surrounding major waterbodies include the Old Channel of the Saskatchewan River, Cumberland Lake, the Saskatchewan River, Lower Saskatchewan River Delta, the Birch River, and the Carrot River. Water enters the marshes through the Dragline Channel constructed between the Old Channel and Cut Beaver River and leaves the system downstream through the Birch River before flowing into the Carrot River and eventually returning to the Saskatchewan River near The Pas, Manitoba.

Baseline Data Collection

Baseline information on surface water will depend largely on previous studies conducted in the Project area for the engineering design, and from other publicly-available or provided information sources (e.g., SaskPower EB Campbell Dam information). Extensive baseline data for water quantity, quality, and flows have been collected over the last several decades within the LSA and RSA. Therefore, baseline data collection for surface water will be collected within the PDA and LSA with representative samples collected throughout the RSA when warranted. Data collection and inputs from WSA, DFO and ECCC will inform required habitat and hydrological analysis that will be used to inform VC effects assessments. Therefore, it is not anticipated that field surveys will be required to assess potential Project effects on Surface Water.

7.1.7 GROUNDWATER

A desktop review of groundwater resources within the PDA was performed using the Boreal Plain Ecozone based on Acton et al. (1998). Delineation of the bedrock aquifer was based on data available from the WSA (or formerly known Saskatchewan Research Council; Millard, 1997) and Manitoba Environment, Climate and Parks (Betcher, 1995). Surficial aquifers were delineated in the same manner using well data from the WSA (Millard, 1997).

Groundwater supplies below the Cumberland Marshes originate from the Cumberland aquifer. The Cumberland aquifer is within Paleozoic limestone and dolomite bedrock deposits from the Ordovician and Silurian. The aquifer is restricted by alluvial and glaciofluvial deposits and are artesian in nature. The water is considered potable ranging from very good to very salty in quality. Some small surficial aquifers are present in the glaciofluvial deposits of the area.

Due to the clayey till soil layers, no leaching from the Project is likely to reach the Cumberland aquifer supplies, except in areas where bedrock is exposed. Leaching and plumes may arise in surficial aquifers of the marshes. Limited information is known on surficial aquifers.

Baseline Data Collection

Project activities are not anticipated to result in complete effect pathways on groundwater, due to winter construction timing, and the intended objective of the water control structure changes. Moreover, any actual changes in surficial groundwater aquifers are more likely to result from changes to flow patterns (volume, timing, spatial distribution) as a result of the deltaic nature of the system. As such, this environmental component was not carried forward into the EIA and no further baseline information will be collected.

7.1.8 GEOLOGY AND GEOCHEMISTRY

A desktop review of the Cumberland Marsh Complex was performed using the Boreal Plain Ecozone according to Acton et al. (1998). Formations were then identified using the Kupsch (1952) report.

The Cumberland Marsh Complex is underlain by dolostone and limestone deposits from the Ordovician (475 million years ago) and Silurian (425 million years ago) periods (Acton et al. 1998). Formations include the Stony Mountain Formation in the Ordovician and the Interlake Formation in the Silurian (Kupsch, 1952). These are overlaid by sand, silts, and clays from glaciofluvial processes, but dolostone and limestone crops do occur.

Baseline Data Collection

Project activities will not result in complete effect pathways on Geology and Geochemistry, due to winter construction timing, and lack of earthworks at geological depths. As such, this environmental component was not carried forward into the EIA and no further baseline information will be collected.

7.1.9 ATMOSPHERIC AND SENSORY ENVIRONMENT

The nearest communities to the Project are Cumberland House (approximately 3.01 km from CMAB) and Pemmican Portage within the Cumberland House Cree Nation Indian Reserve No. 20 (approximately 0.2 km from CMAB).

Atmospheric emissions and sensory impacts will be released during the construction phase. During construction, emissions will be generated by:

- Emissions from vehicle usage
- Emissions from temporary buildings and generators

Greenhouse Gas (GHG) emissions will be released throughout construction and potentially through changes in wetland area of the Birch River Marsh. Estimates of GHG emissions will be based on desktop information and model estimates of system changes. Other sensory outputs may include odour, taste, vibrations, and noise which will be further evaluated in the EIS.

Baseline Data Collection

Baseline studies will rely on the information collected from desktop studies as well as previous and revised modelling for this component. Effects of the Project on the Atmospheric and Sensory Environment will be evaluated in the EIS.

7.2 Social, Economic, and Health

The Cumberland Marsh system provides multiple ecosystem services for local and regional communities including opportunities for hunting, fishing, trapping and other traditional uses. It is also an Important Bird Area, providing breeding, molting, and staging habitats for multiple economically important bird species which support waterfowl hunting and guiding industries across North America (IBA Canada, 2022; BirdLife International, 2022). It is anticipated that the Project will maintain existing waterfowl and fish habitat while enhancing habitat types for other species such as muskrat, shorebirds, and terrestrial songbirds.

The communities nearest to the PDA include the northern village of Cumberland House (approximately 3.01 km from the CMAB) and Pemmican Portage, a settlement within Cumberland House Cree Nation Indian Reserve No. 20 (approximately 0.2 km from the CMAB). The area is also within the homeland of the Red River Métis and used by members of its community.

The northern village of Cumberland House occupies an area of 16.11 km² with 241 total private dwellings, 192 of which are occupied by usual residents. In the 2021 Statistics Canada Census, the recorded population of Cumberland House was 540 people, a decrease of 31.7% from the 791 residents identified in the 2016 census. The average age of the population is 36.1 years old and the median age is 32.8. Of the total population, 205 were employment income recipients in 2020 and the median employment income of recipients was \$29,600. There were 70 employment insurance benefits recipients in 2020 and 355 government transfer recipients (Statistics Canada, 2022).

Statistics Canada census information is not available for the settlement of Pemmican Portage, but rather for Cumberland House Cree Nation Indian Reserve No. 20 (CHCN IR No. 20.) as a whole. CHCN IR No. 20 occupies an area of 15.35 km² with 239 total private dwellings, 218 of which were occupied. In the 2021 Statistics Canada census, the recorded population of CHCN IR No. 20. was 748, having experienced a population decline of 5.9% from the 795 residents identified in the 2016 census. The average age of the population is 29.1 years old, and the median age is 25.6. In 2020, 195 individuals received employment income and the median income among employment income recipients was 23,000. There were 60 employment insurance benefits recipients in 2020 and 445 government transfer recipients (Statistics Canada, 2022).

All employment data provided above applies to individuals aged 15 years or older, residing in private households. Please note that data from 2020 may not be representative of employment statistics across non-pandemic years.

The Cumberland House Health Centre provides medical services for the communities of Cumberland House, Pemmican Portage, and surrounding areas (Saskatchewan Health Authority, 2022). Both communities are located within the Cumberland House Protection Area and are serviced by the Cumberland House Fire Base (Saskatchewan Government Directory, n.d.). A complete evaluation of the social, economic, and health baseline conditions for the Project will be provided in the EIS.

Baseline Data Collection

The EIA will rely on the information collected from desktop studies and information obtained through Consultation and Engagement activities with potentially affected communities to assess the effects of the Project on Social, Economic and Health.

7.3 Archaeology and Heritage

To support compliance with requirements under The *Heritage Property Act*, KGS completed a desktop review of the Project footprint for heritage resources. All quarter-sections within the PDA were reviewed for known heritage resources using the Provincial Heritage Site Inventory dataset and screened using the Developers' Online Screening Tool (DOST). Quarter-sections deemed Heritage Sensitive or requiring further screening would then be referred to the Heritage Conservation Branch (HCB).

A consultation of the Provincial Heritage Site Inventory dataset found no known heritage resources in direct conflict with the PDA. KGS also screened the PDA for heritage sensitivity on the DOST website on September 28, 2022. KGS submitted only the quarter-sections within the PDA that contained the flow structures to be redesigned. Of the 71 quarter-sections submitted, all were deemed Heritage Sensitive (see screening results in Appendix C) and requires a formal Heritage Referral to the HCB for further screening.

The development footprint of the Project was submitted to the HCB for review on September 28, 2022.

HCB responded with Heritage Letter 22-1250, which states that the likelihood that the “Development will occur on terrain judged to have a low heritage potential in areas impacted by previous construction. Therefore, our office has no further concerns with the project proceeding as planned.”

Baseline Data Collection

Field studies are not anticipated as HCB has already issued a clearance letter for the Project as it is presently designed (see Appendix C). This environmental component will not be carried through to the EIA due to the proposed methods and extent of this rehabilitation project and predicted outcomes presented in the submitted TP and because activities are occurring on previously disturbed lands. However, The Duty to Consult will inform on areas of cultural significance that may need additional investigations or mitigations during the EIA. If needed, these processes will follow HCB guidelines and requirements as well as Indigenous guidance.

7.4 First Nations and Métis Land Use

The Project is located within provincial Crown Land within Treaty #5 and Treaty #6 and the documented traditional territories of the Cumberland House Cree Nation, Red Earth Cree Nation, Shoal Lake Cree Nation, Opaskwayak Cree Nation, Cumberland House Métis Local #42, and National Homeland of the Red River Métis.

Almost the entire project area is available and accessible by land or by water to exercise Treaty Rights as well as traditional land uses.

DUC has been working with local Indigenous communities and organizations on existing DUC maintenance and management plans and will be working towards further exploring opportunities for First Nations and Métis involvement in management and maintenance opportunities within the Project area during and after construction is completed.

In addition, DUC will be further exploring ways for First Nation communities and Red River Métis to potentially lead and participate in traditional land use studies for the Project, to ensure their concerns are appropriately documented and addressed to the extent reasonably feasible

DUC has already received an Assignment of Procedural Aspects of the Duty to Consult for the Proposed Cumberland Marshes Rebuild Project (EASB File # 2021-005; CRM # 10054646). This letter states that four First Nations and two Métis communities have been identified as having potential to be affected by the proposed Project:

- Cumberland House Cree Nation
- Red Earth Cree Nation
- Shoal Lake Cree Nation
- Opaskwayak Cree Nation
- Cumberland House Métis Local #42
- The Pas Region Inc. Métis (Manitoba Métis Federation).

These six communities likely are involved in land use activities within the PDA. Through previous voluntary engagement DUC has already identified several activities that have the potential to be conducted by local community members within the PDA (DUC, 2021):

- Berry picking
- Hunting: waterfowl and upland bird, white-tailed deer, moose, bear
- Trapping activities
- Root, bark, and plant harvesting
- Maple syrup harvesting

It should be noted that not all community activities are expected to be impacted by the construction activities associated with the proposed Project, due largely to the lack of overlap in timing of the above activities and those of the Project.

Baseline Data Collection

Baseline data collection for this First Nations and Métis Land Use and potential impacts of the Project will be completed through voluntary engagement activities as well as formal consultation activities for the Project and will be assessed in the EIS.

8.0 VALUED COMPONENT SELECTION

Baseline data collection will identify biophysical, socio-economic, and human environment components which may be assessed during the EIA. From these components, VCs will be selected, generally considering the following criteria:

- Clear identification of a potential Project – component effect pathways where there is uncertainty if standard accepted mitigation practices will eliminate potential effects on the component. This considers the Direction, Magnitude, Geographic extent, Duration and Reversibility, Frequency and Likelihood of the disturbance. If standard mitigation practices are available and suitable for the Project that component will not be carried forward as a VC.
- Identification of SOCC through desktop exercises, or other available research.
- Identification of SOIC through consultation with First Nations and Métis
- SOCC and SOIC habitat requirements, ranges, mobility, and current estimated habitat availability within the various proposed Study Areas.
- SOCC and SOIC sensitivity to disturbance identified in published literature.
- Biophysical, socio-economic, and human environment components identified as important to community or culture by previously completed voluntary engagement sessions and discussions with Project partners, regulators, local communities, and local First Nation and Métis community members and leaders.
- Components specifically identified by SK EASB as Reasons for the Determination.

A description of the baseline conditions of VCs identified in Section 7.0 and the anticipated inclusion or exclusion of those VCs from the EIA. Additionally, a list of VCs relevant to the Project and rationale for

preliminary inclusion or exclusion in the EIA is presented below based on the current Project design, Indigenous and stakeholder engagement, and regulatory engagement (Table 8-1). This VC list may require further inclusions or exclusions during the EIA process as engagement activities continue and formal Consultation activities progress. The final list of VCs in the EIA and selection criteria will be included in the EIS

Table 8-1: Preliminary Valued Component Selection

Environment	Valued Component	Rationale for Inclusion or Exclusion
Valued Components Screened Out of the Environmental Impact Assessment		
Biophysical Environment	Groundwater	The Project activities do not include the extraction of groundwater, or the changes in groundwater flows. As such, this VC was not carried forward into the EIA.
	Geology and Geochemistry	The Project activities do not include works at geological depths. As such, this VC was not carried forward into the EIA.
Valued Components Carried Forward in the Environmental Impact Assessment		
Biophysical Environment	Topography and Soils <ul style="list-style-type: none"> • Soil Quantity • Soil Quality 	The project has the potential to result in limited localized effects on soils through the borrowing of materials for roads and water control structures, compaction of soil to reduce its capacity for rooting of vegetation, and of deposition of sediments from the dragline channel, which may contain deleterious substances. As such, this VEC will be carried forward into the EIS.
	Vegetations and Wetlands <ul style="list-style-type: none"> • Plant SOCC, SOIC and their Habitat • Wetland Extent and Function • Culturally Important Flora and their Habitat 	Project activities will occur on lands with natural vegetation and in or around wetlands. As such, there are complete direct effects pathways that could result in adverse environmental effects on vegetation and wetlands. This VC was carried forward into the EIA.
	Wildlife and Wildlife Habitat <ul style="list-style-type: none"> • Avian SOCC, SOIC and their Habitat • Amphibian SOCC, SOIC and their Habitat 	Project activities have the potential to affect vegetation and wetlands, thus having the potential to affect wildlife habitat. Project activities may also cause sensory disturbance to wildlife or to have direct physical effects on wildlife. Thus, there are complete effect pathway that may result in adverse environmental effects on

	<ul style="list-style-type: none"> • Mammal SOCC, SOIC and their Habitat 	wildlife. This VC was carried forward into the EIA.
	<p>Fish and Fish Habitat</p> <ul style="list-style-type: none"> • Fish SOCC, SOIC and their Habitat 	The Project activities have the potential to affect fish bearing waterbodies and watercourses through the removal or replacement of water control structures, and through drawing water from the Saskatchewan River. As such, there is a complete effects pathway that may result in effects on fish and fish habitat. This VC was carried forward into the EIA.
	<p>Surface Water</p> <ul style="list-style-type: none"> • Surface Water Quantity • Surface Water Quality 	The purpose of the Project is to draw water from the Saskatchewan River and regulate water levels in the Cumberland Marshes. As such, the Project has a complete effects pathway for surface water. This VC was carried forward into the EIA.
	<p>Atmospheric and Sensory Environment</p>	The Project may result in changes to emissions of greenhouse gases from wetlands affected by construction activities. As such, there is a complete effects pathway that may result in Project-related effects to Atmospheric and Sensory Environment. This VC was carried forward into the EIA.
Socio-economic and Cultural Environment	<p>Land Access Availability (Traditional Land Use)</p>	The Project may result in changes to access to the Cumberland Marshes for Indigenous peoples to carry out traditional land use activities. This may occur through access along access roads, or through changes in water levels of the Dragline Channel. This VC was carried forward into the EIA.
	<p>Hunting, Trapping and Fishing</p>	The Project has the potential to affect the ability of Indigenous peoples and outfitters to carry out sustenance and/or commercial hunting, trapping and fishing activities. As such, there is a complete effects pathway that may result in Project-related effects. This VC was carried forward into the EIA. Note that culturally important fish, wildlife and plants are assessed in the biophysical environment VCs

9.0 EFFECTS ASSESSMENT

The assessment of effects will be completed by identifying potential interactions between the Project and selected key indicators identified for each VC that may result in adverse or beneficial changes in the biophysical, socio-economic, or cultural environments. Identification of effects pathways will be followed by the identification of recognized and established mitigation measures that can be successfully applied to eliminate or reduce potential adverse effects the Project may have on the VCs. When applicable mitigation measures are predicted to reduce eliminate the effect pathway (e.g., temporal or spatial avoidance) such that no significant adverse effects are predicted, the VC will not be carried forward for an assessment of cumulative effects (See Section 9.3).

9.1 Predicted Changes to the Environment

Changes to VCs will be addressed by evaluating potential effects, adverse or beneficial, each with associated measurable parameters relative to the applicable LSA and RSA spatial boundaries for each VC and over the temporal boundary of the Project phases. Temporal boundaries will be consistent among VCs and related to the Project phases (Construction, Operation and Decommissioning). The PDA boundary is also consistent among VCs as defined in Section 6.1. Changes in measurable parameters as indicators of the potential effects, whether quantitative or qualitative, will be estimated and compared against the significance threshold of the effect to determine whether the effect is deemed significant.

Table 9-1: Valued Components, LSA and RSA Boundaries, Potential Effects, Measurable Parameters, and Effects Thresholds

Valued Component	Anticipated LSA Boundary	Anticipated RSA Boundary	Potential Effects	Measurable Parameters (units)	Effects Threshold
Soils and Topography	PDA	PDA	Change in Soil Quantity	Soil thickness.	A measurable change in soil quantity due to erosion or thickness due to compaction that will reduce the suitability for vegetation growth.
			Changes in Soil Quality	Soil contamination	A change in soil quality resulting from deposition of deleterious substances exceeding CCME soil quality guidelines.
Vegetation and Wetlands	PDA plus 30 m Boundary, as prescribed in the SARG	PDA plus a 15 km boundary	Change in Plant SOCC Populations and their Habitat	Plant SOCC populations (#) Area of plant SOCC suitable habitat (ha).	Loss of habitat to reasonably support identified local populations of SOCC or direct loss of an entire population of Flora SOCC during construction or operations phases within the LSA or RSA.
			Change in Wetland Extent and Function	Areal extent of wetlands (ha) Wetland function (Depth, water cycling, vegetation community, invertebrate community, wetland connectivity)	Measurable change in wetland habitat area or function that results in risk to the viability or persistence of wetlands plants
			Change in Plant SOIC and their Habitat	Direct loss of SOIC plant populations (#) Area of suitable habitat for SOIC plants (ha)	Measurable change in populations of plant SOIC within the LSA or RSA.
Wildlife and Wildlife Habitat	PDA plus a 1 km boundary	PDA plus a 15 km boundary (except woodland caribou where the RSA is the SK 2 East range)	Change in Wildlife SOCC Populations and their Habitat	Indirect and direct wildlife SOCC mortality risk Area of suitable habitat for wildlife SOCC (ha)	Measurable change in mortality risk or habitat such that the effects pose a risk to the viability and persistence of a SOCC population within the LSA or RSA, relative to provincial and federal conservation strategies.
			Change in Wildlife SOIC and their habitat	Direct and indirect wildlife SOIC mortality risk Suitable Habitat for wildlife SOIC (ha)	Measurable change in mortality risk or habitat such that the effects pose a risk to the viability and persistence of SOIC populations within the LSA or RSA, relative to provincial and federal conservation strategies.
Fish and Fish Habitat	PDA plus Project wetlands, and the South	Saskatchewan River from EB Campbell Dam to Cedar	Change in Fish Mortality Risk	Direct and indirect fish mortality risk	Measurable change in direct or indirect mortality risk associated with Project-related activity effects within the LSA and RSA.

Valued Component	Anticipated LSA Boundary	Anticipated RSA Boundary	Potential Effects	Measurable Parameters (units)	Effects Threshold
	Saskatchewan River between the point of Dragline Inlet to the outlet into the South Saskatchewan River, plus 300 m downstream	Lake	Change or Loss of Habitat Structure and Cover, including Change in Wetted Area	Area of suitable fish habitat (ha)	Loss of suitable fish habitat within the LSA or RSA such that permanent alteration, disruption, or destruction of habitat is likely, and cannot be offset.
			Change or Loss of Fish Passage	Area of connected fish habitat (ha)	Loss of fish passage beyond existing conditions, with the exception of proposed fish exclusion structures intended to limit fish mortality within the LSA and RSA.
Surface Water	PDA plus Project wetlands, and the South Saskatchewan River between the point of Dragline Inlet to the outlet into the South Saskatchewan River, plus 300 m downstream	Saskatchewan River Watershed to 300 m south of the outflow of the Cumberland Marshes into the Saskatchewan River	Change in Water Quality	Physical parameters of baseline water quality	Change in baseline water quality such that waters within the LSA and RSA exceed Canadian Council of Minister’s of the Environment Water Quality Guidelines for Protection of Aquatic Life – Freshwater.
			Change in Water Quantity	Volume of water volume flowing through the CMAB (m ³ /S flow rate)	Changes in water quantity such that current use within the Cumberland Marshes Complex and downstream use is restricted (fishing, recreation, other activities), or that changes in quantity may result in Significant changes to flood frequency or magnitude.
Atmospheric and Sensory Environment	CMAB	Province of Saskatchewan	Change in GHG Emissions	Emission rates for CO ₂ and CH ₄ (tonnes CO _{2eq} /yr)	Project-related changes to net GHG emissions from the LSA.
Land Access and Availability	CMAB	CMAB	Change in Access Opportunities	Number of access routes (roads and waterways) into the CMAB	Measurable change in access to the Cumberland Marshes Complex.
Hunting, Trapping and Fishing	CMAB	CMAB	Change in Hunting Trapping and Fishing Opportunities	Area of suitable habitat for species hunted, fished or trapped.	A reduction in suitable habitat for hunted, fished or trapped species that would result in populations that cannot sustain these activities by local user groups.

9.2 Assessment of Effects on Valued Components

9.2.1 DEVELOPMENT EFFECTS ON THE ENVIRONMENT

The environmental effects of the Project will be assessed in the EIA report, including cumulative environmental effects, for each VEC for all phases of the Project, including the construction, operation, and decommissioning phases of the Project. The potential environmental effects of accidents, malfunctions, and unplanned events will also be assessed.

Assessments will be conducted for each VC independently. VCs with residual adverse effects will be carried forward in the EA to determine significance as well as potential for cumulative effects. In general, the Project activities will be limited to seasonal works occurring in limited spatial areas at existing infrastructure or along previously used roads. Effects are likely to be limited to small areas with short-term changes in habitat. Post construction habitat area is anticipated to be comparable to baseline levels.

Traditional knowledge shared through the voluntary engagement and Consultation processes will be integrated into baseline data collection, VC selection, and significance determination of residual effects.

9.2.2 PROPOSED MITIGATION

The project will employ mitigation measures and best management practices to reduce or avoid adverse project effects on the environment during construction, operation and decommissioning (if applicable). Applicable mitigation measures will be applied wherever there is potential for adverse effect on the environment. It is anticipated that the following mitigation measures will be implemented throughout the construction phase of the Project, many of which will carry into the operation phase:

- Protect Fish and Fish Habitat and mitigate adverse effects by following *DFO Measures to protect fish and fish habitat* (2019) including, but not limited to:
 - Planning in water work outside of Restricted Activity Timing Windows (DFO, 2023)
 - Working in isolation whenever practicable and maintaining fish passage
 - Maintaining undisturbed riparian vegetation buffer when possible
 - Minimizing shoreline disturbance
 - Use of non-toxic construction materials
 - Use of sheet pile coffer dams instead of earthen coffer dams for site isolation and construction
 - Use of existing temporary winter roads
 - Follow all regulatory requirements and conditions of approval outlined by DFO in an issued Letter of Advice (LOA) or *Fisheries Act* authorization
- Protect aquatic systems through preventative measures to avoid the spread of aquatic invasive species, including, but not limited to:
 - before entering and after exiting a body of water, boating equipment will be inspected, including the:
 - boat's hull
 - motor
 - anchor

- trailer
- other equipment such as anchor lines and sampling gear
- all equipment will be cleaned after use with freshwater, or spraying them with pure vinegar before entering other water bodies
- if any plants and animals are found attached to boating equipment, they will be:
 - removed and disposed far from the water, in an appropriate compost or garbage bin.
 - water from any motor, bilge and wells will be drained on land and away from the water
 - equipment will be completely dried before entering another water body.
- Follow the *Saskatchewan Activity Restriction Guidelines for Sensitive Species* (2017) whenever possible. When not possible, establish SK ENV reviewed and accepted mitigation measures.
- Avoid disturbing active bird nests during the nesting period (late April to mid-August). If avoidance is not possible, complete pre-construction Migratory Bird Nesting Surveys.
- Follow all regulatory requirements outlined by the HCB in the context of Heritage Resources.
- Employ a Chance Find Protocol for archaeological and Heritage Resources
- Employ the following Site-Specific Environmental Protection and Management Plans during construction phases:
 - Sediment and Erosion Control Plan
 - Wildlife Encounter/Management Plan
 - Spill Prevention Plan
 - Wildfire Prevention and Preparedness Plan
 - Waste Management Plan
 - Emergency Flood Preparedness Plan
 - Access Control Plan
 - Site Communications Plan
 - Protection Plan for Incidental Finds of Heritage Resources

Mitigation measures will be developed in detail and presented in the Commitments Register (see Section 16.1 below) in the EIS.

9.2.3 RESIDUAL EFFECTS

Residual project effects on the environment are those effects that remain after environmental mitigation measures are applied.

The EIS will assess and describe any residual effects for each VC after mitigation measures are applied and if necessary, any potential offset commitments. It is anticipated that offsetting will not be a requirement for the Project as the Project's purpose is to maintain wetland habitats for SOCC and SOIC as well as restore a naturalized hydrology to portions of the Project.

Determination of Residual Effects

This EIS section will lay out the approach to the determination of residual effects on each VC. Residual effects must be measurable and Residual effects will be evaluated for each VC during the EIS and will be defined as a measurable change in each VC assessed using traditional knowledge and other sources of data.

Determining Significance of Residual Effects

Significance of Residual Effects identified in the EIS will be evaluated on multiple criteria including magnitude, duration, frequency of effect, geographic extent, and reversibility in the biophysical, socio-economic, or cultural context as applicable for each VC.

Identification of Key Anticipated Residual Effects

Key anticipated residual effects will be identified in the EIS following the necessary collection of information and assessment of effects using the above measurable parameters, and significance criteria.

Offsetting Commitment

If residual adverse effects are identified, and determined significant during the EIS, DUC is committed to working with regulatory agencies, rights holders, and stakeholders, to develop reasonable, actionable, and measurable offset planning and implementation.

9.3 Cumulative Effects Assessment

The Cumulative Effects Assessment section in the EIS will evaluate the Project's residual effects on the environment in the context of the effects of past, present, and reasonably predictable developments within each VC-specific RSA. The assessment will include the integration of information collected during Project engagement and Consultation programs with an anticipated focus on water control structures and water management.

The CEA will also include an evaluation of how other developments in the RSA may affect the Project. Significance will be determined based on criteria as outlined in Section 9.2.3 above.

Findings of the CEA may require the development of additional Project mitigation measures to eliminate or reduce predicted cumulative effects on the environment.

10.0 CONSULTATION REPORT

The proposed First Nation and Métis Consultation Plan will be used to assess potential project effects on Treaty Rights and traditional land uses for the Project.

DUC is continuing to consult local and regional First Nation and Métis rights holders to inform on study design, effects assessment inclusion and future potential partnerships for management and maintenance of Project infrastructure. Consultation report results will be included in the EIS.

11.0 POTENTIAL ACCIDENTS AND MALFUNCTIONS

Accidents and malfunctions are unplanned conditions or events that occur during Project activities. Accidents and malfunctions could occur during removal of existing water control structures, during construction (of channels, earthen plugs, weirs, and control structures), during operations, and decommissioning at the end

of a project's life cycle. Many accidents and malfunctions can be reduced or avoided through proper maintenance, well planned safety protocols and work procedures, and implementation of site-specific environmental management and protection plans.

Summarized below are possible pathways that may cause accidents and malfunctions based on the Project activities.

- Spills and Leaks:
 - Spills or leaks of hydrocarbons or similar chemicals that would be required for fueling or maintenance of construction/decommissioning vehicles,
 - May also be possible during maintenance of control structures during operations, but at a lower intensity.
- Vehicle emissions during construction/decommissioning as there would be a higher frequency of vehicles during these times in the Project life cycle.
- Vehicle accidents and malfunctions, including vehicles breaking through ice of insufficiently frozen wet ground.
- Driving vehicles provide hazards in single car accidents, multiple car collisions, or collisions with wildlife.
- Flooding:
 - Flooding of the construction site may occur after unpredictable precipitation events or during uncommunicated release of water from water control structures managed by other parties.
- Wildfire caused by Project activities.
- Vandalism to project equipment or infrastructure.

12.0 ANCILLARY PROJECTS

Based on the available understanding of the Project, it is not expected that any ancillary projects will be required to support the development of the Project as presented.

13.0 EFFECTS OF THE ENVIRONMENT ON THE DEVELOPMENT

Water will be the predominant environmental feature that will influence the Project and overall Cumberland Marsh hydrology. The constructed and natural channels, earthen plugs, weirs, and control structures could have the banks eroded away over time or breached with sufficiently high-water levels. As the banks experience erosion, this could cause sediment deposition in the channels, requiring dredging in the future. The erosion of the banks over time could require maintenance or upgrades to those water control structures in the future.

Extended periods of drought or longer-term changes in local, regional, or global climate patterns could result in shifts in habitats within the Cumberland Marsh from open water and emergent marsh wetland systems to

eventual upland habitats as would happen naturally with the channel evolution and shifting of the channel location of the Saskatchewan River main channel and ultimately flows into the Old Channel.

14.0 MONITORING

The following monitoring programs may be initiated for each identified Project phase and will be further defined and revised in the EIS.

14.1 Construction

- Pre-construction clearing of work areas for sensitive environmental features or wildlife.
- Environmental construction monitoring for work in identified sensitive areas.
- Potential Heritage Resource and Traditional Knowledge monitoring if Consultation identifies culturally sensitive sites within the PDA or a chance find occurs for Heritage Resources.

14.2 Operations

- Vegetation monitoring and management along infrastructure such as dykes, ditches, the Dragline Channel, and Cumberland Marshes wetland cells.
- Access management to the Cumberland Marshes management area via Project access roads.
- Monitoring of water levels and structural integrity of the water control structures.
- Monitoring of sediment deposition in the Dragline Channel.

14.3 Decommissioning

High level monitoring commitments will be developed during the EIS and incorporate input from First Nation, Métis and local stakeholders regarding decommissioning monitoring requirements. It is anticipated that final monitoring requirements will be developed closer to the decommissioning date and meet the regulatory and local requirements at that time.

15.0 SUMMARY AND CONCLUSIONS

This section of the EIS will provide a summary of key Project effects for each biophysical, socio-economic, and cultural VC as well as the significance of residual Project effects on VCs after mitigation measures have been applied. The summary and conclusions section will also briefly summarize mitigations that were presented during the assessment for each VC, and how residual effects may affect First Nations and Métis and local communities. It will be presented in tabular format and cross reference each relevant section in the EIS. It is not anticipated that any offsetting for significant residual effects will be required for the Project, however, if required, offsetting measures will also be included.

16.0 CONDITIONS MANAGEMENT

16.1 Commitments Register

DUC will use the Commitments Register as provided in Appendix D of the *Guidelines for the Terms of Reference and Environmental Impact Statement* (Government of Saskatchewan, 2021a). The Commitments Register will include Project commitments regarding mitigation measures, monitoring, and implementation metrics as well as reference to acceptable tolerances when appropriate.

16.2 Follow-up Reporting

Although it is anticipated the likelihood of follow up reporting requirements will be low, there is the potential that monitoring and reporting on water quality and quantity of waters downstream of the inlet of the Dragline Channel in the Saskatchewan River Old Channel, may be required by regulatory agencies. In addition, follow up reporting on wetland habitat transition within the Cumberland marshes may be required pending the outcomes of the Project. If follow-up reporting is required by a regulatory agency, the reporting will be completed with content requirements set by the responsible agency.

17.0 QUALIFIED PERSONS CREDENTIALS

DUC is committed to using recognized, qualified, and registered professional, scientists, technicians, and engineers, where appropriate, in the completion of the baseline data collection as well as the EIS.

18.0 REFERENCES

- Acton et al. 1998. The Ecoregions of Saskatchewan. Canadian Plains Research Center/ Saskatchewan Environmental and Resource Management. University of Regina, Regina, SK. ISBN: 0-88977-097-2.
- Betcher et al. 1995. Groundwater in Manitoba: Hydrogeology, Quality Concerns, Management. https://gov.mb.ca/sd/pubs/water/groundwater/publication/1995_betcher_groundwater_manitoba_hydrogeology_quality_concerns_management.1db
- BirdLife International. 2022. Important Bird Areas factsheet: Cumberland Marshes. Retrieved October 2022 from <http://datazone.birdlife.org/site/factsheet/cumberland-marshes-iba-canada>.
- Clavelle, C. M. 1997. Ethnobotany of Two Cree Communities in the Southern Boreal Forest of Saskatchewan. [Master's thesis, University of Saskatchewan] Saskatoon, Saskatchewan.
- Department of Fisheries and Oceans Canada. 2019. Measures to Protect Fish and Fish Habitat. <https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>
- Department of Fisheries and Oceans Canada. 2022. Aquatic Species at Risk Mapping Tool. <https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>
- Department of Fisheries and Oceans Canada. 2023. Saskatchewan Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat. Accessed September 2023 from: <https://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/sk-eng.html>
- Ducks Unlimited Canada (DUC). 2008-2010. Cumberland Marsh Bio-inspection Reports.
- Ducks Unlimited Canada. 2021. Cumberland Marsh Rebuild – Environmental Project Proposal.
- Ducks Unlimited Canada. 2022a. Cumberland Marsh Enhanced Wetland Classification Mapping. <https://boreal.ducks.ca/publications/field-guide-of-boreal-wetland-classes-in-the-boreal-plains-ecozone-of-canada/>
- Ducks Unlimited Canada. 2022b. Cumberland Marsh Caribou Habitat Preference Mapping.
- Environment and Climate Change Canada (ECCC). 2020. Amended Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. xiii + 143pp. https://wildlife-species.canada.ca/species-risk-registry/virtual_sara/files/plans/Rs-CaribouBorealeAmdMod-v01-2020Dec-Eng.pdf
- Google Earth – ESRI. 2022. https://earth.google.com/web/@53.20753754,-102.31203444,68329.26170687a,0d,35y,-4.0016h,44.1655t,0.031r?utm_source=earth7&utm_campaign=vine&hl=en
- Government of Canada. Canada-Saskatchewan Agreement on Species at Risk 2007. Available at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/permits-agreements-exceptions/canada-saskatchewan-agreement.html>

- Government of Saskatchewan. 2017. Ministry of Environment, Fish, Wildlife and Lands Branch. Activity Restriction Guidelines for Sensitive Species. Regina, Saskatchewan.
<https://publications.saskatchewan.ca/#/products/79241>
- Government of Saskatchewan. 2021a. Guidelines for the Terms of Reference and Environmental Impact Statement. Environmental Assessment and Stewardship Branch, Ministry of Environment.
<https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/environmental-assessment/does-my-project-need-an-environmental-assessment>
- Government of Saskatchewan. 2021b. Species Detection Survey Protocol: 20.0 Vascular Plant. February 2021 Update. Saskatchewan Ministry of Environment, Fish, Wildlife and Lands Branch, Regina, Saskatchewan. <https://publications.saskatchewan.ca/#/products/79238>
- Government of Saskatchewan. 2021c. Draft Range Plan for Woodland Caribou in Saskatchewan. Boreal Plain Ecozone – SK2 East Caribou Administration Unit. 91 pp.
<https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/wildlife-and-conservation/wildlife-species-at-risk/woodland-caribou>
- Government of Saskatchewan. 2021d. 2021-005 Cumberland Marsh Rebuild Project – File # 2021-005, CRM # 10054646. Saskatchewan Ministry of Environment - Environment Protection Division. Regina, SK.
- Government of Saskatchewan. 2022. Developers' Online Screening Tool – Heritage Sensitivity Information.
<https://gisappl.saskatchewan.ca/Html5Ext/index.html?viewer=HeritageSensitivityScreening>
- iMapInvasives. 2022. <https://www.imapinvasives.org/>
- Important Birds Areas (IBA) of Canada. 2022. IBA Site Summary of Cumberland Marshes SK102. Retrieved October 2022 from <https://www.ibacanada.org/site.jsp?lang=EN&siteID=SK102>.
- Kupsch, W.O. 1952. Geological Report 10: Ordovician and Silurian Stratigraphy of East Central Saskatchewan.
<https://publications.saskatchewan.ca/#/products/7472>
- Millard, M.J. 1997. Geology and Groundwater Resources of the Pasquia Hills Area (62E-F), Saskatchewan.
<https://www.wsask.ca/wp-content/uploads/2021/08/Groundwater-Resources-Report-Pasqua-Hills.pdf>
- North/South Consultants Inc. 2021. Cumberland Marshes Project Fish Passage Technical Guidance. Winnipeg, Manitoba.
- Phillips, D. 2019. Saskatchewan River Delta – Fisheries Enhancement Review and Recommended Work Plan. A report prepared by SaskPower Corporation. 51 p.
- Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.
- The National Wetlands Working Group. 1997. *The Canadian Wetland Classification System* (2nd ed). Wetlands Research Centre, University of Waterloo, Waterloo, Ontario.
- Royer, L.M. 1966. The limnology and fisheries resources of the Saskatchewan River Delta, 1964-1966. A report prepared by the Saskatchewan Fisheries laboratory. Saskatchewan Department of natural Resources, 119 p.

Saskatchewan Conservation Data Centre [SK CDC]. 2022a. Saskatchewan Tracked Non-Vascular Plant Taxa by Ecoregion and Landscape Area. Regina, Saskatchewan. Retrieved from www.biodiversity.sk.ca/SpplList.htm

Saskatchewan Conservation Data Centre [SK CDC]. 2022b. Saskatchewan Tracked Vascular Plant Taxa by Ecoregion and Landscape Area. Regina, Saskatchewan. Retrieved from: www.biodiversity.sk.ca/SpplList.htm

Saskatchewan Conservation Data Centre [SK CDC]. 2022c. Saskatchewan Tracked Vertebrate Taxa by Ecoregion and Landscape Area. Regina, Saskatchewan. <http://biodiversity.sk.ca/TaxaList/sk-taxa-vertebrate-track.pdf>

Saskatchewan Conservation Data Centre [SKCDC]. 2022d. HABISask: Hunting, Angling, and Biodiversity Information of Saskatchewan Online Mapping Application. Retrieved October 2022 from: <https://gisappl.saskatchewan.ca/Html5Ext/?viewer=habisask>.

Saskatchewan Government Directory. n.d. Cumberland House Protection Area. Retrieved November 2022 from: <https://www.saskatchewan.ca/government/directory?ou=2a1b957b-c106-4029-9362-03f1b4f6e30b>

Saskatchewan Environment (SK ENV). 2020. Amphibian Salvage Checklist. Fish Wildlife and Lands Branch. Retrieved September 2023 from: <https://publications.saskatchewan.ca/#/products/107480>

Saskatchewan Health Authority. 2022. Cumberland House Health Centre. Retrieved November 2022 from: <https://www.saskhealthauthority.ca/facilities-locations/cumberland-house-health-centre>

Statistics Canada. 2022. (table). *Census Profile*. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released October 26, 2022. Accessed November 2022. Retrieved from: <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>

Uprety, Y., Asselin, H., Dhakal, A., and Julien, N. 2012. Traditional use of medicinal plants in the boreal forest of Canada: review and perspectives. *Journal of ethnobiology and ethnomedicine*, 8(1), 1-14.

19.0 PERSONAL COMMUNICATIONS

Greer, S. 2022. Discussion related to phragmites management concerns in the Cumberland Marsh Complex. December 15, 2022

20.0 ACTS AND REGULATIONS

Canadian Navigable waters Act. R.S.C., 1985. c. N-22. 2019. Government of Canada.

Environmental Assessment Act. 1980. Chapter E-10.1. 2018. Government of Saskatchewan.

Environmental Management and Protection Act. 2010. Chapter E-10.22. 2018. Government of Saskatchewan.

Fisheries Act, R.S.C., 1985, c. F-14 2019, c. 14. Government of Canada.

Heritage Property Act. 1980. Chapter H-2.2. Government of Saskatchewan.

Impact Assessment Act. S.C. 2019, c. 28, s. 1. Government of Canada.

Migratory Birds Convention Act, S.C., 1994, c. 22. SOR/2022-105. Government of Canada.

Species at Risk Act, S.C. 2002, c. 29 SOR/2022-14. Government of Canada.

Weed Control Act. 2010. Chapter W-11.1. 2020. Government of Saskatchewan.

Wildlife Act. S.C. 1998, Chapter W-13.12. 2020. Government of Saskatchewan.

Water Security Agency Act. SS 2005. Chapter W-8.1. Government of Saskatchewan.

APPENDIX A - LETTER FROM THE IMPACT ASSESSMENT AGENCY OF CANADA



Prairie and Northern Region
Canada Place
Suite 1145, 9700 Jasper Avenue
Edmonton, Alberta T5J 4C3

Région des Prairies et du Nord
Place Canada
Pièce 1145, 9700 rue Jasper
Edmonton (Alberta) T5J 4C3

October 25, 2022

Reed Hentze
Department Head – Ecology and Environmental Impact Assessment
KGS Group
Suite 300 – 203 Stonebridge Blvd
Saskatoon, SK S7T 0G3
Email: RHentze@kgsgroup.com

Dear Reed Hentze,

On October 21, the Impact Assessment Agency of Canada (the Agency) received information regarding the Birch River Dam Decommissioning (the Project) proposed by Ducks Unlimited Canada.

Based on the current information provided regarding the Project, it does not appear to meet the definition of a designated project as described in the *Physical Activities Regulations* under the *Impact Assessment Act* (the IAA). As such, the Agency has determined that the Project, as presented, is not a designated project under the IAA. However, please note that subsection 9(1) of the IAA gives the Minister of Environment and Climate Change the authority to designate the Project if, in the Minister's opinion, the carrying out of Project activities may cause adverse environmental effects or public concerns related to those effects warrant the designation.

Should the Project or any of the planned activities change, or if you have any further questions, please contact me by email at Stephanie.Krysa@iaac-aeic.gc.ca or by phone at 587-340-2082.

Sincerely,


Stephanie Krysa
Environmental Assessment Officer
Impact Assessment Agency of Canada

APPENDIX B - HUNTING, ANGLING AND BIODIVERSITY INFORMATION OF SASKATCHEWAN PROJECT SCREENING REPORT

Notes:

Report Generated
 10/24/2022


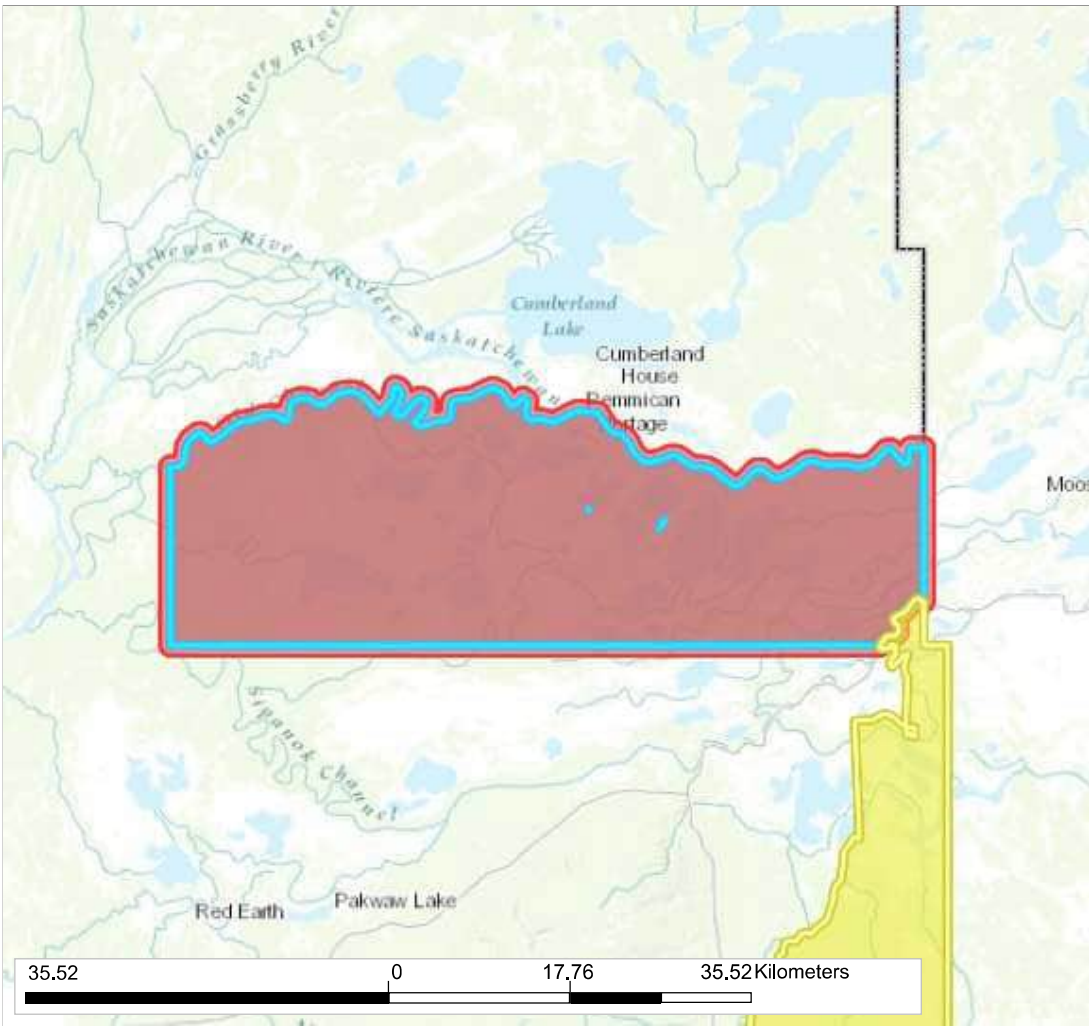
Map Information



Buffer Size:
 1 Kilometers

Shapefile
 Cumberland1.shp

Area of Interest

- Screened Areas:**
- Ecological Management Specialist (EMS) District
 - Compliance & Field Service Area
 - Compliance & Field Service (CFS) Region
 - Area Fisheries Ecologists
 - Area Wildlife Ecologists
 - Rural Municipality
 - Indian Reserve
 - Rare and Endangered Species Fish Species
 - Woodland Caribou Range
 - Species Predictive Models
 - Whooping Crane Corridor
 - Federal Critical Habitat
 - Emergency Protection Order
 - Wind Energy Avoidance Zones
 - Important Natural Areas
 - Provincial Parks
 - Recreation Sites
 - Game Preserves
 - National Wildlife Areas
 - Federal Pastures
 - Community Pastures
 - Wildlife Habitat Protection Act Lands
 - Fish & Wildlife Development Fund Lands
 - Migratory Bird Sanctuary
 - Wildlife Refuge
 - Conservation Easements
 - Crown Conservation Easements
 - Ecological Reserves
 - Ramsar Wetlands
 - Reservoir Development Areas
 - Representative Areas

Species Likely to be Present

Known Species

“Known” species are species that have known occurrences in the area from the Saskatchewan Conservation Data Centre’s Rare and Endangered Species map layer. However, absence of species observation records does not preclude the existence of species in the area of interest. Observations may simply not have been recorded for the given area or may not have yet been entered into the ministry data holdings – new observation records are continuously being discovered. Information accessible through HABISask is not intended to be a definitive statement on the presence, absence or status of a species within a given area, nor as a substitute for onsite surveys.

Rare and Endangered Species

Category: Animal Assemblage

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
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Migratory Bird Concentration Site	<i>Migratory Bird Concentration Site</i>	G3	N3	S3			
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Category: Fungus

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
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Boreal pixie-cup	<i>Cladonia borealis</i>	G5	N5	S3			
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Category: Vascular Plant

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
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Bird's-eye Primrose	<i>Primula mistassinica</i>	G5	N5	S3			
Bristly Gooseberry	<i>Ribes oxyacanthoides var. setosum</i>	G5T4T5	N2	S2			
Canada Waterweed	<i>Elodea canadensis</i>	G5	N5	S3			
Cyperus-like Sedge	<i>Carex pseudocyperus</i>	G5	N5	S3			
Long-spurred Violet	<i>Viola selkirkii</i>	G5	N5	S3			
Marsh St. John's-wort	<i>Triadenum fraseri</i>	G5	N5	SH			
Purple Lousewort	<i>Pedicularis parviflora</i>	G4G5	N5	S3			
Red Elderberry	<i>Sambucus racemosa ssp. pubens</i>	G5T5	N5	S2			
Small White Water-lily	<i>Nymphaea leibergii</i>	G5	N4N5	S2			
Upright Narrow-leaved Pondweed	<i>Potamogeton strictifolius</i>	G5	N5	S3			
Waterlily	<i>Nymphaea loriانا</i>	G1G2	N1	S1			
Water-marigold	<i>Bidens beckii</i>	G5	N5	S2			

Category: Vertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
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Bank Swallow	<i>Riparia riparia</i>	G5	N5B,N5M	S4B,S5M	Threatened	Threatened	
Barn Swallow	<i>Hirundo rustica</i>	G5	N3N4B, N3N4M	S4B	Special Concern	Threatened	
Broad-winged Hawk	<i>Buteo platypterus</i>	G5	N5B,N5M	S4B,S3M			
Canada Warbler	<i>Cardellina canadensis</i>	G5	N4B,N3M	S4B,S3M	Special Concern	Threatened	
Chimney Swift	<i>Chaetura pelagica</i>	G4G5	N4B,N3M	S2B	Threatened	Threatened	
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	G5	N4B,N4N, NUM	S4	Special Concern	Special Concern	
Pileated Woodpecker	<i>Dryocopus pileatus</i>	G5	N5	S3			

Fish Atlas

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
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Trout-perch	<i>Percopsis omiscomaycus</i>	G5	N5	S5			
Burbot	<i>Lota lota</i>	G5	N5	S5			
Blacknose Dace	<i>Rhinichthys atratulus</i>	G5	N5	S3			
Longnose Sucker	<i>Catostomus catostomus</i>	G5	N5	S5			
Yellow Perch	<i>Perca flavescens</i>	G5	N5	S5			
Goldeye	<i>Hiodon alosoides</i>	G5	N5	S4			

Common Name	Scientific Name	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Quillback	<i>Carpiodes cyprinus</i>	G5	N5	S4			
River Shiner	<i>Notropis blennioides</i>	G5	N5	S3			
Fathead Minnow	<i>Pimephales promelas</i>	G5	N5	S5			
Silver Redhorse	<i>Moxostoma anisurum</i>	G5	N5	S4			
Spottail Shiner	<i>Notropis hudsonius</i>	G5	N5	S5			
Brook Stickleback	<i>Culaea inconstans</i>	G5	N5	S5			
Flathead Chub	<i>Platygobio gracilis</i>	G5	N5	S3			
Northern Redbelly Dace	<i>Chrosomus eos</i>	G5	N5	S3			
Lake Whitefish	<i>Coregonus clupeaformis</i>	G5	N5B,N5N,	S5			Not at Risk
Northern Pike	<i>Esox lucius</i>	G5	N5	S5			
Sauger	<i>Sander canadensis</i>	G5	N5	S5			
Emerald Shiner	<i>Notropis atherinoides</i>	G5	N5	S5			
Walleye	<i>Sander vitreus</i>	G5	N5	S5			
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	G5	N5	S4			
White Sucker	<i>Catostomus commersonii</i>	G5	N5	S4			
Logperch	<i>Percina caprodes</i>	G5	N5	S5			
Central Mudminnow	<i>Umbra limi</i>	G5	N5	S2			
Finescale Dace	<i>Chrosomus neogaeus</i>	G5	N5	S4			
Longnose Dace	<i>Rhinichthys cataractae</i>	G5	N5	S5			
Lake Chub	<i>Couesius plumbeus</i>	G5	N5	S5			
Spoonhead Sculpin	<i>Cottus ricei</i>	G5	N5	S5			Not at Risk
Johnny Darter	<i>Etheostoma nigrum</i>	G5	N5	S5			
Iowa Darter	<i>Etheostoma exile</i>	G5	N5	S5			
Mooneye	<i>Hiodon tergisus</i>	G5	N5	S3			
Lake Sturgeon	<i>Acipenser fulvescens</i>	G3G4	N3	S2			Endangered
Pearl Dace	<i>Margariscus nachtriebi</i>	G5	N5	S5			

Expected Species

“Expected” is based on a modelled prediction if a species might occur in areas based upon developed statistical relationships between local and landscape characteristics and species presence. Models utilized by this report have only been created in the prairie ecozone for a selection of species. The boreal plain, boreal shield and taiga shield will not return any expected species results. Models are not a substitute for on the ground surveys to determine species presence.

Species Predictive Models

Category:	Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
	No Species Found (*note, predictive model results are for the prairie ecozone only.)							

Whooping Crane Corridor No

Woodland Caribou Habitat

Detailed information concerning woodland caribou habitat, administration units and Caribou Habitat Management areas is provided below.

Currently, information on woodland caribou habitat potential is not available in this report, but users are encouraged to view the dataset “Woodland Caribou Habitat Potential” to determine whether your project falls within high, moderate or low caribou habitat potential areas.

Woodland Caribou Conservation Unit(s): Boreal Plain

Woodland Caribou Administrative Unit(s): SK2 EAST

Woodland Caribou Habitat Management Area Tier category: 3, 1

Species with Critical Habitat Present

This dataset displays the geographic areas within which federal Critical Habitat for species at risk listed on Schedule 1 of the federal Species at Risk Act (SARA) occurs in Saskatchewan. Please be aware that not all of the area within these boundaries is necessarily Critical Habitat. To determine if a specific area is Critical Habitat and if your activity might be considered “destruction” of Critical Habitat, other information available in each individual species’ Recovery documents (<http://www.sararegistry.gc.ca>) need to be considered, including biophysical attributes and activities likely to result in destruction of Critical Habitat.

Note that recovery documents (and therefore Critical Habitat) may be amended from time to time. Species are added as the data becomes ready, which may occur after the recovery document has been posted on the SAR Public Registry. Although HABISask will try to provide the latest data, the SAR Public Registry should always be considered as the official source for Critical Habitat information.

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
No Critical Habitat found							

Emergency Protection Order

This dataset is comprised of areas under the federal Emergency Order for the Protection of the Greater Sage-Grouse in Canada. The exterior extent polygons are derived from the detailed dataset of the Government of Canada Emergency Order dataset. For specific information regarding the order and the prohibitions set out in the Emergency Order please consult the official documents on the Species at Risk Registry ([sararegistry.gc.ca](http://www.sararegistry.gc.ca))

Common Name	Scientific Name
No species found	

Important Natural Areas

Important Natural Areas are sites in Saskatchewan that are considered to have conservation significance, but are not necessarily legally protected.

Name	Type
Cumberland Marshes	Important Bird Area

Wind Turbine Avoidance Zones Present

The Wind Energy Avoidance Zones were designed to enhance environmental protection and provide more certainty to future wind energy developments. These guidelines clearly identify environmentally sensitive areas that should be avoided for projects that include the siting of wind turbines but can be helpful in siting any development project. The complete report entitled, Wildlife Siting Guidelines for Saskatchewan Wind Energy Projects, can be found on the Government of Saskatchewan website or by selecting the following link: <https://publications.saskatchewan.ca/#/categories/78>

Land Type

North and South Saskatchewan Rivers
 Important Bird Areas
 Ecological Reserves

Managed Areas

Managed areas are a diverse collection of lands and waters on which the conservation of biodiversity and ecosystem function are among the goals of the land management programs. Each of the unique or sensitive landscapes, within the network of managed areas, have some level of protection or activity restrictions placed on them by legislation, agreement or policy. These lands include provincial and national parks, ecological reserves, wildlife lands, game preserves, conservation easements and other privately held stewardship lands.

Conservation Easement	National Wildlife Area	Wildlife Habitat Protection Act (WHPA)
Nothing Found	Nothing Found	Nothing Found
Crown Conservation Easement	Provincial Park	Wildlife Refuge
Nothing Found	Nothing Found	Nothing Found
Ecological Reserve	Provincial Pasture	
Nothing Found	Nothing Found	
Fish & Wildlife Development Fund (FWDF)	Ramsar Wetland	
Nothing Found	Nothing Found	
Former Federal Pasture	Recreation Site	
Nothing Found	Nothing Found	
Game Preserve	Representative Area Ecological Reserve	
Nothing Found	LOBSTICK LAKE	
Migratory Bird Sanctuary	Reservoir Development Area	
Nothing Found	NAKUCHI LAKE	
	Nothing Found	

Rare and Endangered Species Occurrences

The absence of information provided by the Saskatchewan Conservation Data Centre (SKCDC) does not categorically mean the absence of sensitive species or features. The quantity and quality for data collected by the SKCDC are dependent on the research and observations of many individuals and organizations. SKCDC reports summarize the existing natural heritage information, known to the SKCDC, at the time of the request.

SKCDC data should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The user therefore acknowledges that the absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Occurrence ID:	9103	First Observation:	
Occurrence Class:	Animal Assemblage	Last Observation:	
Scientific Name:	Migratory Bird Concentration Site		
Common Name:	Migratory Bird Concentration Site		
Occurrence Rank:			
General Description:	Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.		
Occurrence Data:	Locally significant for moulting ducks (1,000-5,000 ducks). Locally significant for staging ducks (2,000-5,000 ducks). Locally significant for breeding geese 915-30 pairs). Local significance for staging American White Pelicans (50-499 individuals).		
Directions:	WAPISEW LAKE		
Occurrence ID:	4482	First Observation:	1990-06-30
Occurrence Class:	Animal Assemblage	Last Observation:	
Scientific Name:	Migratory Bird Concentration Site		
Common Name:	Migratory Bird Concentration Site		
Occurrence Rank:			
General Description:	Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.		
Occurrence Data:	This site is locally significant for staging ducks (2,000-5,000 individuals), locally significant for breeding geese (15-30 pairs)and, locally significant for staging geese (1,000-5,000 mixed geese or white geese (Snow or Ross') or 1,000-3,000 Canada geese, Greater White-fronted geese or unidentified dark geese).		
Directions:	Big Lake		
Occurrence ID:	333	First Observation:	1990-06-30
Occurrence Class:	Animal Assemblage	Last Observation:	
Scientific Name:	Migratory Bird Concentration Site		
Common Name:	Migratory Bird Concentration Site		
Occurrence Rank:			
General Description:	Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.		
Occurrence Data:	This site is locally significant for moulting ducks (1,000-5,000 ducks) and, locally significant for staging ducks (2,000-5,000 ducks).		
Directions:	Bloodsucker Lake		
Occurrence ID:	8476	First Observation:	
Occurrence Class:	Animal Assemblage	Last Observation:	
Scientific Name:	Migratory Bird Concentration Site		
Common Name:	Migratory Bird Concentration Site		
Occurrence Rank:			
General Description:	Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.		
Occurrence Data:	Local significance for moulting ducks (1,000-5,000 individuals). Regional significance for staging ducks (5,000-20,000 individuals or 3,000-8,000 of a single species).		
Directions:	UPPER SASK. DELTA		

Occurrence ID: 9069 **First Observation:**
Occurrence Class: Animal Assemblage **Last Observation:**
Scientific Name: Migratory Bird Concentration Site
Common Name: Migratory Bird Concentration Site
Occurrence Rank:
General Description: Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.
Occurrence Data: Local significance for moulting ducks (1,000-5,000 ducks). National significance for staging ducks (>20,000 ducks). Regional significance for breeding geese (30-199 pairs). Local significance for moulting geese. National significance for staging geese (>15,000 mixed geese or white geese (Snow or Ross') or >10,000 Canada geese, Greater White-fronted geese or unidentified dark geese).
Directions: MELFORT PLAIN

Occurrence ID: 3188 **First Observation:** 1990-06-30
Occurrence Class: Animal Assemblage **Last Observation:**
Scientific Name: Migratory Bird Concentration Site
Common Name: Migratory Bird Concentration Site
Occurrence Rank:
General Description: Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.
Occurrence Data: This site is locally significant for staging ducks (2,000-5,000 individuals).
Directions: Bewley Lake

Occurrence ID: 3482 **First Observation:**
Occurrence Class: Animal Assemblage **Last Observation:**
Scientific Name: Migratory Bird Concentration Site
Common Name: Migratory Bird Concentration Site
Occurrence Rank:
General Description: Reference: Poston, B., D.M. Ealey, P.S Taylor and G.B. McKeating. 1990. Priority Migratory Bird Habitats of Canada's Prairie Provinces. Canadian Wildlife Service, Western and Northern Region, Edmonton. 107 pp.
Occurrence Data: Local significance for moulting ducks (1,000-5,000 individuals). Regional significance for staging ducks (5,000-20,000 individuals). Local significance for breeding geese (15-30 pairs). Local significance for staging geese (1,000-5,000 mixed geese or white geese (Snow or Ross') or 1,000-3,000 Canada geese, Greater White-fronted geese or unidentified dark geese). Regional significance for staging Black Terns (200-500 individuals).
Directions: MCGREGOR LAKE

Occurrence ID: 20467 **First Observation:** 2001-08-14
Occurrence Class: Fungus **Last Observation:** 2001-08-14
Scientific Name: Cladonia borealis
Common Name: Boreal pixie-cup
Occurrence Rank: E - Verified extant (viability not assessed)
General Description:
Occurrence Data: cover value 1 (2001)
Directions: FEC Plot 1883

Occurrence ID: 5636 **First Observation:** 1966-08-27
Occurrence Class: Vascular Plant **Last Observation:** 1966-08-27
Scientific Name: Bidens beckii
Common Name: Water-marigold
Occurrence Rank: H - Historical
General Description: Growing in 2 ft of water in stand of Typha
Occurrence Data: 1966: species observed in 1 site
Directions: Vicinity of Cumberland House, E end of Cutbeaver laKE

Occurrence ID: 1082
Occurrence Class: Vascular Plant
Scientific Name: *Bidens beckii*
Common Name: Water-marigold
Occurrence Rank: H - Historical
General Description: In a small pond near river
Occurrence Data: 1934: species observed in 1 site
Directions: Saskatchewan River near Cumberland Lake

First Observation: 1934-08-18
Last Observation: 1934-08-18

Occurrence ID: 2307
Occurrence Class: Vascular Plant
Scientific Name: *Carex pseudocyperus*
Common Name: Cyperus-like Sedge
Occurrence Rank: H - Historical
General Description:
Occurrence Data: 1964 - species observed in 1 site.
Directions: Vicinity of Cumberland House

First Observation: 1964-06-17
Last Observation: 1964-06-17

Occurrence ID: 8770
Occurrence Class: Vascular Plant
Scientific Name: *Carex pseudocyperus*
Common Name: Cyperus-like Sedge
Occurrence Rank: H - Historical
General Description:
Occurrence Data: 1965 - species observed in 1 site.
Directions: Cumberland Marshes

First Observation: 1965-07-07
Last Observation: 1965-07-07

Occurrence ID: 6448
Occurrence Class: Vascular Plant
Scientific Name: *Carex pseudocyperus*
Common Name: Cyperus-like Sedge
Occurrence Rank: B? - Possibly good estimated viability
General Description:
Occurrence Data: 1984 - locally common in 1 site.
Directions: Carrot River Valley

First Observation: 1984-07-21
Last Observation: 1984-07-21

Occurrence ID: 4650
Occurrence Class: Vascular Plant
Scientific Name: *Carex pseudocyperus*
Common Name: Cyperus-like Sedge
Occurrence Rank: E - Verified extant (viability not assessed)
General Description:
Occurrence Data: 1978 - species observed in 1 site.
Directions: Waterhen Lake, Cumberland House

First Observation: 1978-08-12
Last Observation: 1978-08-12

Occurrence ID: 5219
Occurrence Class: Vascular Plant
Scientific Name: *Elodea canadensis*
Common Name: Canada Waterweed
Occurrence Rank: H - Historical
General Description:
Occurrence Data: 1968 - species observed in 1 site.
Directions: Saskatchewan River Delta 53 30' - 54 00'N 101 18' - 103 00'W 53.75 102

First Observation: 1968-00-00
Last Observation: 1968-00-00

Occurrence ID: 18788
Occurrence Class: Vascular Plant
Scientific Name: *Nymphaea leibergii*
Common Name: Small White Water-lily
Occurrence Rank: E - Verified extant (viability not assessed)
General Description:
Occurrence Data: 1964 - collected 2000 - two collections
Directions:

First Observation: 1964-06-17
Last Observation: 2000-08-18

Occurrence ID: 8874
Occurrence Class: Vascular Plant
Scientific Name: *Nymphaea leibergii*
Common Name: Small White Water-lily
Occurrence Rank: H - Historical
General Description: Marsh flats S of Saskatchewan River, small sloughs, adjacent to channel; Emergent *Scirpus validus* on open water of Egg Lake
Occurrence Data:
Directions: Vicinity of Cumberland House, Egg Lake

First Observation: 1934-08-18
Last Observation: 1965-07-17

Occurrence ID: 16546
Occurrence Class: Vascular Plant
Scientific Name: *Nymphaea loriana*
Common Name: Waterlily
Occurrence Rank: BC - Good or fair estimated viability
General Description:
Occurrence Data: 1996, 2000 - species observed in 1 site
Directions: Egg Lake

First Observation: 1996-07-26
Last Observation: 2000-08-18

Occurrence ID: 8599
Occurrence Class: Vascular Plant
Scientific Name: *Pedicularis parviflora*
Common Name: Purple Lousewort
Occurrence Rank:
General Description:
Occurrence Data:
Directions: Saskatchewan River Delta

First Observation:
Last Observation:

Occurrence ID: 999974746
Occurrence Class: Vascular Plant
Scientific Name: *Potamogeton strictifolius*
Common Name: Upright Narrow-leaved Pondweed
Occurrence Rank:
General Description: specimen collected (2000)
Occurrence Data:
Directions: Big Lake near Egg Lake

First Observation:
Last Observation:

Occurrence ID: 6314
Occurrence Class: Vascular Plant
Scientific Name: *Potamogeton strictifolius*
Common Name: Upright Narrow-leaved Pondweed
Occurrence Rank: H - Historical
General Description:
Occurrence Data:
Directions: Cumberland House

First Observation:
Last Observation: 1978-1979

Occurrence ID: 3382	First Observation:
Occurrence Class: Vascular Plant	Last Observation: 1980-05-19
Scientific Name: <i>Primula mistassinica</i>	
Common Name: Bird's-eye Primrose	
Occurrence Rank: H - Historical	
General Description: DAMP & SHADED BASE OF RIVER BANK, SEVERAL COLONIES	
Occurrence Data:	
Directions: Mile 18 to Cumberland House	
Occurrence ID: 16696	First Observation: 1965-06-05
Occurrence Class: Vascular Plant	Last Observation: 1965-06-05
Scientific Name: <i>Ribes oxycanthoides</i> var. <i>setosum</i>	
Common Name: Bristly Gooseberry	
Occurrence Rank: H - Historical	
General Description:	
Occurrence Data: 1965 - species observed in 1 site	
Directions: Cumberland Marshes	
Occurrence ID: 1999	First Observation: 1984-07-21
Occurrence Class: Vascular Plant	Last Observation: 1984-07-21
Scientific Name: <i>Sambucus racemosa</i> ssp. <i>pubens</i>	
Common Name: Red Elderberry	
Occurrence Rank: E - Verified extant (viability not assessed)	
General Description: In wet sedge fen - meadow in broad draw between Murphy Lake and Carrot River Occasional	
Occurrence Data:	
Directions: Carrot River Valley: ca 1" km SW of Manitoba border on Hwy 9 (The Pas Road) 53 45'N 101 46'W 53.75 101.77 SE" Sec 13 T35	
Occurrence ID: 4164	First Observation: 1966-08-25
Occurrence Class: Vascular Plant	Last Observation: 1966-08-25
Scientific Name: <i>Triadenum fraseri</i>	
Common Name: Marsh St. John's-wort	
Occurrence Rank: H - Historical	
General Description: ON FLOATING PHRAGMITES ISLAND	
Occurrence Data: 1966 - species observed in 1 sit	
Directions: SW corner of Egg Lake	
Occurrence ID: 657	First Observation: 1968-00-00
Occurrence Class: Vascular Plant	Last Observation: 1968-00-00
Scientific Name: <i>Viola selkirkii</i>	
Common Name: Long-spurred Violet	
Occurrence Rank: H - Historical	
General Description: Moist forest floor in most levee communities A common plant	
Occurrence Data:	
Directions: Saskatchewan River Delta 53 30' - 54 00'N 101 18' - 103 00'W 53.75 102	
Occurrence ID: 4671	First Observation: 1964-06-18
Occurrence Class: Vascular Plant	Last Observation: 1964-06-18
Scientific Name: <i>Viola selkirkii</i>	
Common Name: Long-spurred Violet	
Occurrence Rank: H - Historical	
General Description: Mixed upland forest on levee of Saskatchewan River <i>Picea glauca</i> , <i>Populus balsamifera</i> , <i>Acer negundo</i> woods Growing in moss on poplar log	
Occurrence Data:	
Directions: Vicinity of Cumberland House Saskatchewan River 53 55'N 102 20'W 53.92 102.33	

Occurrence ID: 9999110550
Occurrence Class: Vertebrate Animal
Scientific Name: Buteo platypterus
Common Name: Broad-winged Hawk
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2001)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence ID: 9999110551
Occurrence Class: Vertebrate Animal
Scientific Name: Buteo platypterus
Common Name: Broad-winged Hawk
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2001)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence ID: 9999110552
Occurrence Class: Vertebrate Animal
Scientific Name: Buteo platypterus
Common Name: Broad-winged Hawk
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (1999)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 1999-06-23
Last Observation: 1999-06-23

Occurrence ID: 9999110549
Occurrence Class: Vertebrate Animal
Scientific Name: Buteo platypterus
Common Name: Broad-winged Hawk
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2001)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence ID: 9999130787
Occurrence Class: Vertebrate Animal
Scientific Name: Buteo platypterus
Common Name: Broad-winged Hawk
Occurrence Rank:
General Description: 1 Adult(s) Unknown Gender; Breeding Bird Status: H; (2019)
Occurrence Data:
Directions: 53.8693,-102.8892

First Observation: 2019-07-13
Last Observation: 2019-07-13

Occurrence ID: 9999110603
Occurrence Class: Vertebrate Animal
Scientific Name: Cardellina canadensis
Common Name: Canada Warbler
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (1999)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 1999-06-23
Last Observation: 1999-06-23

Occurrence ID: 17908
Occurrence Class: Vertebrate Animal
Scientific Name: *Cardellina canadensis*
Common Name: Canada Warbler
Occurrence Rank: E - Verified extant (viability not assessed)

First Observation: 1999-06-23
Last Observation: 2019-07-13

General Description:

Occurrence Data: 1999: 2 adults 2000: 1 adult 2001: 4 breeding pairs, 9 adults 2019: 2 adults

Directions:

Occurrence ID: 17858
Occurrence Class: Vertebrate Animal
Scientific Name: *Chaetura pelagica*
Common Name: Chimney Swift
Occurrence Rank: H - Historical

First Observation: 1999-06-23
Last Observation: 2000-07-05

General Description:

Occurrence Data: 1999: 3 individuals observed 2000: 2 individuals observed

Directions: Highway 123 towards Cumberland House

Occurrence ID: 17857
Occurrence Class: Vertebrate Animal
Scientific Name: *Chaetura pelagica*
Common Name: Chimney Swift
Occurrence Rank: E - Verified extant (viability not assessed)

First Observation: 2019-07-13
Last Observation: 2019-07-13

General Description:

Occurrence Data: Three adults observed.

Directions:

Occurrence ID: 9999111202
Occurrence Class: Vertebrate Animal
Scientific Name: *Coccothraustes vespertinus*
Common Name: Evening Grosbeak
Occurrence Rank:

First Observation: 2000-07-05
Last Observation: 2000-07-05

General Description: 8 Unknown Sex/Age; (2000)

Occurrence Data:

Directions: CUMBERLAND

Occurrence ID: 9999111205
Occurrence Class: Vertebrate Animal
Scientific Name: *Coccothraustes vespertinus*
Common Name: Evening Grosbeak
Occurrence Rank:

First Observation: 1999-06-23
Last Observation: 1999-06-23

General Description: 1 Unknown Sex/Age; (1999)

Occurrence Data:

Directions: CUMBERLAND

Occurrence ID: 9999111204
Occurrence Class: Vertebrate Animal
Scientific Name: *Coccothraustes vespertinus*
Common Name: Evening Grosbeak
Occurrence Rank:

First Observation: 2001-07-01
Last Observation: 2001-07-01

General Description: 1 Unknown Sex/Age; (2001)

Occurrence Data:

Directions: CUMBERLAND

Occurrence ID: 9999111201
Occurrence Class: Vertebrate Animal
Scientific Name: *Coccothraustes vespertinus*
Common Name: Evening Grosbeak
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2000)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2000-07-05
Last Observation: 2000-07-05

Occurrence ID: 9999111203
Occurrence Class: Vertebrate Animal
Scientific Name: *Coccothraustes vespertinus*
Common Name: Evening Grosbeak
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2000)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2000-07-05
Last Observation: 2000-07-05

Occurrence ID: 9999112558
Occurrence Class: Vertebrate Animal
Scientific Name: *Dryocopus pileatus*
Common Name: Pileated Woodpecker
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2001)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence ID: 9999112561
Occurrence Class: Vertebrate Animal
Scientific Name: *Dryocopus pileatus*
Common Name: Pileated Woodpecker
Occurrence Rank:
General Description: 2 Unknown Sex/Age; (2001)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence ID: 9999112559
Occurrence Class: Vertebrate Animal
Scientific Name: *Dryocopus pileatus*
Common Name: Pileated Woodpecker
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2000)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2000-07-05
Last Observation: 2000-07-05

Occurrence ID: 9999112560
Occurrence Class: Vertebrate Animal
Scientific Name: *Dryocopus pileatus*
Common Name: Pileated Woodpecker
Occurrence Rank:
General Description: 1 Unknown Sex/Age; (2001)
Occurrence Data:
Directions: CUMBERLAND

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence ID: 9999112562
Occurrence Class: Vertebrate Animal
Scientific Name: *Dryocopus pileatus*
Common Name: Pileated Woodpecker

First Observation: 1999-06-23
Last Observation: 1999-06-23

Occurrence Rank:

General Description: 1 Unknown Sex/Age; (1999)

Occurrence Data:

Directions: CUMBERLAND

Occurrence ID: 9999110007
Occurrence Class: Vertebrate Animal
Scientific Name: *Hirundo rustica*
Common Name: Barn Swallow

First Observation: 2001-07-01
Last Observation: 2001-07-01

Occurrence Rank:

General Description: 1 Unknown Sex/Age; (2001)

Occurrence Data:

Directions: CUMBERLAND

Occurrence ID: 24026
Occurrence Class: Vertebrate Animal
Scientific Name: *Riparia riparia*
Common Name: Bank Swallow

First Observation: 1999-06-19
Last Observation: 1999-06-19

Occurrence Rank: H - Historical

General Description:

Occurrence Data: Breeding Bird Status: ON; Nest/Burrow/Den; (1999)

Directions: Hwy. 123 - Cumberland House bridge

Wild Species Research Permitting

A Research Permit is required to detect or observe plants or wildlife for commercial purposes, such as pre-screening surveys to collect baseline data or other activities, or to conduct academic research. Research Permits are not required if you are doing surveys for personal, recreational, educational or other non-commercial purposes. Revisions were made to Section 21 of The Wildlife Act in 2015 and to Section 6.2 of The Wildlife Regulations in 2016.

See the Government of Saskatchewan [Wild Species Research Permitting](#) page for more information.

All forms and related information pertaining to Research Permits can be found in the Publications Centre. Be sure to check out the Conservation Standards Terms and Conditions for Research Permits for general, wildlife and research-specific and information submission conditions that pertain to all research permits.

Subscribe to our Mail-out List Subscriptions for updates regarding Species Detection Permits, SKCDC Lists and Ranks, Legislation and Policy and HABISask.

Species Detection Survey Protocols

The [Species Detection Survey Protocols](#) are used to detect rare and sensitive species so Activity Restriction Guidelines can be applied. Their use is required by industry/ environmental consultants for proposed or existing commercial activities.

Activity Restriction Guidelines for Sensitive Species

The [Activity Restriction Guidelines for Sensitive Species](#) outline restricted activity periods and distance setbacks for rare and sensitive species to assist proponents in minimizing impacts to rare and sensitive species and habitats.

Administrative Areas

16	Ecological Management Specialist (EMS) District(s)
12	Ecological Management Specialist (EMS) District(s)
Nipawin	Compliance and Field Services Area(s)
Hudson Bay	Compliance and Field Services Area(s)
Prince Albert	Compliance and Field Services Region(s)
Saskatchewan River	Area Fisheries Ecologist Area(s)
EAST BOREAL REGION	Area Wildlife Ecologist(s)
999 - NORTHERN ADMIN DISTRICT	Rural Municipality
394 - HUDSON BAY	Rural Municipality
486 - MOOSE RANGE	Rural Municipality
CUMBERLAND HOUSE CREE NATION I.R.	First Nation Reserve

Contact Us

For more information, please contact our Client Service Office:
 Email: centre.inquiry@gov.sk.ca
 Tel (toll free in North America): 1-800-567-4224
 Tel (Regina): 306-787-2584

APPENDIX C - HERITAGE CONSERVATION BRANCH PROJECT CLEARANCE LETTER 22-150

November 7, 2022

Our file: 22-1250

Kristian Sullivan
KGS Group
Agent For: Ducks Unlimited Canada
Suite 300 – 203 Stonebridge Blvd.
SASKATOON SK S7T 0G3

Dear Kristian Sullivan:

**RE: Ducks Unlimited Canada – Cumberland Marsh Rebuild
HERITAGE RESOURCE REVIEW**

Thank you for referring this project for heritage resource review.

In determining the need for, and scope of, Heritage Resource Impact Assessment (HRIA) pursuant to s.63 of *The Heritage Property Act*, the following factors were considered: the presence of previously recorded heritage sites, the area's overall heritage resource potential, the extent of previous land disturbance, and the scope of new proposed land development.

No known archaeological sites are located in direct conflict with the proposed marsh rebuild project. One site (FIMn-9) is located in the project area. Development will occur on terrain judged to have a low heritage potential in areas impacted by previous construction. Therefore, our office has no further concerns with the project proceeding as planned.

If you have any questions regarding these heritage regulatory requirements, please feel free to contact me. Thank you again for referring this proposed development and for your cooperation in protecting the province's cultural heritage.

Sincerely,



Wade Dargin
Archaeologist





Ducks Unlimited
Canada