Keeyask Generation Project

Terrestrial Effects Monitoring Plan

Colonial Waterbird Habitat Enhancement Monitoring Report

TEMP-2019-09

KEEYASK

Manitoba Sustainable Development Client File 5550.00
Manitoba Environment Act Licence No. 3107

2018 -2019

KEEYASK GENERATION PROJECT

TERRESTRIAL EFFECTS MONITORING PLAN

REPORT #TEMP-2019-09

COLONIAL WATERBIRD HABITAT ENHANCEMENT 2018

Prepared for

Manitoba Hydro

By

Wildlife Resource Consulting Services MB Inc.

June 2019

This report should be cited as follows:

Wildlife Resource Consulting Services MB Inc. 2019. Keeyask Generation Project Terrestrial Effects Monitoring Plan Report #TEMP-2019-09: Colonial Waterbird Habitat Enhancement Monitoring 2018. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2019.

SUMMARY

Background

Construction of the Keeyask Generation Project (the Project) at Gull Rapids began in July 2014. The Keeyask Hydropower Limited Partnership (KHLP) was required to prepare a plan to monitor the effects of construction and operation of the generating station on the terrestrial environment. Monitoring results will help the KHLP, government regulators, members of local First Nation communities, and the general public understand how construction and operation of the generating station will affect the environment, and whether more needs to be done to reduce harmful effects.

The Project has the potential to effect colonial waterbird populations through alteration and loss of habitat, as well as sensory disturbance. Three species of colonial waterbirds: ring-billed gull, herring gull, and common tern, commonly breed on rocky islands and reefs in the Nelson River near the Project site. Previous colonial water bird surveys, conducted from 2001-03, 2006, 2011, and 2013-17 have counted between 1,900-6,200 gulls and 10-200 common terns in the Gull Rapids area.

This report describes the results of colonial waterbird habitat enhancement monitoring conducted during the summer of 2018, the fifth summer of Project construction.

Why is the study being done?

Three species of colonial waterbirds (ring-billed gull, herring gull, and common tern) breed near the Project site on the rocky reefs and islands in Gull Rapids. Because active construction for the Project is taking place on some of these traditional nesting islands and reefs, constructed gull and tern nesting habitats have been developed near the Project site to provide colonial waterbirds with alternate nesting areas, which are not affected by construction activity. This study focused on whether the newly constructed habitats are successful at attracting nesting colonial waterbirds.

What was done?

A gull habitat enhancement area was designed to provide alternate breeding habitat for colonial waterbirds during the construction phase. As described in the *Terrestrial Mitigation Implementation Plan* developed for the Project, part of William Smith Island was modified into a nesting area for gulls in early 2015. This was done by clearing trees, providing rocky substrate, and placing eight large shipping containers (with rocks placed on top) to provide secure nesting habitat elevated from potential ground predators. The site was surveyed by helicopter in June and July 2018 during the regional survey for colonial waterbirds, and photographs of the site

were taken by an unmanned aerial vehicle (UAV or drone) in May, June, and July 2018.

In previous years of Project construction (2015-2017), two floating nesting platforms were deployed to provide alternate nesting habitat for common terns. However, monitoring showed common terns preferred to nest on natural island habitat that was still available in the Gull Rapids area and used the floating nesting platforms relatively little. As a result, the nesting platforms were not deployed again in 2018 and their need will be evaluated annually during the construction period until the permanent gull and tern nesting island is constructed.

Habitat Enhancement Area for Gulls on William Smith Island

What was found?

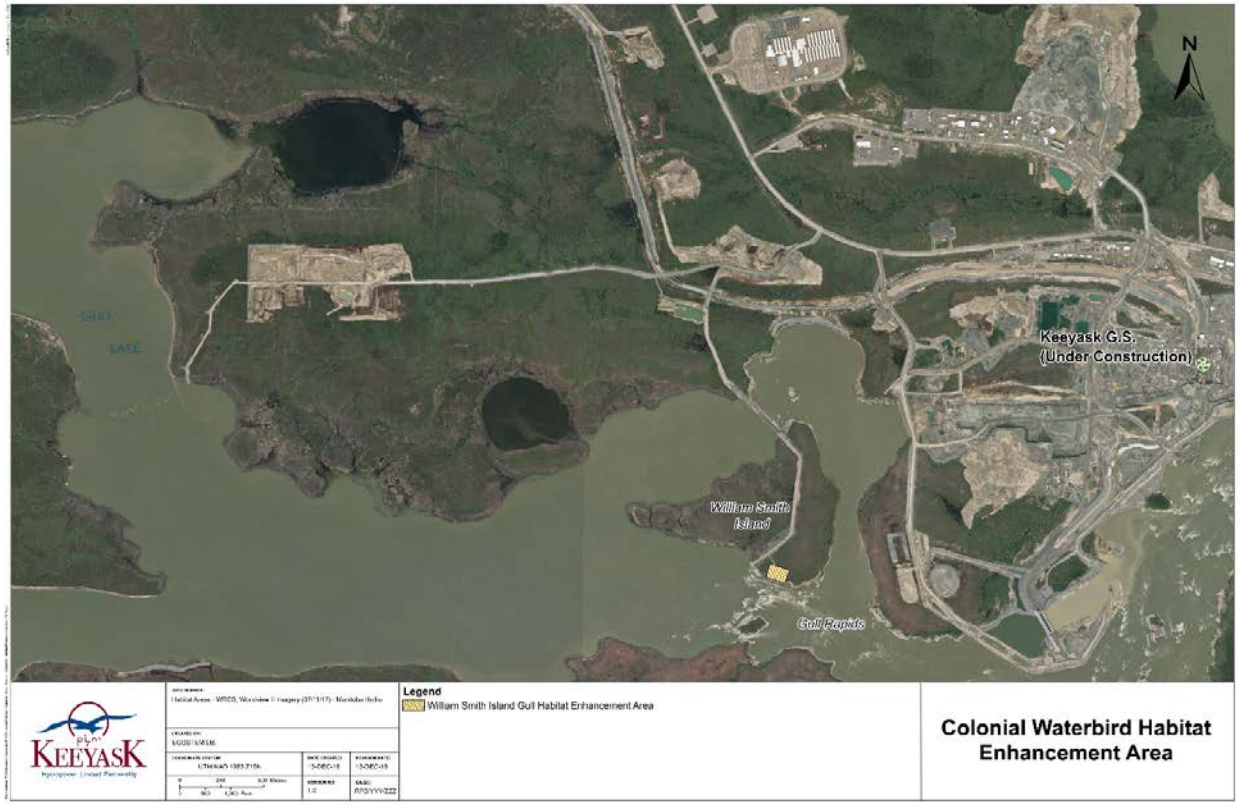
The gull habitat enhancement area was not used for nesting by gulls in 2018. Remote cameras were not installed at the site in 2018, so it is unknown if the site was used for loafing. However, no gulls or nests were present in photographs from the UAV or during the aerial surveys.

What does it mean?

It appears that the presence of natural nesting habitat in the Gull Rapids area has been preferred by gulls during Project construction to date, and as suitable habitat is not yet limited in this area the William Smith Island gull habitat enhancement area has not been used.

What will be done next?

Due to the lack of use of the William Smith Island gull habitat enhancement area by gulls over the past four years of construction and the availability of natural habitat in the Gull Rapids area, the gull habitat enhancement area will be discontinued and the need for it will be evaluated annually until reservoir impoundment occurs.



Location of the Habitat Enhancement Area for Gulls

STUDY TEAM

We would like to thank Sherrie Mason and Rachel Boone of Manitoba Hydro for reviewing the report. Megan Anger of Manitoba Hydro, Ben Hofer of Custom Helicopters, and Ron Bretecher of North/South Consultants Inc. are acknowledged for logistical assistance in the field. We would also like to thank Dr. James Ehnes, ECOSTEM Ltd., for cartographic services.

Biologists, technicians and other personnel who designed, participated in, and drafted the study results included:

- Robert Berger, M.N.R.M., Design, analysis, and reporting
- Mark Baschuk, M.Sc., Analysis and reporting

TABLE OF CONTENTS

LIST OF MAPS

LIST OF PHOTOS

1.0 INTRODUCTION

Construction of the Keeyask Generation Project (the Project), a 695 megawatt hydroelectric generating station (GS) and associated facilities, began in July 2014. The Project is located at Gull Rapids on the lower Nelson River in northern Manitoba where Gull Lake flows into Stephens Lake, 35 km upstream of the existing Kettle GS.

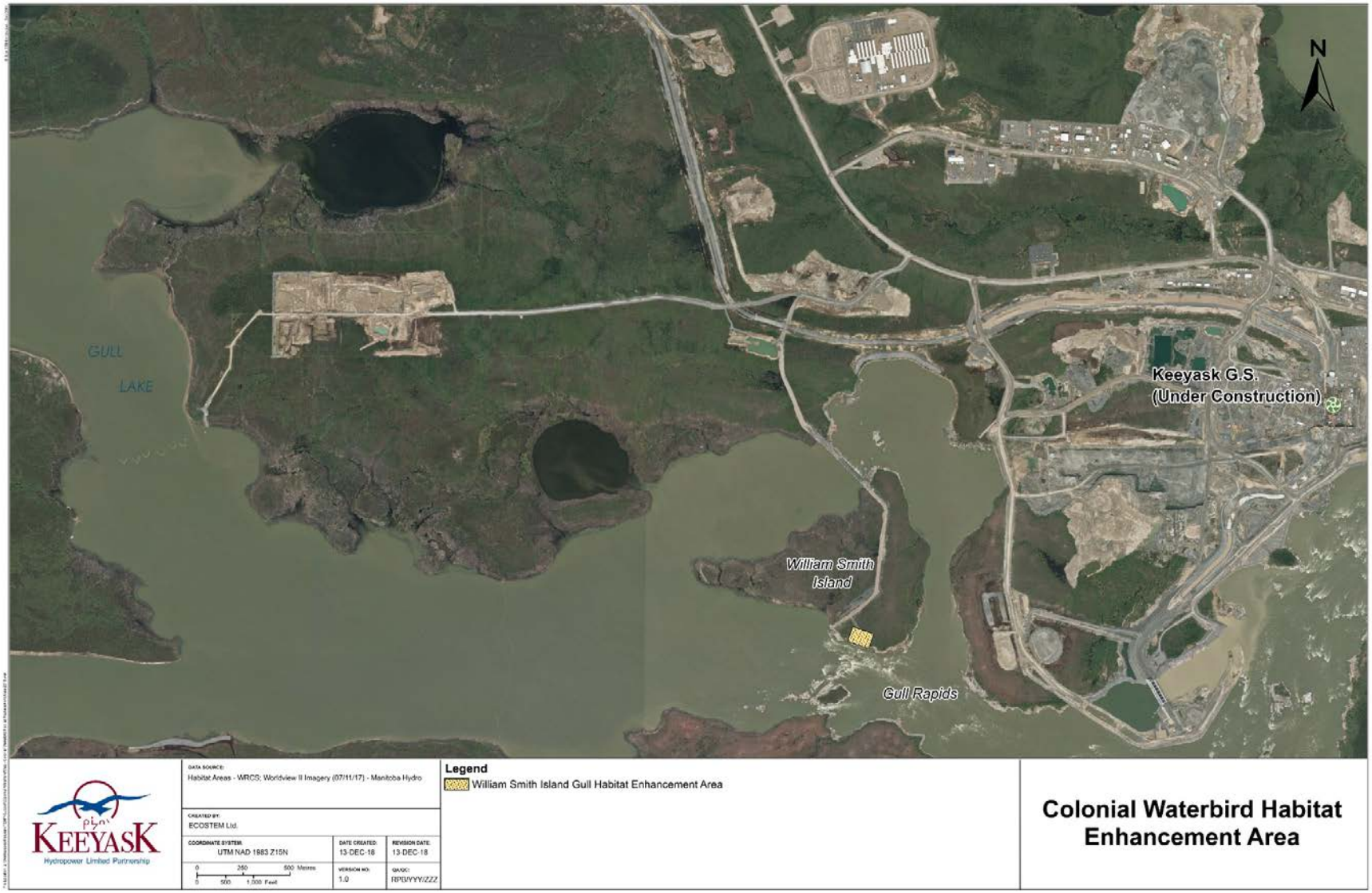
The *Keeyask Generation Project: Response to EIS Guidelines* (the EIS), completed in June 2012, provides a summary of predicted effects and planned mitigation for the Project. Technical supporting information for the terrestrial environment, including a description of the environmental setting, effects and mitigation, and a summary of proposed monitoring and follow-up programs is provided in the *Keeyask Generation Project Environmental Impact Statement: Terrestrial Environment Supporting Volume* (TESV). The *Keeyask Generation Project Terrestrial Effects Monitoring Plan* (TEMP) was developed as part of the licensing process for the Project. Monitoring activities for various components of the terrestrial environment were described, including the focus of this report, colonial waterbird habitat enhancement monitoring, for the construction and operation phases of the Project.

The Project has the potential to affect colonial waterbird populations through alteration and loss of habitat, as well as sensory disturbance. Three species of colonial waterbird: ring-billed gull (*Larus delawarensis*), herring gull (*Larus argentatus*), and common tern (*Sterna hirundo*), commonly breed on rocky islands and reefs in the Nelson River near the Project site. Previous colonial waterbird surveys, conducted from 2001-03, 2006, 2011, and 2013-17 have counted between 1,900-6,200 gulls and 10-200 common terns in the Gull Rapids area (KHLP 2012; Stantec 2014; Stantec 2015; WRCS 2016; WRCS 2017; WRCS 2018). Other colonial waterbird species that have been observed to breed in the region include Bonaparte's gull (*Chroicocephalus philadelphia*) and Caspian tern (*Sterna caspia*). Colonial waterbirds that occur in the region but for which there is no evidence of breeding include American white pelican (*Pelecanus erythrorhynchos*), black tern (*Chlidonias niger*), and double-crested cormorant (*Phalacrocorax auritus*) (KHLP 2012).

To offset the potential loss of colonial waterbird nesting habitat at Gull Rapids during the construction period, habitat enhancement areas were implemented in 2015 and monitored from 2015-2018 to determine their effectiveness (KHLP 2015). For gulls, the William Smith Island gull habitat enhancement area was created in early 2015 on the southern shore of William Smith Island (Map 1). The gull habitat enhancement area (hereafter the habitat enhancement area) was cleared of vegetation and graded with rocky substrate to emulate a natural nesting island (Photo 1). In this area, large shipping containers were also placed in the graded area and rocky substrate was placed on top to provide nesting habitat elevated from potential terrestrial predators (as the island is physically connected to land north of the Nelson River by the North Channel Rock Groin).

In previous years of Project construction (2015-17), two floating nesting platforms were deployed to provide alternate nesting habitat for common terns. However, common terns

preferred to use natural habitat that was still available in the Gull Rapids area and used the floating platforms relatively little. As a result, the nesting platforms were not deployed in 2018. As construction continues, colonial waterbird habitat may continue to be altered in Gull Rapids and the need for the floating platforms will be evaluated annually until the permanent gull and tern nesting island has been constructed.



Map 1: Location of the William Smith Island Gull Habitat Enhancement Area

Photo 1: William Smith Island Gull Habitat Enhancement Area

2.0 METHODS

The gull habitat enhancement area was monitored to determine gull use during two aerial surveys that took place on June 12 and July 18, 2018, and using photographs taken by an unmanned aerial vehicle (UAV or drone) on June 6, June 29, and July 20, 2018.

3.0 RESULTS

The gull habitat enhancement area was not used by gulls for nesting in 2018. No colonial waterbirds were observed during the June or July monitoring conducted during the aerial surveys (Photo 2) and no colonial waterbirds were visible in the photographs taken by the UAV (Photo 3). As remote cameras were not installed at the habitat enhancement area in 2018, it is unknown if the area was temporarily used by loafing gulls or terns in 2018.

Photo 2: William Smith Island Gull Habitat Enhancement Area, Observed During the Aerial Survey on June 13, 2018

Photo 3: Portion of William Smith Gull Enhancement Area, Observed from a UAV on July 20, 2018

4.0 DISCUSSION

The William Smith Island habitat enhancement area was not used by breeding colonial waterbirds for the fourth consecutive year during Project construction. This is likely due to the presence of available natural nesting habitat in Gull Rapids, which is preferred and used extensively by nesting colonial waterbirds in the region.

It is unlikely that Project construction noise or disturbance is deterring colonial waterbirds from using the habitat enhancement area as natural nesting islands in Gull Rapids, which are closer to active construction than the habitat enhancement area, continue to support relatively large numbers of birds.

Due to the availability of and preference for natural nesting habitat over the floating platforms by common terns, the platforms were not deployed in 2018. As construction continues, colonial waterbird habitat may continue to be altered in Gull Rapids, and the need for the nesting platforms will be evaluated annually until the permanent gull and tern nesting island has been constructed.

5.0 SUMMARY AND CONCLUSIONS

The William Smith Island gull habitat enhancement area was not used for nesting by gulls from 2015 to 2018. Remote cameras were not installed at the site in 2018, so it is unknown if the site was used for loafing in this year. However, no colonial waterbirds were present in photographs from the UAV or during the aerial surveys during spring and summer. Due to the habitat enhancement area not being used to date, and the construction of a permanent colonial waterbird island now underway (which will be available following impoundment of the reservoir), the habitat enhancement area will be discontinued for 2019.

Common terns preferred to use natural habitat in the Gull Rapids area and used the floating platforms relatively little from 2015 to 2017. As a result, the nesting platforms were not deployed in 2018 and their need will be evaluated annually during the construction period until the permanent nesting island is constructed.

6.0 LITERATURE CITED

KHLP (Keeyask Hydropower Limited Partnership). 2012. Keeyask Generation Station Project Environmental Impact Statement – Response to EIS Guidelines. Prepared by Keeyask Hydropower Partnership Limited, Winnipeg, Manitoba. June 2012. 1208 pp.

KHLP. 2015. Keeyask Generation Project Terrestrial Effects Monitoring Plan. Prepared by Keeyask Hydropower Partnership Limited, Winnipeg, Manitoba. December 2015. 355 pp.

Stantec. 2014. Avian 2013 Field Studies Report, Report # 13-02. Report prepared for Keeyask Hydropower Limited Partnership by Stantec Consulting Ltd., Winnipeg, Manitoba. 133 pp.

Stantec. 2015. Gull Rapids 2014 Colonial Waterbird Summary Report, Report # 14-01. Report prepared for the Licensing and Compliance Department, Manitoba Hydro by Stantec Consulting Ltd., Winnipeg, Manitoba. 23 pp.

WRCS (Wildlife Resource Consulting Services MB Inc.). 2016. Colonial Waterbird Habitat Effects Monitoring 2015. Terrestrial Effects Monitoring Plan Report #TEMP-2016-03. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2016. 79 pp.

WRCS. 2017. Colonial Waterbird Habitat Effects Monitoring 2017. Terrestrial Effects Monitoring Plan Report #TEMP-2017-06. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2017. 71 pp.

WRCS. 2018. Keeyask Generation Project Terrestrial Effects Monitoring Plan Report #TEMP-2018-09: Colonial Waterbird Habitat Enhancement Monitoring 2017. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2018.