



Keeyask Generation Project  
Terrestrial Effects Monitoring Plan

Bird-Collision Monitoring Report

TEMP-2023-15



# **KEYYASK GENERATION PROJECT**

## **TERRESTRIAL EFFECTS MONITORING PLAN**

REPORT #TEMP-2023-15

### **BIRD-COLLISION MONITORING**

#### **YEAR 1 OPERATION**

**2022**

Prepared for

Manitoba Hydro

By

Wildlife Resource Consulting Service MB Inc.

June 2023

This report should be cited as follows:

Wildlife Resource Consulting Services MB Inc. 2023. Keyyask Generation Project Terrestrial Effects Monitoring Plan Report #TEMP-2023-15. Bird-collision Monitoring – Year 1 Operation, 2022. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2023.

# SUMMARY

## Background

Construction of the Keeyask Generation Project (the Project) at Gull Rapids began in July 2014 and became operational on March 2022. 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 are affecting the environment, and whether or not more needs to be done to reduce harmful effects.

This report describes the results of bird-collision monitoring at the communication tower on the Project powerhouse in 2022.

## Why is the study being done?

A steel communication tower was constructed on the Project powerhouse that may create an obstacle to flying birds, particularly gulls that nest on nearby islands. Birds may be killed or injured if they collide with the tower and monitoring will help determine if this is occurring, and if mitigation, such as making the tower more visible, needs to occur.

## What was done?

Searches for dead birds and other collision evidence, such as groups of feathers, was conducted around the base of the communication tower during the spring and fall of 2022. An area of approximately 50 m around the base of the tower, including the powerhouse roof, powerhouse deck, and ground below the building was searched.

## What was found?

No evidence of bird collisions was found near the communication tower in 2022.

## What does it mean?

It appears that the communication tower is not causing excessive bird mortalities and no mitigation measures for the tower are necessary at this time.

## What will be done next?

Further monitoring for bird collisions will take place in 2023 to determine if the communication tower is posing a hazard to the local bird populations.

# STUDY TEAM

We would like to thank Sherrie Mason and Rachel Boone of Manitoba Hydro for reviewing the report. We would also like to thank Dr. James Ehnes, ECOSTEM Ltd., for GIS supported study design and cartography.

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

- Robert Berger, WRCS, Design, analysis, and reporting
- Mark Baschuk, WRCS, Analysis, and reporting
- Levi Warkentin, WRCS, Survey personnel
- Martial Lemoine, Manitoba Hydro, Survey personnel

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# 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 and became fully operational in March 2022. The Project is located at the former Gull Rapids on the lower Nelson River in northern Manitoba where Gull Lake flows into Stephens Lake (Map 1).

The *Keeyask Generation Project: Response to EIS Guidelines* (KHLP 2012a) 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* (KHLP 2012b). The *Terrestrial Effects Monitoring Plan* (KHLP 2015) 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, bird collisions with lighted towers.

Bird collisions with stationary objects, such as towers, is a significant source of mortality for birds in North America (Longcore *et al.* 2012). Tower characteristics including height, lighting, and the presence of guywires, may play a role in the risk it poses to flying birds (Gehring *et al.* 2011). As part of the Project, a self-supporting (not guyed), steel lattice communication tower was built on the powerhouse. The tower is 53.6 m tall (215 masl), making it the highest point at the Project site. Due to the height of the tower and the close proximity of colonially nesting gulls in the tailrace area, surveys for bird collisions were conducted during Project operation in 2022 to determine the risk the tower posed to birds in the area and the need for mitigation measures. Previous searches of the site were also conducted in 2020, when the tower was partially constructed, and found no evidence of bird collisions (WRCS 2021).

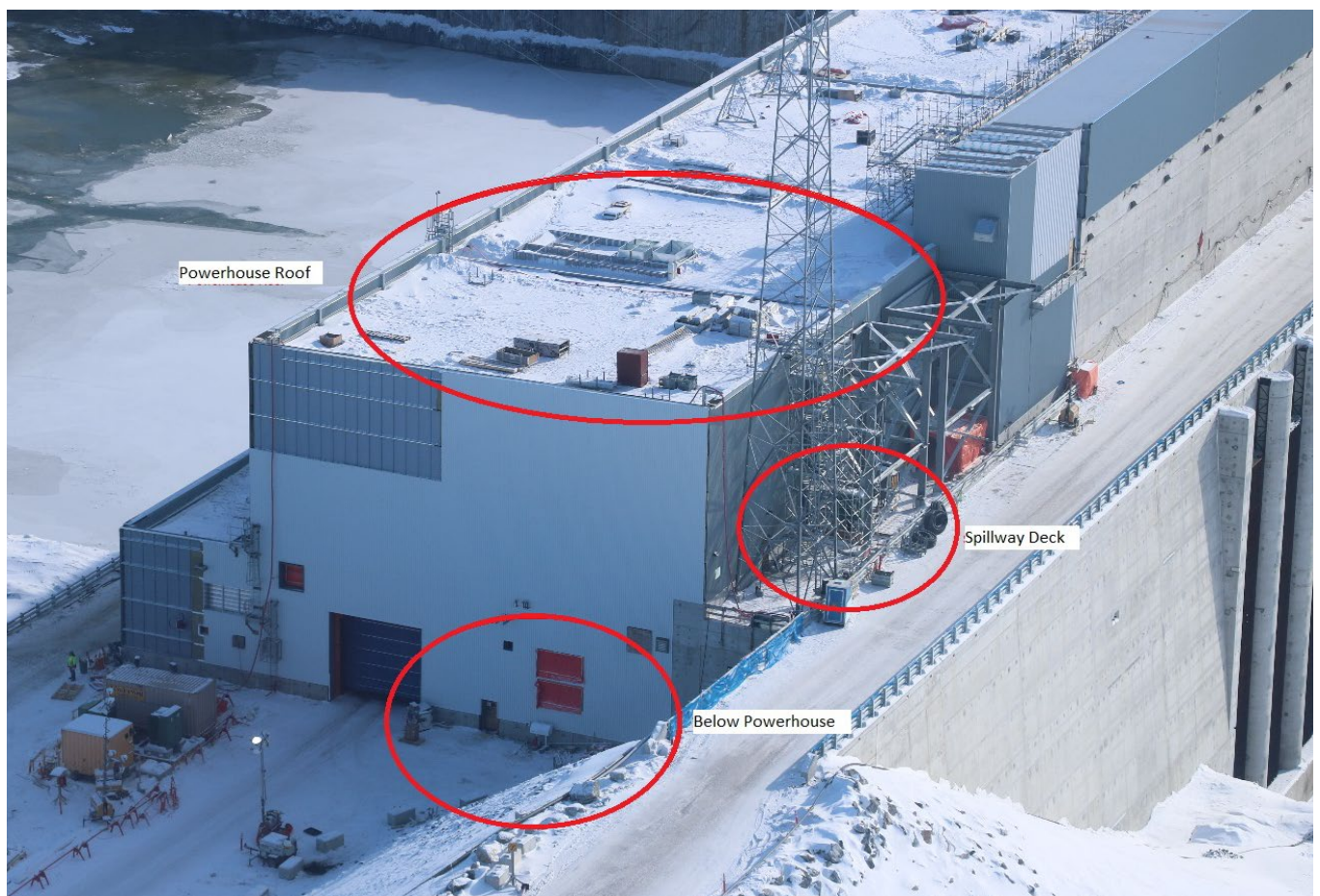


**Map 1. Location of the Communication Tower at the Keyyask Generating Station**



## 2.0 METHODS

A 50-m radius area around the communication tower, including the powerhouse roof, deck, and the ground surrounding the powerhouse (Photo 1), was searched in the early-spring (April 19), late-spring (May 25), and fall (September 20) of 2022. Searches were conducted by one observer that walked parallel lines spaced 10 m apart over the area. The observer visually inspected the search area for signs of bird collisions (*i.e.*, carcasses and clusters of feathers). No vegetation was present on the site and visibility was generally unobstructed. A collision was recorded when the remains found consisted of more than five feathers in a square meter (Barrientos *et al.* 2012). If a carcass or collision evidence was found, the location of the collision was recorded using a handheld global positioning system (GPS) and collision evidence was photographed. Photographs were then used later by a qualified biologist to identify species, where possible.



**Photo 1. Communication Tower on the Powerhouse and Approximate Search Areas for Bird Collisions in 2022**

## 3.0 RESULTS

No evidence of bird collisions was found near the communication tower in 2022. Evidence of bird presence (*i.e.*, scat) was observed during the May survey along the powerhouse roof edge and below the communication tower. No birds were observed perching on these structures in 2022.

## 4.0 DISCUSSION

No evidence of bird collisions was found in 2022, but due to the evidence of potential bird perching on powerhouse roof edge, and the close proximity of the communication tower to gull nesting colonies, there is a risk of bird collisions occurring at the site. No mitigation is recommended at this time.

Due the small search area, scavenger bias estimations were not calculated. As the scavenging rate is unknown at the site, and it is not feasible to calculate due to the small sample sizes that would be involved, further monitoring of bird collisions will occur in 2023 to determine if future mitigation measures are required.

## 5.0 SUMMARY AND CONCLUSIONS

The communication tower on the powerhouse did not appear to cause any mortalities to birds in 2022. Due to the close proximity of gull nesting colonies and the height of the tower, it may pose a collision risk to flying birds in the area. Further monitoring of bird collisions will occur in 2023 to determine if future mitigation measures are required.

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