



Keeyask Generation Project
Terrestrial Effects Monitoring Plan

Colonial Waterbird Habitat Enhancement Monitoring Report

TEMP-2018-09



KEEYASK GENERATION PROJECT

TERRESTRIAL EFFECTS MONITORING PLAN

REPORT #TEMP-2018-09

COLONIAL WATERBIRD HABITAT ENHANCEMENT MONITORING 2017

Prepared for

Manitoba Hydro

By

Wildlife Resource Consulting Services MB Inc.

June 2018

This report should be cited as follows:

Wildlife Resource Consulting Services MB Inc. 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.

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, including colonial waterbirds. 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 colonial waterbirds, and whether or not 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 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 water bird surveys, conducted from 2001-03, 2006, 2011, and 2013-16 have counted between 3,000-6,200 ($\pm 1,000$) gulls and 100-200 common terns in the Gull Rapids area.

This report describes the results of colonial waterbird habitat enhancement monitoring conducted during the summer of 2017, the fourth summer of Project construction. Monitoring for this study occurred at the constructed gull habitat enhancement area and at the tern nesting platforms.

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 nearby to provide colonial waterbirds with alternate nesting areas, which are not affected by construction activity. This study was focused on whether the newly constructed habitats are successful at attracting nesting colonial waterbirds.

What was done?

Habitat enhancement areas were designed to provide alternate breeding habitat for colonial waterbirds. 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. 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. In previous years, gull decoys and audio equipment broadcasting breeding gulls' sounds were installed in the area in an attempt to attract gulls, and remote cameras were installed to monitor gull use of the areas and predator numbers. However, in 2017, due to high water levels, the road connecting William Smith Island to the mainland was flooded and these items could not be

installed prior to the start of the bird-breeding period. As remote cameras could not be used, the site was surveyed by helicopter in June and July during the regional survey for colonial waterbirds, and photographs of the site were taken by an unmanned aerial vehicle (UAV or drone) in May.

For terns, a floating nest platform was deployed in June 2017. In previous years, two nest platforms were deployed, but one was damaged over the winter and was unusable. The useable nest platform was enhanced by adding baffles to prevent shifting of the substrate. This floating platform was towed and anchored in a bay of Gull Lake. Tern decoys were installed to attract breeding terns to the floating platforms and driftwood and shelters (small wooden crates) were added to improve chick survival. Remote cameras were set up on the platforms to watch for birds, nests, chicks, and predators. After the breeding season, the floating platform and cameras were removed from Gull Lake.



Habitat Enhancement Area for Gulls on William Smith Island



Floating Nest Platform for Common Terns in Gull Lake

What was found?

Common terns used the floating platform less in 2017 compared to 2016. A single common tern attempted to nest on the floating platform, but abandoned their nest after approximately 14 days for unknown reasons. The platform was mostly used by single, loafing terns throughout 2017.

The gull habitat enhancement area was not used for nesting by gulls in 2017. Remote cameras could not be installed at the site due to flooding of the access road to the island, so it is unknown if the site was used for loafing. However, no gulls or nests were present in photographs from the UAV in May or during the aerial surveys in June and July.

What does it mean?

During the spring of 2017, water levels within the Nelson River were high and most of the natural nesting habitat in the Gull Rapids area was flooded. However, several islands upstream of Gull Rapids, including an island that had been cleared of vegetation by the Project, was available and was used by colonial waterbirds for nesting. It appears that the presence of this more natural, alternate nesting habitat in the area may be preferred by colonial waterbirds and is limiting the use of the William Smith Island gull habitat enhancement area.

The floating platforms appear to have limited attractiveness to terns and are likely to be used by only a few nesting terns in future years.

What will be done next?

The gull habitat enhancement area will be available for the duration of the Project construction period. The need for the annual installation of the floating platforms is being reassessed. Gull and tern created habitats will continue to be monitored throughout the construction period to

document the use of these areas over time by colonial waterbirds and to ensure that they are not being disturbed.

To provide nesting habitat for displaced gull and tern colonies within Study Zone 3 during the operation phase of the Project, portions of William Smith Island will be modified and built up to serve as a colonial waterbird nesting area in the future reservoir. Other islands that were cleared by the Project will also provide suitable colonial waterbird nesting habitat during the operations phase.



Colonial Waterbird Habitat Enhancement Areas in 2017

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
- Kevin McCrae, B.Env.St., Platform set-up
- Nathaniel Beady, YFFN, Platform set-up
- Kenneth Ouskan, TCN, Platform set-up

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	METHODS.....	6
3.0	RESULTS.....	7
4.0	DISCUSSION	9
5.0	SUMMARY AND CONCLUSIONS.....	11
6.0	LITERATURE CITED.....	12

LIST OF MAPS

Map 1:	Locations of Gull Habitat Enhancement Area and Floating Tern Platform in 2017.....	3
--------	--	---

LIST OF PHOTOS

Photo 1:	William Smith Island Gull Habitat Enhancement Area	4
Photo 2:	Floating Tern Platform with Common Tern Decoys, Driftwood, and Chick Shelters	4
Photo 3:	Floating Tern Platform in Gull Lake.....	5
Photo 4:	Remote Camera, Decoys, Driftwood, and Chick Shelters on the Floating Tern Platform	5
Photo 5:	Photograph Taken by UAV of the William Smith Gull Habitat Enhancement Area on May 31, 2017.....	7
Photo 6:	Nesting Common Tern on Floating Platform on July 4, 2017	8
Photo 7:	Four Common Tern Adults Loafing on Floating Platform on June 22, 2017	8

LIST OF APPENDICES

Appendix 1: Photograph Events at Floating Platforms.....	14
Appendix 2: Photographs of Events On Floating Platforms	17

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 water bird surveys, conducted from 2001-03, 2006, 2011, and 2013-16 have counted between 3,000-6,200 ($\pm 1,000$) gulls and 100-200 common terns in the Gull Rapids area (KHLP 2012; Stantec 2014; Stantec 2015; WRCS 2016a; WRCS 2017). 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, habitat enhancement areas were implemented in 2015 and monitored from 2015-2017 to determine their effectiveness (KHLP 2015). For gulls, the William Smith Island gull habitat enhancement area was created in 2015 on 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).

For terns, a floating platform was anchored in Gull Lake approximately five km upstream of Gull Rapids in June 2017 (Map 1). This was after most gulls should have initiated their nests, to minimize competition from gulls for the floating platforms. In previous years (2015 and 2016),

two floating platforms were deployed, but over the winter of 2016/17 one floating platform was damaged and was unusable. The floating platform provides approximately 25 m² of replacement nesting habitat, designed to accommodate around 50 tern pairs (Photo 2 - Photo 4).



Map 1: Locations of Gull Habitat Enhancement Area and Floating Tern Platform in 2017



Photo 1: William Smith Island Gull Habitat Enhancement Area



Photo 2: Floating Tern Platform with Common Tern Decoys, Driftwood, and Chick Shelters



Photo 3: Floating Tern Platform in Gull Lake



Photo 4: Remote Camera, Decoys, Driftwood, and Chick Shelters on the Floating Tern Platform

2.0 METHODS

In early 2017, the North Channel Rock Groin connecting William Smith Island to the mainland was flooded and the habitat enhancement area was not accessible. As a result, the remote cameras, which were set up in previous years to monitor for gull use and predator abundance, were not set up for the 2017 season. As potential gull use could not be monitored using photographs, it was instead determined using observations from the aerial colonial waterbird survey conducted on June 23 and July 19, 2017 and from photographs taken by an unmanned aerial vehicle (UAV or drone) on May 31, 2017.

One floating platform for terns was deployed in a bay of Gull Lake on June 13, 2017. The second platform was damaged during the winter of 2016/2017 and was not deployed. The tern platform was removed from Gull Lake on September 14, 2017.

Several modifications were made to the floating platform in 2017, including baffles to limit substrate from shifting. In addition to driftwood, chick shelters made from wooden crates were installed to enhance chick survival (Photo 2-Photo 4). Due to equipment malfunction, the audio equipment used to broadcast sounds of breeding terns was not installed in 2017. The floating platform was equipped with two Reconyx® PC850 HyperFire Pro cameras (remote cameras), situated on opposite corners of the platform that captured images 4 times per day (at 8 a.m., 12 p.m., 4 p.m., and 8 p.m.) from June 13 to September 14, 2017. These remote cameras were equipped with a 3G cellular modem that transmitted photographs to Winnipeg.

Photographs transmitted from the floating platform were reviewed daily to determine the presence/absence of colonial waterbirds, or other wildlife, and their behaviours. All photographs were thoroughly evaluated following completion of the field season. Photographs containing wildlife were recorded as events (e.g., tern events). As two remote cameras were installed on the floating platform, if the same bird was photographed by both cameras it was defined as a single event.

3.0 RESULTS

The William Smith Island gull habitat enhancement area did not appear to be used by gulls for nesting in 2017. No colonial waterbirds were observed during the June or July monitoring conducted during the aerial colonial waterbird survey and no colonial waterbirds were visible in the photographs taken by the UAV in May (Photo 5). As remote cameras were not installed in the area in 2017, it is unknown if the area was used temporarily by loafing gulls or terns.

The floating platform had limited use by common terns in 2017. There were 49 events of terns using the floating platform in 2017 and an additional nine events of terns flying nearby or loafing on the associated buoys (Appendix 1). The majority of the events (38) captured on the platform were of a single common tern sitting tight on a probable nest (Photo 6). This common tern was present from approximately June 22 - July 5 (14 days). Eggs were not visible in the photographs, but the number of days on the nest was not sufficient for egg incubation and it appeared the nest was abandoned for unknown reasons. There were 14 events of terns using the floating platform for loafing and the greatest number of terns present was four, which was observed once (Photo 7). The majority of terns using the floating platform occurred singly. Other observations on the platform included a great blue heron (*Ardea herodias*) and a ring-billed gull (Appendix 2).



Photo 5: Photograph Taken by UAV of the William Smith Gull Habitat Enhancement Area on May 31, 2017



Photo 6: Nesting Common Tern on Floating Platform on July 4, 2017



Photo 7: Four Common Tern Adults Loafing on Floating Platform on June 22, 2017

4.0 DISCUSSION

The William Smith Island habitat enhancement area was not used by breeding colonial waterbirds for the third consecutive year. This may be due to the presence of available natural nesting habitat nearby. Gull Rapids is extensively used by nesting colonial waterbirds in the region, but during the spring of 2017, water levels within the Nelson River were high and most natural nesting habitat in Gull Rapids was inundated. However, several islands upstream of Gull Rapids, including an island that had been cleared of vegetation as part of the Project's reservoir clearing activities, were used by colonial waterbirds for nesting in 2017 (WRCS 2018). The presence of natural, alternate nesting habitat in the area appears to be preferred by colonial waterbirds and may be limiting the use of the William Smith Island habitat enhancement area and the floating tern platforms.

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

In 2015 and 2016, remote cameras in the habitat enhancement area captured images of mammalian predators and humans visiting the area. In 2017, the remote cameras were unable to be installed so it is unknown if predators frequented the area. However, due to the high water levels and the North Channel Rock Groin being under water during the spring, the numbers of terrestrial predators or humans visiting the area was likely limited.

In future years, predators or humans accessing the area may be problematic if gulls colonise the area. In a potential scenario where gulls are nesting on the ground in the habitat enhancement area and a terrestrial predator (e.g., grey wolf, red fox) enters the area, outcomes are likely to be severe. Potential negative effects of mammalian predators entering gull colonies observed in other studies include heavy losses of eggs, chicks, and adults, reduced reproductive success, or in a worst-case scenario, total colony abandonment (Emlen *et al.* 1966; Kadlec 1971; Conover and Miller 1979; Pollett *et al.* 2012; Southern *et al.* 1980; Southern *et al.* 1985). Exclusionary fencing may be considered to reduce the access by humans or predators, if required.

Tern use of the floating platform in 2017 (49 events) was lower compared to the use that was observed on one platform in 2016 (127 events). It is uncertain why adult tern use in 2017 was lower than that observed in 2016, but it could be related to the quality of alternate nesting habitat available for colonial waterbirds located about 12 km upstream of Gull Rapids (WRCS 2018). In 2017, a single common tern appeared to attempt to nest on the floating platform that was deployed, but abandoned it after approximately 14 days. In 2016 one common tern nest on the platform was successful at producing three chicks.

To ensure that displaced gull and tern colonies continue to have suitable nesting habitat available within Study Zone 3 during the operation phase of the Project, portions of William Smith Island will be modified and built up to serve as a colonial waterbird nesting island in the

future reservoir. One or two island areas may be included in the final design at this location. Other islands that were cleared during the Project will also provide suitable colonial waterbird nesting habitat during the operations phase.

5.0 SUMMARY AND CONCLUSIONS

The William Smith gull habitat enhancement area was not used for nesting by gulls from 2015 to 2017. Remote cameras could not be installed at the site in 2017 due to flooding of the access road, 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 in May or during the aerial surveys in June or July.

Common terns used the floating platform less in 2017 compared to 2016. A single common tern attempted to nest on the floating platform, but abandoned it after approximately 14 days for unknown reasons. The platform was mostly used by single, loafing terns throughout 2017. Several alternate nesting areas were available for colonial waterbirds in 2017.

Recommendations for the William Smith gull habitat enhancement area include:

- Continue monitoring intrusions of predators and humans in the area using remote cameras.

Recommendations to improve the performance of the floating platforms, if required in future years, include:

- The floating platforms should be repaired and strengthened prior to their next deployment.

6.0 LITERATURE CITED

- Conover, M.R. and D. E. Miller. 1979. Reaction of ring-billed gulls to predators and human disturbances at their breeding colonies. *Proceedings of the Colonial Waterbird Group*, 2: 41-47.
- Emlen, J. T., D.E. Miller, R.M. Evans, and D.H. Thompson. 1966. Predator induced parental neglect in a ring-billed gull colony. *The Auk*, 83: 677-679.
- Kadlec. J.A. 1971. Effects of introducing foxes and raccoons on herring gull colonies. *Journal of Wildlife Management*. 35: 625-636.
- 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. 2014a. Keeyask Generation Station Project Terrestrial Mitigation Implementation Plan. Prepared by Keeyask Hydropower Partnership Limited, Winnipeg, Manitoba. 46 pp.
- KHLP. 2015. Keeyask Generation Project Terrestrial Effects Monitoring Plan. Prepared by Keeyask Hydropower Partnership Limited, Winnipeg, Manitoba. December 2015. 355 pp.
- Pollet, I. L., D. Shutler, J. W. Chardine, and J. P. Ryder. 2012. Ring-billed Gull (*Larus delawarensis*), *The Birds of North America* (P. G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America: <https://birdsna.org/Species-Account/bna/species/ribgul>
- Southern, W. E., S. R. Ratton, and L.A. Hanners. 1980. Differential response of ring-billed gulls and herring gulls to fox predation. *Proceedings of the Colonial Waterbird Group*, 3: 119-127.
- Southern, W. E., S. R. Ratton, L.K. Southern, and L.A. Hanners. 1985. Effects of nine years of fox predation on two species of breeding gulls. *The Auk*, 102 (4): 827-833.
- 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.). 2016a. 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. 2016b. Colonial Waterbird Habitat Enhancement Monitoring Report. Terrestrial Effects Monitoring Plan Report #TEMP-2016-04. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2016. 27 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.
- Wildlife Resource Consulting Services MB Inc. 2018. Keeyask Generation Project Terrestrial Effects Monitoring Plan Report #TEMP-2018-08. Colonial Waterbird Habitat Effects Monitoring. A report prepared for Manitoba Hydro by Wildlife Resource Consulting Services MB Inc., June 2018.

APPENDIX 1: PHOTOGRAPH EVENTS AT FLOATING PLATFORMS

Table 1: Photograph Events Captured at the Floating Platform in 2017

Note: shaded rows indicate the same bird was photographed on both cameras and defined as a single event.

Camera	Date	Time	Species	Adults	Behaviour
2	15-Jun-17	8:00 PM	Common Tern	1	Loafing
1	17-Jun-17	4:00 PM	Common Tern	1	Loafing
2	17-Jun-17	4:00 PM	Common Tern	1	Loafing
2	19-Jun-17	12:00 PM	Common Tern	1	Loafing
2	20-Jun-17	8:00 AM	Common Tern	1	Loafing
1	21-Jun-17	8:00 AM	Common Tern	1	Flying
1	21-Jun-17	8:00 PM	Common Tern	1	Loafing
2	21-Jun-17	8:00 PM	Common Tern	1	Loafing
1	22-Jun-17	8:00 AM	Common Tern	1	Loafing
2	22-Jun-17	8:00 AM	Common Tern	1	Flying
1	22-Jun-17	12:00 PM	Common Tern	2	Loafing
2	22-Jun-17	12:00 PM	Common Tern	1	Loafing
1	22-Jun-17	4:00 PM	Common Tern	1	Loafing
2	22-Jun-17	4:00 PM	Common Tern	1	Nesting
2	22-Jun-17	8:00 PM	Common Tern	4	Loafing
2	23-Jun-17	8:00 AM	Common Tern	2	Nesting & Loafing
2	25-Jun-17	8:00 AM	Common Tern	1	Nesting
2	25-Jun-17	12:00 PM	Common Tern	1	Nesting
2	26-Jun-17	12:00 PM	Common Tern	2	Loafing
2	26-Jun-17	8:00 PM	Common Tern	1	Nesting
2	27-Jun-17	8:00 AM	Common Tern	1	Nesting
2	27-Jun-17	12:00 PM	Common Tern	1	Nesting
2	27-Jun-17	4:00 PM	Common Tern	1	Nesting
2	27-Jun-17	8:00 PM	Common Tern	1	Nesting
2	28-Jun-17	8:00 AM	Common Tern	1	Nesting
2	28-Jun-17	4:00 PM	Common Tern	1	Nesting
2	28-Jun-17	8:00 PM	Common Tern	1	Nesting
2	29-Jun-17	8:00 AM	Common Tern	1	Nesting
2	29-Jun-17	12:00 PM	Common Tern	1	Nesting
2	29-Jun-17	4:00 PM	Common Tern	1	Nesting
2	29-Jun-17	8:00 PM	Common Tern	1	Nesting
2	30-Jun-17	8:00 AM	Common Tern	1	Nesting
2	30-Jun-17	12:00 PM	Common Tern	2	Nesting & Flying
2	30-Jun-17	4:00 PM	Common Tern	1	Nesting
2	30-Jun-17	8:00 PM	Common Tern	1	Nesting
2	1-Jul-17	8:00 AM	Common Tern	1	Nesting
2	1-Jul-17	12:00 PM	Common Tern	1	Nesting

Camera	Date	Time	Species	Adults	Behaviour
2	1-Jul-17	4:00 PM	Common Tern	1	Nesting
2	1-Jul-17	8:00 PM	Common Tern	1	Nesting
2	2-Jul-17	8:00 AM	Common Tern	1	Nesting
2	2-Jul-17	12:00 PM	Common Tern	2	Nesting & Loafing
2	2-Jul-17	4:00 PM	Common Tern	2	Nesting & Loafing
2	2-Jul-17	8:00 PM	Common Tern	1	Nesting
2	3-Jul-17	12:00 PM	Common Tern	1	Nesting
2	3-Jul-17	4:00 PM	Common Tern	1	Nesting
2	3-Jul-17	8:00 PM	Common Tern	1	Nesting
2	4-Jul-17	8:00 AM	Common Tern	1	Nesting
2	4-Jul-17	12:00 PM	Common Tern	1	Nesting
1	4-Jul-17	4:00 PM	Common Tern	1	Flying
2	4-Jul-17	4:00 PM	Common Tern	1	Nesting
2	4-Jul-17	8:00 PM	Common Tern	1	Nesting
2	5-Jul-17	8:00 AM	Common Tern	1	Nesting
2	5-Jul-17	12:00 PM	Common Tern	1	Nesting
2	5-Jul-17	4:00 PM	Common Tern	1	Nesting
2	17-Jul-17	4:00 PM	Common Tern	1	Flying
1	4-Aug-17	8:00 PM	Common Tern	1	Flying
2	14-Aug-17	8:00 AM	Common Tern	1	Loafing on nearby buoy
2	14-Aug-17	4:00 PM	Common Tern	1	Loafing on nearby buoy
1	15-Aug-17	8:00 PM	Ring-billed Gull	1	Loafing
2	15-Aug-17	8:00 PM	Ring-billed Gull	1	Loafing
2	19-Aug-17	12:00 PM	Common Tern	1	Loafing on nearby buoy
2	19-Aug-17	4:00 PM	Common Tern	1	Loafing on nearby buoy
1	28-Aug-17	8:00 PM	Great Blue Heron	1	Loafing

APPENDIX 2: PHOTOGRAPHS OF EVENTS ON FLOATING PLATFORMS



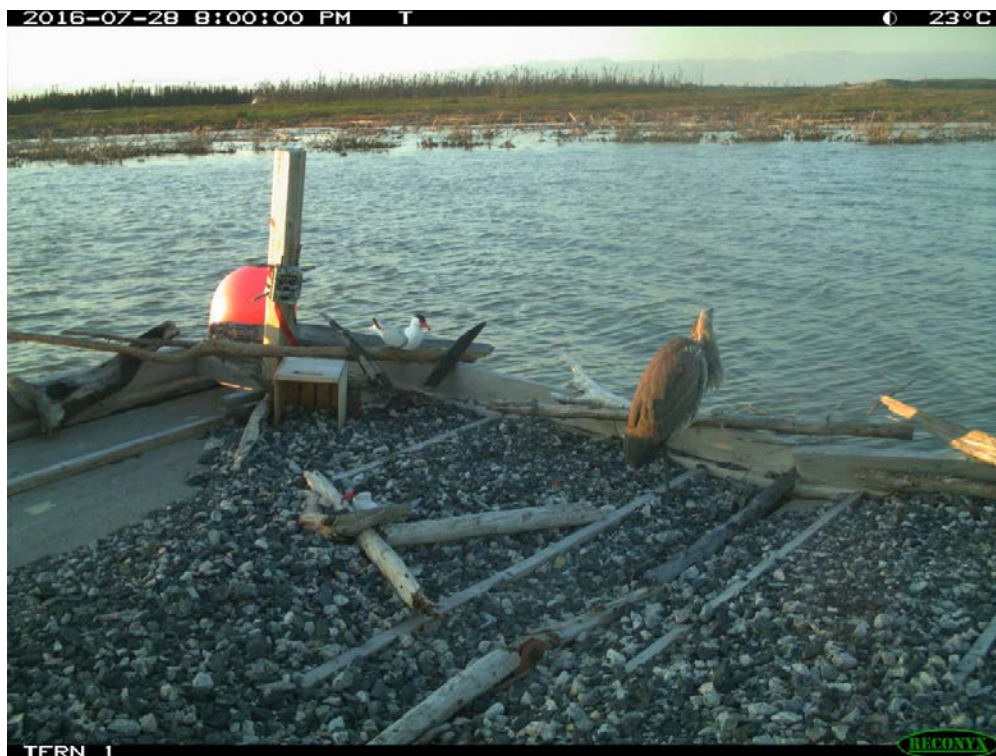
Photo 1: One Common Tern Nesting and Another Loafing on the Floating Platform on June 23, 2017



Photo 2: One Common Tern Nesting on the Floating Platform and Another Flying in the Background on June 30, 2017



Photo 3: Ring-billed Gull Loafing on the Floating Platform on August 15, 2017



Note: the date shown in the photograph is incorrect.

Photo 4: Great Blue Heron Loafing on the Floating Platform on August 28, 2017