



# Keeyask Generation Project Resource Use Monitoring Plan

## Resource Use Monitoring Report RUMP-2020-01



# **KEYYASK GENERATION PROJECT**

## **RESOURCE USE MONITORING PLAN**

REPORT #RUMP–2020-01

## **RESOURCE USE MONITORING: YEAR 6 CONSTRUCTION**

Prepared for

Manitoba Hydro

By

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# 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 environment. Monitoring results will help the KHLP, government regulators, members of local First Nation communities, and the 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.

Resource use is important to monitor because it is important to local First Nation people. On-site harvests by Project workforce personnel are not expected because of rules that prohibit hunting and fishing there (KHLP 2014). However, if the workforce is harvesting resources in off-site areas, this may affect the success of local First Nation peoples' domestic resource use. The Project also may increase the use of the area by other resource harvester groups such as licensed hunters and fishers in off-site areas. Levels of harvest, occurring on the Project site by local authorized resource users, is also important to understand.

## Why is the study being done?

The 2019 monitoring was done to answer three questions:

- Has the construction workforce been harvesting resources and, if so, how much? It is important to understand if harvest by construction workers is reducing the resources available for harvest by local First Nation people.
- Has the Project or its workforce caused a change in the levels of licensed (non-Aboriginal) harvest? In other words, is there more use of the area for resource harvest due to the presence of the workforce or for other reasons related to the Project?
- Have authorized resource users accessed the site through the access gates? It is important to understand how the site is being used for resource harvesting.

## What was done?

A construction workforce survey was conducted in early November 2019 to ask construction workers about harvesting in the area; previous surveys were completed in November 2018 and 2016, June 2015, and November 2014. Workforce members were also asked if they were interested in returning for fishing or hunting after their employment term had ended.



Keeyask camp site personnel were interviewed to provide information on the harvesting activities of the workforce and to understand any use of the site by authorized resource users. An official from Manitoba Conservation and Climate (MCC) also was interviewed to understand and record changes in licensed (non-Indigenous) harvests in the area.

### **What was found?**

In 2019, 280 workforce survey responses were completed which was about 8% of the 3,514 member workforce. The overall response rate was higher than the 2014 survey (7%) but lower than the response rate in 2015 (23%), 2016 (21%) and 2018 (13%). Response by some groups was higher than others. For example, the percentage of non-Indigenous and Metis workforce members who responded was over 10% (the target number of responses). Local and non-local Indigenous responses were lower at 3.9% and 1.6% respectively.

The 2019 survey results suggest that there was a decrease in fishing undertaken by the construction workforce when compared with findings from the 2018 survey, which measured the results of harvest in 2017. The results in the 2019 survey were similar to those found in 2014, 2015 and 2016, which showed very low levels of workforce engagement in resource harvesting except for local catch and release fishing by non-Indigenous workforce members at locations such as the North Moosokot River at Provincial Road 280. A change to the number of fishing licences issued was not noted in 2019. Throughout all years, plant gathering has been nominal.

Email correspondence with a Manitoba Conservation and Climate (MCC; formerly Manitoba Sustainable Development) official indicated that a change in demand for moose licences has not been detected as they are for sale across the province and therefore cannot be linked to regional hunting levels. The completion of the South Access Road and the shift of the security gate from the Butnau Dam area west to its present location closer to the Project has increased available access for moose hunting on the south side of the Nelson River west of Gillam. The South Access Road and a network of connecting trails are being used by licensed and Indigenous moose hunters. The MCC official noted that, some workforce members have made local connections in nearby communities and have formed hunting parties to conduct moose hunting which has contributed to a small increase in hunting. Survey results indicated that seven moose and seven caribou were harvested within the study area by Indigenous hunters from local communities. One caribou was harvested under a provincial licence.

On-site environmental staff were not aware of resource harvesting undertaken by the workforce residing at the Keeyask camp or of any gate records indicating authorized resource users have entered the site for the purposes of hunting, fishing or gathering.

Looking to the future, some workforce members expressed interest in returning to the region after their employment at the Project ends. Based on an extrapolation of survey results, an

estimated 350 non-local individuals expressed interest in returning to the Project area. Two thirds expressed interest in fishing and one third in hunting.

**What does it mean?**

Overall, workforce harvest monitoring has not identified that non-local members of the workforce are harvesting fish, wildlife and plants in quantities that may negatively affect domestic resource use undertaken by local First Nation residents. The 2018 survey was the only one where an increase in fishing in response to construction was observed. This is attributed to a larger workforce contingent located at the Kettle Generating Station camp during construction of the South Access Road and at the Keewatinohk Converter Station camp. Fishing in the area around Gillam and the Kettle and Long Spruce generating stations by workforce members is more accessible than when the workforce is centralized at the Keeyask Main camp and limited by transportation. Most workers were relocated to the Keeyask Main camp in autumn 2017. This is reflected in the results from the 2019 survey.

According to an interview with a MCC official, a small increase in moose hunting has occurred west of Gillam since the South Access Road opened and the security gate was moved closer to the Project site. A network of trails adjoining the South Access Road also have been used more due to improved access for non-Indigenous and local Indigenous hunters alike.

**What will be done next?**

The 2019 survey is the final of a six-year series of surveys over a seven year period. Future surveys are not planned as the workforce is expected to decline as construction of the Project is completed.

# ACKNOWLEDGEMENTS

We would like to thank Manitoba Hydro for the resources and support to conduct this study. We are also grateful to the Keeyask site personnel for their support and assistance in conducting the surveys.

To Mr. Andrew Szklaruk of Manitoba Conservation and Climate, thank you for providing information on hunting and fishing activity in the region.

A special thank you to Rachelle Budge, the Keeyask Site Environmental Lead, and her team for their support with administering the survey.

Finally, we say thank you to the construction workforce at Keeyask for volunteering to participate in the survey.

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# TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	OBJECTIVES AND RATIONALE .....	1
<b>2.0</b>	<b>METHODS .....</b>	<b>3</b>
2.1	WORKFORCE SURVEY.....	3
2.2	COMMUNICATIONS WITH KEEYASK SITE PERSONNEL.....	4
2.3	INTERVIEW WITH MANITOBA CONSERVATION AND CLIMATE OFFICIAL.....	4
<b>3.0</b>	<b>RESULTS .....</b>	<b>6</b>
3.1	WORKFORCE SURVEY.....	6
3.1.1	Characteristics of Survey Participants .....	6
3.1.2	Resource Use During Days Worked.....	7
3.1.3	Resource Use During Days Off.....	8
3.1.4	Potential For Post-Employment Resource Use.....	9
3.2	SITE PERSONNEL INTERVIEW .....	9
3.2.1	Knowledge of Workforce Resource Use and Harvests .....	9
3.2.2	Gate Access.....	9
3.3	INTERVIEWS WITH MANITOBA CONSERVATION AND CLIMATE OFFICIALS.....	10
3.3.1	Licensed Moose and Caribou Hunting.....	10
3.3.2	Licensed Fishing.....	10
3.4	CONSOLIDATING INFORMATION GENERATED FROM OTHER MONITORING PROGRAMS/PLANS.....	11
3.4.1	Results from Other Monitoring Activities .....	11
<b>4.0</b>	<b>SUMMARY AND CONCLUSIONS.....</b>	<b>12</b>
4.1	WORKFORCE HARVEST LEVELS .....	12
4.2	CHANGES IN LICENSED HUNTING AND FISHING .....	12
4.3	USE OF THE SITE BY AUTHORIZED RESOURCE USERS .....	13
4.4	CONCLUSION .....	13

<b>5.0</b>	<b>REFERENCES .....</b>	<b>15</b>
<b>5.1</b>	<b>LITERATURE CITED .....</b>	<b>15</b>

## LIST OF TABLES

Table 1:	Surveyed Personnel by Identity and Proportion of Total Workforce Surveyed. ....	6
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## LIST OF MAPS

Map 1:	Keeyask Study Area. ....	17
Map 2:	Game Hunting Areas. ....	18

## LIST OF APPENDICES

Appendix 1:	Construction Workforce Resource Harvest Survey .....	20
Appendix 2:	Notification Poster for Workforce Survey .....	23
Appendix 3:	Interview Guide for Manitoba Conservation and Climate Officials .....	25
Appendix 4:	Employment Statistics for end of June 2019 from Keeyask.com .....	27
Appendix 5:	Summary of Workforce Survey Data for Years 1 to 6 (excluding Year 4) .....	29

# 1.0 INTRODUCTION

The Keeyask Generation Project (the Project) is a 695-megawatt (MW) hydroelectric generating station currently under construction in northern Manitoba. The Project is located on the lower Nelson River in northern Manitoba, where Gull Lake flows into Stephens Lake. The Project is entirely within the Split Lake Resource Management Area and is located 35 kilometres (km) upstream of Kettle Generating Station, 60 km east of the community of Split Lake, 30 km west of Gillam, 180 km east-northeast of Thompson, and approximately 725 km northeast of Winnipeg.

An assessment of resource use, including a description of the environmental setting, effects and mitigation, and a summary of proposed monitoring and follow-up programs is provided in the *Resource Use section of the Keeyask Generation Project: Response to EIS Guidelines and the Socio-Economic Environment, Resource Use and Heritage Supporting Volume (SE SV)*.

A Resource Use Monitoring Plan (RUMP) was developed to monitor activities of various components of resource use for the construction phase of the Project. Monitoring as set out in this plan has been carried out annually from 2014 to 2019 except for 2017<sup>1</sup>. This document provides results of RUMP Year 6 monitoring activities.

## 1.1 OBJECTIVES AND RATIONALE

There are five objectives of the resource use monitoring. They are:

- To determine if the workforce is hunting, fishing or gathering within or outside the Project site and, if so, whether the harvest could adversely affect domestic resource use;
- To document any Project-related changes to moose and caribou license demand, harvest patterns and, if feasible, harvest quantities;
- To document any Project-related changes to licensed fish harvest patterns and fishing intensity;
- To summarize resource use access requests and collect voluntary harvest information from authorized resource harvesters on the Project site; and
- To consolidate relevant information generated from other monitoring programs/plans (e.g., physical, aquatic, terrestrial, socio-economic and Aboriginal Traditional Knowledge).

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<sup>1</sup> A 2017 survey was not conducted as per the RUMP plan to move to a biennial schedule following the completion of three survey years (2014-2016). An annual schedule was readopted for 2018 and 2019 after 2018 survey findings of increased fishing associated with a portion of the workforce being housed at the Kettle Generating Station.

To achieve these objectives, the following activities were completed:

- A construction workforce survey was conducted to document fishing, hunting, and plant/medicine gathering activities undertaken by the workforce;
- An interview was conducted with an official from Manitoba Conservation and Climate (Manitoba Sustainable Development at the time of interview) to understand any changes to licensed hunting and fishing and whether these changes have any linkages to the Project or its workforce; and
- Communications with Keeyask environmental site personnel were completed to understand harvesting activities undertaken by the workforce and to request gate records of site access by authorized resource users.

The study area included areas east of Thompson, the Provincial Road 280 corridor, the Keeyask Project site, and the Gillam area (Map 1, p. 17).

## 2.0 METHODS

Three methods were utilized to gather data for this report: a construction workforce survey; two discussions with the Project site environmental lead; and an interview with personnel from Manitoba Conservation and Climate (MCC). These methods are described below.

### 2.1 WORKFORCE SURVEY

A workforce survey was conducted the week of November 4<sup>th</sup> 2019 to document fishing, hunting, and plant gathering activities that have been undertaken by the Project's construction workforce within the study area from November 2018 to the end of October 2019. The survey documented non-Indigenous or Indigenous group identity (First Nation, Inuit or Metis); whether they live in or have ties to local communities; species and amount harvested; and timeframe, duration and location of harvesting activities (Appendix 1). Survey results indicated whether the construction workforce was harvesting at levels that have the potential to affect local domestic use of resources.

A notification poster was displayed in the Keeyask camp in advance of the survey date to generate awareness of the survey and to inform potential workforce participants that participation was voluntary and results would be kept confidential (Appendix 2).

The survey was administered in two ways to maximize participation. Surveys were distributed to contractors and their staff to complete during their morning team meetings. Construction workforce personnel completed the surveys and then submitted them to their supervisors, who submitted them to the Project site environmental lead.

Secondly, in-person surveys were conducted at Keeyask camp from November 4, 2019 to November 7, 2019. A booth was set up outside of the Keeyask Café before, during, and after breakfast and supper. Construction workforce participants came by the table to fill out the surveys, while some took the surveys away and returned them the next day. To avoid duplication, those who approached the booth were asked if they had already filled out the survey during their morning team meetings before being encouraged to complete the surveys if they had not already done so.

Sampling targets were set at 10% of the total construction workforce in order to obtain reliable results. In 2019, the 10% overall target was not met as 280 surveys were completed, representing 8.0% of the workforce total in June 2019 (3,514). The implications of this are discussed in Section 3.1.1.

The survey also recorded if participants normally reside in or visit local communities, which is important in interpreting results. For example, harvesters who are new to the area would be

conducting new or additional harvests, while harvesters already residing in, or visiting the area would harvest resources regardless of Project employment. Local Indigenous people are those who reside in communities close to the Project (e.g., Split Lake, Ilford, Gillam, Fox Lake, Bird and York Landing). These workforce members conduct harvests that are not additive due to the Project. Other personnel (e.g., Metis<sup>2</sup>, non-local Indigenous, non-Indigenous) who do not normally live in or visit the area, however, may be conducting additional harvesting in the area that may not have occurred without the Project. It is these potential new harvests that are the focus of monitoring.

If additional harvesting is being conducted by non-local groups, an estimated total additive harvest can be calculated from the known (surveyed) harvest to represent harvests by the entire workforce.

The 2019 survey included an additional question to learn about interest in post-employment resource harvesting. Given that the workforce has gained familiarity with the region and its resources, the new question inquired whether workforce members would have interest in returning to the area to fish or hunt after their employment had ended at the Project. Results are provided in Section 3.1.4.

## **2.2 COMMUNICATIONS WITH KEEYASK SITE PERSONNEL**

To build on and verify workforce survey results, the Keeyask Project site environmental lead was asked for information regarding resource use conducted by the construction workforce and any available details about that use (Budge, R. *pers. comm.* 2019, 2020). Additionally, Keeyask access gate records containing resource user access requests and voluntary statements of harvests also were requested from the site environmental lead.

## **2.3 INTERVIEW WITH MANITOBA CONSERVATION AND CLIMATE OFFICIAL**

Interview questions were provided to Mr. A. Szklaruk, a Manitoba Conservation Officer located in Gillam on October 31, 2019 to gather expert perspectives on the changing demand for licences (moose, caribou and fish), changes in the spatial distribution of resource use associated with the Project or its workforce, and changes in intensity of resource use associated with the Project or its workforce. Response to the questions was received on November 22, 2019 (A. Szklaruk *pers. comm.* 2019). Interview questions are provided in Appendix 3.

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<sup>2</sup> Though Metis are a distinct Indigenous group, their right to hunt and fish for food has not been defined in northern Manitoba. At this time, they are required to acquire provincial licences to harvest.



It should be noted that it is not possible to directly link changes in licence demand to effects of the Project on resource use due to factors such as moose hunters moving to the northern part of Manitoba from the south owing to Game Hunting Area (GHA) closures in the south. Also, for the six GHAs that intersect within the Project region (Map 2, p.18) and several other GHAs, moose licensing is open or general and harvest is not tracked specifically by GHA.

## 3.0 RESULTS

### 3.1 WORKFORCE SURVEY

#### 3.1.1 CHARACTERISTICS OF SURVEY PARTICIPANTS

Two hundred and eighty surveys were completed by construction personnel. Employment statistics (see Appendix 4) indicated a total workforce of 3,514, which included 1,965 (56%) non-Indigenous and 1,428 (40%) Indigenous personnel, of whom 433 (12%) were from partner communities as of June 2019. Table 1 provides information on the number and percentages of personnel that participated in the survey. Out of the 280 completed surveys, 205 (73%) respondents were non-Indigenous and 75 (27%) were Indigenous.

The overall workforce survey response was 8%. The non-Indigenous response rate (10.4%) and Metis response rate (11.8%) met the survey target of 10%. Survey responses from other groups such as local and non-local Indigenous workforce members did not meet the survey response target at 3.9% and 1.6%, respectively. This suggests that the non-Indigenous and Metis worker responses can be used to make inferences about resource harvests in the workforce as a whole but additional responses by Indigenous workers would make extrapolations about their resource harvests more reliable.

The overall 2019 response rate was higher than the 2014 survey (7%) but lower than the response rate in 2015 (23%), 2016 (21%) and 2018 (13%).

**Table 1: Surveyed Personnel by Identity and Proportion of Total Workforce Surveyed.**

Identity	# Surveyed	Total Employed <sup>2</sup>	Proportion of Total Workforce Surveyed (%)
Non-Indigenous	205	1,965	10.4
Keeyask Cree Nations <sup>1</sup>	17	433	3.9
Metis	26	221	11.8
Other First Nations	12	746	1.6
Non-status / Nation not specified	20	28	71.4
Unspecified	-	121	-
<b>Total/Average</b>	<b>280</b>	<b>3,514</b>	<b>8.0</b>

1. 'Keeyask Cree Nations' includes members of: Tataskweyak Cree Nation, War Lake First Nation, Fox Lake Cree Nation, and York Factory First Nation.
2. Source: KHLP (2019).

Of the 280 completed surveys, 43 (15%) workforce personnel indicated that they had conducted resource use in the study area during the reporting period (November 2018 to October 2019). Of the 43 individuals who conducted resource use, eight (19%) were Keeyask Cree Nation members, six (14%) were Metis, 10 (23%) were other Indigenous and 19 (44%) were non-Indigenous.

### **3.1.2 RESOURCE USE DURING DAYS WORKED**

Twenty-seven participants reported that they harvested (fished, hunted, and gathered), during days that they worked. Out of the 27 participants, 16 were Indigenous and 11 were non-Indigenous. Out of the 16 Indigenous participants, five were from Keeyask Cree Nations, seven were from other First Nations, and four were Metis.

#### ***Fishing***

Eighty fish were harvested on days worked by participants. Fish harvested included Northern Pike (also known as jackfish) and Walleye (also known as pickerel) by 17 harvesters. Keeyask Cree Nation members reported harvests of four pickerel and six jackfish. Respondents from other First Nations harvested three pickerel and two jackfish. Three Metis individuals reported harvests of 14 pickerel and 11 jackfish. Non-Indigenous workforce members reported catching and releasing 14 pickerel and 26 jackfish. Some participants did not provide information on fish species or harvests.

Fishing locations reported within the study area were offsite areas such as Wilson Creek, Nelson River, Long Spruce Dam, Orr Creek, the Gillam area and between Split Lake and Gillam and off the PR280.

The 17 participants who reported fishing averaged just over two trips per month, mainly in the open water season; however two reported fishing year round. Participants fished 172 hours total averaging 10 hours each annually.

#### ***Hunting***

No hunting was reported on days worked.

#### ***Gathering***

Two participants, one from a Keeyask Cree Nation and the other from another First Nation, reported plant gathering on days worked. Details about species and location of the harvest were not provided. One reported averaging about 10 trips per month averaging 3 hours each trip.

### 3.1.3 RESOURCE USE DURING DAYS OFF

Thirty participants reported that they harvested (fished, hunted, and gathered), during days off. Out of the 30 participants, 10 were Indigenous and 20 were non-Indigenous. Out of the 10 Indigenous participants, six were from Keeyask Cree Nations and four were from other First Nations. Metis participants did not report harvesting in the study area during days off.

#### ***Fishing***

Seventeen participants fished during days off and collectively harvested 57 pickerel and jackfish from local waterbodies. Non-Indigenous participants harvested 14 pickerel and Indigenous participants harvested a total of 43 pickerel and jackfish. Keeyask Cree Nation members harvested 35 of the fish, while other Indigenous participants harvested the remaining eight. Some participants did not provide information on fish species or harvests.

Fishing locations reported within the study area were offsite areas such as Fox Lake, Orr Creek, the North Moosokot River at the PR 280 bridge, Wilson Creek, York Landing, and within the Gillam area.

The seventeen participants who reported fishing averaged just over 2 trips per month mainly in the open water season, although three reported fishing year round. Participants fished 451 hours total averaging 35 hours each annually.

#### ***Hunting***

Nine participants, including eight Indigenous and one non-Indigenous respondent, reported to have hunted. Five of the eight Indigenous participants were from Keeyask Cree Nations and three were from other First Nations. No Metis participants reported hunting.

Animals harvested included seven caribou, seven moose and 27 geese. One participant indicated that they hunted small game and trapped, but did not provide the quantity or species harvested. Keeyask Cree Nations harvested all reported animals with the exception of one caribou that was harvested by a non-Indigenous participant. Participants from other First Nations did not report the species or quantities harvested.

All participants indicated that they used rifles to hunt. Hunting areas in the study area included the York Landing area, Gillam, Trapline 16, Limestone River, Stephens Lake, and Game Hunting Area 3 (see Map 2). The total number of hours hunted was 598 for the 9 participants who reported their hunting effort, which averaged 66 hours per participant.

#### ***Gathering***

Two participants, both Indigenous, reported that they had gathered plants on days off. One of them was from a Keeyask Cree Nation and the other was from another First Nation. Neither of the two participants, however, provided information on plants gathered, the quantity gathered, and the location where gathering occurred.

### **3.1.4 POTENTIAL FOR POST-EMPLOYMENT RESOURCE USE**

Out of the 280 survey participants, 217 indicated that they will not return to the area to hunt, fish, and/or gather any medicines once they have completed their work on the Project. After excluding local Indigenous participants, those who live in local communities (e.g., Gillam) and those with local connections, 33 non-local respondents reported that they will return to harvest given their familiarity with the area. Out of the 33, 27 of a total 205 non-Indigenous participants and 6 of a total of 58 non-local Indigenous workforce members indicated interest in returning to the area to fish or hunt. Extrapolated to the workforce as a whole, this would mean that an additional 259 and 103 people of non-Indigenous and non-local Indigenous identity respectively indicated interest in returning to fish or hunt.

Three quarters of the participants wanted to return to the area to fish and one quarter were interested in hunting. One expressed interest in gathering medicines or plants. Specific target species included pickerel, jackfish, moose, caribou, chicken (likely grouse), ducks and geese. Participants also mentioned they would like to gather Labrador tea leaves, strawberries, and raspberries.

Participants indicated the frequency they would like to come back to harvest ranged from once per week (3 respondents) to once per year, the most frequent answer at 18 respondents.

## **3.2 SITE PERSONNEL INTERVIEW**

### **3.2.1 KNOWLEDGE OF WORKFORCE RESOURCE USE AND HARVESTS**

The Keeyask site environmental lead was not aware of fishing or hunting activities carried out by Project personnel either within the Keeyask site or outside of it (Budge, R. *pers. comm.* April 30, 2020).

### **3.2.2 GATE ACCESS**

There were no resource use access requests recorded between November 2018 and October 2019. Similarly, there were no records of voluntary harvest information provided by authorized resource harvesters at the Project's site (Budge, R. *pers. comm.* November 4, 2019).

### **3.3 INTERVIEWS WITH MANITOBA CONSERVATION AND CLIMATE OFFICIALS**

A MCC official was contacted for their observation of changes to moose, caribou and fish harvesting from November 2018 to October 2019.

#### **3.3.1 LICENSED MOOSE AND CARIBOU HUNTING**

According to the MCC official, there were no noticeable changes to moose hunting license demand over the period under examination. This is consistent with data collected in 2015, 2016, and 2018. It should be noted that moose tags are available to purchase across the province for use in the Project area.

The MCC official observed that there has been increased hunting pressure from resident licensed hunters, as well as rights-based hunting around the South Access Road area and in adjacent areas accessed by a network of trails. This is due to improved access to the road and trails in the area since the security gate was moved closer to the Project site. Similarly, the MCC official observed that there has been a small increase in moose hunting by non-resident licensed hunters, because several contractors that worked on the Project site have made local friends and returned to the area to hunt moose.

Demand for caribou licences remained high, and the MCC official noted that this did not change over the period under examination. The number of tags available for GHA 3<sup>3</sup>, which is set at 75, was sold out on the first day of sales. Also, the total number of available tags for GHA 2 remained at 120, as in previous years. According to the MCC official, there were no changes in the patterns of caribou hunting by resident licensed hunters.

#### **3.3.2 LICENSED FISHING**

The MCC official stated that elevated fishing activity has been observed in the area since the Project started compared to the pre-Project period. Activity peaked when the Keewatinohk Converter Station was under construction and a contingent of the Keeyask workforce was housed at the Kettle Generating Station while they built the South Access Road. Since the completion of the Keewatinohk Converter Station and centralizing the Keeyask workforce back at the main Keeyask camp, the MCC official has observed fewer people fishing in the Gillam/Split Lake area but still more than in the pre-Project period.

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<sup>3</sup> The study area also includes portions of GHA 9. Caribou licences are not issued in this GHA.



## **3.4 CONSOLIDATING INFORMATION GENERATED FROM OTHER MONITORING PROGRAMS/PLANS**

### **3.4.1 RESULTS FROM OTHER MONITORING ACTIVITIES**

Wildlife Resource Consulting Services undertook waterfowl monitoring as part of the Terrestrial Effects Monitoring Plan (TEMP). A waterfowl survey conducted in April 2019 documented 26 hunting blinds in the region. The number of blinds observed did not differ substantively from previous years (R. Berger *pers. comm.*, April 29, 2020).

## **4.0 SUMMARY AND CONCLUSIONS**

### **4.1 WORKFORCE HARVEST LEVELS**

The first objective of the monitoring program was to determine if, and how much, the workforce was harvesting resources (see Appendix 5 for harvest summary). This information was to be used to determine if harvest by the Project workforce had the potential to affect local First Nation resource harvesting success.

Big game harvests documented by the current survey were seven moose, six caribou and 27 geese harvested by local Indigenous workforce members. An additional caribou was harvested by a non-Indigenous workforce member under a hunting licence.

Of the 137 fish caught, local Indigenous workforce members harvested about 40% (52), non-local Indigenous members including Metis harvested 30 fish (23% of the harvest excluding one released) and non-Indigenous members harvested 14 and caught and released 40 fish (39%). Therefore, a total of 44 fish were considered to be harvests undertaken by groups other than local Indigenous workforce members. This new harvest of 44 fish represents 550 fish when extrapolated to the entire workforce. This amount, spread over more than 7 waterbodies is not expected to be detectable by local Indigenous fishers. Only a very limited amount of plant gathering occurred in off-site areas.

### **4.2 CHANGES IN LICENSED HUNTING AND FISHING**

The second and third objectives of resource use monitoring were to determine if licensed hunting and licensed fishing changed, and if those changes were caused by the Project.

Email correspondence with an MCC official indicated that increased demand for moose licenses has not been detected locally as they are for sale across the province. A small increase in hunting activity has been noted and is likely due to new connections made among workers and residents of Gillam. The opening of the South Access Road and the current location of the security gate closer to the Project has increased moose hunting pressure on the south side of the Nelson River further west of Gillam. The South Access Road corridor and a network of connecting trails are being used by local licensed and Indigenous moose hunters. It is possible this may include some workforce members who have developed local ties in Gillam. This has not been confirmed though because the workforce survey did not capture any moose hunting effort by non-local workforce personnel.

No change in caribou hunting has been detected though demand for caribou hunting licenses in GHA 3 remains in high.

Regional fishing activity, though elevated at locations close to the Project, declined since the completion of the Keewatinohk Converter Station and dispersal of its workforce. Most of the licensed fishing is catch and release.

Interest in returning to the Project area post-employment was recorded in the workforce survey. Six non-local Indigenous and 27 non-Indigenous workforce members expressed interest in returning to hunt or fish once their employment had ended. Extrapolating this interest to the workforce as a whole resulted in an estimated total of over 350 non-local individuals interested in fishing and hunting. About two-thirds were interested in fishing and one third expressed interest in hunting.

### **4.3 USE OF THE SITE BY AUTHORIZED RESOURCE USERS**

The fourth objective of resource use monitoring was to document resource user requests to access the site and their harvests (if voluntarily provided).

Keeyask site environmental staff personnel were not aware of any gate records documenting access to the site between November 2018 and November 2019 for the purposes of resource harvesting. It should be noted that the Partnership has the ability to manage site access through the security gates; however, trail use or water access by local resource users may still occur.

### **4.4 CONCLUSION**

All sources of information suggest resource harvests are not likely to cause a detectable change in the success of local Indigenous harvests (Table A5-3). However, changes that have occurred in 2018-2019 include:

- Increased moose hunting pressure in the South Access Road area due to improvements in access (new road and change in security gate location);
- Catch and release fishing has occurred in accessible areas proximal to the Project such as the North Moosokot River at PR280;
- Lower overall levels of fishing occurred since the South Access Road was completed and workforce members returned from the Kettle Generation Station camp to the Keeyak main camp; and
- Workforce members were reported to have made local connections and formed hunting parties for moose hunting on days off and possibly for the post-employment period. However, moose hunting effort by non-local workforce members was not reported through the workforce survey.

Change in regional caribou hunting patterns and harvests of any species within site boundaries were not detected.

The EIS predicted that the workforce would not have the time or opportunity to conduct fishing, hunting and plant gathering at levels that would have the potential to affect local Indigenous harvests. In response to concerns raised by the Keeyask Cree Nation partners, workforce harvest monitoring was carried out in five of six construction years. In all years, workforce harvests by those who do not live locally or have local ties have been minimal and not expected to have affected Indigenous harvest success.

Looking to the future, some workforce members expressed interest in returning to the region after their employment there ends. Based on an extrapolation of survey results, over 350 individuals are likely to have interest in returning to the Project area. Two thirds expressed interest in fishing and one third in hunting.

## 5.0 REFERENCES

### 5.1 LITERATURE CITED

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KHLP. 2019. Active Hires. Online Access: <http://keeyask.com/the-project/employment/employment-statistics/active-hires/> [Accessed January 2, 2019].

### 5.2 PERSONAL COMMUNICATIONS

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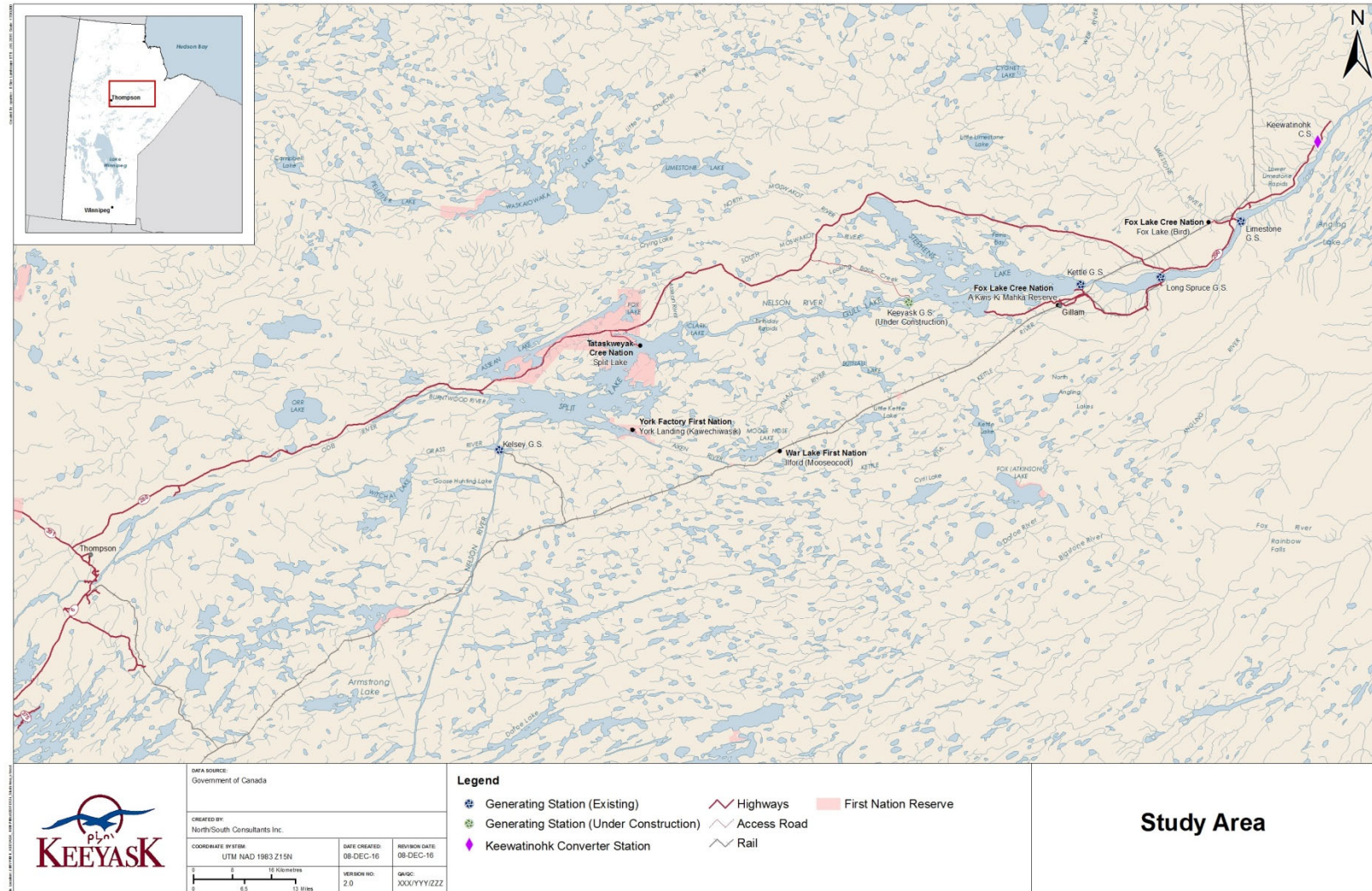
Budge, R. Keeyask Site Environmental Lead. November 4-6, 2019. In person interview with A. Assuah, North/South Consultants Inc.

Budge, R. Keeyask Site Environmental Lead. April 30, 2020. April 29, 2020. Telephone interview with G. Eaton, North/South Consultants Inc.

Szklaruk, A. Manitoba Conservation and Climate. October 31, 2019 and November 22, 2019. Email correspondence with A. Assuah, North/South Consultants Inc.

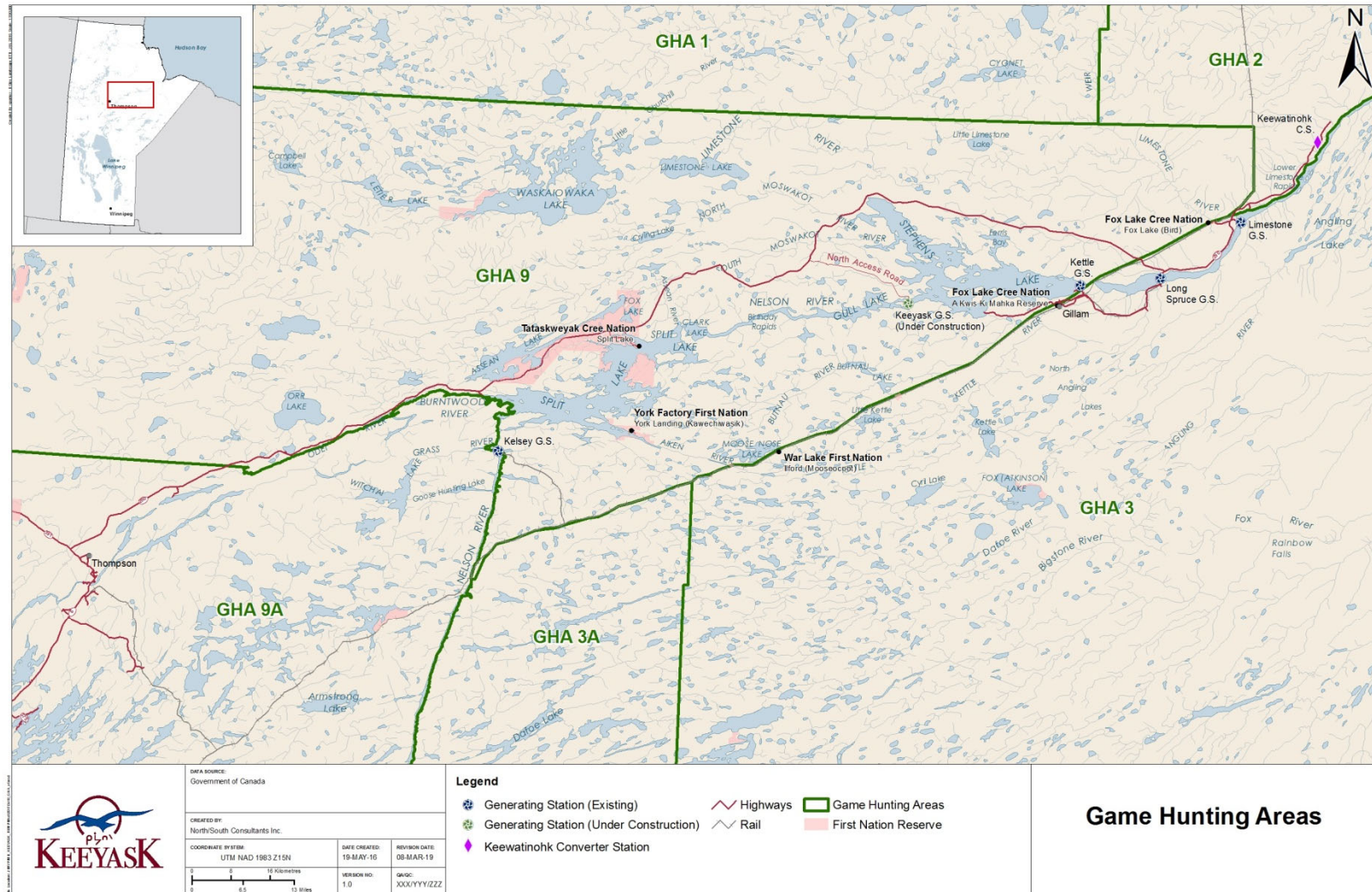
# MAPS





**Map 1: Keeyask Study Area.**





Map 2: Game Hunting Areas.

# APPENDICES

# **APPENDIX 1: CONSTRUCTION WORKFORCE RESOURCE HARVEST SURVEY**

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Figure A1-1: Construction workforce resource harvest survey. ....	21
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## CONSTRUCTION WORKFORCE RESOURCE HARVEST SURVEY- PURPOSE AND HOW INFORMATION WILL BE USED

The purpose of this survey is to find out if and how much wildlife, fish and plants are harvested by construction workers. This information will be used to understand the level of fishing, hunting and gathering conducted by the workforce. You will not be personally identified in any way and information collected will be used to monitor fish and wildlife.

THIS SURVEY IS FOR THE PERIOD OF NOVEMBER 2017 TO NOVEMBER 2018

### SECTION 1

**Question 1.** Which group best describes you (check one box):

- ☐ Construction workforce member (non-Aboriginal)  
☐ Construction workforce member (Aboriginal)  
☐ TCN ☐ WLFN ☐ YFFN ☐ FLCN ☐ Métis  
☐ Non-Status ☐ Inuit ☐ Other First Nation \_\_\_\_\_

**Question 2.** Do you normally live in Thompson, Split Lake, Gillam or Bird? ☐ Yes ☐ No

**Question 3.** Do you have friends or family connections in Thompson, Split Lake, Gillam or Bird that would bring you to this area to visit? If yes, how many times/year would you visit this area?  
 \_\_\_\_\_

**Question 4.** When did your employment begin at the Keeyask Generation Site? \_\_\_\_\_ (Date)

**Question 5.** Have you worked regularly since that date?

- ☐ Yes ☐ No \_\_\_\_\_ (specify any interruptions in employment)

**Question 6.** What is your work rotation? \_\_\_\_\_ days on, \_\_\_\_\_ days off.

**Question 7.** Since you began working here, have you fished, hunted or gathered plants and/or other natural products on **days that you worked**?

- ☐ No ☐ Yes – Fished ☐ Yes – Hunted ☐ Yes – Gathered plants/other natural products.

**Question 8.** During your **days off**, did you fish, hunt or gather plants and/or other natural products east of Thompson?

- ☐ No ☐ Yes – Fished ☐ Yes – Hunted ☐ Yes – Gathered plants/other natural products.

If no to questions 7 and 8, this survey is completed. If yes, please answer questions 9 (fishing), 10 (hunting) and/or 11 (gathering); all that are applicable.



RESOURCE USE MONITORING PLAN – CONSTRUCTION  
WORKFORCE SURVEY

**Figure A1-1: Construction workforce resource harvest survey, page one.**



## SECTION 2

**Question 9 – FISHING SINCE NOVEMBER 2017**Fishing method: ☐ Angling (rod and reel) ☐ Ice fishing ☐ Net fishing

Fishing effort: average number of hours per trip \_\_\_\_\_, number of trips/month \_\_\_\_\_ and months active \_\_\_\_\_

Fishing location(s): \_\_\_\_\_ (waterbody)

Harvest: ☐ No, catch and release ☐ Yes. If yes, indicate how much: Species: \_\_\_\_\_ # of fish: \_\_\_\_\_

Species: \_\_\_\_\_ # of fish: \_\_\_\_\_

Species: \_\_\_\_\_ # of fish: \_\_\_\_\_ Species: \_\_\_\_\_ # of fish: \_\_\_\_\_

Fishing occurred during ☐ Stay at site ☐ Days off ☐ Both. If local resident or one with connections to local residents: Would you have fished these times even if you were not working here? ☐ Yes☐ No**Question 10 – HUNTING SINCE NOVEMBER 2017** (includes small and large game such as rabbits, grouse, moose, caribou and furbearers etc.)Hunting method: ☐ Rifle ☐ Bow ☐ Other, please specify: \_\_\_\_\_

Hunting effort: average number of hours per trip \_\_\_\_\_, number of trips /month \_\_\_\_\_ and months active \_\_\_\_\_

Hunting location(s) (please be as specific as possible and list multiple locations if necessary):

Species: \_\_\_\_\_ # harvested: \_\_\_\_\_ Species: \_\_\_\_\_ # of harvested \_\_\_\_\_

Species: \_\_\_\_\_ # harvested: \_\_\_\_\_ Species: \_\_\_\_\_ # of harvested \_\_\_\_\_

Hunting occurred during ☐ Stay at site ☐ Days off ☐ Both.If local resident or one with connections to local residents: Would you have hunted these times even if you were not working here? ☐ Yes ☐ No**Question 11 – GATHERING SINCE NOVEMBER 2017** (plants for medicine or for eating, crafts or ceremonial purposes [e.g., feathers, firewood or other natural items].)

Gathering effort: average number of hours per trip \_\_\_\_\_, number of trips /month \_\_\_\_\_ and months active \_\_\_\_\_

Gathering location(s) (please be as specific as possible and list multiple locations if necessary):

Species or type: \_\_\_\_\_ Amount: \_\_\_\_\_ Species or type: \_\_\_\_\_ Amount: \_\_\_\_\_ Species or type: \_\_\_\_\_ Amount: \_\_\_\_\_ Species or type: \_\_\_\_\_ Amount: \_\_\_\_\_ Species

Gathering occurred during ☐ Stay at site ☐ Days off ☐ Both. If local resident or one with connections to local residents: Would you have gathered these times even if you were not working here? ☐ Yes ☐ No

RESOURCE USE MONITORING PLAN – CONSTRUCTION WORKFORCE SURVEY

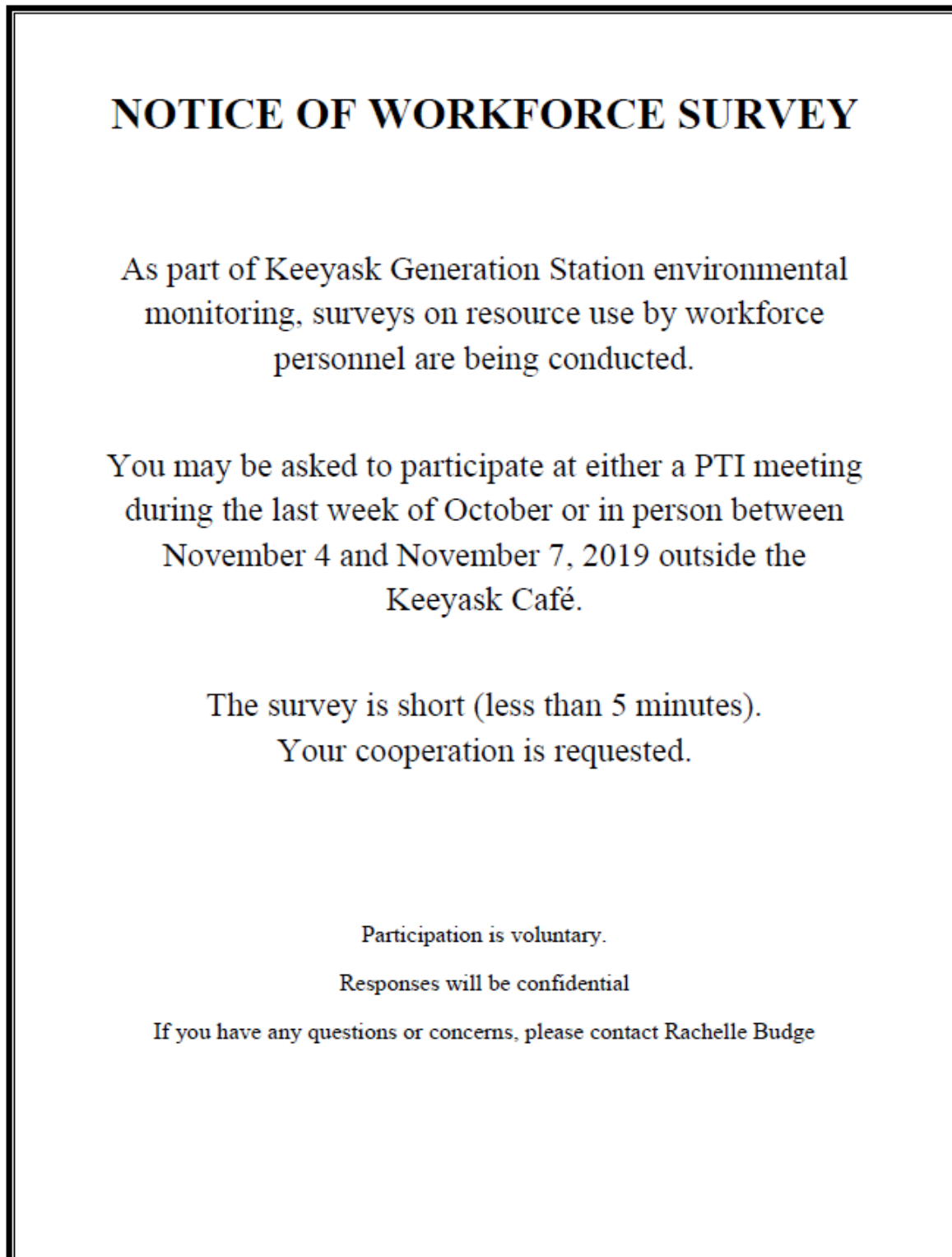
Figure A1-1: Construction workforce resource harvest survey, page two.

## **APPENDIX 2:**

# **NOTIFICATION POSTER FOR WORKFORCE SURVEY**

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Figure A2-1: Notification poster for workforce survey. ....	24
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**Figure A2-1: Notification poster for workforce survey.**



## **APPENDIX 3:**

# **INTERVIEW GUIDE FOR MANITOBA CONSERVATION AND CLIMATE OFFICIALS**

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Table A3-1: Interview guide for Manitoba Conservation and Climate resource officials.....	26
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**Table A3-1: Interview guide for Manitoba Conservation and Climate resource officials.****Keeyask Generation Project (KGP) Resource Use Monitoring Plan (RUMP)**

**Purpose-** To consult resource MCWS managers' expertise to meet the following RUMP objectives:

1. To document any changes to moose and caribou license demand, harvest patterns and, if feasible, quantify harvests; and
2. To document any changes to licensed fish harvest patterns and fishing intensity.

Results will be published in a short report entitled: Resource Use Monitoring Plan: Results of Year 5 Monitoring produced for the Keeyask Hydropower Limited Partnership.

**Questions:****Moose:**

For the period between November 2018 and October 2019:

- Are you aware of changes to demand for moose licences in the Project area including GHAs 9, 2 and 3? If so, could you please explain the changes?
- Have you noticed any changes to the patterns of moose hunting/harvesting by resident licensed hunters specifically in GHA 9 (eastern portion), GHA 2 (south portion) and GHA3 (north central portion)? If so, are any changes associated with the Project's workforce?
- Have you noticed any changes to the patterns of moose hunting/harvesting by non-resident licensed hunters? If so, are any changes associated with the Project's workforce?
- Can a quantitative estimate of licenses/ harvest be developed for the Project area that relates to the GHA areas noted above?
- Are there any other changes that you would like to note?

**Caribou:**

For the period between November 2018 and October 2019:

- Are you aware of changes to demand for caribou licences? If so, could you please explain?
- Are the same number of licences being issued for GHA 2 and GHA 3 as in previous years? If so, could you please confirm the number of licences issued for each GHA and the success rate?
- Have you noticed any changes to the patterns of caribou hunting/harvesting by resident licensed hunters? If so, are any changes associated with the Project's workforce?
- Are there any other changes that you would like to note?

**Fish:**

For the period between November 2018 and October 2019:

- Are you aware of changes to the overall intensity of licensed fishing? Have there been increases or decreases in activity at specific locations? If so, are any changes associated with the Project's workforce?
- Have any changes in fishing effort led to changes in harvest, species harvested or a redistribution of harvest? Are any noted changes related to the Project's workforce?
- Are there any other changes that you would like to note?

# **APPENDIX 4:** **EMPLOYMENT STATISTICS FOR END OF JUNE 2019** **FROM KEEYASK.COM**

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Table A4-1: Employment statistics for end of June 2019.....	28
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**Table A4-1: Employment statistics for end of June 2019.****ACTIVE PROJECT HIRES**

Active Hires in June 2019

	<b>Active Hires</b>	<b>% of Active Hires</b>
Active Project Hires	3514	n/a
Indigenous	995	28%
Manitobans	1965	56%
Partner Communities	433	12%

Source: KHLP (2019).

## **APPENDIX 5:**

### **SUMMARY OF WORKFORCE SURVEY DATA FOR YEARS 1 TO 6 (EXCLUDING YEAR 4)**

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Table A5-1:	Summary of Year VI workforce survey data for the period of 1 November, 2018 to 31 October, 2019.....	30
Table A5-2:	Summary of workforce survey data in Year I to III and Year V to VI. ....	31
Table A5-3:	Summary of resource harvests and effort in Years I to VI excluding Year 4.....	32

Table A5-1: Summary of Year VI workforce survey data for the period of 1 November, 2018 to 31 October, 2019.

Identity	Non-Harvesters			Resource Users			Harvests												
	Count	Total Days On	Total Days Off	Count	Total Days On	Total Days Off	Fish					Hunting					Plants and Berries		
							Total # Caught	# Harv-ested	# Re-leased	Effort Days On	Effort Days Off	Harvest Total (# moose)	Harvest Total (# caribou)	Harvest Total (# geese)	Effort Days On	Effort Days Off	Harvest Total	Effort Days On	Effort Days Off
Local Indigenous	8	1,618	557	9	2,063	722	52	52	-	1	6	7	6	27	0	10	2	1.5	1.5
Metis	21	4,482	1,604	5	1,146	417	25	24	1	24	0	0	0	0	0	0	0	0	0
Non-Local / Non-Status Aboriginal	20	5,169	1,800	12	2,576	870	6	6	-	124	124	n/s	n/s	0	0	20	n/s	0	15
Non-Aboriginal	183	39,921	15,488	22	5,106	1,838	54	14	40	12	16	0	1	0	0	40	0	0	0
Totals (n=280)	232	51,190	19,449	48	10,891	3,847	137	96	41	161	146	7	7	27	0	70	2	1.5	16.5

Note: Effort is expressed as total number of eight hour days.  
n/s refers to harvest quantities that were not specified.

Table A5-2: Summary of workforce survey data in Year I to III and Year V to VI.

Workforce		Year I							Year II							Year III							Year V							Year VI					
		Local Indigenous	Metis	Non-Local	Non-Indigenous	Non-Specified	Total		Local Indigenous	Metis	Non-Local	Non-Indigenous	Non-Specified	Total		Local Indigenous	Metis	Non-Local	Non-Indigenous	Non-Specified	Total		Local Indigenous	Metis	Non-Local	Non-Indigenous	Non-Specified	Total							
Non-Harvesters																																			
Total No:		15	12	21	84	2	134		25	26	39	127	0	217		20	19	27	88	0	154		16	33	57	354	0	354		9	20	13	186	7	237
Total Days On:		1350	1034	1394	5952	200	9930		2969	3165	5347	15564	0	27045		4088	4478	7123	19312	0	35001		3813	7370	12978	80397	0	104558		1,757	4,275	3,976	40,242	1,649	51,898
Total Days Off:		436	337	482	2067	67	3389		993	1085	1779	5417	0	9274		1384	1502	2384	6945	0	12215		1338	2768	5401	31483	0	40990		603	1,536	1,380	15,598	575	19,692
Resource Users																																			
Total No:		9	3	1	6	1	20		12	1	0	14	0	27		4	4	2	4	0	14		5	4	6	23	0	38		8	6	6	19	4	43
Total Days On:		1350	1034	1292	5551	200	9427		1557	181	0	1401	0	3159		1107	729	313	1502	0	3651		1361	1168	1660	6373	0	10562		1,924	1,352	1,348	4,785	773	10,182
Total Days Off:		436	337	448	1933	67	3221		521	45	0	474	0	1040		369	243	104	545	0	1261		428	408	553	2477	0	3866		676	486	449	1,728	266	3606
Total Surveyed (n=154)							Total Surveyed (n=244)							Total Surveyed (n=168)							Total Surveyed (n=498)							Total Surveyed (n=280)							

Table A5-3: Summary of resource harvests and effort in Years I to VI excluding Year 4.

Workforce	Year I						Year II						Year III						Year V						Year VI						
	Local Indigenous	Metis	Non-Local Indigenous	Non-Indigenous	Non-Specified	Total	Local Indigenous	Metis	Non-Local Indigenous	Non-Indigenous	Non-Specified	Total	Local Indigenous	Metis	Non-Local Indigenous	Non-Indigenous	Non-Specified	Total	Local Indigenous	Metis	Non-Local Indigenous	Non-Indigenous	Non-Specified	Total	Local Indigenous	Metis	Non-Local Indigenous	Non-Indigenous	Non-Specified	Total	
<b>Fishing</b>																															
Catch/Release:	88	60	0	0	0	148	19	9	0	75	0	103	20	4	64	14	0	102	0	0	0	59	0	59	0	0	0	40	0	40	
Harvest Total:	90	0	0	0	0	90	63	0	0	8	0	71	10	0	0	0	0	10	2065	53	17	180	0	2315	45	29	9	14	0	97	
Total Days On:	0	7	0	3	0	10	6	0	0	10	0	16	23	12	0	1	0	36	38	15	58	24	0	135	3	0	1.5	1.5	0	6	
Total Days Off:	12	6	0	4	0	22	61	3	0	6	0	70	36	0	13	1	0	50	50	23	69	35	0	177	4	8	1.5	21	0	34.5	
<b>Hunting</b>																															
Total Moose:	1	0	2	0	0	3	3	0	0	1	0	4	n/s	1	0	1	0	2	10	0	n/s	0	0	10	7	0	0	0	0	7	
Total Caribou:	0	0	0	0	0	0	5	0	0	0	0	5	n/s	0	0	1	0	1	13	0	n/s	n/s	0	13	7	0	0	1	0	8	
Total Rabbits:	0	0	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	0	0	0	n/s	n/s	0	0	0	0	0	0	0	0	
Total Birds:	0	0	0	0	0	0	66	0	0	10	0	76	0	0	0	0	0	0	0	0	n/s	n/s	0	0	27	0	0	0	0	0	
Total Days On:	0	0	0	0	0	0	2	0	0	0	0	2	23	0	0	0	0	23	9	0	54	0	0	63	0	0	0	0	0	0	
Total Days Off:	17	0	3	0	0	20	39	0	0	25	0	64	23	2	0	6	0	29	32	0	2	5	0	39	8	0	0	2	0	10	
<b>Plants and Berries</b>																															
Harvest Total:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n/s	0	n/s	45	0	n/s	50	0	95	n/s	0	0	0	0	n/s	
Total Days On:	0	0	0	0	0	0	0	0	0	3	0	3	0	2	0	1	0	3	2	0	0	1	0	3	0	0	0	0	0	0	
Total Days Off:	8	0	0	0	0	8	16	0	0	1	0	17	0	0	13	0	0	13	1	0	54	1	0	56	21	0	0	0	0	21	
Total Harvesters Surveyed (n=20)						Total Harvesters Surveyed (n=27)						Total Harvesters Surveyed (n=14)						Total Harvesters Surveyed (n=38)						Total Harvesters Surveyed (n=43)							

Note: Effort is expressed as total number of eight hour days.  
n/s refers to harvest quantities that were not specified.