



# Keeyask Generation Project Resource Use Monitoring Plan

## Resource Use Monitoring Report RUMP-2016-01



# KEEYASK GENERATION PROJECT

## RESOURCE USE MONITORING PLAN

Report #RUMP-2016-01

## RESOURCE USE MONITORING: YEAR 2 CONSTRUCTION

Prepared for

Manitoba Hydro

By

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# SUMMARY

## BACKGROUND

The Keeyask Hydropower Limited Partnership (KHLP) was required to prepare a plan to monitor the effects of construction (which commenced in July 2014) and operation of the generating station on resource use. 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 resource use, and whether or not 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 2013). 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 MONITORING BEING DONE?

Monitoring is being 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 done in June 2015 to ask construction workers about harvesting in the area since the last survey in November of 2014. Keeyask camp site personnel were interviewed to provide information on the harvesting activities of the workforce and to understand use of the site by authorized resource users. Officials from Manitoba Conservation and Water Stewardship (MCWS) were interviewed to understand and record changes in licensed (non-Aboriginal) harvests in the area.

## WHAT WAS FOUND?

The workforce survey indicated that there has not been an increase in the amount of resource harvest in the local area. Fishing effort at places such as the North Moswakot River and PR 280 appear to have been higher in the 2014 study and lower this year. Though there are non-Aboriginal workforce members who fish there and at other locations along the PR 280, it was found that they are not harvesting fish; the fish are released. Future monitoring will tell us more about this fishing.

Interviews with MCWS officials indicated that moose hunting by licensed hunters has increased in the area, but these changes have not been linked to the Project. The workforce survey found that one non-Aboriginal hunter harvested a moose but, the location of this harvest is not known. Licensed caribou hunting has not changed.

As of March 2016, gate records indicated that a limited number of authorized resource harvesters had accessed the site in March 2016 to go to a cabin located off the North Access Road. A trapper was also noted to access the site area by snowmobile. Information on site harvests was not available.

## WHAT WILL BE DONE NEXT?

It is expected that the construction workforce survey will be repeated in November 2016. This next survey will cover the period of time when workforce numbers are at their greatest. Interviews with key Keeyask environmental staff and Manitoba Conservation and Water Stewardship officials also will be repeated in late 2016 or early 2017.

# ACKNOWLEDGEMENTS

We would like to thank Manitoba Hydro for the opportunity and resources to conduct this study.

Keeyask site personnel provided extensive support to the workforce survey and offered their expertise. Thanks to the Manitoba Conservation and Water Stewardship Director of Parks and Regional Services, Northeast Division and the Natural Resource Officer District Supervisor of the Gillam District for providing information on hunting and fishing activity in the region.

# STUDY TEAM

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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. 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 (Map 1).

The Keeyask Generation Project: Response to EIS Guidelines, completed in June 2012, provides a summary of predicted effects and planned mitigation for the Project. Technical supporting information for the resource use 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: Socio-Economic Environment Supporting Volume (SE SV). As part of the licencing process for the Project, a Resource Use Monitoring Plan (RUMP) was developed detailing the monitoring activities of various components of the resource use environment for the construction and operation phases of the Project.

This document provides results of RUMP Year 2 monitoring activities. Results are available for all of five of the RUMP key objectives:

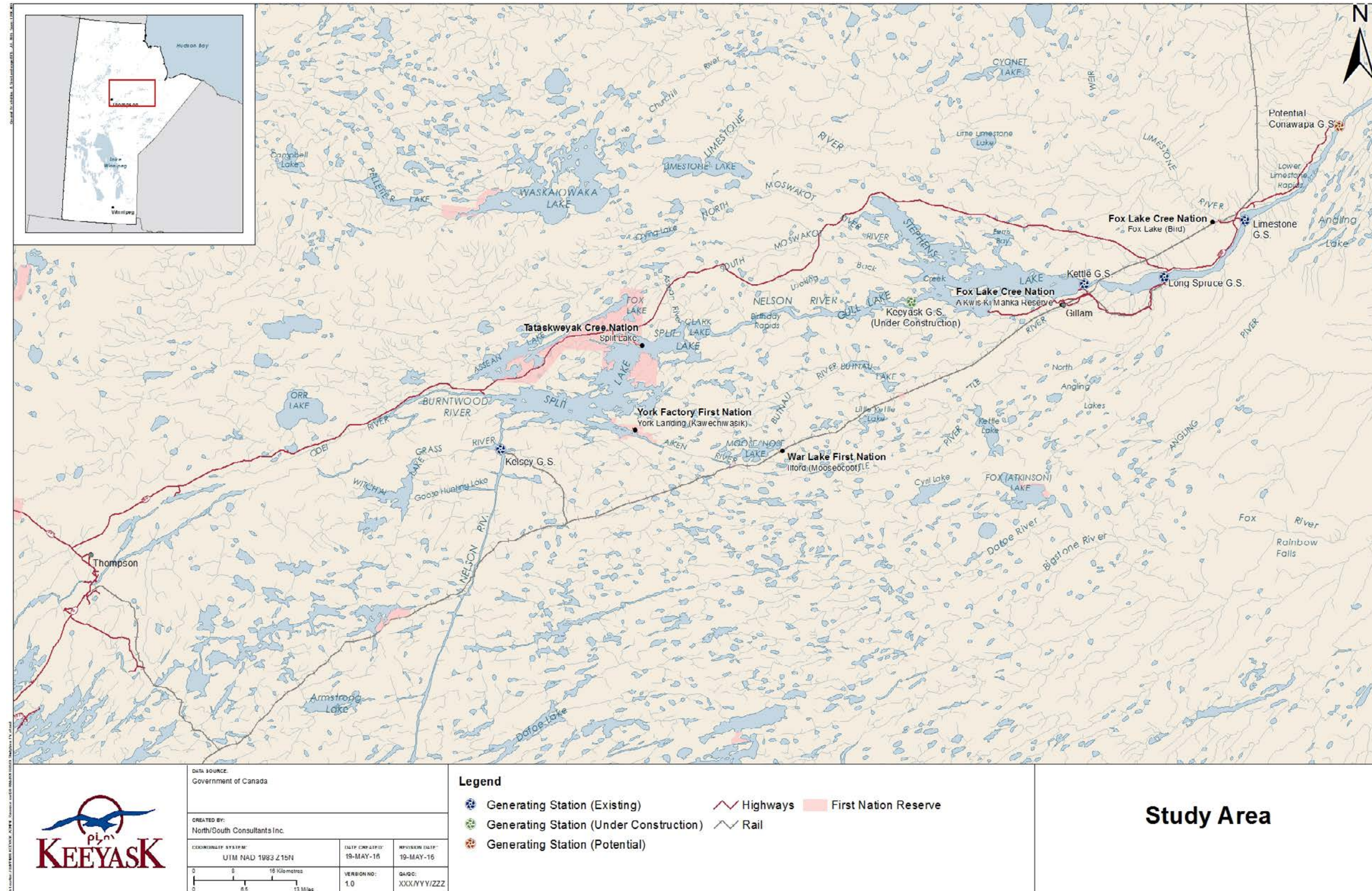
- To determine if the workforce is hunting, fishing, or gathering within or outside the Project site and, if so, whether the harvest would adversely affect domestic resource use;
- To document Project-related changes to moose and caribou license demand, harvest patterns, and, if feasible, quantify harvests;
- To document 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; and
- To consolidate information generated from other monitoring plans/programs as information becomes available.

To achieve these objectives, the following activities were conducted:

- A construction workforce survey was undertaken to document fishing, hunting, and plant gathering activities that may be conducted by the workforce;
- An interview was conducted with Manitoba Conservation and Water Stewardship (MCWS) officials to understand any changes to licensed hunting and fishing and potential linkages to the Project or its workforce; and
- Keeyask site personnel were interviewed 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 PR 280 corridor, the Keeyask site area, and west to the Gillam area (Map 1).





**Map 1: Keeyask Study Area**



## 2.0 METHODS

### 2.1 WORKFORCE SURVEY

The purpose of workforce surveys is to document fishing, hunting, and plant gathering activities that may be conducted by the Project workforce. Survey results provide an indication of whether the construction workforce is harvesting at levels that may have the potential to affect local domestic use of resources and to provide information to other Project monitoring plans.

A workforce survey (Appendix 1), the second completed since the beginning of the Keeyask Generation Project construction phase, was conducted in late June, 2015. The survey covered resource use from November 1, 2014 to June 15, 2015. The previous survey covered from the beginning of the Keeyask Generation Project construction phase from July 2014 to end of October 2014 (see Eaton 2015).

Notification of the June 2015 survey was posted in advance in Keeyask camp common areas to generate awareness of the survey and to inform potential participants that participation was voluntary and results would be kept confidential (Appendix 2).

The survey was conducted between June 15 and 27, 2015 using two different approaches to access participants:

- In-person surveys conducted in the Keeyask Café on June 25, 26, and 27, 2015 during mealtimes; and
- Surveys were provided to contractors to distribute at their morning safety meetings with their staff between June 15 and 19, 2015.

The survey sampling target was set at 10% of the construction workforce for the Year 1 survey (e.g., November 2014), and was used again in Year 2. Sampling targets were set because it is important to understand the number of surveyed workforce relative to the total number of workforce members. The ratio of surveyed to unsurveyed individuals provides an indication that too few or enough people were surveyed to get reliable results.

Knowledge of where resource harvesters normally reside is also important as it reveals whether harvesters are new to the area (and are conducting new or additional harvests) or if they already reside in, or visit, the area (and their harvest would occur regardless of Project employment). Keeyask Cree Nations (KCN) personnel are local Aboriginal people that reside in communities close to the Project (e.g., Split Lake, Ilford, Gillam, Fox Lake, and York Landing). These workforce members conduct harvests that are not new or additive due to the Project. Other personnel, who do not normally live in the area, however, may be conducting harvests that are new. It is these new potential harvests that are being monitored.

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. In the case of the June 2015 survey, the estimated total additive harvest was not calculated because either there was no harvest recorded by non-local groups or, in the case of gathering, calculation of additive harvest was not appropriate (see section 3.1).

## **2.2 SITE PERSONNEL INTERVIEWS**

To build on workforce survey results, the Keeyask Site Environmental Lead (Ms. Caroline Walmsley) was interviewed on February 2, 2016. The Environmental Lead was asked for knowledge of any resource use conducted by the construction workforce and any available details about that use. Keeyask access gate records that would contain resource user access requests and voluntary statements of harvests were also requested from the Site Liaison Lead.

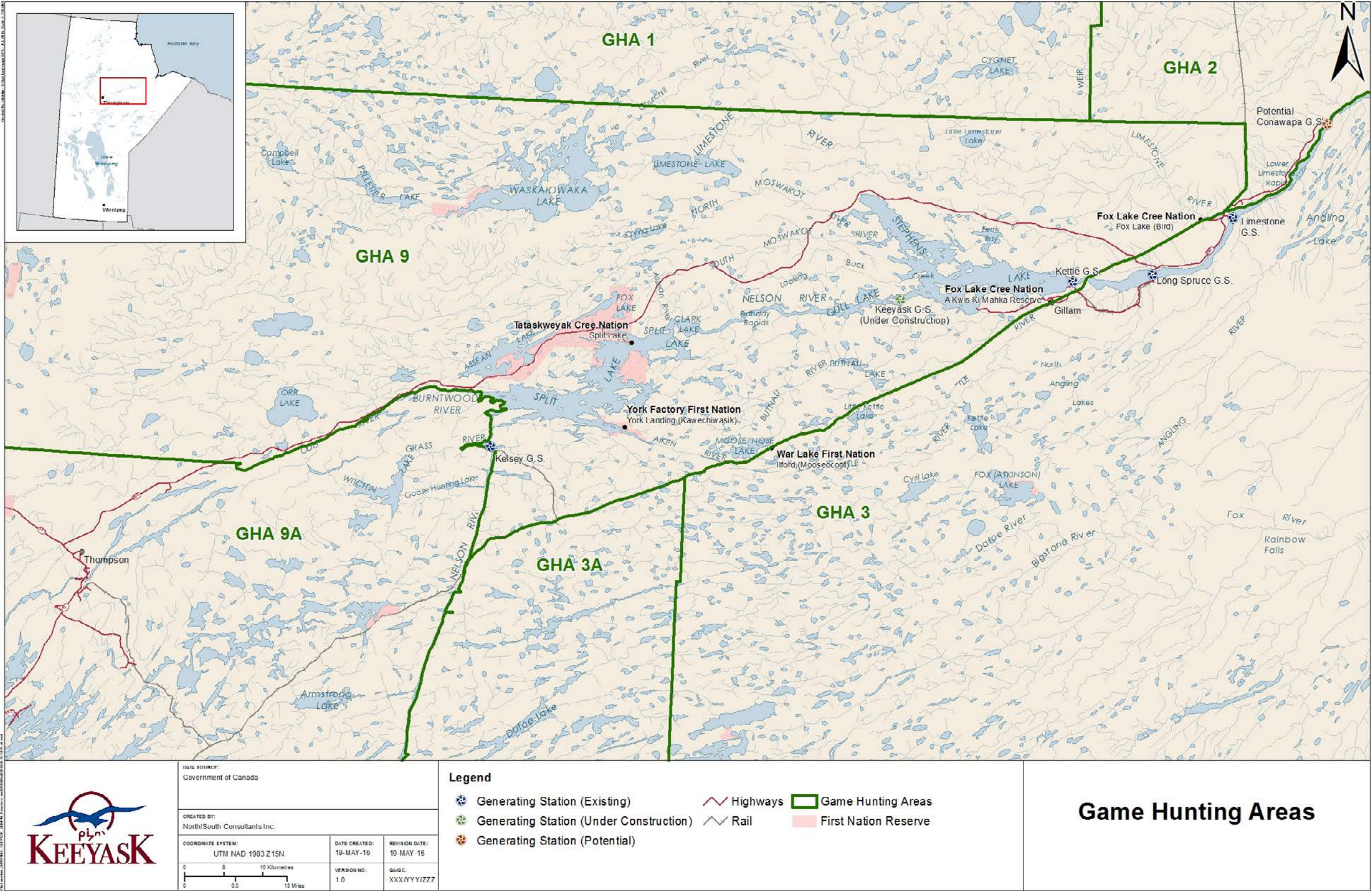
## **2.3 INTERVIEW WITH MANITOBA CONSERVATION AND WATER STEWARDSHIP OFFICIALS**

Interview questions were provided to Manitoba Conservation and Water Stewardship (MCWS) Northeast Region Director and the Northeast Region Natural Resource Officer District Supervisor on March 1, 2016. Each were asked for their 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. Interview questions are provided in Appendix 3; responses to questions were received on March 8, 2016.

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 other factors (e.g., moose hunters coming from the south due to Game Hunting Area [GHA] closures there). The areas where licences are issued are also a factor. For example, for the six GHAs that intersect within the Project region (Map 2) and several other GHAs, moose licensing is open or general and harvest is not tracked specifically by GHA. Fishing licences also are valid for any location within Manitoba (i.e., they can be purchased in one location and used in another within Manitoba).

Despite these limitations, consulting the local expertise of MCWS officials, in addition to workforce survey results and ATK monitoring results (which were not available for this report), provides the best available understanding of any Project-related changes to the nature, distribution, and intensity of licensed harvest.





Map 2: Game Hunting Areas



## 3.0 RESULTS

### 3.1 WORKFORCE SURVEY

Two hundred and forty-seven surveys were completed by construction workforce personnel (47 in-person and 200 at safety meetings) of which, 244 were analysed (three were incomplete). The end of August 2015 employment statistics (see Appendix 4, KHL P 2015) indicated a total workforce count of 1,159 including 548 Aboriginal (47%) and 611 non-Aboriginal (53%) personnel. These statistics were used to calculate the proportion of the workforce surveyed by identity (Table 1).

The survey response rate exceeded the 10% sampling target by achieving an overall sample of 21% of the total workforce (19% of Aboriginal personnel and 23% of non-Aboriginal personnel; Table 1). Detailed information on survey participation by identity relative to total workforce personnel is provided in Table 1. Representation of personnel from each identity group was equal to or greater than 15%.

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

| <b>Identity</b>             | <b># Surveyed</b> | <b>Total Employed <sup>2</sup></b> | <b>Proportion of Total Workforce Surveyed</b> |
|-----------------------------|-------------------|------------------------------------|---|
| Non-Aboriginal              | 141               | 611                                | 23  |
| KCN Aboriginal <sup>1</sup> | 37                | 242                                | 15  |
| Non-KCN Aboriginal          | 39                | 196                                | 20  |
| Metis                       | 27                | 110                                | 25  |
| <b>Total/Average</b>        | <b>244</b>        | <b>1,159</b>                       | <b>21</b>                                     |

1. 'KCN Aboriginal' includes members of: Tataskweyak Cree Nation, War Lake First Nation, Fox Lake Cree Nation, and York Factory First Nation.
2. Source: KHL P (2015).

Of the 244 completed surveys, 26 (11%) indicated that they had conducted resource use during the survey period, of which 11 (5%) were KCN individuals, one (0.4%) was Metis, and 14 (6%) were non-Aboriginal. Non-local First Nation people surveyed did not conduct resource use in the study area.

#### 3.1.1 RESOURCE USE DURING DAYS WORKED

Of the 27 individuals who conducted resource use, ten conducted resource use during days they worked. All ten participants reported angling, and less commonly ice fishing, on work days at locations such as the North and South Moswakot rivers, Assean River and Lake, and Split

and Stephens lakes. The most common angling site was on the North Moswakot River at Provincial Road 280 where six people went fishing. Total hours spent angling during work days was estimated at 32 total hours or an average of 3.2 hours per participant over the seven month survey period (0.5 hours/person/month). The only harvests reported were by KCN individuals; non-Aboriginal anglers conducted catch and release fishing, primarily for Northern Pike (jackfish).

Non-Aboriginal participants did not hunt on days worked. Two KCN individuals (0.8%) reported hunting birds (*i.e.*, geese, ducks) for approximately 20.5 hours over the survey period on days worked. One harvested four geese in the Assean Lake area, while the other did not disclose harvest numbers or location.

One non-Aboriginal employee reported spending 27 hours gathering a small number (12–24) of morel mushrooms from an on-site area that had experienced forest fires. No other gathering activities were reported on days worked.

### 3.1.2 RESOURCE USE DURING DAYS OFF

Of the 244 surveys, 21 (9%) participants indicated that they had engaged in resource use during days off.

Angling and/or ice fishing was conducted by 17 people (7%); six were non-Aboriginal, one was Metis, and ten were KCNs.

Five of the six non-Aboriginal participants conducted catch and release fishing for Northern Pike and Walleye (pickerel) at locations such as the Assean River and North Moswakot bridges at PR 280 and at “Riders Landing”, reported to be west of Split Lake. The remaining non-Aboriginal fisher reported a harvest of eight Walleye but did not confirm whether the catch was from Stephens Lake or the Grassy River (outside the study area). Total effort amounted to 52.5 hours over the seven month survey period.

Ten KCN fishers fished on days off at locations such as: Assean, Moosenose, Split, and Caldwell lakes and at the Odie, Aiken, and North Moswakot rivers. Harvests were comprised primarily of Walleye and amounted to approximately 60 fish.

Four non-Aboriginal participants hunted during days off: one for rabbits and geese, one for rabbits and grouse; and two for moose. Small game hunting occurred in the western end of the study area towards Thompson at locations such as the “Thompson area” and along the Grassy, Odie, and Burntwood rivers and a total of 10 rabbit and 10 grouse were harvested. Moose hunting occurred at Split and Holmes lakes with no harvest reported. One hunter was active both within and outside the study area and harvested a moose at an undisclosed location. Non-local Aboriginal participants did not hunt and six KCNs reported hunting and the harvest of three moose, five caribou, and 66 waterfowl (geese and ducks) in areas such as the Aiken River, and Caldwell and Assean lakes.

Three participants reported gathering plants, mushrooms, and berries during days off. Two identified as non-Aboriginal; one collected berries and chaga mushrooms at Stephens Lake and the Nelson River and one gathered unknown plants in the Gillam area (PR 280). One KCN member reported spending 128 hours collecting small amounts of berries (>100), tea leaves (>20), and firewood (six cords) near lakes, rivers and trails along an undisclosed trapline within the study area. See Appendix 5 for a summary of survey data.

### **3.1.3 OTHER RESULTS**

While not specifically collected as part of the survey, five participants indicated they had interest in fishing, one in hunting, and one in gathering. Lack of opportunity and transportation were the primary reasons given as to why participants did not engage in these activities. One participant considered the cost of both hunting and fishing licences to be prohibitive.

### **3.1.4 RESULTS FROM OTHER MONITORING ACTIVITIES**

One incidental find of a moose harvest location occurred in 2015 as part of Terrestrial Effects Monitoring Plan activities. While searching for bear den locations on October 18, 2015, the harvest site was discovered west of Gull Lake on the north side of the Nelson River, approximately 23 km west of the dam construction site. Harvest was considered to be recent (e.g., autumn of 2015). Given the site's proximity to the Nelson River and the absence of roadways, it is likely that access to the harvest site was by boat.

As part of waterfowl habitat effects monitoring conducted as part of the Terrestrial Effects Monitoring Plan, a series of waterfowl surveys were conducted in 2015 (Wildlife Resources Consulting Services [WRCS] 2016). Aerial waterfowl surveys were conducted from early spring to fall on waterbodies extending from Split and Assean lakes east to the Long Spruce G.S. including off-system lakes, rivers and watercourses to the north and south such as Limestone, Myre, and Cyril lakes (WRCS 2016). Spring (April) waterfowl surveys recorded the presence of hunting parties (or their blinds / decoys) to estimate the amount of hunting pressure in the study area. Sixteen hunting parties were observed. Seven were situated near York Landing, one each on Assean, Split, and Clarke lakes, two each on Stephens Lake and the Nelson River below Birthday Rapids, and the remainder on regional, off-system waterbodies (WRCS 2016; Map 3.4-1).

## **3.2 SITE PERSONNEL INTERVIEWS**

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

The Site Environmental Lead indicated that, based on her knowledge, no fishing, hunting or plant harvests occurred on-site and no hunting or plant harvests were known to occur off-site (Walmsley *pers. comm.* February 2, 2016). Low levels of fishing were known to be continuing off-site. Though the levels of fishing were not measured, they were estimated to be similar to the prior year or possibly decreased due to increased restrictions on the use of contractors' vehicles for non-work purposes. BBE Hydro Constructors LP, the general civil works contractor and the largest employer at Keeyask, for example, implemented a policy restricting use of vehicles for non-work purposes (Walmsley *pers. comm.* February 2, 2016). Similar to Year 1 monitoring, potential fishers were limited by the lack of transportation to the start-up camp where personal vehicles are parked.

### **3.2.2 GATE ACCESS**

Two records of gate access were available to document entry through the access gate. In March 2016, two groups of resource users accessed a cabin located off the North Access Road. It was also noted that a trapper had accessed the site using a snowmobile. It should be noted that the Partnership has the ability to manage access through the gates; however, trail use or water access by local resource users may still occur.

## **3.3 INTERVIEWS WITH MANITOBA CONSERVATION STEWARDSHIP OFFICIALS**

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

Based on an interview with the Natural Resource Officer District Supervisor (Gillam), the demand for moose licences over the last couple of years has increased. More resident hunters (e.g., those residing in Manitoba) were reported hunting in the eastern portion of GHA 9 and the north central portion of GHA 3 (see Map 2). Some of these hunters have family or friends living in the area. Others come to the area in search of work and are looking for places to hunt. In 2013, the harvest rate was fairly high for hunters. Most groups of hunters were able to fill the majority, if not all, of the tags in the group. In 2014 and 2015, however, the harvest rate seemed to be considerably lower for licensed hunters and hunters found it difficult to fill their tags. Some

groups which consisted of up to six hunters were only able to fill one or two of the tags in the whole group. To date, a significant increase in Non-Resident hunters in the area has not been observed.

Also, a high percentage of hunters north of the Project area in GHA 9 are First Nation hunters from Split Lake who are flown out as part of the Access Program associated with the Keeyask Project. In 2014 and 2015, the harvest rate for First Nation hunters also seemed to be considerably lower (Henry *pers. comm.* March 8 2016).

Demand for caribou licences were noted by MCWS officials to be about the same. Only 75 GHA 3 licences were available for sale and all were sold. Ten licences were sold to hunters from southern Manitoba and the remainder went to residents of Gillam, Churchill, Thompson, and The Pas (Henry *pers. comm.* March 8, 2016). There were 120 GHA 2 licences for sale and only 18 GHA 2 licences sold, three of which were to hunters from southern Manitoba (Henry *pers. comm.* March 8, 2016). Hunter patterns have not changed much as hunters wait until the caribou migrate through the area before they begin their hunts. The success rate the last three years in GHA 3 has been high. Most hunters have found it relatively easy to harvest their animals due to the number and location of animals in the area.

### 3.3.2 LICENSED FISHING

Early in summer of 2014, MCWS officials observed a considerable increase in people angling along the rivers and creeks on PR 280 near the Keeyask Generation Project area (Henry *pers. comm.* March 2, 2015). Since then, MCWS officials have observed a large reduction of anglers along PR 280. There has not been any noticeable increase of anglers ice fishing or open water fishing by boat (Henry *pers. comm.* March 8, 2016).

## 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. 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.

Confirmed harvests reported by non-Aboriginal construction workforce members on work days and days off in the study area were: 11 rabbits and 10 waterfowl from areas near Thompson; mushrooms from on-site and at Stephens Lake near Gillam; and plants near Gillam. One moose and eight Walleye were harvested at locations that could have been either within or outside the study area. Moose and Walleye harvests are therefore inconclusive. Survey results suggest that non-local Aboriginal harvests including Metis individuals' harvests were nil.

When compared to construction Year 1 survey results, total hours of fishing effort by non-Aboriginals appear to have decreased nominally from 1.3 hours/month/fisher to 1.25 hours/month/fisher by the same number of fishers. Harvest remained equivalent between the survey periods at zero fish (catch and release fishing) with the exception of a possible harvest of eight Walleye in the latter period. Based on MCWS observations and survey data, fishing intensity appears to have decreased from the prior year, however, seasonal differences with respect to survey coverage may have influenced results. For example, the Year 1 survey covered the entire 2014 open water period and the Year 2 survey covered only a portion of the 2015 open water period.

In both construction years, fish harvest for later consumption is thought to have been low or nil because of restrictions with respect to dressing fish on-site, few personal fridges, and due to health regulations restricting storage of uninspected foods in camp fridges with other food destined for camp consumption. Further restrictions on the use of contractors' vehicles were implemented in 2015 and appear to have reduced fishing effort.

Year 2 results also captured additional types of animals harvested by non-Aboriginal workforce members that were not reported in the previous year. In Year 2 only, rabbit, grouse, geese, ducks, mushrooms, and berries were reported as harvested whereas in the previous year, fishing was the only activity conducted by non-Aboriginal workforce members.

Of the 37 surveys conducted with KCN members, resource harvest occurred primarily on days off in local areas and included the following harvest: fish (61 tallied); moose (three); caribou (five); and plants and berries (unquantified).



## 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.

Interviews with MCWS officials revealed increasing demand for moose licences in 2014 and 2015 and increased hunting effort in the eastern portions of GHA 9 and north central portions of GHA 3. MCWS officials observed that additional hunters from the south were present in the area; some have ties with local residents and some have come to the area to work. Of the 244 workforce surveys conducted, 127 were conducted with non-Aboriginal workforce members (*i.e.*, those that would need to buy a moose hunting licence to hunt). Of those 127, one conducted moose hunting in the Thompson region and harvested a moose. It is unclear whether that individual did so within the study area. Findings from the construction workforce survey do not suggest that the source of increased moose hunting pressure east of the Project is from the Keeyask workforce. However, further information on hunting is expected to be collected as part of the November 2016 workforce survey.

MCWS indicated that no changes in licences issued for caribou have occurred and the workforce survey did not reveal any caribou hunting by groups other than the KCN.

An initial increase in licensed fishing appeared to have been caused by the presence of the Project workforce but, based on observations from MCWS, the intensity of fishing appears to have decreased. The Keeyask Site Environmental lead suggested that fishing effort was possibly the same or reduced. Though fishing continues at road accessible locations such as the North Moswakot River at PR 280, fish harvest has not increased in either year; fishing is reported to be primarily catch and release.

## 4.3 USE OF THE SITE BY AUTHORIZED RESOURCE USERS

The final objective of Year 2 resource use monitoring was to document resource user requests to access the site and their harvests (if voluntarily provided). Gate records indicated that two groups authorized resource harvesters accessed the site in March 2016 to go to a cabin located off the North Access Road. A trapper was also noted to access the site area by snowmobile. Information on site harvests was not available. It is expected that ATK monitoring programs would describe resource use conducted by KCN Aboriginal resource users and any changes to that use.

## 5.0 LITERATURE CITED

- Eaton, G.J. 2015. Resource Use Monitoring: Year 1 Construction. Keeyask Generation Project Resource Use Monitoring Report #RUMP-2015-01. A report prepared for Manitoba Hydro by North/South Consultants Inc., June 2015. 25 pp.
- Keeyask Hydropower Limited Partnership [KHLP]. 2013. Keeyask Generation Project Construction Access Management Plan, project site rules and information, August 2013, Version 2.0. Online access: <http://keeyask.com/wp/wp-content/uploads/2013/04/Keeyask-Access-Management-Plan.pdf> [Accessed June 3, 2015].
- KHLP. 2015. The Keeyask Project – Employment. Online Access: <http://keeyask.com/wp/the-project/employment> [Accessed July 17, 2015].
- WRCS (Wildlife Resource Consulting Services MB Inc.). 2016. Keeyask Generation Project, Terrestrial Effects Monitoring Plan, Waterfowl habitat effects monitoring report. Report #TEMP-2016-02. June 2016. Prepared for Manitoba Hydro. 29 pp.

## 5.1 PERSONAL COMMUNICATIONS

- Henry, D. Natural Resource Officer – District Supervisor, Gillam District (Northeast Region). March 8, 2016. Email correspondence with G. Eaton, North/South Consultants Inc.
- Walmsley, C. Keeyask Site Environmental Lead. February 2, 2016. Telephone interview with G. Eaton, North/South Consultants Inc.

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

## 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 2014 to JUNE 2015**

### 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 NOVEMBER 2014,** 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 since November 2014**, 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.

## SECTION 2

### Question 9– FISHING SINCE NOVEMBER 2014

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 2014 (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 2014 (includes plants for medicinal purpose, berries, items for 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

-End of survey. Thank you for your participation-

## **APPENDIX 2: NOTIFICATION POSTER FOR WORKFORCE SURVEY**



# NOTICE OF WORKFORCE SURVEY

As part of Keeyask Generation Station environmental monitoring, surveys on resource use by workforce personnel are being conducted.

You may be asked to participate at either a PTI meeting the week of **JUNE 15<sup>TH</sup> TO 19<sup>TH</sup>** or in person on **JUNE 25<sup>TH</sup> TO 27<sup>TH</sup>** in the Keeyask Café.

The survey is short (less than 10 minutes). Your cooperation is requested.

Participation is voluntary

Responses will be confidential

If you have any questions or concerns, please contact Caroline Walmsley

# **APPENDIX 3: INTERVIEW GUIDE FOR MANITOBA CONSERVATION AND WATER STEWARDSHIP RESOURCE MANAGERS**

## Keeyask Generation Project (KGP) Resource Use Monitoring Plan

**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 of the interview(s) will be published in a short report entitled: Resource Use Monitoring Plan: Results of Year 2 Monitoring produced for the Keeyask Hydropower Limited Partnership.

### Questions:

#### Moose:

From November 2014 to June 2015,

- 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 changes?
- Have you noticed any changes to the patterns of moose hunting / harvest by resident licensed hunters specifically in GHA 9 (eastern portion), GHAs 2 (south portion) and 3 (north central portion)? If so, are any changes considered to be associated with the Project or its workforce?
- Have you noticed any changes to the patterns of moose hunting / harvest by non-resident licensed hunters? If so, are any changes associated with the Project or its workforce?
- Can a quantitative estimate of licenses/ harvest be developed for the Project area relating to the GHA areas noted above?
- Are there any other changes that you would like to note?

#### Caribou:

From November 2014 to June 2015,

- Are you aware of changes to demand for caribou licences? If so, could you please explain.
- Are the same numbers 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/ harvest by resident licensed hunters? If so, are any changes associated with the Project or its workforce?
- Are there any other changes that you would like to note?

#### Fish:

From November 2014 to June 2015,

- 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, would you consider any changes noted related to the Project or its workforce?
- Have any increases or decreases led to changes in harvest, species harvested or a redistribution of harvest? Are any changes noted related to the Project or its workforce?
- Are there any other changes that you would like to note?

**APPENDIX 4:  
EMPLOYMENT STATISTICS FOR END OF AUGUST  
2015 FROM KEEYASK.COM**

## Employment

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- Environment Licensing Process
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## Employment

Construction occupations fall into three categories: designated trades, non-designated trades and support occupations. Designated trades include electricians, plumbers and other licensed skilled trades. Non-designated trades include heavy equipment operators, truck drivers, labourers, etc. Support occupations include clerks, cooks/catering personnel and security.

Construction of the Keeyask Generating Station requires a total of 4,200 person-years of employment over a seven-year period. This provides a range of opportunities for both designated and non-designated trades and support occupations.



## Current Project Employees\* at End of August 2015

| Category                       | Currently Employed | Percent of Total Currently Employed |
|--------------------------------|--------------------|-------------------------------------|
| Total Aboriginal Employees     | 548                | 47%                                 |
| Total Non-Aboriginal Employees | 611                | 53%                                 |
| TOTAL EMPLOYEES                | 1159               | 100%                                |

\*Current Project Employees represents employees actively working at site in the report month (including those on rotational leave from site).

## Current Aboriginal Project Employees\* at End of August 2015

| Aboriginal Group *                         | Currently Employed | Percent of Total Employees Currently Employed** |
|--|--------------------|---|
| First Nation Located Outside of Manitoba   | 12                 | 2%  |
| Fisher River Cree First Nation             | 10                 | 2%  |
| Fox Lake Cree Nation                       | 46                 | 8%  |
| God's Lake First Nation                    | 5                  | 1%  |
| Métis                                      | 110                | 20%   |
| Nisichawayasihk Cree Nation (Nelson House) | 24                 | 4%  |
| Non-Status                                 | 10                 | 2%  |
| Norway House Cree Nation                   | 26                 | 5%  |
| Opaskwayak Cree Nation                     | 8                  | 1%  |
| O-Pipon-Na-Piwin Cree Nation               | 7                  | 1%  |
| Peguis First Nation                        | 8                  | 1%  |
| Pimicikamak Cree Nation (Cross Lake)       | 33                 | 6%  |
| Skowman First Nation                       | 9                  | 2%  |
| Tataskweyak Cree Nation                    | 119                | 22%   |
| War Lake First Nation                      | 23                 | 4%  |
| York Factory First Nation                  | 54                 | 10%   |
| Other                                      | 44                 | 8%  |
| TOTAL ABORIGINAL EMPLOYEES                 | 548                | 100%  |

\*Current Aboriginal Project Employees represents employees actively working at site in the report month (including those on rotational leave from site).

\*\*Includes groups with 5 or more active employees. Those with less than 5 are grouped into "Other".

Total Hires Since Project Began January 2012\*



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## Employment

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| Category                   | Hires | Percent of Total Hires |
|----------------------------|-------|------------------------|
| Total Aboriginal Hires     | 2174  | 52%                    |
| Total Non-Aboriginal Hires | 2005  | 48%                    |
| TOTAL HIRES                | 4179  | 100%                   |

*\*Includes hires on Keeyask Infrastructure and Generating Station Projects*

## Aboriginal Hires Since Project Began January 2012\*

| Aboriginal Group*                          | Hires | Percent of Total Hires** |
|--|-------|--------------------------|
| Barren Lands First Nation                  | 19    | 1%                       |
| Berens River First Nation                  | 5     | <1%                      |
| Brokenhead Ojibway Nation                  | 5     | <1%                      |
| Bunibonibee (Oxford House) Cree Nation     | 9     | <1%                      |
| First Nation Located Outside of Manitoba   | 64    | 3%                       |
| Fisher River Cree First Nation             | 26    | 1%                       |
| Fox Lake Cree Nation                       | 179   | 8%                       |
| God's Lake First Nation                    | 13    | 1%                       |
| Inuit                                      | 6     | <1%                      |
| Lake Manitoba First Nation                 | 7     | <1%                      |
| Mathias Colomb First Nation                | 15    | 1%                       |
| Métis                                      | 399   | 18%                      |
| Misipawistik Cree Nation (Grand Rapids)    | 9     | <1%                      |
| Mosakahiken Cree Nation (Moose Lake)       | 19    | 1%                       |
| Nisichawayasihk Cree Nation (Nelson House) | 68    | 3%                       |
| Non-Status                                 | 22    | 1%                       |
| Northlands Dene First Nation               | 10    | <1%                      |
| Norway House Cree Nation                   | 85    | 4%                       |
| Ochi-Chak-Ko-Sipi First Nation             | 5     | <1%                      |
| Opaskwayak Cree Nation                     | 47    | 2%                       |
| O-Pipon-Na-Piwin Cree Nation               | 8     | <1%                      |
| Peguis First Nation                        | 31    | 1%                       |
| Pimicikamak Cree Nation (Cross Lake)       | 108   | 5%                       |
| Pinaymootang First Nation                  | 21    | 1%                       |
| Pine Creek First Nation                    | 13    | 1%                       |
| Sagkeeng First Nation                      | 8     | <1%                      |
| Sapotaweyak Cree Nation                    | 24    | 1%                       |
| Sayisi Dene First Nation (Tadouls Lake)    | 14    | 1%                       |
| Skowman First Nation                       | 25    | 1%                       |
| Tataskweyak Cree Nation                    | 596   | 27%                      |
| War Lake First Nation                      | 85    | 4%                       |
| York Factory First Nation                  | 194   | 9%                       |
| Other                                      | 35    | 2%                       |
| Total Aboriginal Hires                     | 2174  | 100%                     |

*\*Includes groups with 5 or more hires (on Keeyask Infrastructure and Generating Station Projects). Those with less than 5 are grouped into "Other".*

*"Aboriginal" means Indian, Inuit, or Métis people of Canada including status, treaty or registered persons as well as non-status and non-registered peoples.*

*"Hires" refers to instances of hiring and can include individuals who have been hired more than once. All project hires are consistent within the provisions of the Burntwood Nelson Agreement (BNA).*

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## **APPENDIX 5: SUMMARY OF YEAR 1 AND YEAR 2 WORKFORCE SURVEY DATA**

Table A5-1. Summary of year 2 workforce survey data for the period of November 1, 2014 to June 1, 2015.

| 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 |                 |               |                |                 |   |      |
|   |                |               |                |  |                |               |       |                | Catch & Release Total | Harvest Total (# fish) | Effort Days On | Effort Days Off | Harvest Total (# moose) | Harvest Total (# caribou) | Harvest Total (# Rabbit /hare) | Harvest Total (# birds) | Effort Days On     | Effort Days Off | Harvest Total | Effort Days On | Effort Days Off |   |      |
| Non-Aboriginal  | 127            | 15,564        | 5,417          |  | 14             | 1401          | 474   |                | 75                    | 8                      | 10             | 6               |                         | 1                         | 0                              | 11                      | 10                 | 0               | 25            |                | n/s             | 3 | 0.3  |
| KCN   | 25             | 2,969         | 993            |  | 12             | 1577          | 521   |                | 19                    | 63                     | 6              | 61              |                         | 3                         | 5                              | 0                       | 66                 | 2               | 39            |                | 0               | 0 | 16   |
| Non-local Aboriginal  | 39             | 5,347         | 1,779          |  | 0              | 0             | 0     |                | 0                     | 0                      | 0              | 0               |                         | 0                         | 0                              | 0                       | 0                  | 0               | 0             |                | 0               | 0 | 0    |
| Metis   | 26             | 3,165         | 1,085          |  | 1              | 181           | 45    |                | 9                     | 0                      | 0              | 3               |                         | 0                         | 0                              | 0                       | 0                  | 0               | 0             |                | 0               | 0 | 0    |
| Totals (n = 244)  | 217            | 27,045        | 3,159          |  | 27             | 3,159         | 1,040 |                | 103                   | 71                     | 16             | 70              |                         | 4                         | 5                              | 11                      | 76                 | 2               | 64            |                | 0               | 3 | 16.3 |
| NOTE: Effort is expressed as total number of eight hour days. |                |               |                |  |                |               |       |                |                       |                        |                |                 |                         |                           |                                |                         |                    |                 |               |                |                 |   |      |

Table A5-2. Summary of year 1 workforce survey data for the period of July 1, 2015 to October 31, 2015.

| Identity             | Non-Harvesters |               |                | Resource Users |               |                | Harvests              |                        |                |                 |                         |                |                 |                    |                |                 |
|----------------------|----------------|---------------|----------------|----------------|---------------|----------------|-----------------------|------------------------|----------------|-----------------|-------------------------|----------------|-----------------|--------------------|----------------|-----------------|
|                      | Count          | Total Days On | Total Days Off | Count          | Total Days On | Total Days Off | Fish                  |                        |                |                 | Moose                   |                |                 | Plants and Berries |                |                 |
|                      |                |               |                |                |               |                | Catch & Release Total | Harvest Total (# fish) | Effort Days On | Effort Days Off | Harvest Total (# moose) | Effort Days On | Effort Days Off | Harvest Total      | Effort Days On | Effort Days Off |
| Non-Aboriginal       | 84             | 5,952         | 2,067          | 6              | 5,551         | 1,933          | 0                     | 0                      | 3.3            | 4.0             | 0                       | 0              | 0               | 0                  | 0              | 0               |
| KCN                  | 15             | 1,350         | 436            | 9              | 1,350         | 436            | 88                    | 90                     | 0              | 12.3            | 1                       | 0              | 17.0            | n/s                | 0              | 8.0             |
| Non-local Aboriginal | 21             | 1,394         | 482            | 1              | 1,292         | 448            | 0                     | 0                      | 0              | 0               | 2                       | 0              | 3.0             | 0                  | 0              | 0               |
| Métis                | 12             | 1,034         | 337            | 3              | 1,034         | 337            | 60                    | 0                      | 6.9            | 6.0             | 0                       | 0              | 0               | 0                  | 0              | 0               |
| Not Specified        | 2              | 200           | 67             | 1              | 200           | 67             | 0                     | 0                      | 0              | 0               | 0                       | 0              | 0               | 0                  | 0              | 0               |
| Totals (n = 154)     | 134            | 9,930         | 3,389          | 20             | 9,427         | 3,221          | 148                   | 90                     | 10.1           | 22.3            | 3                       | 0              | 20.0            | n/s                | 0              | 8.0             |



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