Keeyask Generation Project

Aquatic Effects Monitoring Plan

Fish Use of Existing and Created Spawning Habitat Report

AEMP-2023-09

KEEYASK

Manitoba Environment and Climate Client File 5550.00
Manitoba Environment Act Licence No. 3107

2022 -2023

KEEYASK GENERATION PROJECT

AQUATIC EFFECTS MONITORING PLAN

REPORT #AEMP-2023-09

FISH USE OF EXISTING AND CREATED SPAWNING HABITAT: YEAR 2 IMPOUNDMENT

Prepared for

Manitoba Hydro

By

S. Morrison and C.L. Hrenchuk

June 2023

North/South Consultants Inc.
Aquatic Environment Specialists

83 Scurfield Blvd.
Winnipeg, Manitoba, R3Y 1G4
Website: www.nscons.ca

Tel.: (204) 284-3366
Fax: (204) 477-4173
E-mail: nscons@nscons.ca

This report should be cited as:

Morrison, S.M. and C.L. Hrenchuk. 2023. Fish use of existing and created spawning habitat: Year 2 impoundment. Keeyask Generation Project Aquatic Effects Monitoring Plan Report #AEMP-2023-09. A report prepared for Manitoba Hydro by North/South Consultants Inc., June 2023. xiv + 95 pp.

SUMMARY

Background

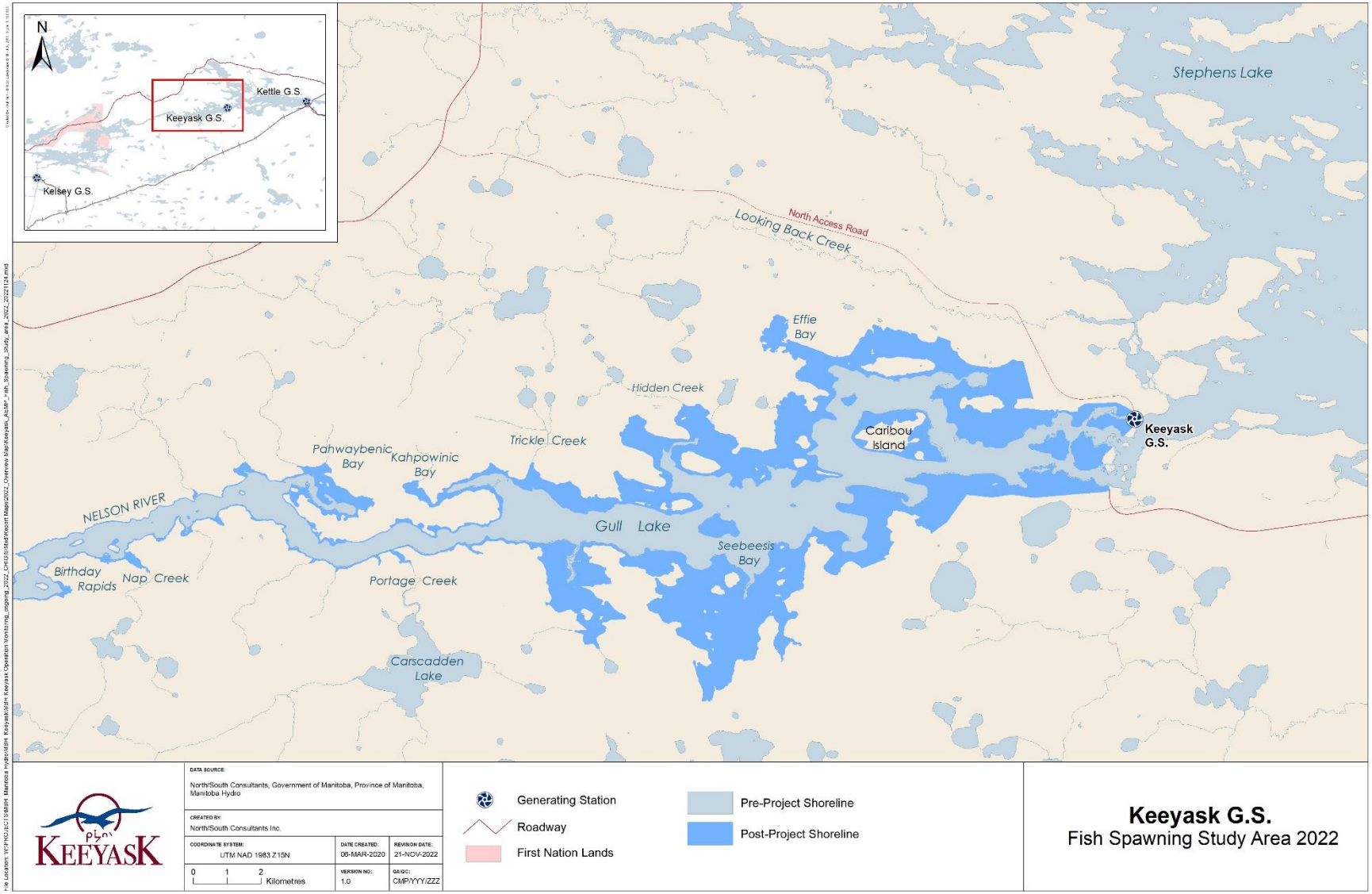
The Keeyask Hydropower Limited Partnership (KHLP) was required to prepare a plan to monitor the effects of construction and operation of the Keeyask Generating Station (GS) on the environment. Besides measuring the accuracy of the predictions made, monitoring results will provide information on how construction and operation of the GS will affect the environment and if more needs to be done to reduce harmful effects.

Construction of the Keeyask GS began in mid-July 2014 and instream work was completed in 2020. The reservoir was impounded with water levels being raised to full supply level between August 31 and September 5, 2020. Commissioning of the powerhouse turbines was initiated after impoundment. They were brought into service one at a time with the final of seven turbines completed on March 9, 2022.

The monitoring of spawning habitat remaining after construction of the generating station as well as newly constructed spawning shoals is an important component of the overall plan to monitor the impacts of construction and operation of the Keeyask GS on fish. Fish spawning may be affected by operation of the Keeyask GS due to a loss of natural spawning habitat associated with construction of the generating station and reservoir impoundment.

Several studies were conducted in the Keeyask area before construction of the Keeyask GS started to identify spawning habitat for Lake Whitefish, Northern Pike (jackfish), and Walleye (pickerel). Results of these studies suggested that jackfish spawned in the mouths of streams and backbays of the Keeyask area. Pickerel spawned in the main body of the Nelson River including sites near Birthday Rapids, the opening of Gull Lake, and on the rocky shorelines of Caribou Island. Lake Whitefish that were about to spawn were captured in the riverine section of the Nelson River between Birthday Rapids and Gull Lake while Gull Rapids (now the site of the Keeyask GS) provided spawning habitat for pickerel and Lake Whitefish in Stephens Lake.

This report presents the results of fish spawn monitoring conducted in the reach of the Nelson River from downstream of Birthday Rapids to the Keeyask GS and in Stephens Lake immediately downstream of the GS (Map 2) during the second year after the reservoir was flooded and the first year since the GS became fully operational. Sampling was done in the spring and fall of 2022 to determine if and where Lake Whitefish, jackfish, and pickerel continue to spawn in the Keeyask reservoir and Stephens Lake following completion of the Keeyask GS.



Map showing an overview of where sampling was done to monitor spawning Lake Whitefish, jackfish, and pickerel in spring and fall, 2022.

Why is the study being done?

Monitoring the presence of spawning Lake Whitefish, jackfish, and pickerel is being done to answer several questions:

Does suitable spawning habitat exist upstream and downstream of the Keeyask GS for each fish species?

This question is important because habitat changes associated with construction of the GS and reservoir impoundment will change spawning habitat for fish upstream and downstream of the GS. If no suitable spawning habitat remains, then no new fish will enter the population.

Will jackfish continue to spawn in tributary confluences and backbays of the Keeyask reservoir?

This question is important because it will show whether jackfish continue to spawn in these areas. If there is no spawning, we would need to find if they are spawning somewhere else or if additional habitat needs to be created or improved.

Will pickerel and Lake Whitefish use existing or created spawning habitat in the Keeyask reservoir, immediately downstream of the GS and in Stephens Lake?

This question is important because it will indicate whether pickerel and Lake Whitefish continue to spawn in these areas. If there is no spawning, we would need to find if they are spawning somewhere else or if additional habitat needs to be created or improved.

What was done?

Sampling was conducted in the Keeyask reservoir between Birthday Rapids and the Keeyask GS and in upper Stephens Lake in both the spring and fall of 2022. Gill nets were set in spring to capture spawning jackfish and pickerel. All gill nets were set for a short amount of time (*i.e.*, 1–3 hours) to minimize mortalities. Floating drift traps and neuston tows were also used in the spring to capture drifting Lake Whitefish larvae following hatch. Both gill nets and boat-based electrofishing were used to capture spawning Lake Whitefish in fall 2022. Sampling sites included areas identified as spawning habitat before construction of the GS, created habitat within the Keeyask reservoir, and possible new spawning sites developed after impoundment and/or commissioning of the GS. When a fish was caught, it was measured, weighed, and examined for sex and maturity (*i.e.*, whether it was a male or female and whether it was ready to spawn) based on the presence of milt or eggs.


Neuston sampler (left), towed behind boat (right) to capture Lake Whitefish larvae drifting in at the surface of the water column after hatch.

What was found?

Larval Lake Whitefish were captured in the Keeyask reservoir and spawning pickerel and jackfish were captured upstream and downstream of the Keeyask GS in spring 2022. Spawning Lake Whitefish also were captured downstream of the Keeyask GS in fall 2022. Spawning jackfish were captured in several areas of the Keeyask reservoir in spring 2022 including at the mouths of streams, within flooded backbays, and on three constructed spawning shoals. Based on the capture of larval Lake Whitefish and spawning pickerel and Lake Whitefish, it appears that both species also continue to use existing spawning habitat both upstream and downstream of the Keeyask GS. For the first time, larval Lake Whitefish were captured near one of the constructed spawning shoals in the reservoir. The Lake Whitefish spawning shoal in Stephens Lake was not yet constructed when sampling occurred.



Lake Whitefish (left), jackfish (middle), and pickerel (right) captured during spawning studies.

What does it mean?

The capture of spawning Lake Whitefish, jackfish, and pickerel suggests that all three species continue to spawn upstream and downstream of the GS after reservoir flooding and during operation of the GS. This means that spawning habitat continues to exist for all three species.

What will be done next?

Monitoring in 2022 represents the second year of sampling after flooding of the Keeyask reservoir and the first year since the GS became fully operational. Monitoring will continue in the spring and fall of 2023 providing information on spawning fish as GS operation continues. Further monitoring will show whether spawning habitat exists for Lake Whitefish, jackfish, and pickerel in the Keeyask reservoir and Stephens Lake following reservoir flooding and GS construction and operation.

ACKNOWLEDGEMENTS

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

The following members of Tataskweyak Cree Nation (TCN) and War Lake First Nation (WLFN) are thanked for their local expertise and assistance in conducting the field work: Grant Connell, Hunter Kitchekeesik, Leslie Flett, Patrick Connell, and Terry Kitchekeesik of TCN; and Nolan Bloomfield and Justin Spence of WLFN.

The collection of biological samples described in this report was authorized by Natural Resources and Northern Development, Fish and Wildlife Branch, under terms of the Scientific Collection Permit #41767128 (SCP 08-2022).

STUDY TEAM

Data Collection

Brenden Slongo

Brock Kramble

Claire Hrenchuk

Grant Connell

Hunter Kitchekeesik

James Aiken

Jenelle Ehn

Leslie Flett

Nolan Bloomfield

Patrick Connell

Scott Morrison

Ryler Tonner

Natasha Fafard

Data Analysis, Report Preparation, and Report Review

Brett Funk

Cam Barth

Chris Kullman

Claire Hrenchuk

Friederike Schneider-Vieira

Scott Morrison

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF MAPS

LIST OF APPENDICES

1.0 INTRODUCTION

The Keeyask Generation Project (the Project) is a 695-megawatt (MW) hydroelectric generating station on the lower Nelson River in northern Manitoba. The GS is approximately 725 kilometres (km) northeast of Winnipeg, 35 km upstream of the existing Kettle Generating Station, 60 km east of the community of Split Lake, 180 km east-northeast of Thompson and 30 km west of Gillam. Construction of the GS began in July 2014 and the seven generating units were all in-service in March 2022.

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 aquatic 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: Aquatic Environment Supporting Volume* (AE SV). As part of the licensing process for the Project, an *Aquatic Effects Monitoring Plan* (AEMP) was developed detailing the monitoring activities of various components of the aquatic environment for the construction and operation phases of the Project.

Monitoring of the fish community during the operation phase of the Project includes a core monitoring program designed to assess changes in the fish community. These studies focused on fish species that were of particular interest during the environmental assessment (referred to as Valued Ecosystem Components, or VECs). VEC species include Lake Whitefish, Northern Pike, and Walleye. These species were chosen because they are important to local communities for harvest, are sensitive to environmental change, and use a variety of habitats for spawning and foraging that will be substantially altered by the Project.

Several studies were conducted in the Keeyask area between 2001 and 2004 to identify spawning habitat for VEC fish species (Remnant *et al*. 2004; Johnson and Parks 2005; Bretecher *et al*. 2007; Johnson 2007). Similar studies were conducted concurrently in the reach of the Nelson River below Birthday Rapids (Pisiak *et al.* 2004; Pisiak 2005a, b; MacDonald 2007). Results of these studies suggest that Northern Pike spawn in tributary confluences and backbays of the Keeyask area. Walleye were found to spawn in the Nelson River mainstem and spawning sites were identified in the vicinity of Birthday Rapids, the inlet to Gull Lake, and on the rocky shorelines of Caribou Island. Pre-spawn Lake Whitefish in the Keeyask area were captured in the riverine section of the Nelson River between Birthday Rapids and Gull Lake, suggesting that spawning occurred within this reach. Gull Rapids (now the site of the Keeyask GS) was found to provide important spawning habitat for Walleye and Lake Whitefish in Stephens Lake.

In February and March 2018, three hectares of rocky spawning shoals were constructed in the future Keeyask reservoir to provide Lake Whitefish and Walleye spawning habitat immediately after impoundment. In addition, a tailrace spawning shoal was constructed immediately downstream of the Keeyask GS powerhouse. A Lake Whitefish spawning reef will be constructed along the South shore of Stephens Lake in winter 2022/2023.

Construction of the Keeyask GS and creation of the Keeyask reservoir has altered existing spawning habitat for each VEC fish species at Birthday Rapids, Gull Rapids (now the Keeyask GS), and throughout the reservoir. It is unclear whether constructed spawning shoals in the reservoir, in Stephens Lake, and in the tailrace of the Keeyask GS will be used by Walleye and Lake Whitefish, and if each species will continue to use pre-Project spawning habitat. This report presents results from spawn monitoring conducted on newly created and existing spawning habitat in the Keeyask reservoir and Stephens Lake in spring and fall 2022.

Spawn monitoring is being conducted to address the following key questions, as described in the AEMP:

- Does suitable spawning habitat exist upstream and downstream of the Keeyask GS for each VEC fish species in the post-Project environment?
- Will Northern Pike continue to spawn in tributary confluences and backbays of the Keeyask reservoir?
- Will Walleye and Lake Whitefish use existing or created spawning habitat in the Keeyask reservoir, immediately downstream of the Keeyask GS, and in Stephens Lake?

Spawn monitoring for each VEC fish species will be conducted again in 2023.

2.0 STUDY SETTING

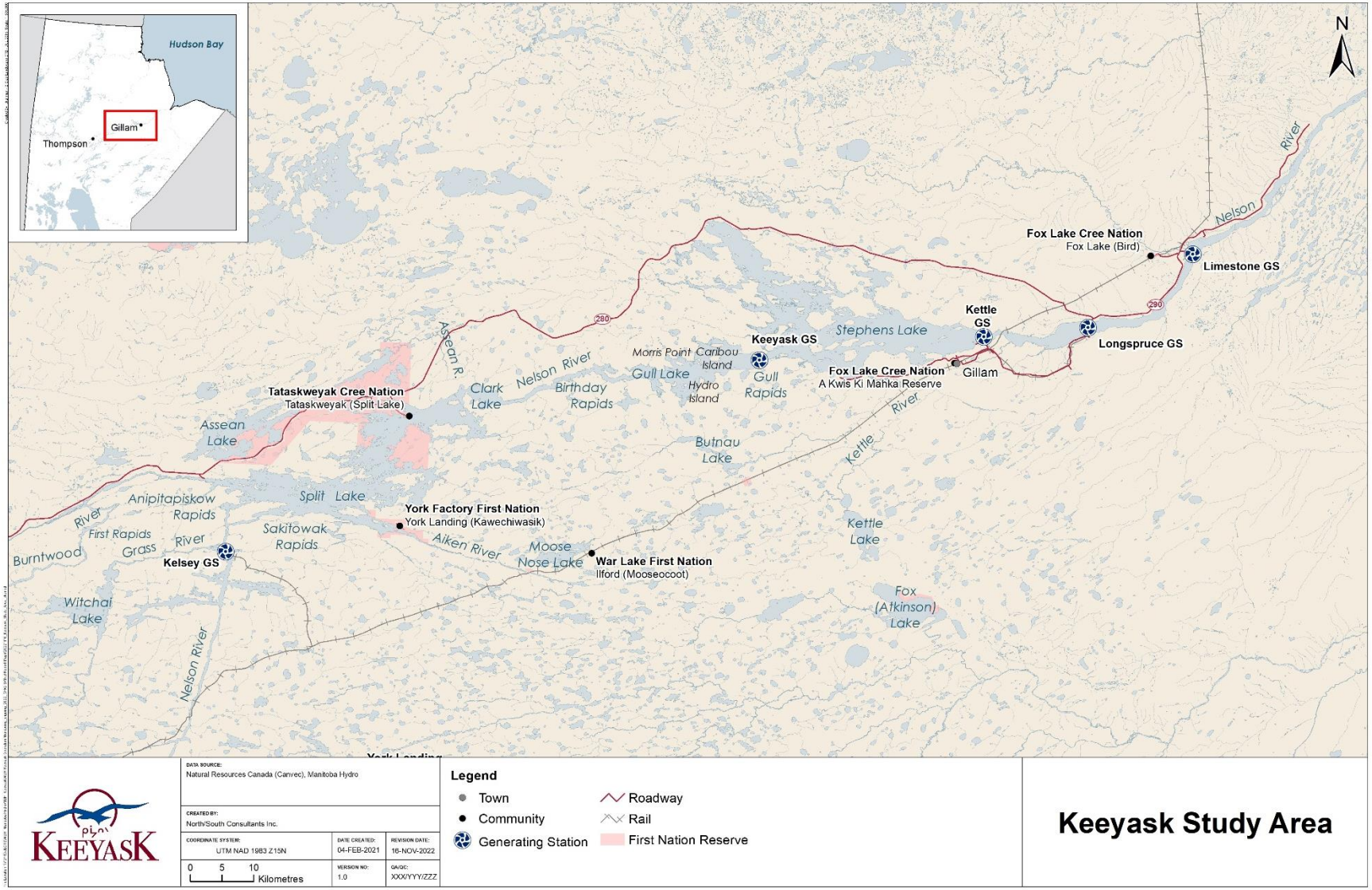
The study area encompasses a reach of the Nelson River from Birthday Rapids to the upstream portion of Stephens Lake (Map 1). This section of river offers a diversity of physical habitat conditions, including a variety of substrate types, and variable water depths (range 0–30 m) and velocities. Clark Lake is located immediately downstream of Split Lake, and approximately 42 km upstream of the Keeyask GS (formerly Gull Rapids). Current is restricted to the main section of the lake, with off-current bays outside the main channel. The Assean River is the only major tributary to Clark Lake and flows into the north side. Downstream from the outlet of Clark Lake, the Nelson River narrows and water velocity increases for a 3 km stretch, known as Long Rapids. For the next 7 km, the river widens, and water velocity decreases. The area between Clark Lake and the Keeyask GS is considered the Keeyask reservoir.

Birthday Rapids is located approximately 10 km downstream of Clark Lake and 30 km upstream of the Keeyask GS and marks the upstream end of major water level changes as a result of impoundment by the Keeyask GS. The drop in elevation from the upstream to downstream side of Birthday Rapids was approximately 2 m prior to impoundment but is now a nearly level, albeit fast-flowing section of river. Before impoundment, the 14 km reach of the Nelson River between Birthday Rapids and Gull Lake was characterized as a large and somewhat uniform channel with medium to high water velocities and a few large bays. This area is now within the Keeyask reservoir, though flooding was limited to mainly shoreline areas.

Prior to impoundment, Gull Lake was a widening of the Nelson River, with moderate to low water velocity beginning approximately 20 km upstream of the Keeyask GS. Water levels on Gull Lake increased by several metres following impoundment and flooding along the shoreline and small tributaries entering this reach was extensive. Although this area is now a portion of the Keeyask reservoir, it is referred to herein as Gull Lake.

Just below the Keeyask GS, the Nelson River enters Stephens Lake. Stephens Lake was formed in 1971 by construction of the Kettle GS. Construction of the Keeyask GS has altered the flow distribution immediately downstream of the station.

Construction of the Kettle GS flooded Moose Nose Lake (north arm) and several other small lakes that previously drained into the Nelson River, as well as the old channels of the Nelson River that now lie within the southern portion of the lake. Major tributaries of Stephens Lake include the North and South Moswakot rivers that enter the north arm of the lake. Looking Back Creek is a second order stream that drains into the north arm of Stephens Lake. Kettle GS is located approximately 40 km downstream of the Keeyask GS.



Map 1: Map of Nelson River showing the site of the Keeyask Generating Station and the fish spawn monitoring study area.

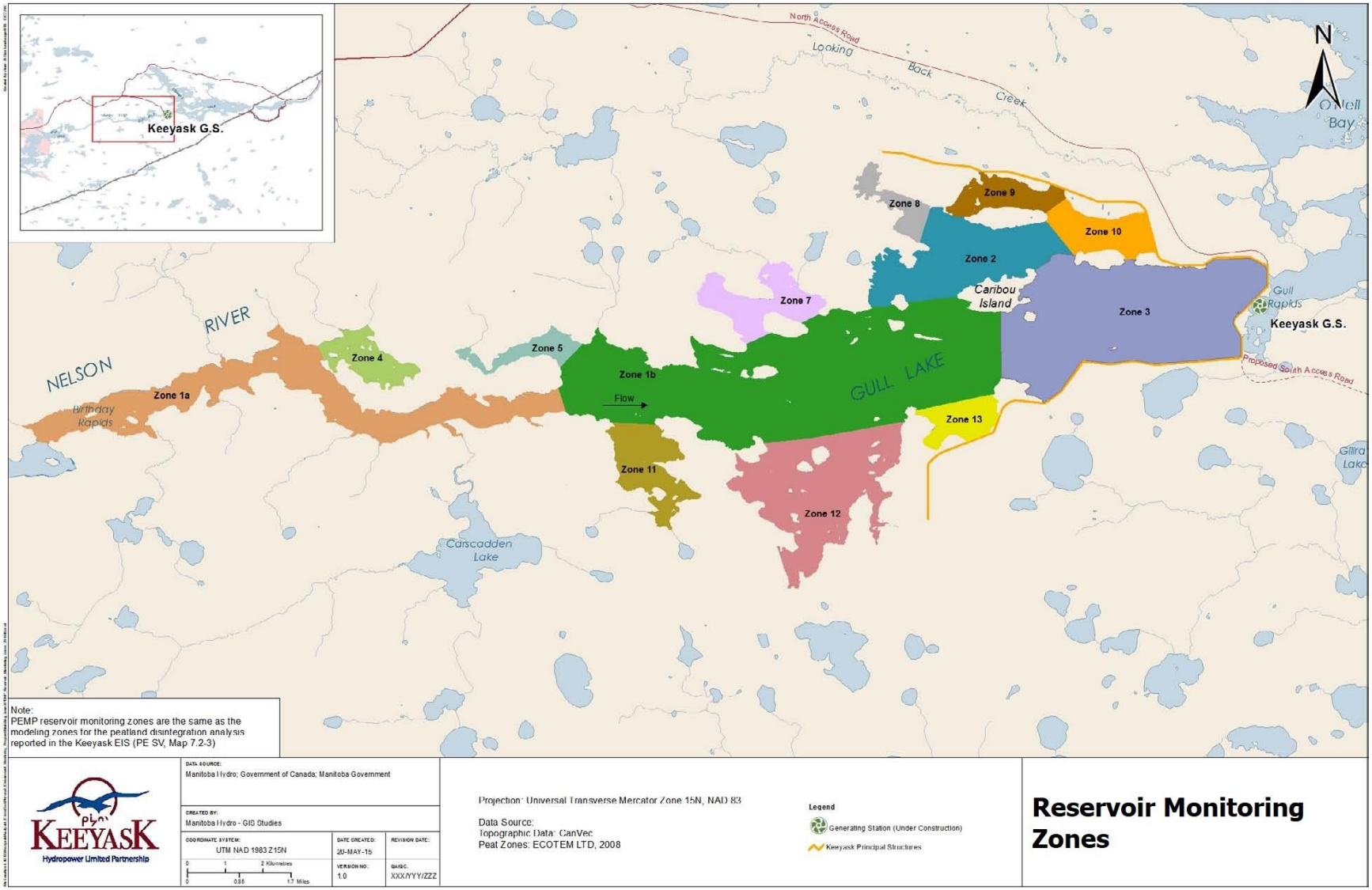
3.0 METHODS

Sampling was conducted in the spring and fall of 2022 within the Keeyask reservoir and Stephens Lake. Areas targeted included reservoir backbays (Map 2), the reservoir spawning shoals (Map 3), spawning areas identified in the EIS (Maps 4–6), and other areas identified as suitable spawning habitat post-impoundment. A variety of sampling methods were used including gillnetting, boat-based electrofishing, neuston tows, and floating drift traps.

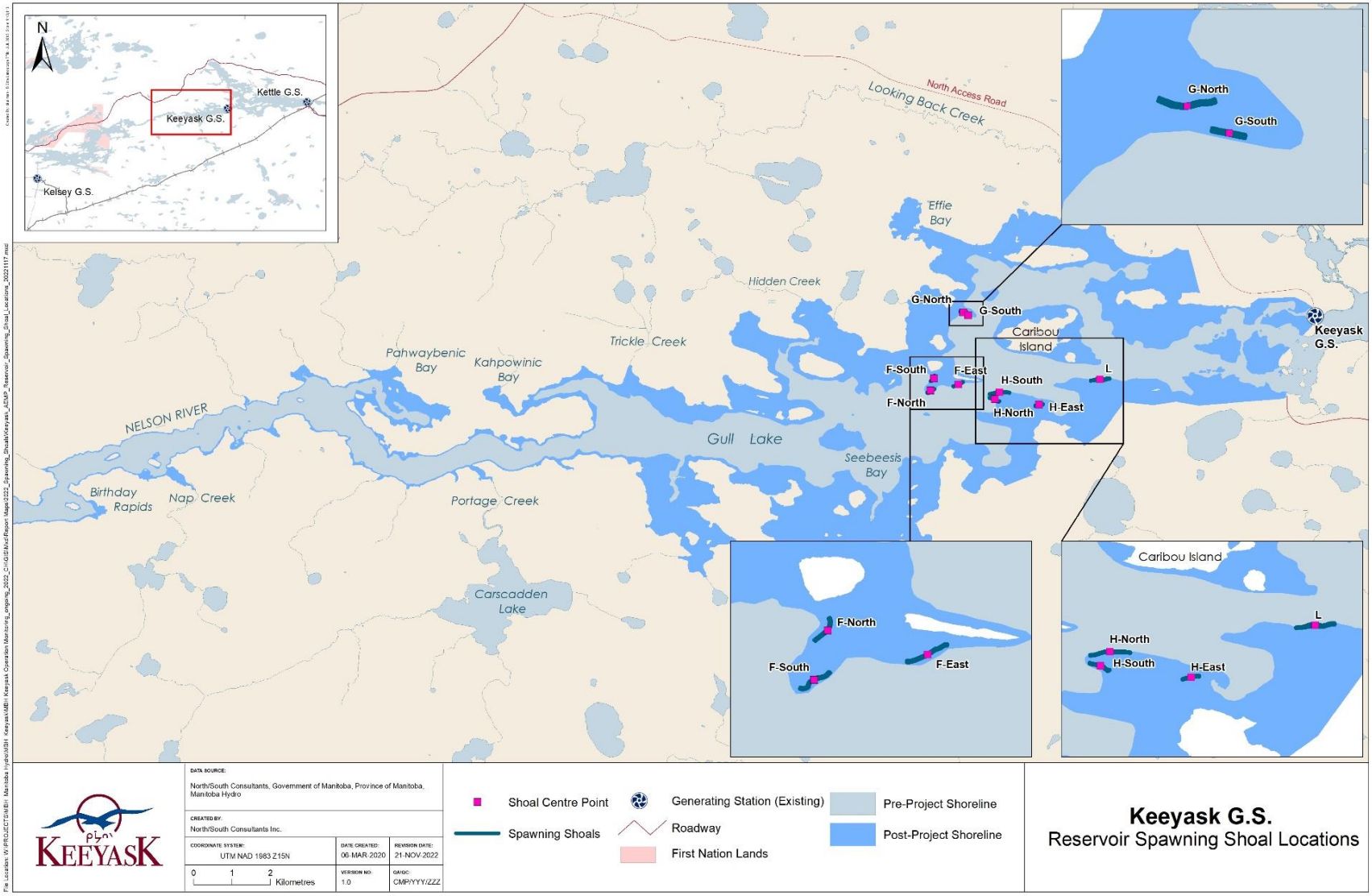
Sampling was conducted to coincide with the spawning period of each species. Both Northern Pike and Walleye spawn in spring soon after ice-off when water temperature measures between 4 and 11˚C (Scott and Crossman 1973; Stewart and Watkinson 2004). Lake Whitefish spawn during fall when water temperatures are between 6 and 9°C, often forming pre-spawning aggregations (Green and Derksen 1987; Scott and Crossman 1998; Stewart and Watkinson 2004). Eggs remain in the spawning bed to hatch in the following spring. Lake Whitefish hatch generally corresponds with ice-off, and the associated elevation of light and temperature levels. This can occur at a variety of water temperatures. Therefore, sampling in spring 2022 commenced as close to ice-off as possible (*i.e.*, when ice had cleared enough to facilitate safe travel).

3.1 GILLNETTING

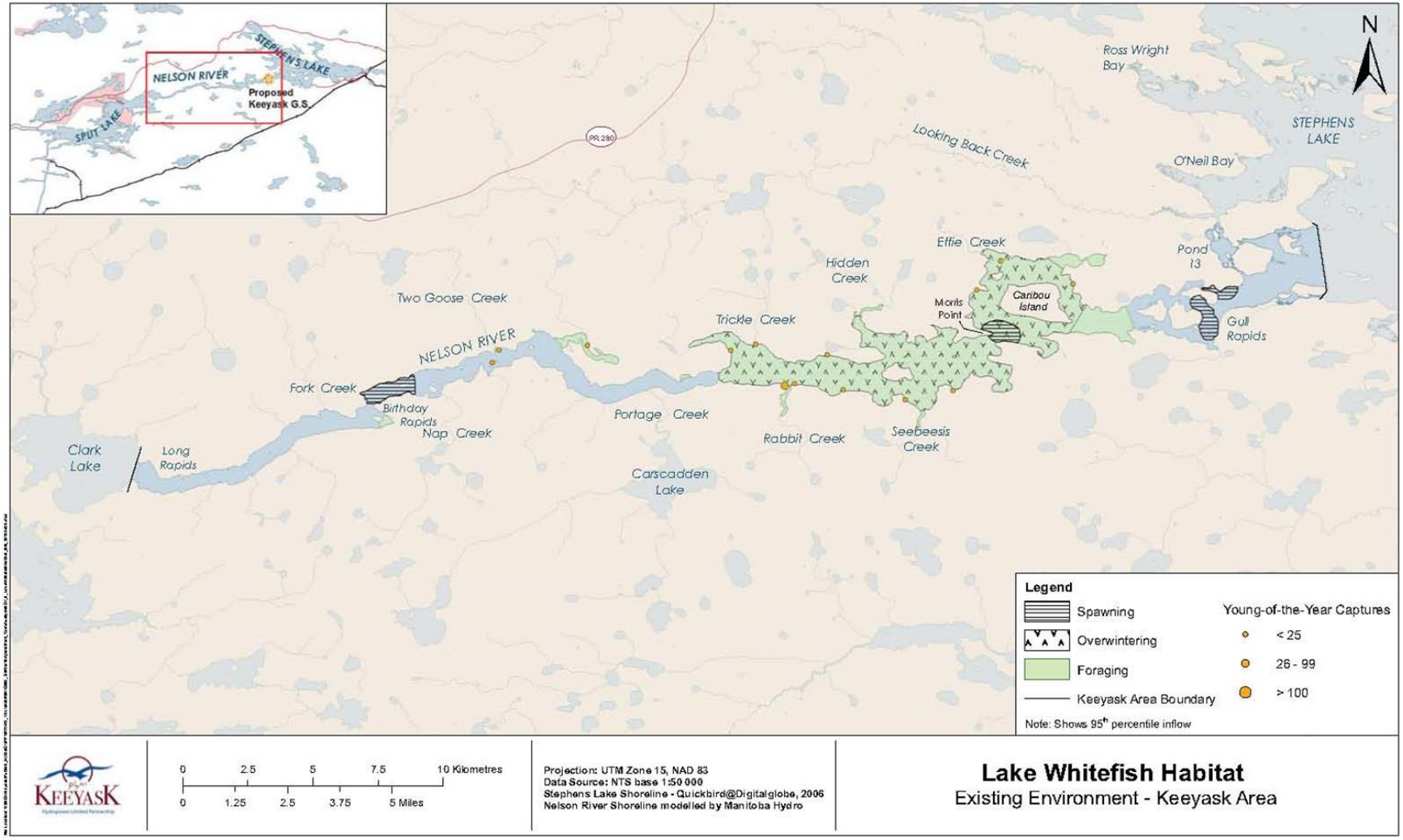
Gillnetting was conducted in the Keeyask reservoir and the upper 10 km of Stephens Lake in both spring and fall, 2022. Gill nets were set on constructed spawning shoals, areas previously identified as spawning habitat, and new areas considered suitable. Gill nets were composed of five panels of 2, 3, 3 ¾, 4 ¼, and 5” twisted nylon stretched mesh (51, 76, 95, 108, and 127 mm). Each panel was 25 yards (yd) (22.9 m) long and 2.7 yd (2.5 m) deep. Each gill net set was given a unique identification number, and net locations were recorded using a Garmin Marine GPS navigator (Garmin International Inc., Olathe, KS). Water depth at each end of the net was measured using a Lowrance® Elite FS-7 consumer-grade single-beam echosounder (Lowrance Electronics, Tulsa, OK). Water temperature was measured daily in each area using a hand-held thermometer (±0.5°C). HOBO Water Temperature Pro data loggers (±0.2°C), set approximately 1 m off the substrate, were also used to log water temperature at 4-hour intervals in the Keeyask reservoir and Stephens Lake. Gill nets were checked approximately every 1–3 hours to prevent fish mortality.



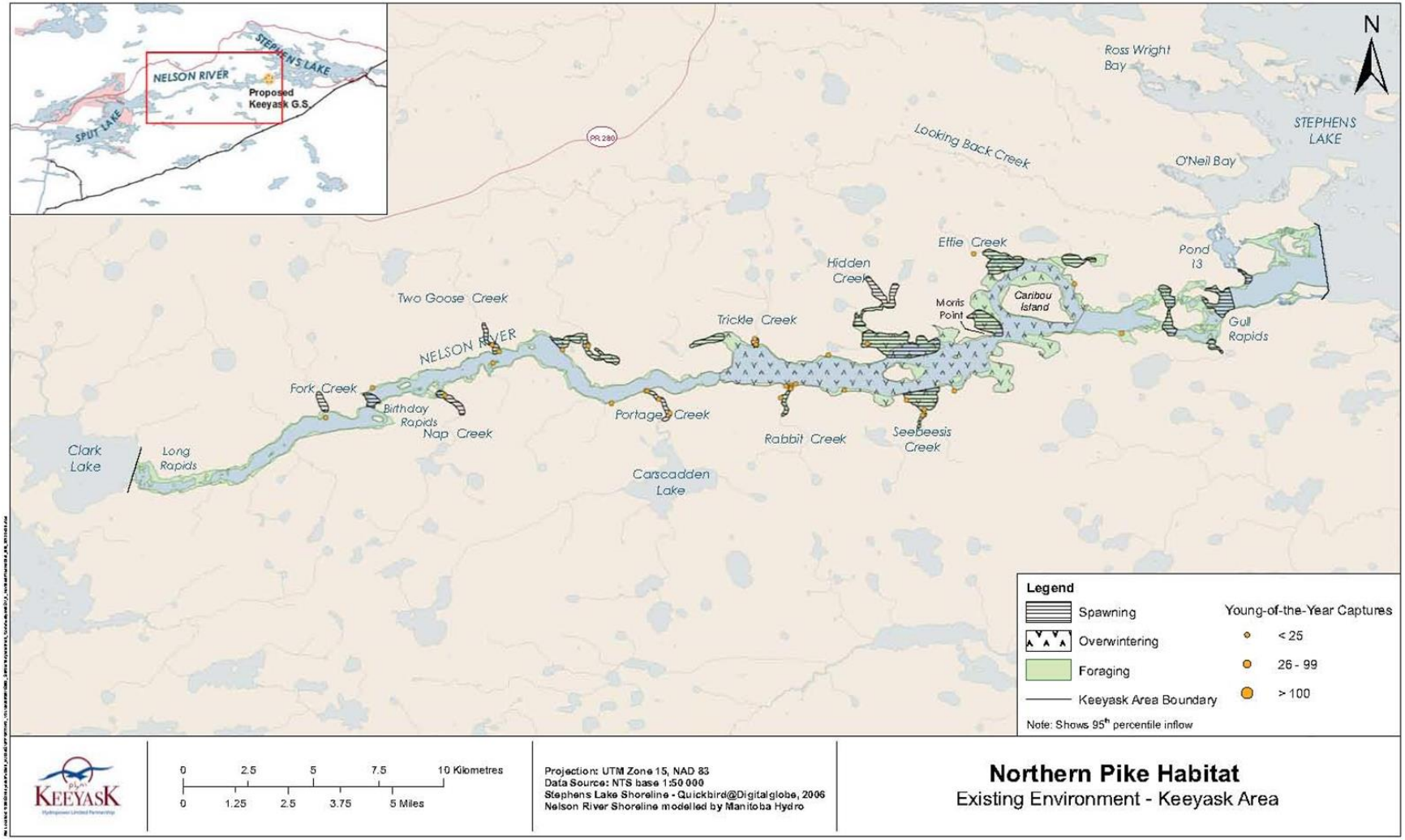
Map 2: Locations of monitoring zones within the Keeyask reservoir, as outlined in the AEMP.



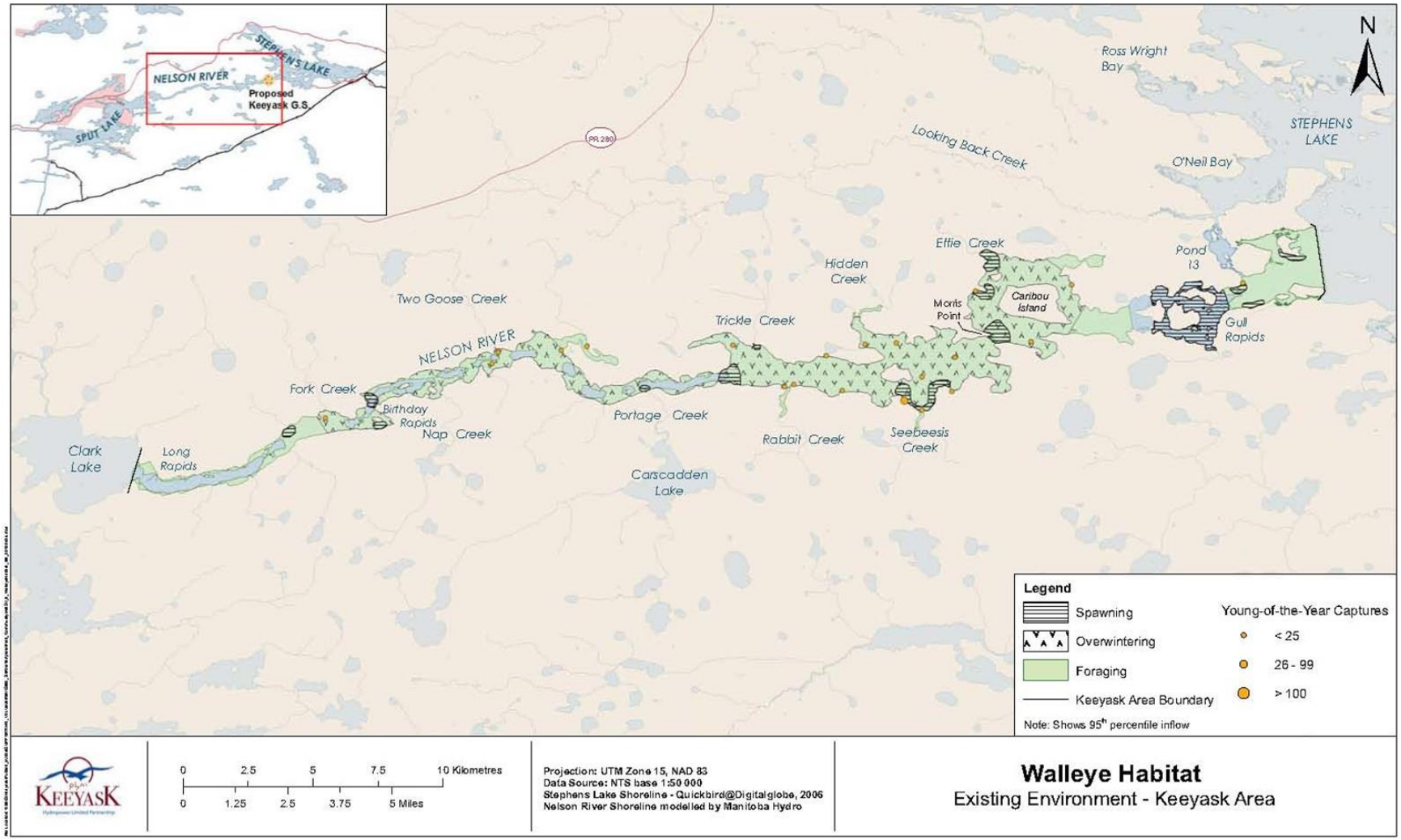
Map 3: Locations of the reservoir spawning shoals in lower Gull Lake.



Map 4: Lake Whitefish habitat in the pre-project environment including areas of spawning, overwintering, and foraging, as presented in the EIS.



Map 5: Northern Pike habitat in the pre-project environment including areas of spawning, overwintering, and foraging, as presented in the EIS.



Map 6: Walleye habitat in the pre-project environment including areas of spawning, overwintering, and foraging, as presented in the EIS.

3.2 ELECTROFISHING

Boat-based electrofishing was conducted in the Keeyask reservoir and the upper 10 km of Stephens Lake in spring and fall 2022. Electrofishing sites included constructed spawning shoals, areas previously identified as spawning habitat, and new areas considered suitable. Sampling was conducted with a Smith-Root GPP 5.0 electrofisher with dual boom Smith-Root UAA-6 Umbrella anodes (0.91 m diameter) mounted approximately 2.0 m apart. The electrofishing settings typically were set to 30 pulses per second and 500 volts, achieving an output current of approximately 4 amps. During electrofisher operation, the boat serves as a cathode, and lines of electrical current are established between the anode and the boat. The electric field causes muscle contractions in fish that lie within the electric field, forcing them to swim towards the anode. Prolonged exposure temporarily stuns the fish. Field technicians stationed at the front of the boat use large dip nets to collect stunned or partially stunned fish.

At each electrofishing site, start and end points were recorded using a Garmin Marine GPS navigator (Garmin International Inc., Olathe, KS). The fishing effort (number of seconds of operation) and electrofisher settings (volts, amperage, pulse width, and pulses per second) were also recorded.

3.3 NEUSTON TOWS

In early spring, soon after hatching, Lake Whitefish larvae ascend to the surface where they are initially unable to swim effectively against the current (Scott and Crossman 1998). Neuston tows were conducted throughout the reservoir to target drifting Lake Whitefish larvae in spring 2022, including in areas of constructed spawning shoals. Sampling was conducted as soon after ice-off as possible to minimize distribution of larvae by wind and wave action.

The neuston sampler was towed behind the starboard side of a boat to sample water undisturbed by the boat's propeller and wake. Surface water to a depth of 0.30 m flowed through the 0.45 m x 0.45 m opening of the sampler and was filtered through a tapered 500 µm mesh Nitex screen cloth into a removable 500 µm Nitex cod-end. A calibrated flow meter (General Oceanics Inc., Model Series 2039) was mounted in the mouth of the sampler from which the volume of water sampled during each tow could be calculated.

Upon completion of each tow, the Nitex screen cloth was rinsed until items adhering to the cloth were within the cod-end. The cod-end was then removed and the materials within were transferred into labelled sample jars. Samples were examined in the field for larval fish, which were transferred to scintillation vials containing a solution of 10% formalin. In the NSC laboratory in Winnipeg, the samples were rinsed with water and placed in a clear tray for identification. All fish larvae were identified to species using taxonomic keys (*e.g.*, Auer 1982; Fudge *et al.* 1986) and enumerated.

3.4 DRIFT TRAPS

Floating drift traps were set downstream of Birthday Rapids in spring 2022 to sample larval Lake Whitefish in areas where fast current prevented effective neuston sampling. Drift traps had a mouth opening of 15 x 15 cm, and a 1 m long cod-end constructed of 500 µm Nitex®. A wooden pontoon approximately 20 cm wide, 2.5 cm thick, and 120 cm long was used to buoy the traps. The trap was attached to the bottom of the pontoon using metal brackets such that the top of the trap was approximately 10 cm below the surface of the water when deployed. Traps were oriented with the trap mouth facing upstream. Drift traps were checked approximately every 24 hours. Contents from each trap were preserved in 10% formalin for subsequent sorting in the laboratory. Traps were removed when the capture of Lake Whitefish larvae was confirmed in the field.

3.5 BIOLOGICAL SAMPLING

All fish captured were counted by species and location. Walleye, Northern Pike, and Lake Whitefish were measured for fork length (FL; ±1 mm) and weight (±5 g using a digital scale, or nearest 25 g for fish greater than 4,000 g). Each VEC species were marked with an individually numbered external Floy FD-94 T-bar anchor tag (Floy-tag & Mfg. Inc., Seattle, WA).

Sex and maturity were determined for individual Walleye, Northern Pike, and Lake Whitefish by applying pressure to the ventral surface of the fish to express gametes. If no gametes were expressed, sex and maturity codes were not assigned. The following codes were used:

Female (F)	Male (M)
2 – maturing to spawn (pre-spawn)	7 – maturing to spawn (pre-spawn)
3 – ripe (spawning)	8 – ripe (spawning)
4 – spent (post-spawn)	9 – spent (post-spawn)

3.6 DATA ANALYSIS

Mean FL (mm), weight (g), and condition factor (K) were calculated for all Walleye, Northern Pike, and Lake Whitefish. Length-frequency distributions were plotted in 50 mm length class intervals (*e.g.*, 300–349 mm). Condition factor was calculated based on the following equation (after Fulton 1911, in Ricker 1975):

$$K = W / (L^3 / 10^5)$$

Where:

W = round weight (g); and

L = fork length (mm).

Gillnetting hours (*i.e.*, effort) was calculated as the number of sampling hours per 91.4 m of net set using the following equation:

Effort (hours) = set duration × (net length/91.4 m)

Catch-per-unit-effort (CPUE) was calculated and expressed as the number of fish captured in 91.4 m of net per 24-h period using the following formula:

CPUE = ∑ # Lake Sturgeon / ∑ Effort × 24 h

Where: Σ = sum of the number of fish or gillnetting hours at all sites.

CPUE for electrofishing runs was calculated as the number of fish captured per 60 seconds of electrofishing. CPUE was calculated for each sampling area and sampling session by averaging CPUE for electrofishing runs conducted in each area during each session. Total CPUE was calculated by averaging CPUE values for all electrofishing runs.

CPUE for Lake Whitefish larvae captured in Neuston Tows was expressed as the number of larvae/100 m^3 of water filtered.

All captures of spawning fish were mapped and compared to pre-impoundment spawning locations.

4.0 RESULTS

A total of 14 fish species were captured during short duration gillnetting, boat electrofishing surveys, drift trap and neuston tow sampling conducted in the Keeyask reservoir and Stephens Lake during spring and fall 2022 (Table 1). Sampling site data are presented in Appendix 1 and biological and tagging information for all fish captured are provided in Appendix 2.

Table 1: Fish species (including juvenile and adult fish) captured during short duration gillnetting and boat electrofishing surveys and larval fish captured during neuston tow and drift trap sampling conducted in the Keeyask study area during spring and fall 2022.

Common name	Scientific name	Gillnets/ Boat Electrofishing				Neuston Tows/ Drift Traps
		Keeyask reservoir		Stephens Lake		Keeyask reservoir
		Spring	Fall	Spring	Fall	Spring
Burbot	*Lota lota*	X	-	X	-	-
Cisco	*Coregonus artedi*	-	-	X	-	X
Common Carp	*Cyprinus carpio*	-	-	-	X	-
Emerald Shiner	*Notropis atherinoides*	-	X	-	X	X
Freshwater Drum	*Aplodinotus grunniens*	-	X	-	X	-
Lake Sturgeon	*Acipenser fluvescens*	X	-	X	-	-
Lake Whitefish	*Coregonus clupeaformis*	X	X	X	X	X
Longnose Sucker	*Catostomus catostomus*	X	X	X	-	-
Northern Pike	*Esox lucius*	X	X	X	X	-
Sauger	*Sander canadensis*	X	-	X	X	-
Shorthead Redhorse	*Moxostoma macrolepidotum*	X	X	X	X	-
Walleye	*Sander vitreus*	X	X	X	X	-
White Sucker	*Catostomus commersonii*	X	X	X	X	-
Yellow Perch	*Perca flavescens*	X	X	X	-	-

4.1 KEEYASK RESERVOIR

Four floating drift traps set downstream of Birthday Rapids were sampled between May 27 and June 2. Twenty-two sites throughout the reservoir were sampled using a neuston sampler between May 26 and June 4. Water temperature ranged from 4.9–7.0ºC during this time (Figure 1). Gillnetting (110 sites) and electrofishing (five runs totalling 17,243 seconds) was conducted

throughout the reservoir between May 26 and June 11, when the water temperature ranged from 4.9–12.5ºC.

During fall, gillnetting (19 sites) and electrofishing (42 runs totalling 27,847 seconds) was conducted from September 29 to October 11, when the water temperature ranged from 9.2–13.3ºC.

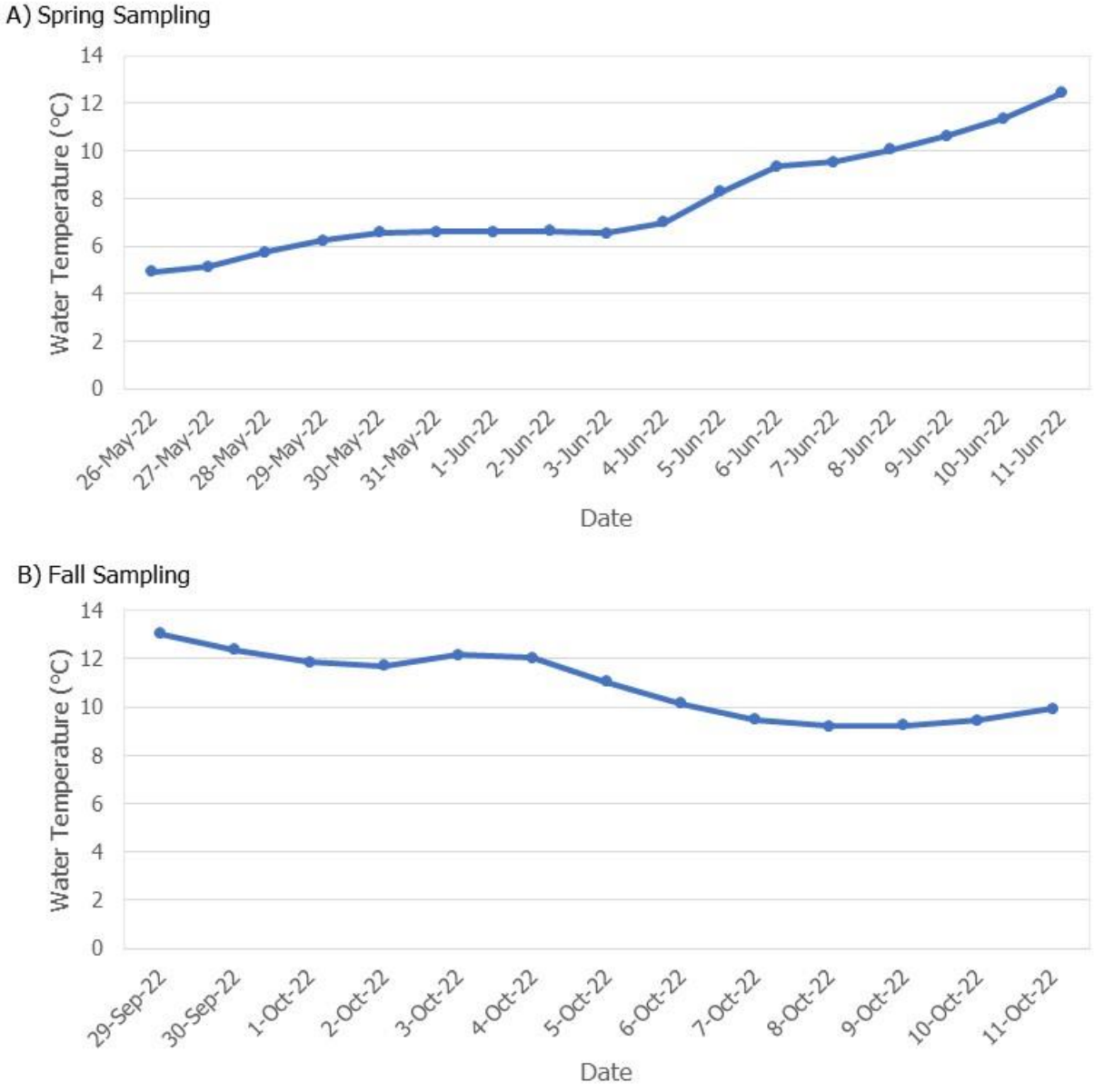


Figure 1: Water temperature as measured in the Keeyask reservoir during the spring (A) and fall (B) sampling periods.

4.1.1 LAKE WHITEFISH

A total of seven Lake Whitefish larvae were captured in neuston tows conducted during spring (Figure 2; Table 2). Lake Whitefish larvae were captured at four of the 22 neuston sites (CPUE = 0.2 Lake Whitefish/100 m^3; Table 2). Larval Lake Whitefish were captured downstream of Birthday Rapids, within the middle Keeyask reservoir, and on constructed spawning shoal L (Map 3). The highest CPUE was observed in the middle Keeyask reservoir at Site NT-06 (1.31 Lake Whitefish/100 m^3; Map 7). No Lake Whitefish larvae were captured in drift traps in spring 2022.

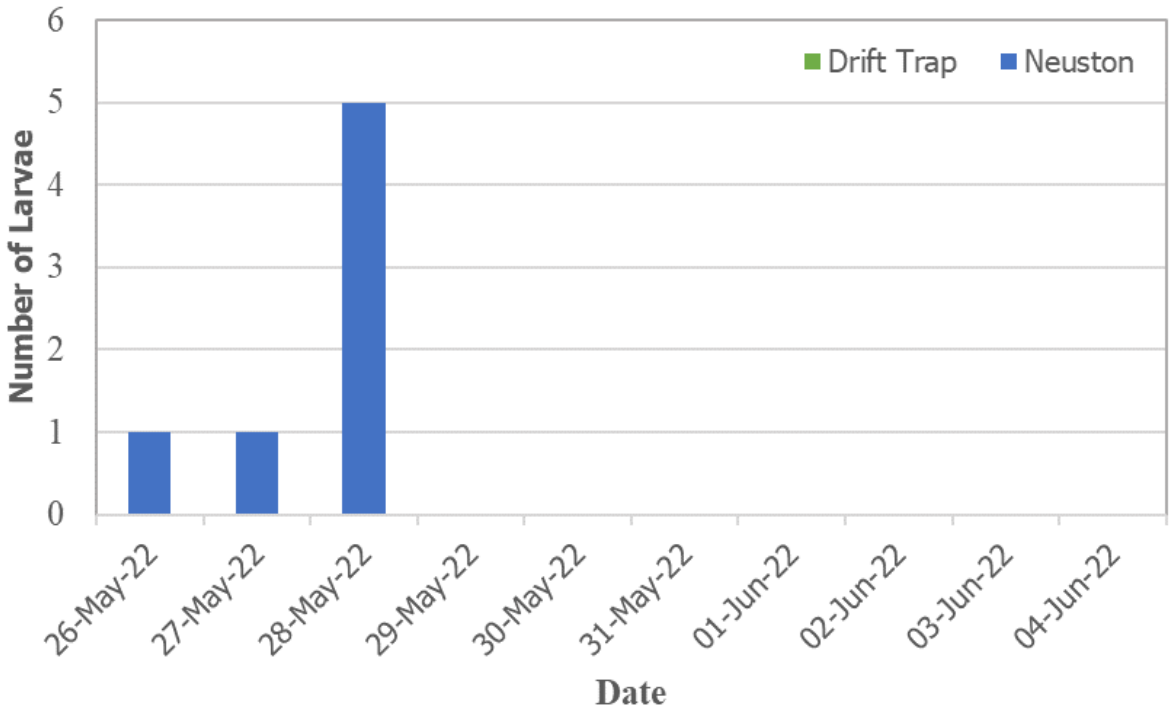
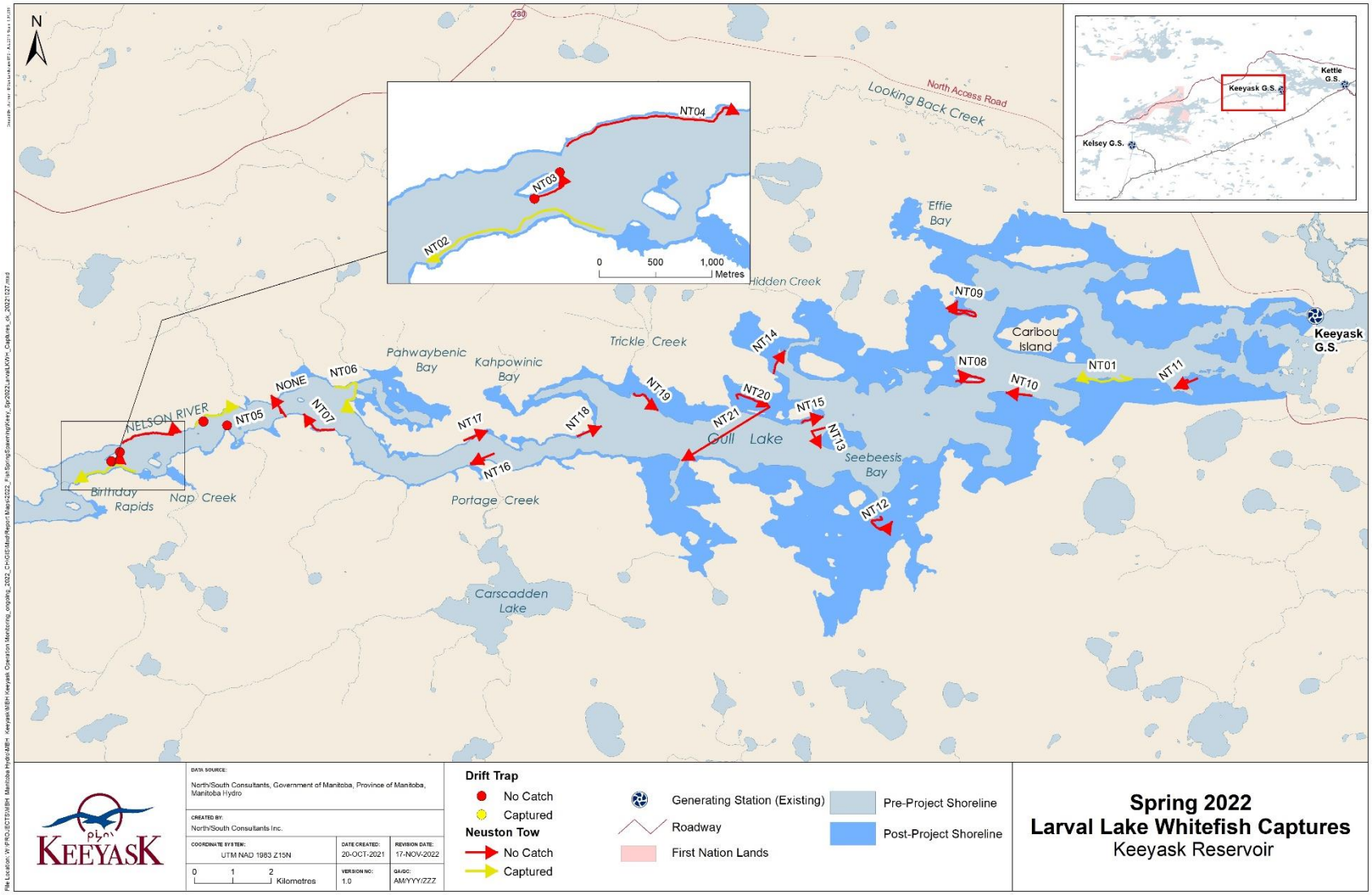


Figure 2: Number of larval Lake Whitefish captured by day during sampling in the Keeyask reservoir during spring 2022 by sampling method. Sampling was conducted between May 26 and June 4, 2022. Neuston tows captured seven larval Lake Whitefish while drift traps captured no larval Lake Whitefish.

Table 2: Physical measurements (tow distance, water volume and water temperature), total number of larvae captured (n) and mean catch-per-unit-effort (CPUE; fish/100 m^3) by species, associated with neuston tow surveys conducted in the Keeyask reservoir during spring 2022.

Site	Tow Distance (m)	Water Volume (m^3)	Water Temp. (^0C)	CISC		LKWH	
				n	CPUE	n	CPUE
NT-01	2400	324.0	4.9	0	0.0	1	0.3
NT-02	2100	283.5	5.1	0	0.0	1	0.4
NT-03	656	88.6	5.1	0	0.0	0	0.0
NT-04	2000	270.0	5.1	0	0.0	0	0.0
NT-05	1400	189.0	5.7	0	0.0	2	1.1
NT-06	1700	229.5	5.7	1	0.4	3	1.3
NT-07	1100	148.5	5.7	0	0.0	0	0
NT-08	1800	243.0	6.6	0	0.0	0	0
NT-09	1700	229.5	6.6	0	0	0	0.0
NT-10	1000	135.0	6.6	0	0	0	0.0
NT-11	707	95.4	6.5	0	0	0	0
NT-12	1500	202.5	6.5	0	0	0	0
NT-13	649	87.6	6.5	0	0.0	0	0
NT-14	519	70.1	6.5	0	0.0	0	0.0
NT-15	632	85.3	6.5	0	0.0	0	0.0
NT-16	236	31.9	7.0	0	0	0	0.0
NT-17	289	39.0	7.0	0	0	0	0.0
NT-18	370	50.0	7.0	0	0.0	0	0.0
NT-19	912	123.1	7.0	0	0.0	0	0.0
NT-20	1200	162.0	7.0	0	0	0	0
NT-21	623	84.1	7.0	0	0.0	0	0.0
NT-1001	225	30.4	6.2	0	0.0	0	0.0
Total	**23718**	**3201.9**	**6.3**	**1**	**0.0**	**7**	**0.2**

1 – Number of fish



Map 7: Map of the Keeyask reservoir showing larval Lake Whitefish captures during drift trap and Neuston tow surveys, Spring 2022.

A total of 14 adult Lake Whitefish were captured in the Keeyask reservoir during fall 2022 (Table 3; Figure 3). Captured fish measured between 244 and 572 mm FL, with the majority measuring between 450 and 499 mm (Table 4, Figure 4). Lake Whitefish were captured at six of the 19 gillnetting sites, for an average CPUE of 5.4 fish/91.4 m of net/24 h (Table 5). Lake Whitefish were also captured in two of 42 electrofishing runs for an average CPUE of 0.01 fish/60 s (Table 6; Map 9).

No Lake Whitefish captured were in spawning condition (Map 8).

Table 3: Total number (n) and relative abundance (%) of fish, by species, captured in gillnetting and electrofishing surveys conducted in the Keeyask reservoir during spring and fall 2022.

Common Name	Spring		Fall	
	n[1]	%	n	%
Burbot	1	0.1	-	-
Cisco	-	-	-	-
Common Carp	-	-	-	-
Emerald Shiner	-	-	1	0.7
Freshwater Drum	-	-	2	1.3
Lake Sturgeon	1	0.1	-	-
Lake Whitefish	5	0.7	14	9.2
Longnose Sucker	91	12.0	1	0.7
Northern Pike	178	23.5	69	45.1
Sauger	9	1.2	-	-
Shorthead Redhorse	151	20.0	20	13.1
Walleye	72	9.5	33	21.6
White Sucker	242	32.0	12	7.8
Yellow Perch	6	0.8	1	0.7
Total	**756**	**-**	**153**	**-**

1 – Number of fish

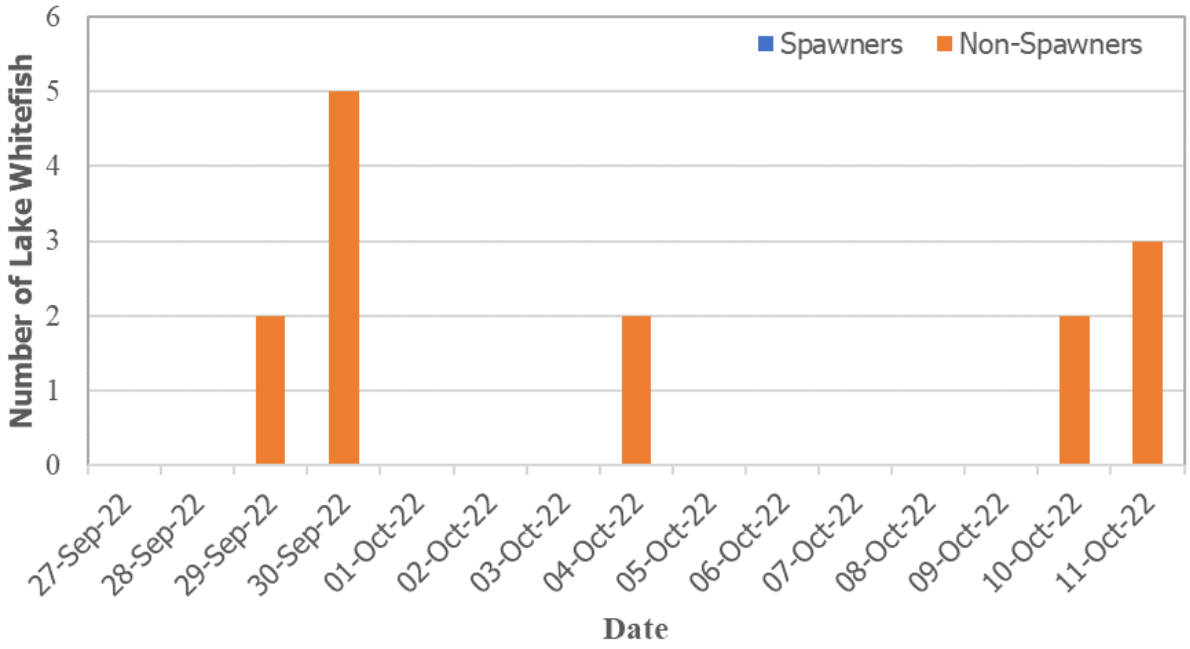


Figure 3: **Number of Lake Whitefish captured by day during sampling in the Keeyask reservoir during fall 2022 by spawning-condition. Sampling in the Keeyask reservoir was conducted between September 29 and October 11, 2022.**

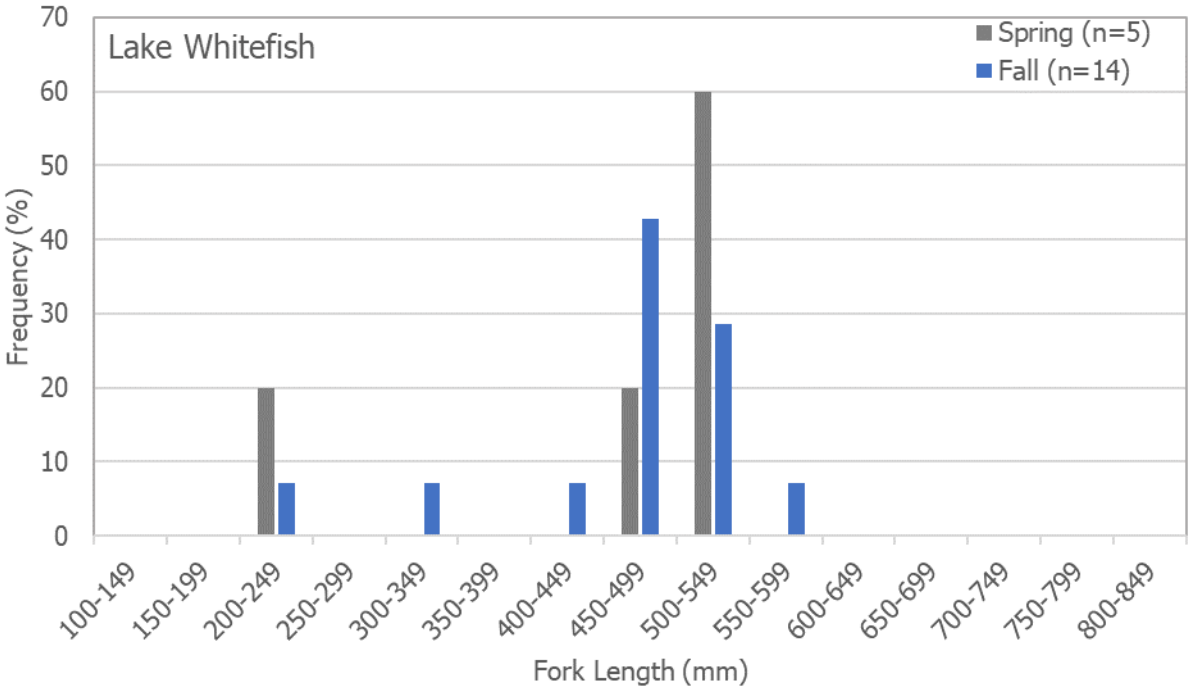


Figure 4: **Length-frequency distribution for Lake Whitefish captured during gillnet surveys in the Keeyask reservoir in the spring and fall 2022.**

Table 4: Mean fork length (mm), weight (g), and condition factor (K) for Lake Whitefish, Northern Pike, and Walleye caught during gillnetting and boat electrofishing surveys in the Keeyask reservoir during spring and fall 2022.

		Fork Length (mm)				Weight (g)				Condition (K)			
Species	**Season**	**n[1]**	**Mean**	**StDev**	**Range**	**n[1]**	**Mean**	**StDev**	**Range**	**n[1]**	**Mean**	**StDev**	**Range**
Lake Whitefish	Spring	5	450	141	200-527	2	1,570	2,051	120-3,020	2	1.84	0.48	1.50-2.17
	Fall	14	461	83	244-572	14	1,901	852	270-341(	14	1.76	0.25	1.11-2.04
Northern Pike	Spring	174	528	168	192-1,155	128	1,185	998	100-5,500	128	0.74	0.23	0.31-2.26
	Fall	65	573	146	274-878	65	1,787	1,295	130-530(	65	0.79	0.09	0.52-0.99
Walleye	Spring	72	383	81	215-583	43	741	441	100-1,760	43	1.07	0.15	0.77-1.36
	Fall	33	430	54	305-520	33	939	350	360-175(	33	1.13	0.09	0.94-1.27

1 – Number of fish

Table 5: Mean catch-per-unit-effort (CPUE; fish/91.4 m of net/24 h) by species for fish captured in short duration gillnetting surveys in the Keeyask reservoir during spring and fall 2022.

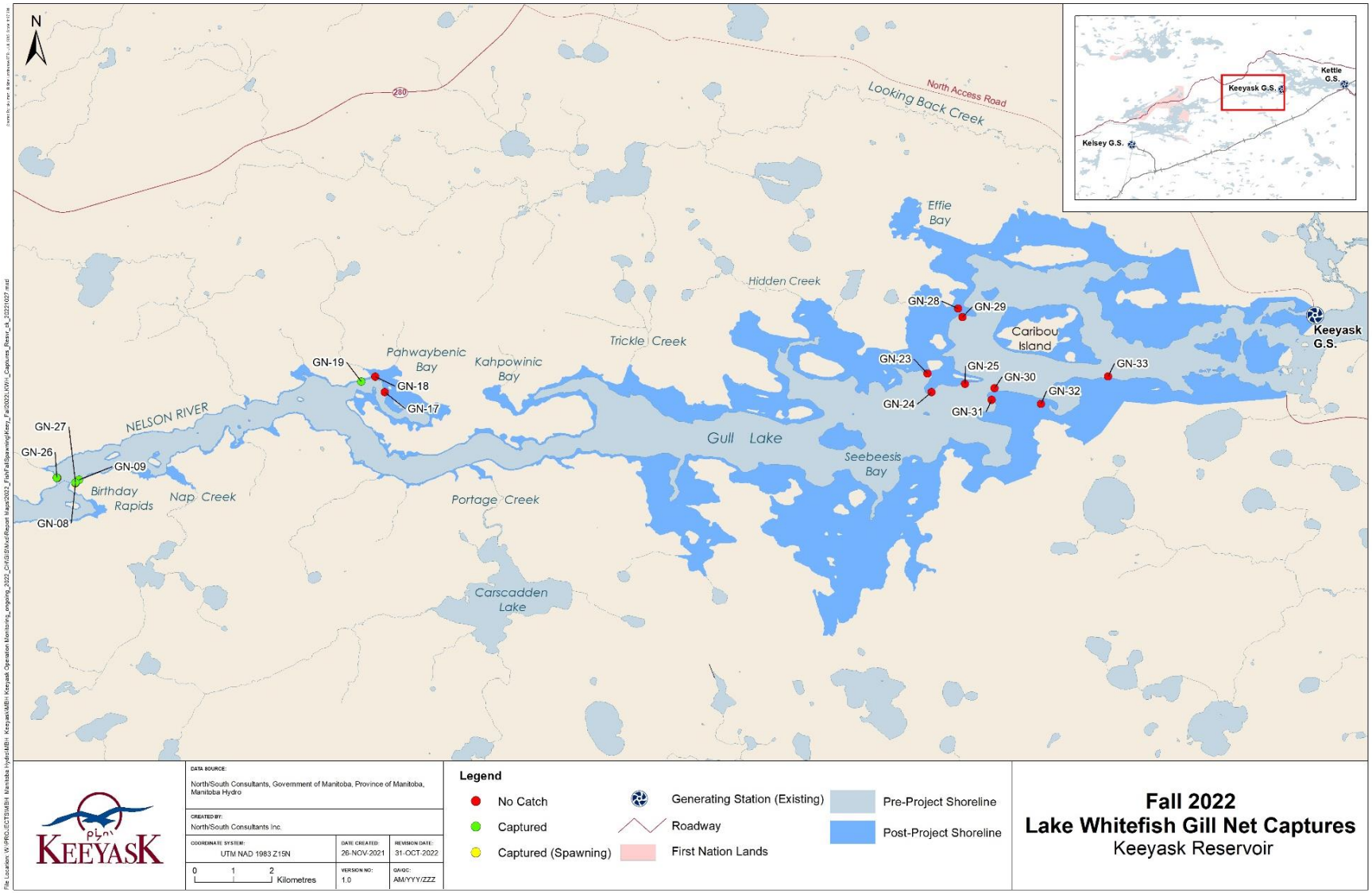
	Spring			Fall		
Common Name	**n[1]**	**CPUE**	**StDev**	**n[1]**	**CPUE**	**StDev**
Burbot	0	0.0	-	0	0.0	-
Cisco	0	0.0	-	0	0.0	-
Common Carp	0	0.0	-	0	0.0	-
Freshwater Drum	0	0.0	-	1	0.3	1.1
Lake Sturgeon	1	0.2	1.7	0	0.0	-
Lake Whitefish	0	0.0	-	12	5.4	9.2
Longnose Sucker	86	7.0	22.3	1	0.7	2.9
Northern Pike	167	15.0	16.4	54	23.4	29.8
Sauger	9	0.9	5.2	0	0.0	-
Shorthead Redhorse	148	13.7	27.0	8	4.7	8.2
Walleye	71	6.1	11.4	28	12.4	18.5
White Sucker	236	21.9	33.6	5	2.9	6.7
Total	**718**	**64.8**	**117.6**	**109**	**49.8**	**76.4**

1 – Number of fish

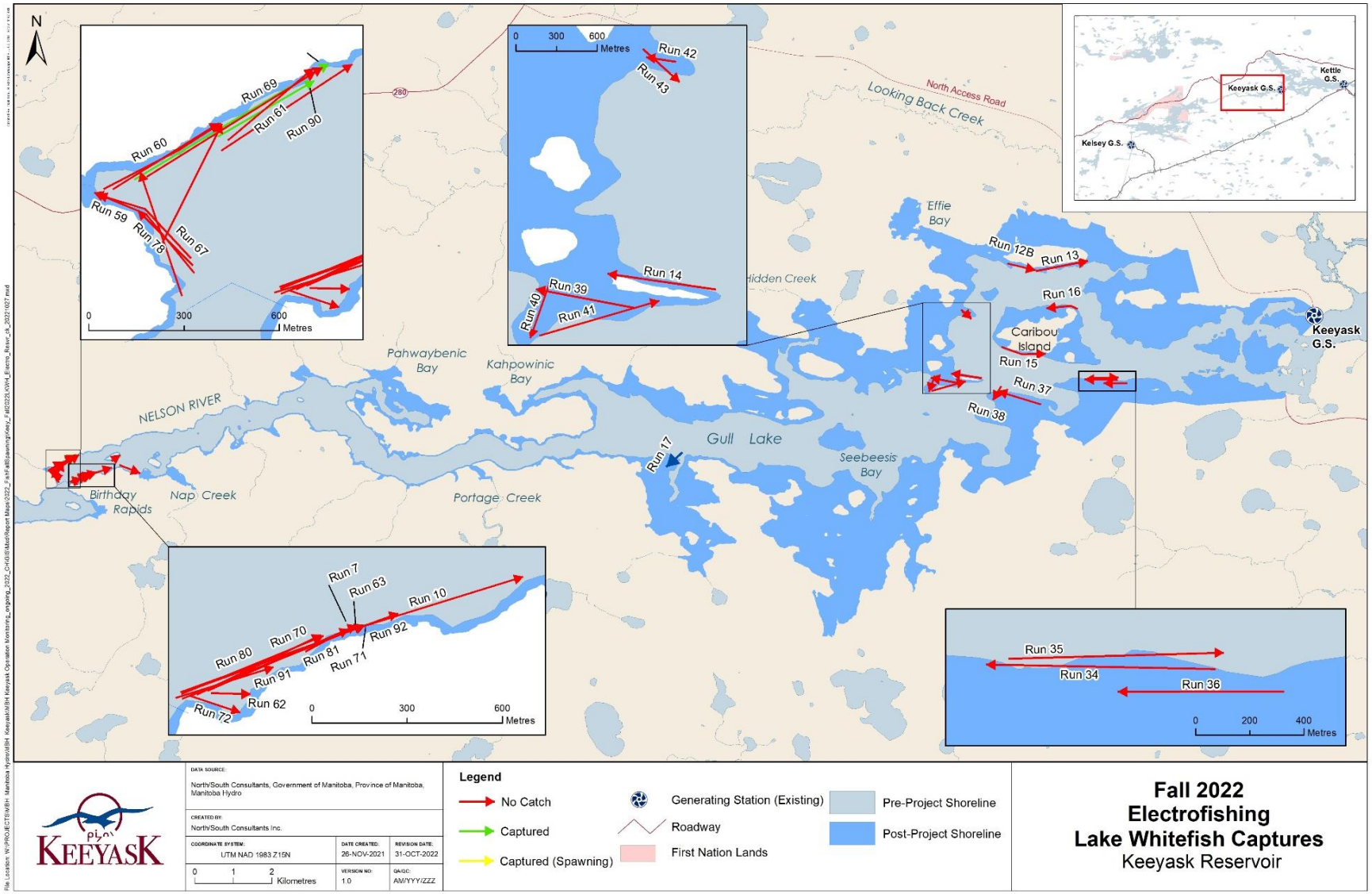
Table 6: Mean catch-per-unit-effort (CPUE; fish/60 s) by species for fish captured during boat electrofishing surveys in the Keeyask reservoir during spring and fall 2022.

	Spring			Fall		
Common Name	**n[1]**	**CPUE**	**StDev**	**n[1]**	**CPUE**	**StDev**
Burbot	1	0.01	0.01	0	0.00	-
Emerald Shiner	0	0.00	-	1	0.00	0.02
Freshwater Drum	0	0.00	-	1	0.00	0.01
Lake Whitefish	0	0.00	-	2	0.01	0.03
Longnose Sucker	5	0.02	0.02	0	-	-
Northern Pike	11	0.04	0.03	15	0.03	0.05
Sauger	0	0.00	-	0	0.00	-
Shorthead Redhorse	3	0.01	0.02	12	0.03	0.07
Walleye	1	0.01	0.01	5	0.01	0.03
White Sucker	6	0.03	0.05	7	0.01	0.03
Yellow Perch	0	0.00	-	1	0.00	0.01
Total	**27**	**0.11**	**0.14**	**44**	**0.08**	**0.23**

1 – Number of fish



Map 8: Map of the Keeyask reservoir showing Lake Whitefish captures during gillnet surveys, fall 2022.



Map 9: Map of the Keeyask reservoir showing Lake Whitefish captures during boat electrofishing surveys, fall 2022.

4.1.2 NORTHERN PIKE

A total of 178 Northern Pike were captured in the Keeyask reservoir during spring 2022 (Table 3). The 174 fish that were measured were between 192 and 1,155 mm FL, with the majority measuring between 500 and 549 mm (Table 4, Figure 5). Northern Pike were captured at 70 of 110 gillnet sites, for an average CPUE of 15.0 fish/91.4 m of net/24 h (Table 5). Northern Pike were also captured in four of five electrofishing runs, for an average CPUE of 0.04 fish/60 s (Table 6; Map 11).

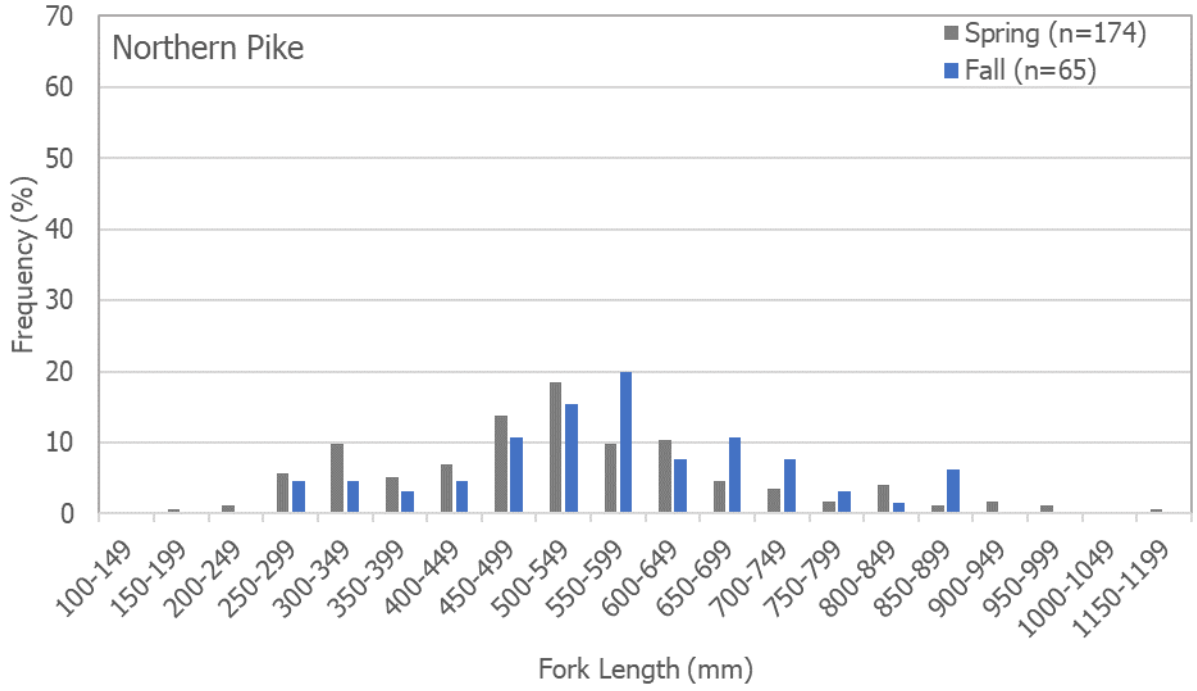


Figure 5: Length-frequency distribution for Northern Pike captured during gillnet surveys in the Keeyask reservoir in the spring and fall 2022.

Thirty-five captured Northern Pike were in spawning condition, including nine ripe females and 26 males (2 pre-spawn, 3 ripe, and 21 post-spawn; Figure 6). Spawning Northern Pike were captured within the Keeyask reservoir including within flooded backbays (in zones 4, 5, 7, 8, 11, and 13), and on three constructed spawning shoals (F East, G South, and H East). Spawning Northern Pike were captured within 11 of the 12 areas identified as Northern Pike spawning habitat in the EIS (Map 10).

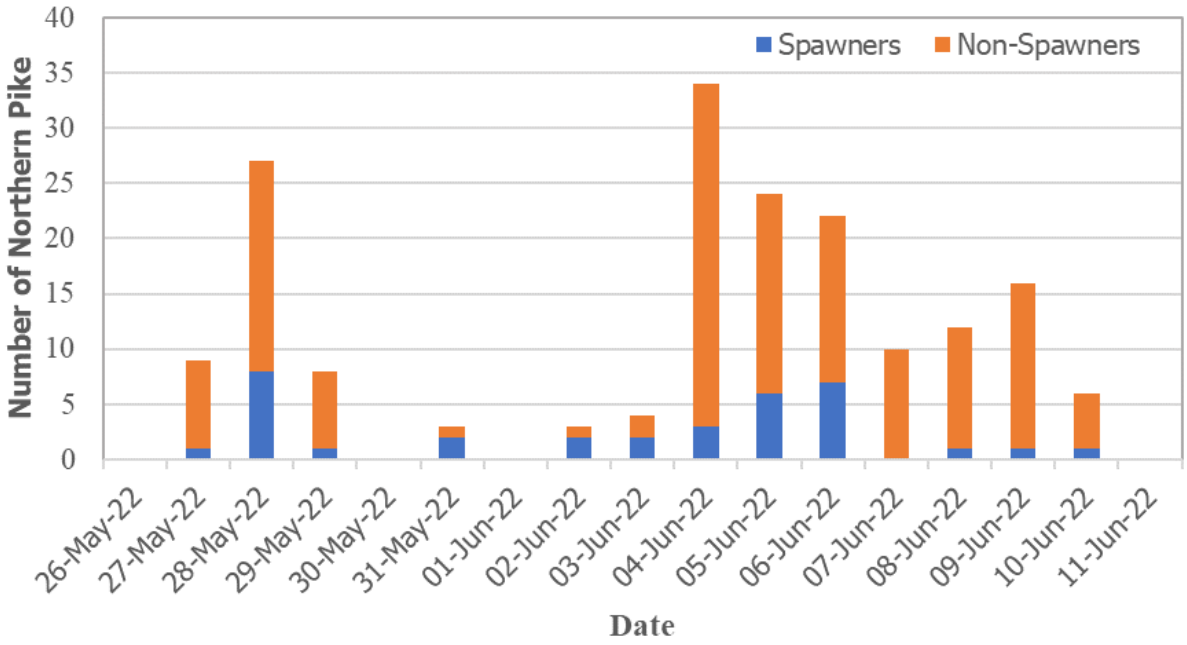
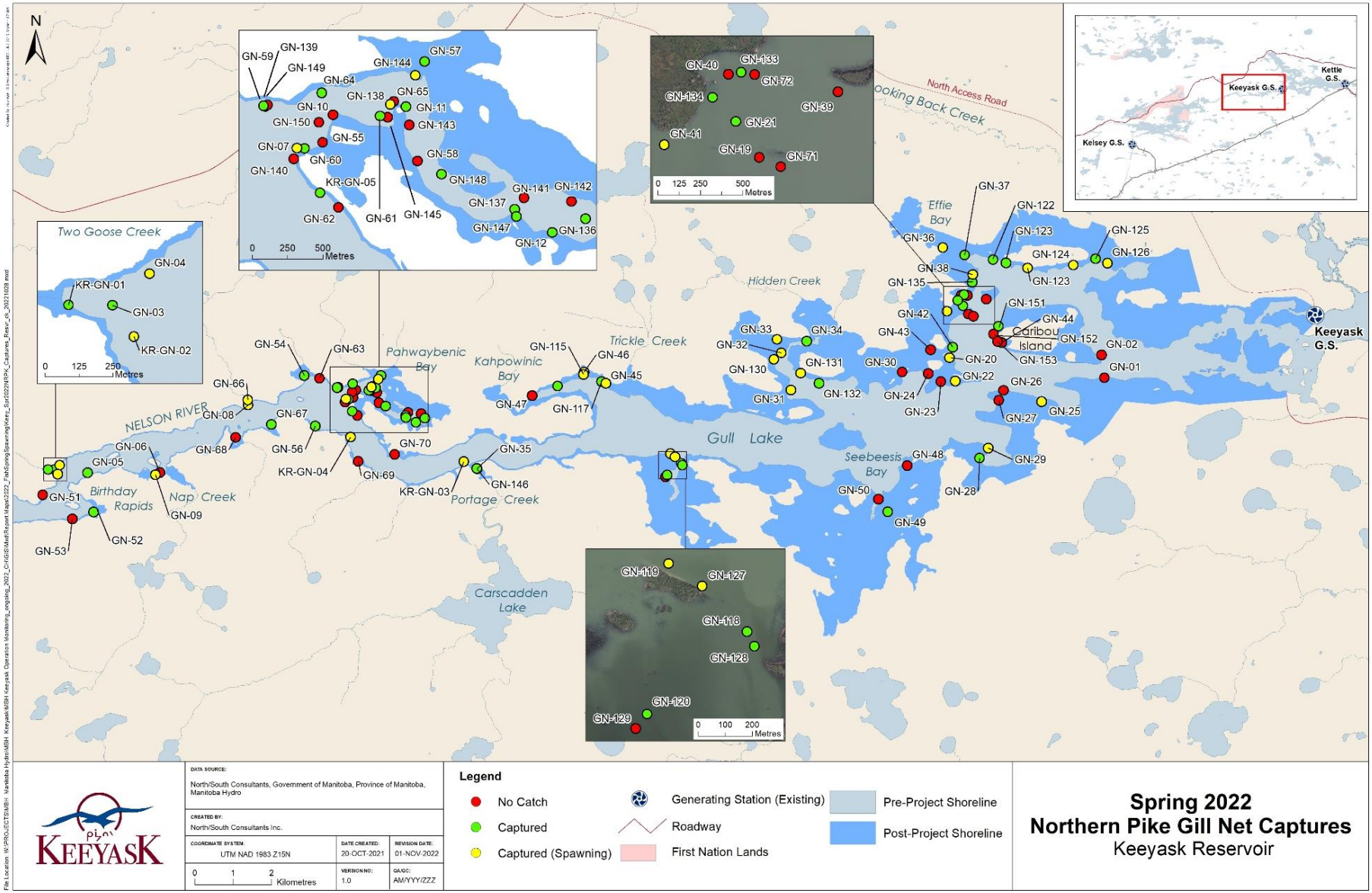
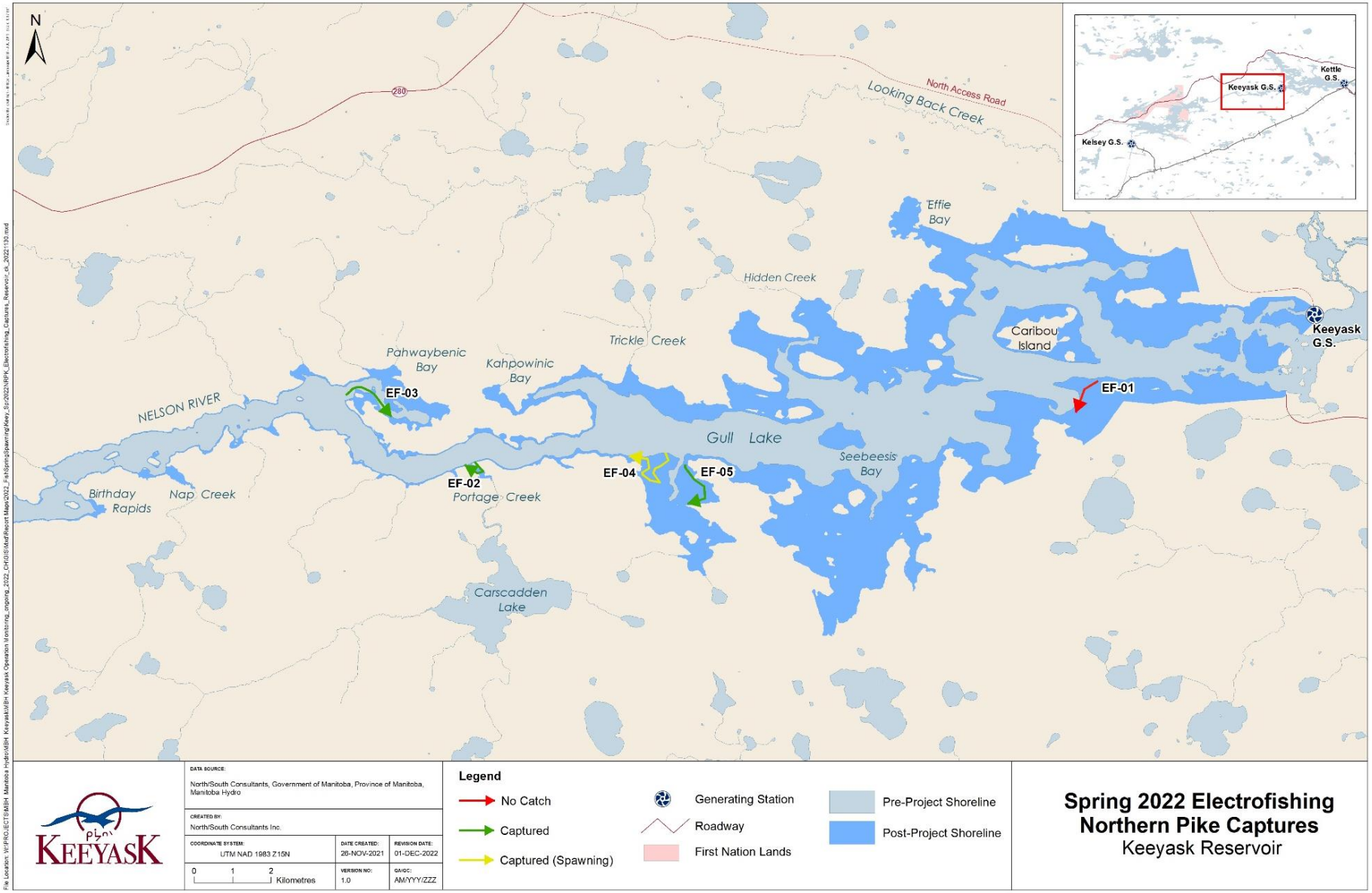


Figure 6: **Number of Northern Pike captured by day during sampling in the Keeyask reservoir during spring 2022 by spawning-condition. Sampling in the Keeyask reservoir was conducted between May 26 and June 11, 2022.**



Map 10: Map of the Keeyask reservoir showing Northern Pike captures during gillnet surveys, spring 2022.



Map 11: Map of the Keeyask reservoir showing Northern Pike captures during boat electrofishing surveys, spring 2022.

4.1.3 WALLEYE

A total of 72 Walleye were captured in the Keeyask reservoir during spring 2022 (Table 3). Captured fish measured between 215 and 583 mm FL, with the majority measuring between 350 and 449 mm (Table 4, Figure 7). Walleye were captured at 39 of 110 gillnet sites, for an average CPUE of 6.1 fish/91.4 m of net/24 h (Table 5). Walleye were also captured in one of five electrofishing runs, for an average CPUE of 0.01 fish/60 s (Table 6; Map 13).

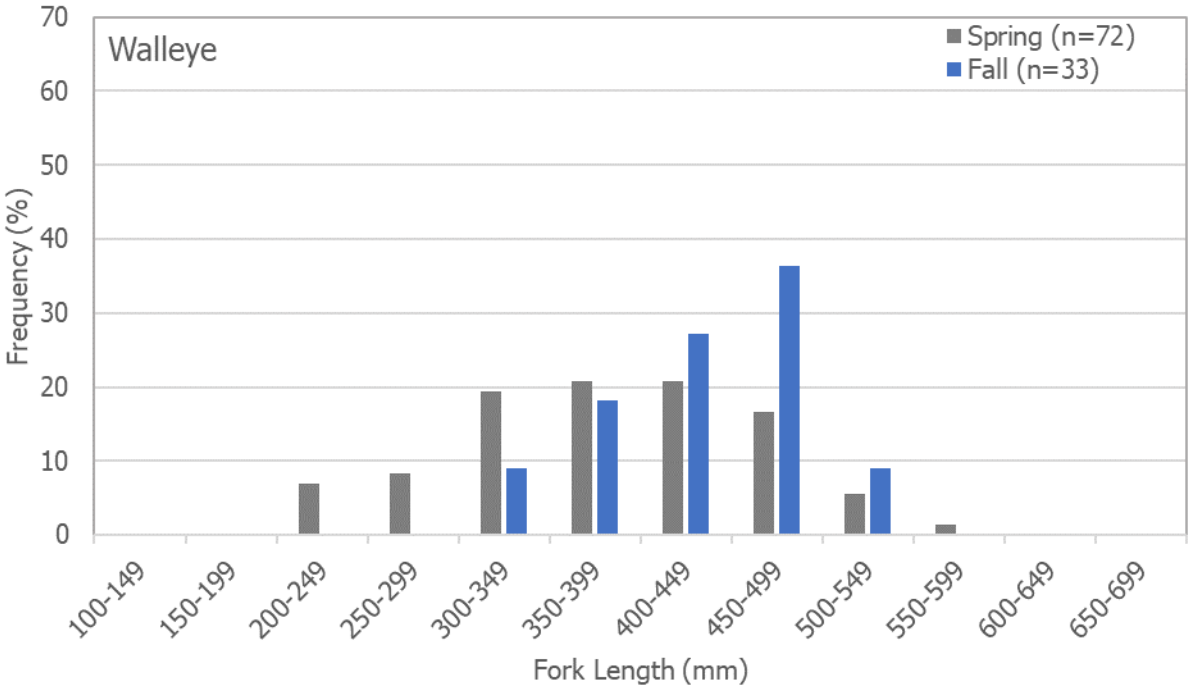


Figure 7: Length-frequency distribution for Walleye captured during gillnet surveys in the Keeyask reservoir in the spring and fall 2022.

Eleven captured Walleye were in spawning condition, including one ripe female, one ripe male and nine post-spawn males (Figure 8). Ten spawning Walleye were captured within the middle Keeyask reservoir (Zone 1a; Maps 2 and 12). A single spawning Walleye was captured in a backbay in lower Gull Lake in Zone 8 (Maps 2 and 12). No Walleye in spawning condition were captured on the constructed reservoir spawning shoals. Spawning Walleye were captured within two of the seven areas identified as Walleye spawning habitat in the EIS and two areas that were not previously identified (Map 6).

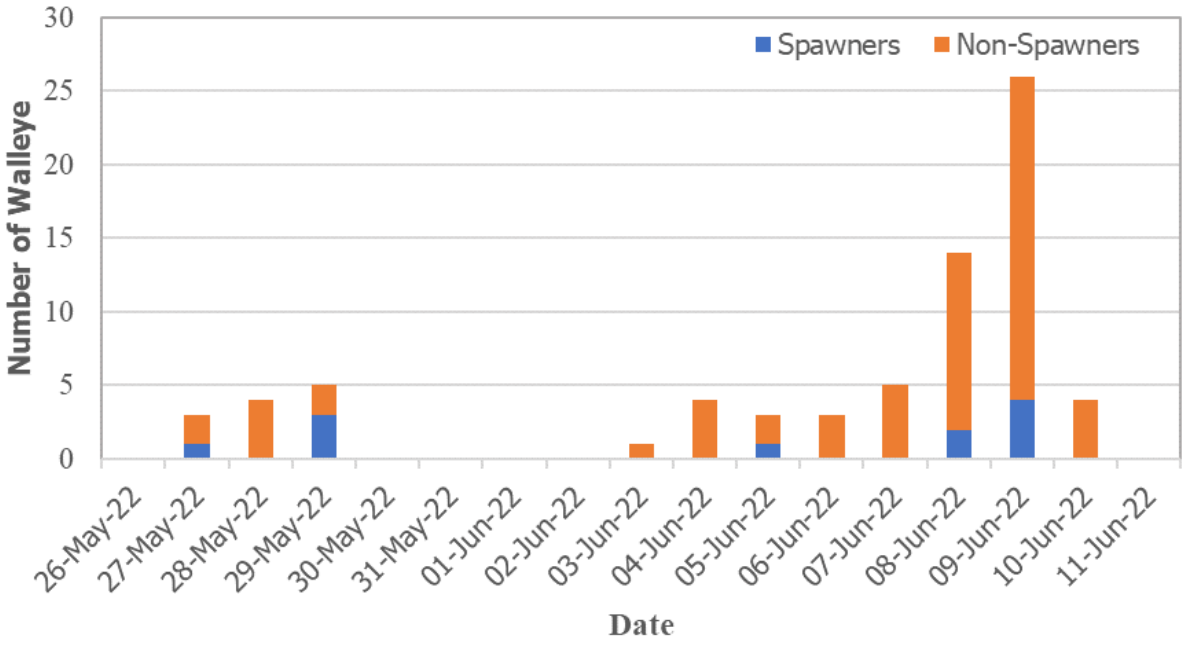
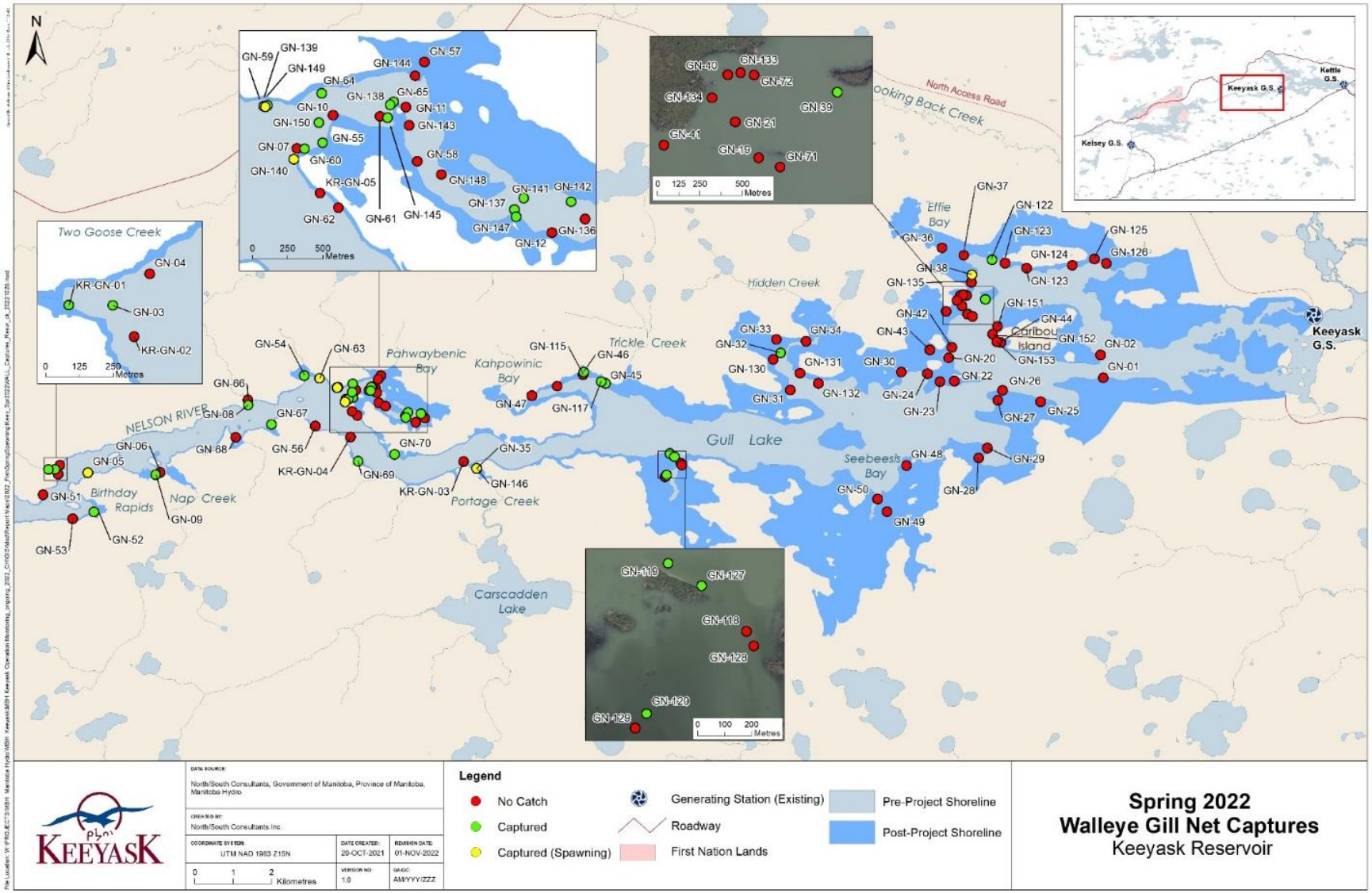
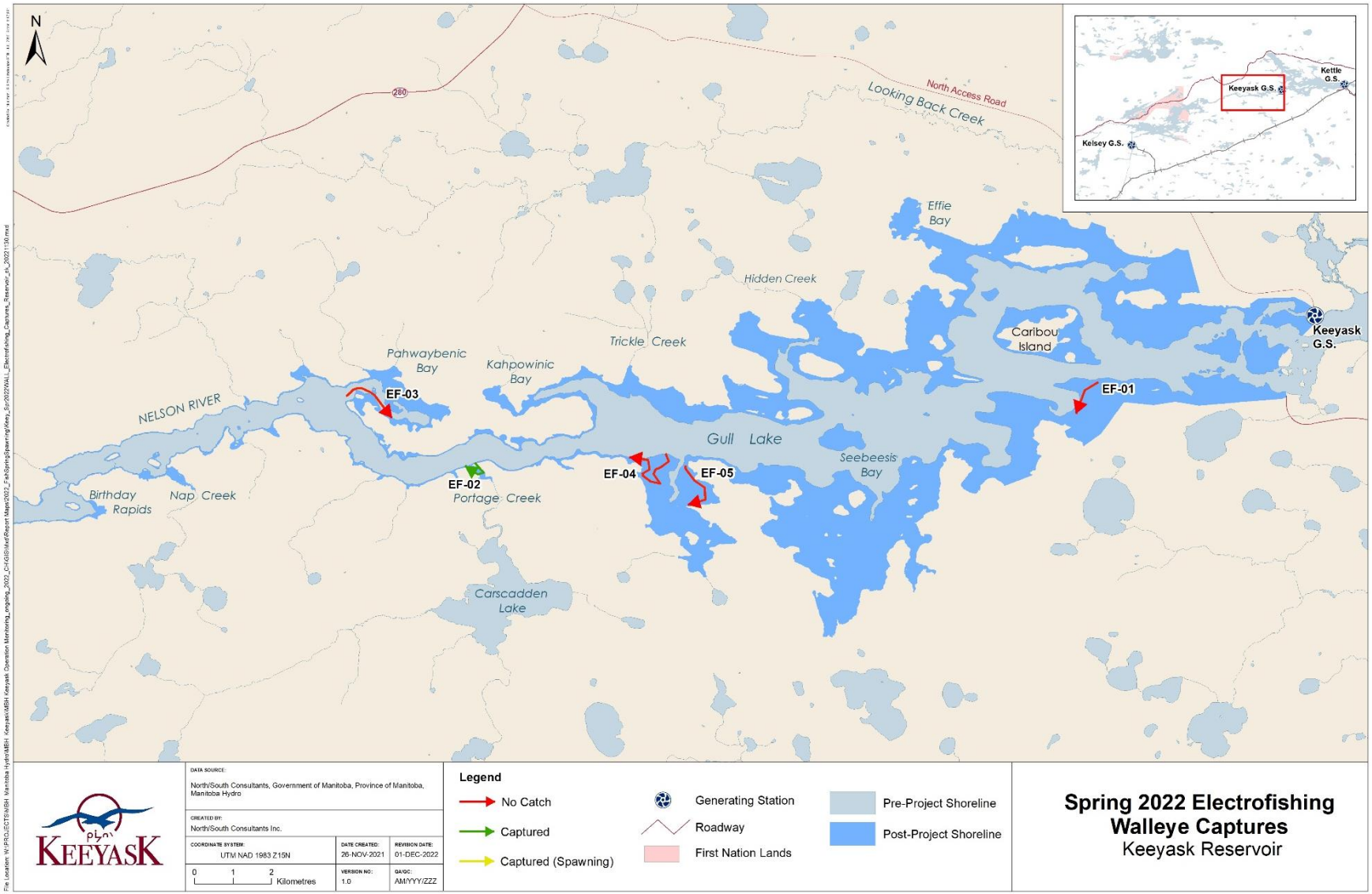


Figure 8: **Number of Walleye captured by day during sampling in the Keeyask reservoir during spring 2022 by spawning-condition. Sampling in the Keeyask reservoir was conducted between May 26 and June 11, 2022.**



Map 12: Map of the Keeyask reservoir showing Walleye captures during gillnet surveys, spring 2022.



Map 13: Map of the Keeyask reservoir showing Walleye captures during boat electrofishing surveys, spring 2022.

4.2 STEPHENS LAKE

Gillnetting (28 sites) and electrofishing (four runs totalling 10,680 seconds) was conducted at 28 sites throughout the upper ~10 km of Stephens Lake between May 27 and June 9, when the water temperature ranged from 5.1–10.6ºC (Figure 9).

During fall, gillnetting (14 sites) and electrofishing (52 runs totalling 36,904 seconds) was conducted from September 27 to October 10, when the water temperature ranged from 9.2–13.0ºC (Figure 9).

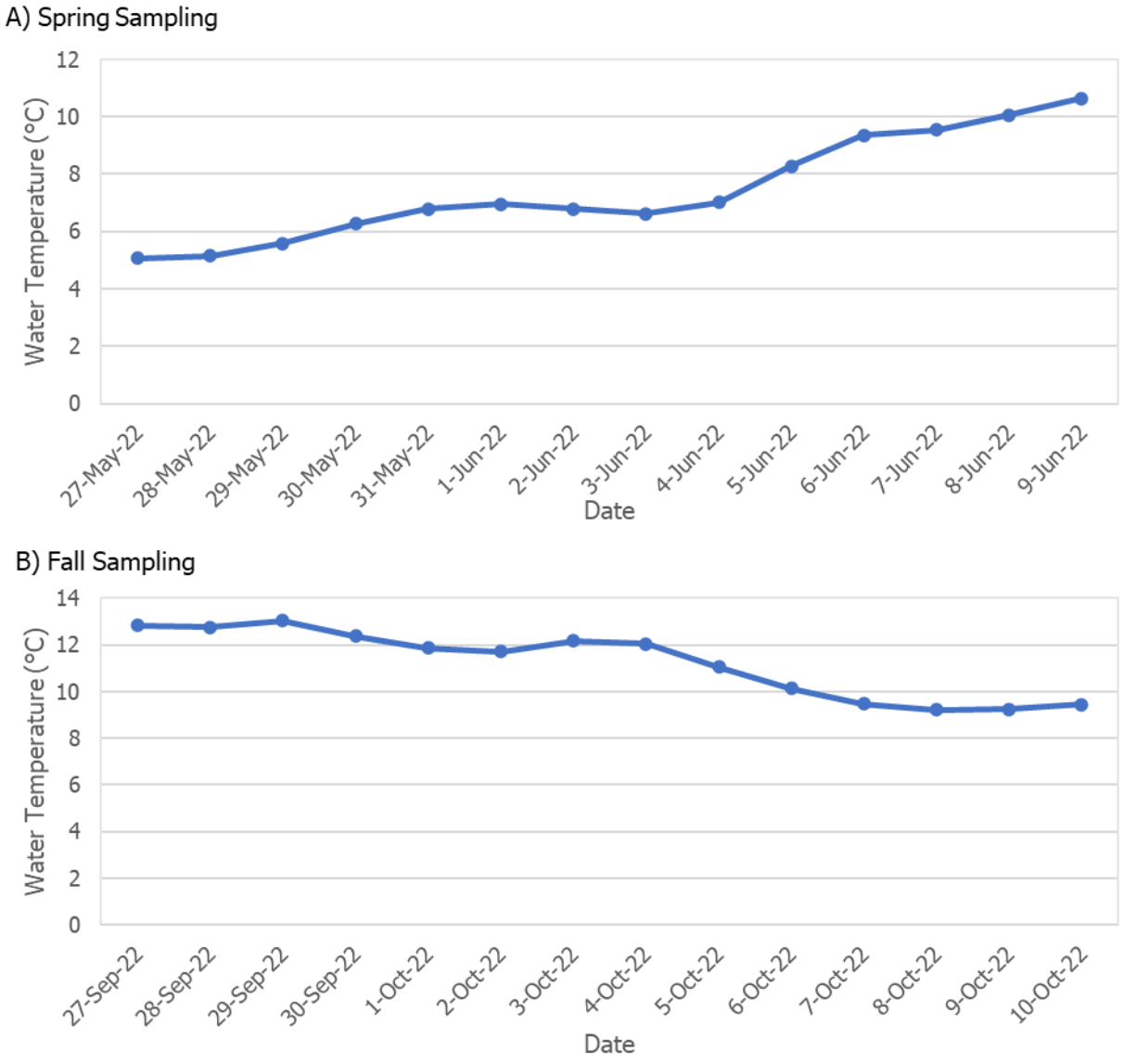


Figure 9: Water temperature as measured in Stephens Lake during the spring (A) and fall (B) sampling periods.

4.2.1 LAKE WHITEFISH

A total of 36 adult Lake Whitefish were captured in Stephens Lake in fall 2022 (Table 7). Captured fish measured between 300 and 555 mm FL, with the majority measuring between 400 and 449 mm (Table 8, Figure 10). Lake Whitefish were captured at five of 14 gillnetting sites, for an average CPUE of 3.7 fish/91.4 m/24 h (Table 9). Lake Whitefish were also captured in 17 of 52 electrofishing runs for an average CPUE of 0.05 fish/60 s (Table 10).

Three captured Lake Whitefish were in spawning condition, including two females (one ripe, one pre-spawn) and one ripe male (Figure 11). All spawning Lake Whitefish were captured in the Nelson River on the north shore within 2 km of the Keeyask GS (Maps 14 and 15).

Table 7: Total number (n) and relative abundance (%) of fish, by species, captured in gillnetting and electrofishing surveys conducted in Stephens Lake during spring and fall 2022.

Common Name	Spring		Fall	
	n[1]	%	n[1]	%
Burbot	1	0.3	-	-
Cisco	1	0.3	-	-
Common Carp	-	-	2	0.8
Emerald Shiner	-	-	1	0.4
Freshwater Drum	-	-	49	20.2
Lake Sturgeon	2	0.6	-	-
Lake Whitefish	8	2.3	36	14.9
Longnose Sucker	13	3.7	-	-
Northern Pike	70	20.2	79	32.6
Sauger	41	11.8	7	2.9
Shorthead Redhorse	9	2.6	23	9.5
Walleye	46	13.3	23	9.5
White Sucker	154	44.4	22	9.1
Yellow Perch	2	0.6	-	-
Total	**347**	**-**	**242**	**-**

1 – Number of fish

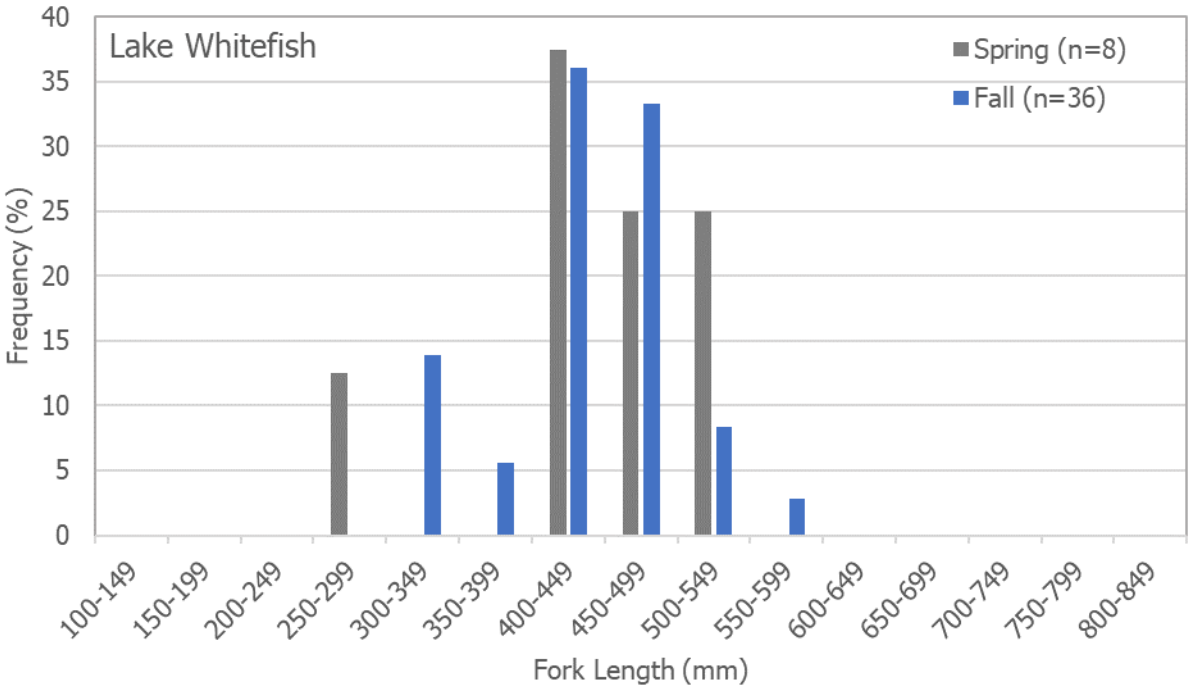


Figure 10: **Length-frequency distribution for Lake Whitefish captured during gillnet and boat electrofishing surveys in Stephens Lake surveys the spring and fall 2022.**

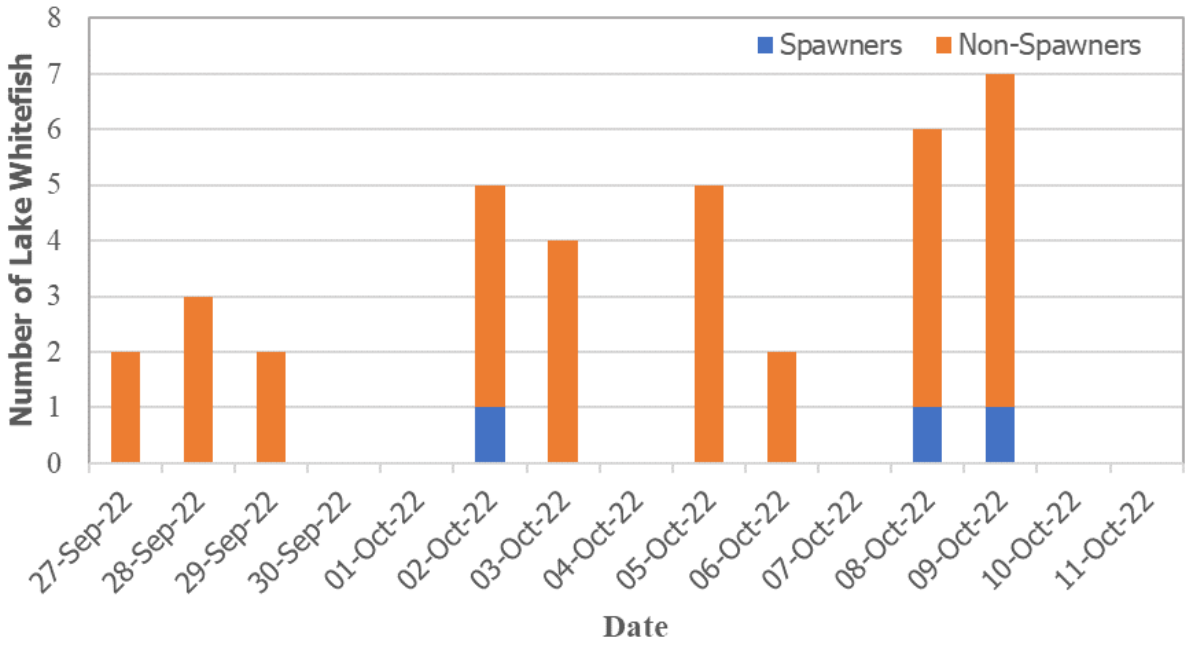


Figure 11: **Number of Lake Whitefish captured by day during sampling in Stephens Lake during fall 2022 by spawning-condition. Sampling in Stephens Lake was conducted between September 27 and October 10, 2022.**

Table 8: Mean fork length (mm), weight (g), and condition factor (K) for Lake Whitefish, Northern Pike, and Walleye caught during gillnetting and boat electrofishing surveys in Stephens Lake during spring and fall 2022.

		Fork Length (mm)				Weight (g)				Condition (K)			
Species	**Season**	**n[1]**	**Mean**	**StDev**	**Range**	**n[1]**	**Mean**	**StDev**	**Range**	**n[1]**	**Mean**	**StDev**	**Range**
Lake Whitefish	Spring	8	445	77	277-528	8	1,589	748	300-2,800	8	1.63	0.20	1.35-1.90
	Fall	36	434	63	300-555	36	1,413	665	380-2950	36	1.59	0.21	1.12-2.16
Northern Pike	Spring	70	562	175	287-983	62	1,348	1,333	140-5,500	62	0.68	0.14	0.50-0.96
	Fall	79	548	194	134-1034	72	1,300	1,514	20-6050	72	0.68	0.11	0.49-0.95
Walleye	Spring	46	394	54	254-525	42	713	290	200-1,600	42	1.11	0.08	0.94-1.31
	Fall	23	413	81	219-565	23	911	482	100-2330	23	1.16	0.15	0.88-1.52

1 – Number of fish

Table 9: Mean catch-per-unit-effort (CPUE; fish/91.4 m of net/24 h) by species for fish captured in short duration gillnetting surveys in Stephens Lake during spring and fall 2022.

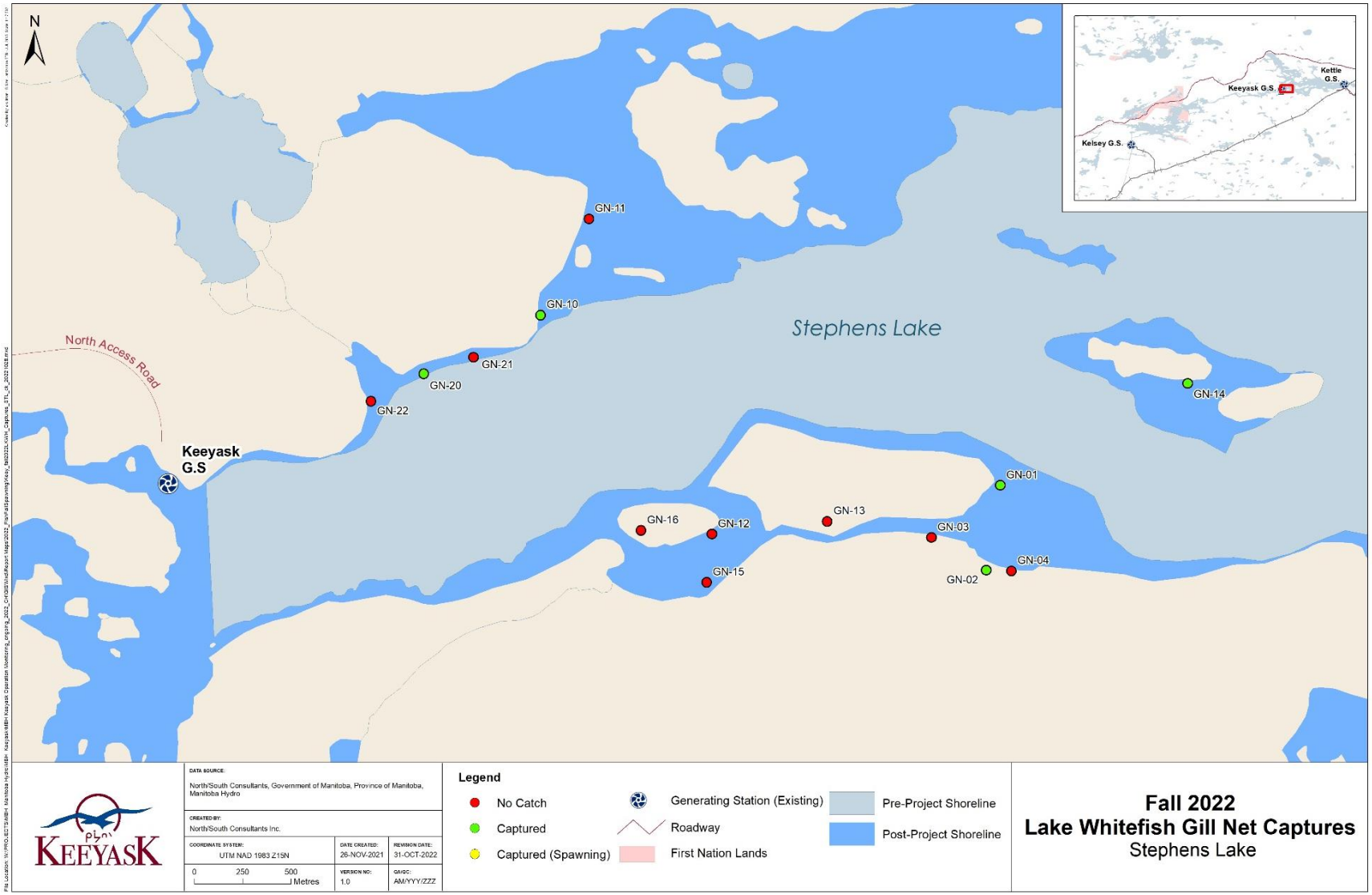
	Spring			Fall		
Common Name	**n[1]**	**CPUE**	**StDev**	**n[1]**	**CPUE**	**StDev**
Burbot	1	0.4	2.1	0	0.0	-
Cisco	1	0.5	2.5	0	0.0	-
Common Carp	0	0.0	-	2	0.8	3.1
Freshwater Drum	0	0.0	-	0	0.0	-
Lake Sturgeon	2	0.8	4.0	0	0.0	-
Lake Whitefish	1	0.3	1.7	8	3.7	7.2
Longnose Sucker	12	4.3	10.8	0	0.0	-
Northern Pike	60	15.4	12.0	24	12.1	19.0
Sauger	41	11.6	26.4	6	2.9	6.7
Shorthead Redhorse	6	1.4	3.1	8	6.2	14.3
Walleye	43	12.5	16.8	16	5.9	9.9
White Sucker	99	26.5	28.1	7	2.5	3.8
Total	266	73.65388851	107.58	71	34.09	64

1 – Number of fish

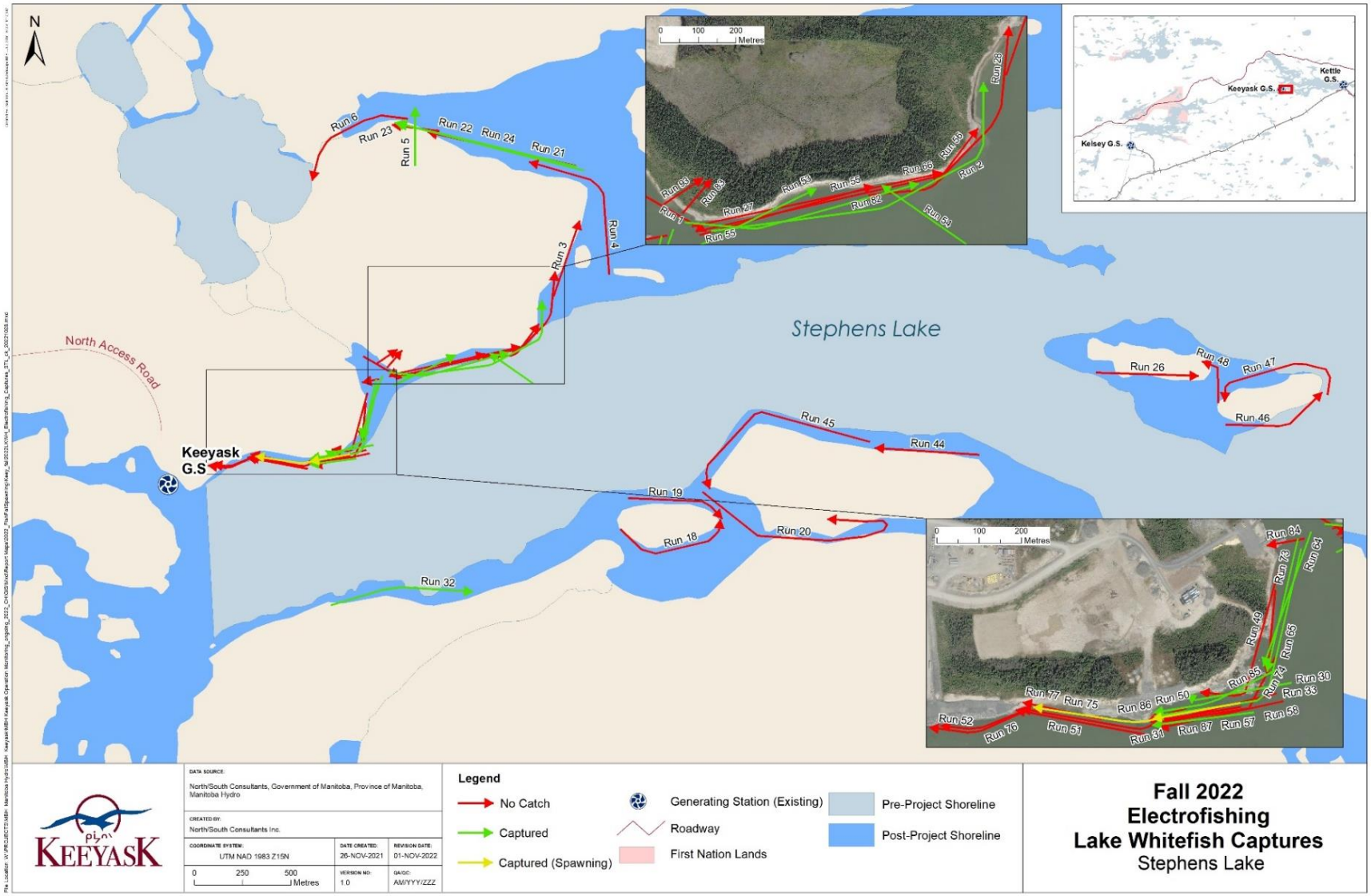
Table 10: Mean catch-per-unit-effort (CPUE; fish/60 s) by species for fish captured during boat electrofishing surveys in Stephens Lake during spring and fall 2022.

	Spring			Fall		
Common Name	**n[1]**	**CPUE**	**StDev**	**n[1]**	**CPUE**	**StDev**
Burbot	0	0.00	-	0	0.00	-
Emerald Shiner	0	0.00	-	1	0.02	0.01
Freshwater Drum	0	0.00	-	49	0.08	0.22
Lake Whitefish	7	0.03	0.04	28	0.05	0.10
Longnose Sucker	1	0.01	0.01	0	0.00	-
Northern Pike	10	0.06	0.00	55	0.09	0.14
Sauger	0	0.00	-	1	0.00	0.01
Shorthead Redhorse	3	0.01	0.02	15	0.03	0.07
Walleye	4	0.02	0.00	7	0.01	0.05
White Sucker	55	0.41	0.42	15	0.02	0.06
Yellow Perch	0	0.00	-	0	0.00	-
Total	80	0.53	0.49	171	0.30	0.66

1 – Number of fish



Map 14: Map of Stephens Lake showing Lake Whitefish captures during gillnet surveys, fall 2022.



Map 15: Map of Stephens Lake showing Lake Whitefish captures during boat electrofishing surveys, fall 2022.

4.2.2 NORTHERN PIKE

A total of 70 Northern Pike were captured in Stephens Lake in spring 2022 (Table 7). Captured fish measured between 287 and 983 mm FL, with the majority measuring between 450 and 499 mm (Table 8, Figure 12). Northern Pike were captured at 22 of 28 gillnetting sites, for an average CPUE of 15.4 fish/91.4 m/24 h and at all four electrofishing sites for (Table 9; Map 16). Northern Pike were also captured in all four electrofishing runs for an average CPUE of 0.06 fish/60 s (Table 10; Map 17).

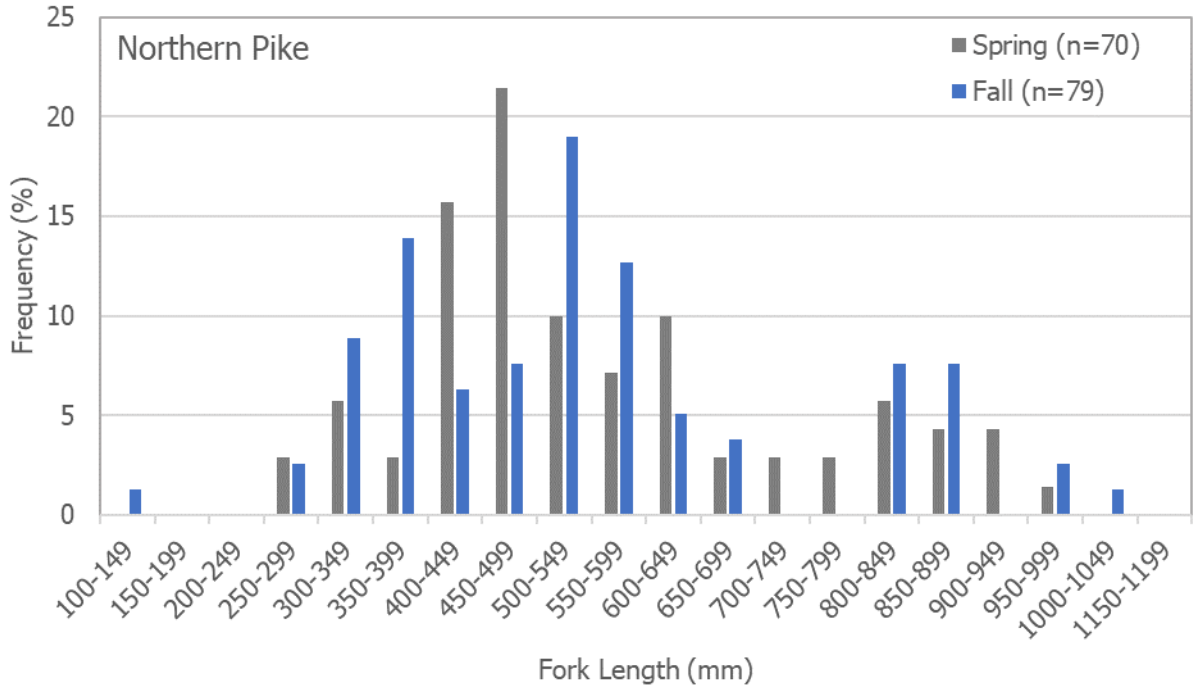


Figure 12: Length-frequency distribution for Northern Pike captured during gillnet and boat electrofishing surveys in Stephens Lake surveys the spring and fall 2022.

Nineteen captured Northern Pike were in spawning condition, including eight females (three pre-spawn, four ripe, and one post-spawn) and 11 males (three ripe and eight post-spawn; Figure 13). Spawning Northern Pike were captured on the north shore downstream of the Keeyask GS (Map 16).

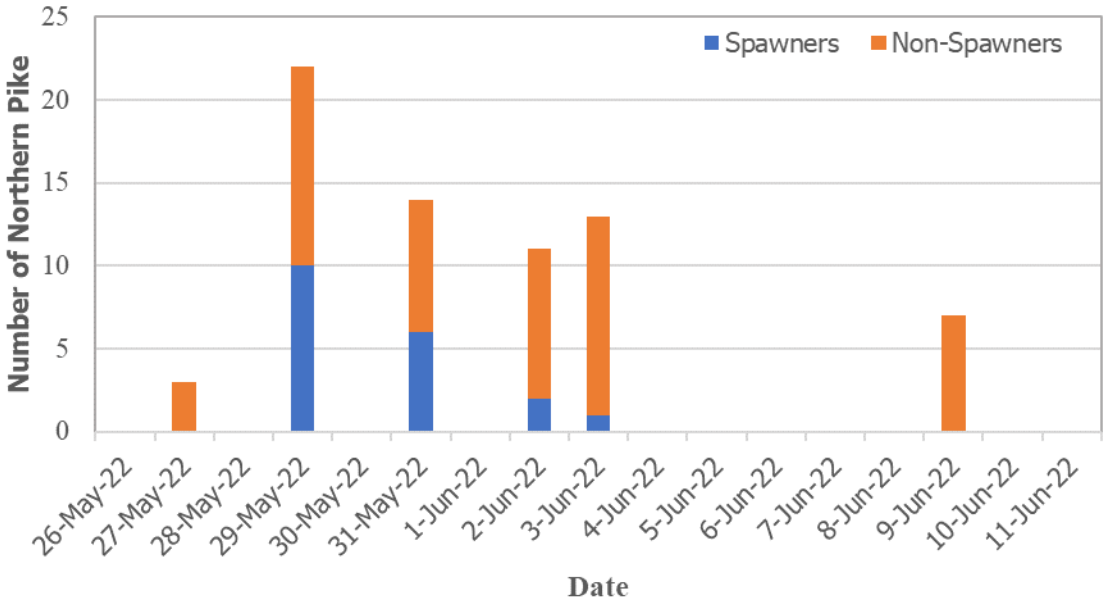
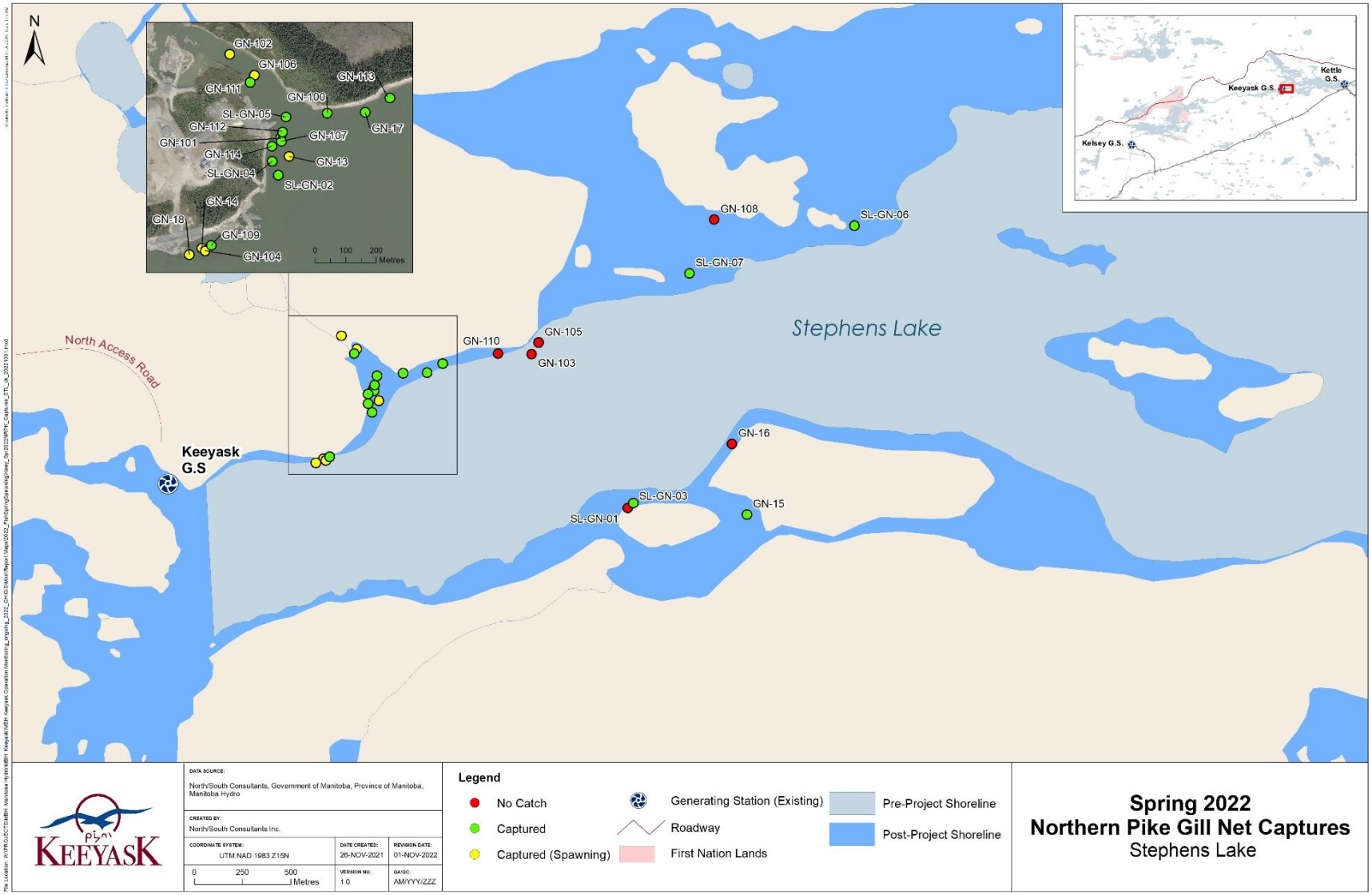


Figure 13: Number of Northern Pike captured by day during sampling in Stephens Lake during spring 2022 by spawning-condition. Sampling in Stephens Lake was conducted between May 27 and June 9, 2022.



Map 16: Map of Stephens Lake showing Northern Pike captures during gillnet surveys, spring 2022.

Map 17: Map of Stephens Lake showing Northern Pike captures during boat electrofishing surveys, spring 2022.

4.2.3 WALLEYE

A total of 46 Walleye were captured in Stephens Lake during spring 2022 (Table 7). Captured fish measured between 254 and 525 mm FL, with the majority measuring between 350 and 399 mm (Table 8, Figure 14). Walleye were captured at 17 of 28 sampling sites, for an average CPUE of 12.5 fish/91.4 m/24 h (Table 9). Walleye were also captured in three of four electrofishing runs for an average CPUE of 0.06 fish/60 s (Table 10; Map 18).

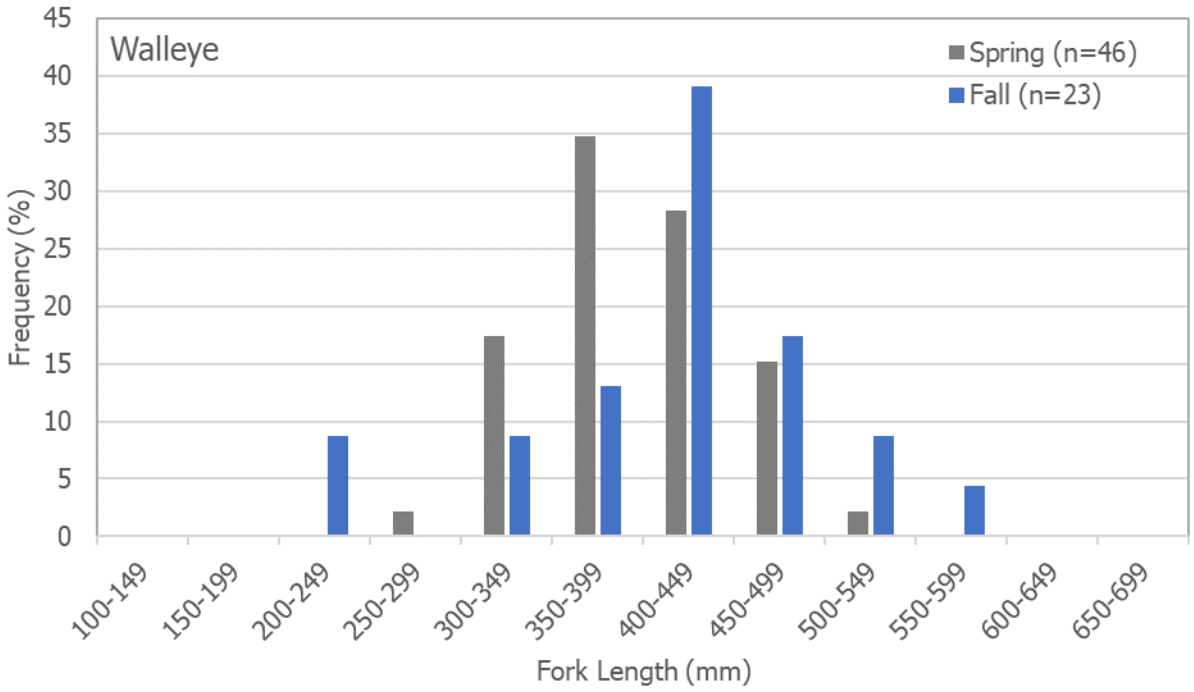


Figure 14: Length-frequency distribution for Lake Whitefish, Northern Pike, and Walleye captured during gillnet and boat electrofishing surveys in Stephens Lake surveys the spring and fall 2022.

Twenty-one captured Walleye were in spawning condition, all of which were males (one pre-spawn and 20 ripe; Figure 15). Spawning Walleye were captured both on the North (n = 17) and South (n = 4) shores downstream of the Keeyask GS (Map 19).

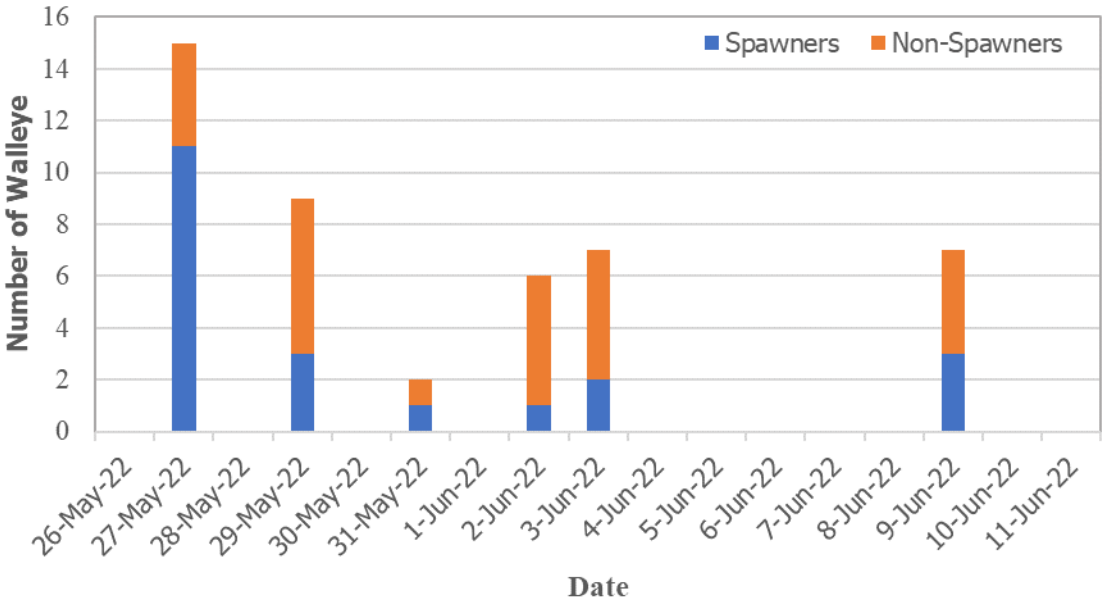
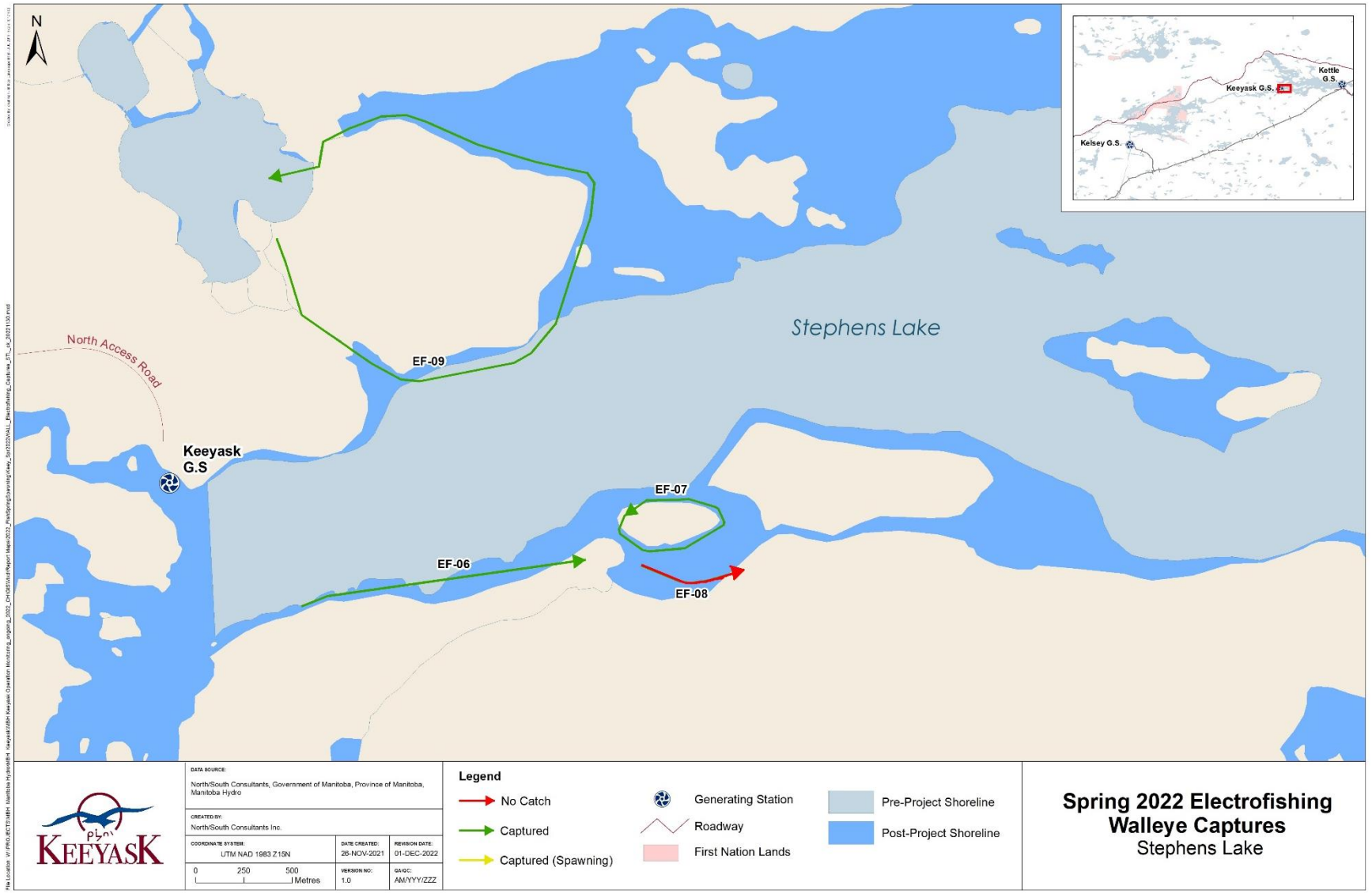
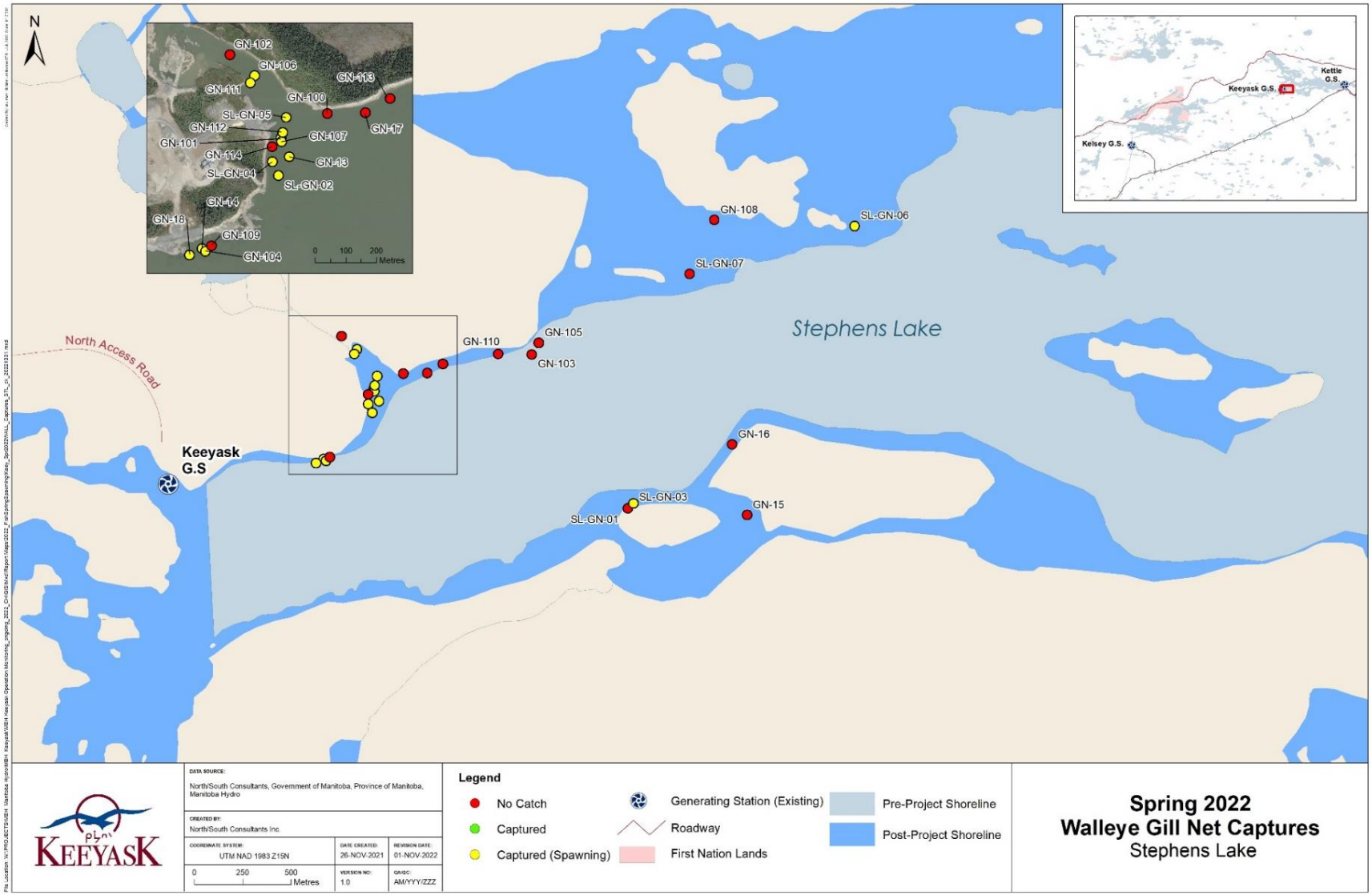


Figure 15: Number of Walleye captured by day during sampling in Stephens Lake during spring 2022 by spawning-condition. Sampling in Stephens Lake was conducted between May 27 and June 9, 2022.



Map 18: Map of Stephens Lake showing Walleye captures during boat electrofishing surveys, spring 2022.



Map 19: Map of Stephens Lake showing Walleye captures during gillnet surveys, spring 2022.

5.0 DISCUSSION

Spawn monitoring was conducted in 2022 to determine if spring-spawning (*i.e.*, Walleye and Northern Pike) and fall-spawning (*i.e.*, Lake Whitefish) VEC species continue to spawn within the Keeyask reservoir and upper Stephens Lake following reservoir impoundment and GS operation. Areas targeted for sampling included reservoir backbays, the reservoir spawning shoals, spawning areas identified in the EIS, and other areas identified as potentially suitable post-impoundment.

Commissioning of the Keeyask GS was completed in March 2022, when all powerhouse units became functional. Therefore, 2022 represents the first year of sampling during operation conditions in both the Keeyask reservoir and Stephens Lake. Key questions identified in the AEMP are addressed below.

Does suitable spawning habitat exist upstream and downstream of the Keeyask GS for each VEC fish species in the post-Project environment?

Larval Lake Whitefish (spawned in fall 2021), spawning Walleye, and spawning Northern Pike were captured upstream of the Keeyask GS in spring 2022, indicating that spawning habitat was present in the reservoir for these species in the second year following impoundment. Downstream of the Keeyask GS, spawning Walleye and Northern Pike were captured in spring and spawning Lake Whitefish were captured in fall, 2022. Together, these results suggest that suitable spawning habitat exists for all three VEC species both upstream and downstream of the Keeyask GS during operation.

Will Northern Pike continue to spawn in tributary confluences and backbays of the Keeyask reservoir?

It was predicted in the EIS that inundation of terrestrial vegetation would result in a short-term increase in Northern Pike spawning habitat following impoundment. Spawning Northern Pike were captured at several locations in the Keeyask reservoir in spring 2022. Spawning Northern Pike were captured within eleven of the 12 areas identified as spawning habitat in the EIS including several tributary confluences (*e.g.,* Nap, Two Goose, and Portage creeks). Spawning fish were also captured within flooded backbays 4, 5, 7, 8, 11, and 13 and on three constructed spawning shoals (F East, G South, and H East).

Northern Pike spawned following reservoir impoundment were captured during fish community monitoring studies in the Keeyask reservoir in 2022 (Slongo and Hrenchuk 2022). The catch included 12 age-1 (spawned in 2021) and five young-of-the-year (spawned in 2022) fish indicating that Northern Pike spawning and recruitment occurred in the Keeyask reservoir following GS construction.

Will Walleye and Lake Whitefish use existing or created spawning habitat in the Keeyask reservoir, immediately downstream of the GS, and in Stephens Lake?

It was predicted in the EIS that, despite habitat changes associated with reservoir impoundment, Birthday Rapids would remain suitable for Lake Whitefish spawning. Lake Whitefish continue to spawn in the Keeyask reservoir following impoundment. In spring 2022, larval Lake Whitefish were captured downstream of Birthday Rapids and in the middle Keeyask reservoir. A single larvae was captured in the vicinity of constructed spawning shoal L, suggesting that Lake Whitefish may be spawning on or near this shoal.

Although no spawning Lake Whitefish were captured during surveys conducted during fall 2021 (Hrenchuk and Loeppky 2022), larvae captured in spring 2022 were hatched from eggs that were deposited during fall 2021. Similarly, no spawning Lake Whitefish were captured in the reservoir in fall 2022. It is likely that water temperatures were too warm (reaching 9ºC by the end of sampling) and fish were not showing signs of spawning by the end of the fall sampling program. Neuston tows will be conducted in early spring 2023 to determine whether spawning and successful incubation of eggs occurred. Sampling in fall 2023 will be conducted later to better target Lake Whitefish spawning temperatures.

Lake Whitefish also continue to use spawning habitat in Stephens Lake immediately downstream of the GS. It was predicted in the EIS that construction of the GS would result in a loss of spawning habitat for Lake Whitefish. However, spawning Lake Whitefish were captured on the North shore within 2 km downstream of the GS in fall 2022. The spawning shoal in Stephens Lake was not yet constructed in 2022.

Walleye also continue to use existing spawning habitat in the Keeyask reservoir and Stephens Lake. Walleye were captured downstream of Birthday Rapids in the middle Keeyask reservoir, and Gull Lake. No spawning Walleye were captured in the vicinity of the constructed reservoir spawning shoals in spring 2022. Spawning Walleye were captured in Stephens Lake on the North and South shores between 1 and 4 km downstream of the GS.

5.1 NEXT STEPS

Sampling conducted in 2022 represents the second year of monitoring following impoundment of the Keeyask GS reservoir and the first year of operation monitoring following GS commissioning. The VEC fish spawn monitoring program will be repeated in spring and fall 2023, representing the second year of operation monitoring. Sampling in fall 2023 will be conducted later to better target Lake Whitefish spawning temperatures. The Lake Whitefish spawning shoal is scheduled to be constructed in Stephens Lake during winter 2023/2024 and will be monitored for the first time in fall 2024.

6.0 SUMMARY AND CONCLUSIONS

- The AEMP identified three key questions for the use of existing and created spawning habitat by VEC fish species. Key questions are addressed below.
    - *Does suitable spawning habitat exist upstream and downstream of the Keeyask GS for each VEC fish species in the post-Project environment?*

      Larval Lake Whitefish (spawned in fall 2021) were captured in the Keeyask reservoir, and spawning Walleye and Northern Pike were captured both upstream and downstream of the Keeyask GS in spring 2022. Additionally, spawning Lake Whitefish were captured downstream of the Keeyask GS in fall 2022. Together, these results suggest that suitable spawning habitat exists for each VEC species both upstream and downstream of the GS in the second year following reservoir impoundment and the first year of full GS operation.
    - *Will Northern Pike continue to spawn in tributary confluences and backbays of the Keeyask reservoir?*

      Spawning Northern Pike were captured at several locations in the Keeyask reservoir in spring 2022 including tributary confluences, within flooded backbays, and on three constructed spawning shoals.
    - *Will Walleye and Lake Whitefish use existing or created spawning habitat in the Keeyask reservoir, immediately downstream of the GS, and in Stephens Lake?*

      Larval Lake Whitefish (spawned in 2021) were captured downstream of Birthday Rapids in spring 2022 indicating that whitefish are continuing to use this area for spawning. A single larvae was also captured in the vicinity of one of the constructed spawning shoals in the Gull Lake, suggesting that spawning may have occurred on or near this shoal. Spawning Lake Whitefish were captured in Stephens Lake in fall 2022, indicating that they are continuing to use spawning habitat in the river channel downstream of the GS.

      Spawning Walleye were captured in the middle Keeyask reservoir and Gull Lake. No spawning Walleye were captured in the vicinity of the constructed reservoir spawning shoals in spring 2022. Spawning Walleye were captured in Stephens Lake on both the North and South shores between 1 and 4 km of the GS.
- During the initial years of Project operation, the EIS predicted that flooding of terrestrial vegetation would result in a short-term increase in Northern Pike spawning habitat in the Keeyask reservoir. Spawning Northern Pike were captured in the upper, middle, and lower Keeyask reservoir, within reservoir backbays, and on three of the constructed spawning shoals. Walleye and Lake Whitefish were predicted to continue to use Birthday Rapids for spawning. No spawning Walleye have been captured downstream of Birthday Rapids since reservoir impoundment, however they were captured in the middle Keeyask reservoir and Gull Lake showing that spawning has continued within the reservoir. Lake

Whitefish have continued to use Birthday Rapids for spawning. Larval Lake Whitefish spawned following reservoir impoundment were captured downstream of Birthday Rapids both in 2021 and 2022. A single larval Lake Whitefish was captured near a constructed spawning shoal in Gull Lake in 2022 suggesting that Lake Whitefish may be spawning on or near this shoal. No spawning-condition Lake Whitefish were captured within the Keeyask reservoir in either 2021 or 2022, however, it is likely that sampling occurred too early and that water temperatures were too warm for Lake Whitefish spawning. Sampling in fall 2023 will be conducted later to better target Lake Whitefish spawning temperatures.

- Within Stephens Lake, the EIS predicted that, despite the loss of spawning habitat within Gull Rapids, VEC species would find alternative spawning locations within the riverine reach downstream of the GS, and any losses would be mitigated by constructed spawning shoals. Spawning Northern Pike, Walleye, and Lake Whitefish were captured downstream of the Keeyask GS in 2022.

7.0 LITERATURE CITED

Auer, N.A. 1982. Identification of larval fishes of the Great Lakes Basin with emphasis on the Lake Michigan Drainage. Great Lakes Fishery Commission, Special Publication 82-3, Ann Arbor, MI.

Fudge, R.J.P., R.A. Bodaly, and M. Viljanen. 1986. Identification of larval Lake Whitefish (Coregonus clupeaformis) and Cisco (Coregonus artedii), from Southern Indian Lake, Manitoba, by pigmentation characteristics and by isoelectric focusing on whole body protein extracts. Canadian Technical Report of Fisheries and Aquatic Sciences: 1471. iv + 30 pp.

Hrenchuk, C.L. and A.R. Loeppky. 2022. Fish use of existing and created spawning habitat: Year 1 impoundment. Keeyask Generation Project Aquatic Effects Monitoring Plan Report #AEMP-2022-09. A report prepared for Manitoba Hydro by North/South Consultants Inc. xiii + 87 pp.

Green, D.J. and Derksen, A.J. 1987. Observations on the spawning of Lake Whitefish (*Coregonus clupeaformis*) in the Poplar River area of Lake Winnipeg, 1974 – 1977. Manitoba Department of Natural Resources, Fisheries Branch Manuscript Report 87–24: 86 pp.

Scott, W.B. and E.J. Crossman. 1998. Freshwater fishes of Canada. Fisheries Research Board of Canada Bulletin: 184. 966 pp.

Slongo, B. and C.L. Hrenchuk. 2022. Fish community monitoring in the Nelson River from Split Lake to Stephens Lake, summer 2022. Keeyask Generation Project Aquatic Effects Monitoring Report #AEMP-2023-07. A report prepared for Manitoba Hydro by North/South Consultants Inc.

Stewart, K. W. and Watkinson, D. A. 2004. The freshwater fishes of Manitoba. University of Manitoba Press, Winnipeg, MB. 243 pp.

APPENDICES

APPENDIX 1:
LOCATIONS AND SITE-SPECIFIC PHYSICAL MEASUREMENTS COLLECTED AT GILLNETTING, BOAT ELECTROFISHING, DRIFT TRAP, AND NEUSTON TOW SITES, SPRING AND FALL 2022.

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022.

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Keeyask reservoir	GN-01	358445	6245582	26-May-22	5	1.38	6.2	3.6
Keeyask reservoir	GN-02	358366	6246173	26-May-22	5	1.58	10.6	7.6
Keeyask reservoir	GN-03	331211	6243197	27-May-22	5	2.28	5.5	3.1
Keeyask reservoir	GN-04	331347	6243314	27-May-22	5	2.57	4.4	2.8
Keeyask reservoir	GN-05	332065	6243115	27-May-22	5	2.70	4.9	4.9
Keeyask reservoir	GN-06	333953	6243122	27-May-22	5	1.25	5.1	4.9
Keeyask reservoir	GN-07	338774	6245028	28-May-22	7	2.65	6.3	-
Keeyask reservoir	GN-08	336231	6244871	28-May-22	7	2.75	4.2	6.5
Keeyask reservoir	GN-09	333829	6243064	28-May-22	7	3.18	5.2	5.1
Keeyask reservoir	GN-10	339030	6245264	28-May-22	7	2.28	3.4	4.2
Keeyask reservoir	GN-11	339547	6245323	28-May-22	7	1.10	4.2	4.9
Keeyask reservoir	GN-12	340584	6244431	28-May-22	7	1.38	4.5	4.9
Stephens Lake	GN-13	365008	6247628	29-May-22	7	3.20	7.7	5.4
Stephens Lake	GN-14	364722	6247328	29-May-22	7	3.88	10.7	8.4
Stephens Lake	GN-15	366907	6247039	29-May-22	7	2.32	4.6	4.4
Stephens Lake	GN-16	366831	6247404	29-May-22	7	2.15	10.2	19.4
Stephens Lake	GN-17	365256	6247773	29-May-22	7	2.27	7.1	7.3
Stephens Lake	GN-18	364681	6247308	29-May-22	7	1.82	2.9	1.5
Keeyask reservoir	GN-19	354916	6247235	31-May-22	7	1.35	3.7	3.6
Keeyask reservoir	GN-20	354424	6246104	31-May-22	7	1.30	3.8	1.8
Keeyask reservoir	GN-21	354777	6247446	31-May-22	7	1.52	6.7	7.5
Keeyask reservoir	GN-22	354574	6245502	31-May-22	7	1.48	2.2	2.3
Keeyask reservoir	GN-23	354202	6245482	31-May-22	7	1.07	5.1	7.2
Keeyask reservoir	GN-24	353874	6245694	31-May-22	7	0.75	6.8	5.1
Keeyask reservoir	GN-25	356812	6244965	2-Jun-22	6	1.77	1.9	3.9
Keeyask reservoir	GN-26	355828	6245252	2-Jun-22	6	1.95	7.2	7.8

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Keeyask reservoir	GN-27	355703	6244999	2-Jun-22	6	1.73	4.2	6.5
Keeyask reservoir	GN-28	355207	6243494	2-Jun-22	6	2.20	3.7	6.3
Keeyask reservoir	GN-29	355431	6243761	2-Jun-22	6	1.72	5.7	6
Keeyask reservoir	GN-30	353202	6245727	2-Jun-22	6	1.07	6.7	7.4
Keeyask reservoir	GN-31	350312	6245261	3-Jun-22	-	1.42	6.5	6.6
Keeyask reservoir	GN-32	350063	6246227	3-Jun-22	-	1.45	6.3	6.3
Keeyask reservoir	GN-33	349951	6246578	4-Jun-22	6.5	1.78	3.9	4
Keeyask reservoir	GN-34	350718	6246532	4-Jun-22	6.5	1.97	5.1	5.8
Keeyask reservoir	GN-35	342172	6243222	4-Jun-22	6.5	2.18	3.0	2.5
Keeyask reservoir	GN-35	342172	6243222	4-Jun-22	6.5	2.25	3.0	2.5
Keeyask reservoir	GN-36	354257	6248957	5-Jun-22	6.5	2.25	3.2	3.8
Keeyask reservoir	GN-37	354819	6248767	5-Jun-22	6.5	2.38	4.6	6.4
Keeyask reservoir	GN-38	355030	6248256	5-Jun-22	6.5	2.62	3.3	7.4
Keeyask reservoir	GN-39	355380	6247622	5-Jun-22	6.5	1.90	4.1	11.2
Keeyask reservoir	GN-40	354733	6247726	5-Jun-22	6.5	2.13	4.7	6.5
Keeyask reservoir	GN-41	354356	6247310	5-Jun-22	6.5	2.08	3.2	3.1
Keeyask reservoir	GN-42	354510	6246380	5-Jun-22	6.5	1.65	5.3	7.5
Keeyask reservoir	GN-43	353934	6246308	5-Jun-22	6.5	1.33	1.9	2.5
Keeyask reservoir	GN-44	355780	6246499	5-Jun-22	6.5	0.92	2.7	2.7
Keeyask reservoir	GN-45	345514	6245439	6-Jun-22	7	3.07	6.3	6.3
Keeyask reservoir	GN-46	344948	6245733	6-Jun-22	7	2.42	2.9	6.4
Keeyask reservoir	GN-47	343603	6245118	6-Jun-22	7	2.03	5.6	6.7
Keeyask reservoir	GN-48	353336	6243304	6-Jun-22	7	2.83	2.8	2
Keeyask reservoir	GN-49	352826	6242103	6-Jun-22	7	2.00	2.8	2.6
Keeyask reservoir	GN-50	352580	6242430	6-Jun-22	7	2.17	6.1	5.4
Keeyask reservoir	GN-51	330909	6242548	7-Jun-22	7	3.33	3.8	4.8

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Keeyask reservoir	GN-52	332220	6242098	7-Jun-22	7	2.25	2.7	2.7
Keeyask reservoir	GN-53	331671	6241917	7-Jun-22	7	1.92	2.4	4.5
Keeyask reservoir	GN-54	337692	6245637	7-Jun-22	7	1.85	4.6	5.5
Keeyask reservoir	GN-55	338957	6245069	7-Jun-22	7	1.88	4.5	5.4
Keeyask reservoir	GN-56	337975	6244330	7-Jun-22	7	2.08	5.9	5.9
Keeyask reservoir	GN-57	339679	6245642	8-Jun-22	-	2.33	4.4	4.3
Keeyask reservoir	GN-58	339627	6244937	8-Jun-22	-	2.42	4.9	5.2
Keeyask reservoir	GN-59	338538	6245329	8-Jun-22	-	2.42	5.9	5.9
Keeyask reservoir	GN-60	338828	6245026	8-Jun-22	-	2.67	5.1	5.5
Keeyask reservoir	GN-61	339364	6245255	8-Jun-22	-	2.92	4.9	4.9
Keeyask reservoir	GN-62	339069	6244608	8-Jun-22	-	3.00	5.1	7.2
Keeyask reservoir	GN-63	338090	6245563	9-Jun-22	7	2.05	5.7	5.7
Keeyask reservoir	GN-63	338090	6245563	9-Jun-22	7	3.00	5.7	5.7
Keeyask reservoir	GN-64	338951	6245421	9-Jun-22	7	1.83	5.1	5.2
Keeyask reservoir	GN-64	338951	6245421	9-Jun-22	7	3.17	5.1	5.2
Keeyask reservoir	GN-65	339460	6245359	9-Jun-22	7	2.08	4.3	5.3
Keeyask reservoir	GN-65	339460	6245359	9-Jun-22	7	3.08	4.3	5.3
Keeyask reservoir	GN-66	336226	6245009	10-Jun-22	7.5	2.22	3.5	4.3
Keeyask reservoir	GN-67	336839	6244368	10-Jun-22	7.5	2.50	2.5	6.1
Keeyask reservoir	GN-68	335907	6244036	10-Jun-22	7.5	2.97	2.8	5.8
Keeyask reservoir	GN-69	339091	6243418	10-Jun-22	7.5	1.92	3.8	3.6
Keeyask reservoir	GN-70	340035	6243593	10-Jun-22	7.5	2.08	5.8	1.8
Keeyask reservoir	GN-71	355042	6247178	11-Jun-22	-	2.08	5.1	3.1
Keeyask reservoir	GN-72	354889	6247724	11-Jun-22	-	2.22	6.2	3.7
Stephens Lake	GN-100	365132	6247770	31-May-22	6	2.25	5.7	9.0
Stephens Lake	GN-101	364980	6247690	31-May-22	6	2.35	6.8	5.3

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Stephens Lake	GN-101	364980	6247690	31-May-22	6	3.05	6.8	5.3
Stephens Lake	GN-102	364813	6247962	31-May-22	6	3.02	3.7	5.6
Stephens Lake	GN-103	365796	6247868	31-May-22	6	3.18	11.1	11.3
Stephens Lake	GN-104	364734	6247320	31-May-22	6	2.45	1.5	2.0
Stephens Lake	GN-105	365831	6247928	2-Jun-22	6.5	3.00	13.7	12.6
Stephens Lake	GN-106	364894	6247894	2-Jun-22	6.5	3.23	8.1	5.9
Stephens Lake	GN-106	364894	6247894	2-Jun-22	6.5	2.68	8.1	5.9
Stephens Lake	GN-107	364982	6247678	2-Jun-22	6.5	3.87	6.4	4.9
Stephens Lake	GN-108	366739	6248562	2-Jun-22	6.5	2.42	2.6	7.0
Stephens Lake	GN-109	364753	6247338	2-Jun-22	6.5	1.90	3.4	1.8
Stephens Lake	GN-110	365623	6247871	3-Jun-22	6	2.57	5.4	12.5
Stephens Lake	GN-111	364880	6247870	3-Jun-22	6	2.83	4.3	7.3
Stephens Lake	GN-111	364880	6247870	3-Jun-22	6	2.72	4.3	7.3
Stephens Lake	GN-112	364986	6247708	3-Jun-22	6	3.32	2.6	8.1
Stephens Lake	GN-113	365337	6247819	3-Jun-22	6	2.43	3.4	8.1
Stephens Lake	GN-114	364951	6247661	3-Jun-22	6	2.25	5.7	5.5
Keeyask reservoir	GN-115	344935	6245667	4-Jun-22	6	2.48	3.0	6.4
Keeyask reservoir	GN-116	344260	6245368	4-Jun-22	6	2.55	6.6	6.8
Keeyask reservoir	GN-117	345404	6245485	4-Jun-22	6	2.53	6.6	5.6
Keeyask reservoir	GN-118	347472	6243362	4-Jun-22	6	2.12	5.6	4.7
Keeyask reservoir	GN-119	347183	6243613	4-Jun-22	6	2.25	5.4	7.7
Keeyask reservoir	GN-120	347104	6243057	4-Jun-22	6	2.18	5.7	5.4
Keeyask reservoir	GN-121	355555	6248645	5-Jun-22	7	2.00	2.8	7.3
Keeyask reservoir	GN-122	355890	6248565	5-Jun-22	7	2.88	2.4	8.4
Keeyask reservoir	GN-123	356450	6248430	5-Jun-22	7	3.60	5.3	8.5
Keeyask reservoir	GN-124	357643	6248505	5-Jun-22	7	2.50	4.4	7.4

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Keeyask reservoir	GN-125	358214	6248670	5-Jun-22	7	2.12	4.4	6.6
Keeyask reservoir	GN-126	358523	6248559	5-Jun-22	7	1.87	4.1	6.6
Keeyask reservoir	GN-127	347307	6243530	6-Jun-22	7	2.35	5.5	8.0
Keeyask reservoir	GN-128	347500	6243308	6-Jun-22	7	2.93	5.4	6.6
Keeyask reservoir	GN-129	347062	6243005	6-Jun-22	7	3.05	3.4	3.8
Keeyask reservoir	GN-130	349873	6246054	6-Jun-22	7	2.33	3.4	2.9
Keeyask reservoir	GN-131	350566	6245697	6-Jun-22	7	2.55	3.3	6.4
Keeyask reservoir	GN-132	351037	6245439	6-Jun-22	7	2.72	3.4	7.1
Keeyask reservoir	GN-133	354809	6247737	7-Jun-22	8	1.92	3.4	6.5
Keeyask reservoir	GN-134	354640	6247588	7-Jun-22	8	1.98	5.4	6.4
Keeyask reservoir	GN-135	355016	6248065	7-Jun-22	8	2.00	3.5	7.4
Keeyask reservoir	GN-136	340819	6244529	8-Jun-22	8	3.00	4.9	4.9
Keeyask reservoir	GN-137	340317	6244595	8-Jun-22	8	3.18	4.9	4.8
Keeyask reservoir	GN-137	340317	6244595	8-Jun-22	8	2.05	4.9	4.8
Keeyask reservoir	GN-138	339436	6245340	8-Jun-22	8	3.28	5.1	5.4
Keeyask reservoir	GN-139	338549	6245325	8-Jun-22	8	1.40	5.7	8.8
Keeyask reservoir	GN-140	338752	6244953	8-Jun-22	8	1.98	5.3	11.4
Keeyask reservoir	GN-141	340383	6244677	9-Jun-22	8.5	1.97	4.9	5.0
Keeyask reservoir	GN-142	340719	6244650	9-Jun-22	8.5	2.12	5.0	5.1
Keeyask reservoir	GN-143	339571	6245193	9-Jun-22	8.5	2.25	4.9	4.8
Keeyask reservoir	GN-144	339614	6245545	9-Jun-22	8.5	2.32	2.9	5.3
Keeyask reservoir	GN-145	339415	6245248	9-Jun-22	8.5	2.70	4.9	4.5
Keeyask reservoir	GN-146	342161	6243229	10-Jun-22	10	2.23	2.5	2.9
Keeyask reservoir	GN-146	342161	6243229	10-Jun-22	10	2.25	2.5	2.9
Keeyask reservoir	GN-147	340329	6244545	10-Jun-22	10	2.62	4.5	5.0
Keeyask reservoir	GN-148	339798	6244843	10-Jun-22	10	3.08	5.2	5.0

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Keeyask reservoir	GN-149	338567	6245335	10-Jun-22	10	2.07	5.5	10.1
Keeyask reservoir	GN-150	338931	6245211	10-Jun-22	10	2.20	5.1	5.4
Keeyask reservoir	GN-151	355695	6246918	11-Jun-22	11	2.07	6.4	7.1
Keeyask reservoir	GN-152	355570	6246721	11-Jun-22	11	2.15	5.4	8.7
Keeyask reservoir	GN-153	355675	6246526	11-Jun-22	11	2.80	4.4	10.1
Stephens Lake	SL-GN-01	366293	6247074	27-May-22	-	2.67	-	-
Stephens Lake	SL-GN-02	364972	6247567	27-May-22	-	3.17	6.8	6.4
Stephens Lake	SL-GN-03	366320	6247098	27-May-22	-	2.17	7.0	9.0
Stephens Lake	SL-GN-04	364952	6247612	27-May-22	-	2.03	8.1	5.0
Keeyask reservoir	KR-GN-01	331048	6243198	28-May-22	-	2.67	2.3	3.8
Keeyask reservoir	KR-GN-02	331290	6243082	28-May-22	-	2.83	4.4	4.3
Keeyask reservoir	KR-GN-03	341827	6243410	29-May-22	-	4.13	-	-
Keeyask reservoir	KR-GN-04	338888	6244037	29-May-22	-	3.58	5.8	6.0
Keeyask reservoir	KR-GN-05	338938	6244710	29-May-22	-	2.62	4.5	3.8
Stephens Lake	SL-GN-05	364997	6247757	9-Jun-22	-	3.25	7.5	8.0
Stephens Lake	SL-GN-06	367463	6248532	9-Jun-22	-	3.67	1.7	4.8
Stephens Lake	SL-GN-07	366611	6248284	9-Jun-22	-	3.75	3.8	8.2
Stephens Lake	GN-01	368309	6247283	28-Sep-22	12	2.03	2.3	10.6
Stephens Lake	GN-01	368309	6247283	28-Sep-22	12	2.28	2.3	10.6
Stephens Lake	GN-01	368309	6247283	28-Sep-22	12	1.98	2.3	10.6
Stephens Lake	GN-02	368218	6246847	28-Sep-22	12	2.10	1.1	11.7
Stephens Lake	GN-03	368009	6246960	28-Sep-22	12	3.10	4.5	8.8
Stephens Lake	GN-03	368009	6246960	28-Sep-22	12	2.35	4.5	8.8
Stephens Lake	GN-04	368334	6246849	28-Sep-22	12	1.82	0.9	7.6
Keeyask reservoir	GN-05	331295	6243094	29-Sep-22	13	1.92	4.9	6
Keeyask reservoir	GN-06	331651	6242933	29-Sep-22	13	2.02	3.6	12.7

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Keeyask reservoir	GN-07	331274	6243114	30-Sep-22	12	2.60	4.9	4.8
Keeyask reservoir	GN-07	331274	6243114	30-Sep-22	12	2.42	4.9	4.8
Keeyask reservoir	GN-08	331649	6242919	30-Sep-22	12	3.32	3.5	5.8
Keeyask reservoir	GN-08	331649	6242919	30-Sep-22	12	2.15	3.5	5.8
Keeyask reservoir	GN-09	331747	6243015	30-Sep-22	12	3.88	2.9	5.9
Keeyask reservoir	GN-09	331747	6243015	30-Sep-22	12	1.97	2.9	5.9
Stephens Lake	GN-10	365941	6248154	2-Oct-22	11	2.08	1.9	4.8
Stephens Lake	GN-10	365941	6248154	2-Oct-22	11	2.05	1.9	4.8
Stephens Lake	GN-11	366177	6248646	2-Oct-22	11	2.32	3.8	3.1
Stephens Lake	GN-11	366177	6248646	2-Oct-22	11	2.32	3.8	3.1
Stephens Lake	GN-12	366894	6246861	3-Oct-22	12	2.15	2.8	6.5
Stephens Lake	GN-13	367445	6246969	3-Oct-22	12	2.32	8.1	10.3
Stephens Lake	GN-13	367445	6246969	3-Oct-22	12	2.25	8.1	10.3
Stephens Lake	GN-13	367445	6246969	3-Oct-22	12	2.28	8.1	10.3
Stephens Lake	GN-14	369268	6247634	3-Oct-22	12	2.58	6.6	3.4
Stephens Lake	GN-14	369268	6247634	3-Oct-22	12	2.00	6.6	3.4
Stephens Lake	GN-14	369268	6247634	3-Oct-22	12	2.28	6.6	3.4
Stephens Lake	GN-15	366793	6246772	3-Oct-22	12	2.05	1.7	8.3
Stephens Lake	GN-16	366462	6246880	3-Oct-22	12	2.15	4.6	6.4
Keeyask reservoir	GN-17	339753	6245079	4-Oct-22	12	1.57	4.8	4.9
Keeyask reservoir	GN-18	339654	6245557	4-Oct-22	12	1.82	4	4.8
Keeyask reservoir	GN-19	339276	6245449	4-Oct-22	12	1.92	3.6	5.3
Stephens Lake	GN-20	365306	6247563	5-Oct-22	10	2.08	5.7	12
Stephens Lake	GN-20	365306	6247563	5-Oct-22	10	2.02	5.7	12
Stephens Lake	GN-20	365306	6247563	5-Oct-22	10	1.97	5.7	12
Stephens Lake	GN-21	365561	6247738	5-Oct-22	10	2.33	6.4	12.4

Table A1-1: Gillnet survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)	Water Depth (m)	
		Easting	Northing				Start	End
Stephens Lake	GN-21	365561	6247738	5-Oct-22	10	1.95	6.4	12.4
Stephens Lake	GN-22	364958	6247495	5-Oct-22	10	1.62	8.6	6.5
Keeyask reservoir	GN-23	354029	6245617	6-Oct-22	10	1.92	6.6	4.6
Keeyask reservoir	GN-24	364106	6245272	6-Oct-22	10	2.12	6.1	7
Keeyask reservoir	GN-25	354737	6245406	6-Oct-22	10	2.17	7	5.8
Keeyask reservoir	GN-26	331254	6243104	11-Oct-22	9	1.88	5.3	3.8
Keeyask reservoir	GN-27	331660	6242925	11-Oct-22	9	2.37	3.9	5.4
Keeyask reservoir	GN-28	354796	6247377	11-Oct-22	9	1.87	6.3	6.4
Keeyask reservoir	GN-29	354877	6247161	11-Oct-22	9	1.88	7.2	7.6
Keeyask reservoir	GN-30	355745	6245324	11-Oct-22	9	1.85	10.8	10
Keeyask reservoir	GN-31	355700	6244975	11-Oct-22	9	1.83	6.9	4.5
Keeyask reservoir	GN-32	356708	6244897	11-Oct-22	9	1.72	3.7	3.4
Keeyask reservoir	GN-33	358670	6245647	11-Oct-22	9	1.62	5.8	9.1

Table A1-2: Boat electrofishing survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022.

Location	Site	Date	UTM Coordinates		Water Temp (°C)	Duration (dec. hours)	Settings		
			Easting	Northing			Frequency (Hz)	Voltage (V)	Pulse Width
Keeyask reservoir	EF-1	26/May/22	358306	6245492	5	0.99	20	375	20
Keeyask reservoir	EF-2	27/May/22	342119	6243393	4.5	0.63	40	375	28
Keeyask reservoir	EF-3	27/May/22	338776	6245119	4.5	0.70	40	375	28
Keeyask reservoir	EF-4	28/May/22	347069	6243639	5	1.55	40	375	28
Keeyask reservoir	EF-5	28/May/22	347583	6243323	5	0.93	40	375	28
Stephens Lake	EF-6	29/May/22	364602	6246560	5	0.63	40	375	28
Stephens Lake	EF-7	29/May/22	366275	6247029	5	0.48	40	375	28
Stephens Lake	EF-8	29/May/22	366360	6246772	5	0.24	40	375	28
Stephens Lake	EF-9	29/May/22	364472	6248465	5	1.62	40	375	28
Stephens Lake	Run 1	27/Sep/22	364925	6247860	13	0.16	-	500	30
Stephens Lake	Run 2	27/Sep/22	365125	6247752	13	0.29	-	500	30
Stephens Lake	Run 3	27/Sep/22	365910	6248168	13	0.14	-	500	30
Stephens Lake	Run 4	29/Sep/22	366198	6248279	13	0.27	-	500	30
Stephens Lake	Run 5	29/Sep/22	365194	6248841	13	0.27	-	500	30
Stephens Lake	Run 6	29/Sep/22	365161	6249085	13	0.23	-	500	30
Keeyask reservoir	Run 7	30/Sep/22	331642	6242892	13	0.26	-	500	30
Keeyask reservoir	Run 8	30/Sep/22	331222	6243008	13	0.26	-	500	30
Keeyask reservoir	Run 9	30/Sep/22	331424	6243331	13	0.24	-	500	30
Keeyask reservoir	Run 10	30/Sep/22	332001	6243030	13	0.22	-	500	30
Keeyask reservoir	Run 11	30/Sep/22	332677	6243429	13	0.21	-	500	30
Keeyask reservoir	Run 12A	30/Sep/22	332876	6243337	11	0.20	-	500	30
Keeyask reservoir	Run 12B	1/Oct/22	355945	6248568	11	0.24	-	500	30
Keeyask reservoir	Run 13	1/Oct/22	356681	6248361	11	0.45	-	500	30
Keeyask reservoir	Run 14	1/Oct/22	355284	6245591	11	0.28	-	500	30
Keeyask reservoir	Run 15	1/Oct/22	355796	6246399	11	0.37	-	500	30

Table A1-2: Boat electrofishing survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	UTM Coordinates		Water Temp (°C)	Duration (dec. hours)	Settings		
			Easting	Northing			Frequency (Hz)	Voltage (V)	Pulse Width
Keeyask reservoir	Run 16	1/Oct/22	357777	6247379	11	0.34	-	500	30
Keeyask reservoir	Run 17	1/Oct/22	347374	6243533	11	0.23	-	500	30
Stephens Lake	Run 18	2/Oct/22	366259	6246974	10	0.13	-	500	30
Stephens Lake	Run 19	2/Oct/22	366296	6247128	10	0.16	-	500	30
Stephens Lake	Run 20	2/Oct/22	366679	6247161	10	0.21	-	500	30
Stephens Lake	Run 21	2/Oct/22	366028	6248840	10	0.42	-	500	30
Stephens Lake	Run 22	2/Oct/22	366028	6248840	10	0.41	-	500	30
Stephens Lake	Run 23	2/Oct/22	365316	6249021	10	0.14	-	500	30
Stephens Lake	Run 24	2/Oct/22	366065	6248820	10	0.48	-	500	30
Stephens Lake	Run 25	3/Oct/22	368712	6247775	10	0.24	-	500	30
Stephens Lake	Run 26	3/Oct/22	368712	6247775	10	0.23	-	500	30
Stephens Lake	Run 27	3/Oct/22	365074	6247766	10	0.23	-	500	30
Stephens Lake	Run 28	3/Oct/22	365726	6247886	10	0.25	-	500	30
Stephens Lake	Run 29	3/Oct/22	364940	6247621	10	0.10	-	500	30
Stephens Lake	Run 30	3/Oct/22	364979	6247402	10	0.20	-	500	30
Stephens Lake	Run 31	3/Oct/22	364721	6247341	10	0.23	-	500	30
Stephens Lake	Run 32	3/Oct/22	364759	6246576	10	0.21	-	500	30
Stephens Lake	Run 33	3/Oct/22	364944	6247377	10	0.21	-	500	30
Keeyask reservoir	Run 34	4/Oct/22	358805	6245540	10	0.16	-	500	30
Keeyask reservoir	Run 35	4/Oct/22	358038	6245578	10	0.12	-	500	30
Keeyask reservoir	Run 36	4/Oct/22	359058	6245457	10	0.25	-	500	30
Keeyask reservoir	Run 37	4/Oct/22	356825	6244906	10	0.18	-	500	30
Keeyask reservoir	Run 38	4/Oct/22	355789	6245319	10	0.07	-	500	30
Keeyask reservoir	Run 39	4/Oct/22	354689	6245453	10	0.12	-	500	30
Keeyask reservoir	Run 40	4/Oct/22	354059	6245649	10	0.08	-	500	30

Table A1-2: Boat electrofishing survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	UTM Coordinates		Water Temp (°C)	Duration (dec. hours)	Settings		
			Easting	Northing			Frequency (Hz)	Voltage (V)	Pulse Width
Keeyask reservoir	Run 41	4/Oct/22	353982	6245250	10	0.11	-	500	30
Keeyask reservoir	Run 42	4/Oct/22	354991	6247271	10	0.04	-	500	30
Keeyask reservoir	Run 43	4/Oct/22	354744	6247367	10	0.07	-	500	30
Stephens Lake	Run 44	4/Oct/22	368103	6247351	10	0.24	-	500	30
Stephens Lake	Run 45	4/Oct/22	367544	6247419	10	0.38	-	500	30
Stephens Lake	Run 46	4/Oct/22	369382	6247508	10	0.19	-	500	30
Stephens Lake	Run 47	4/Oct/22	369908	6247658	10	0.22	-	500	30
Stephens Lake	Run 48	4/Oct/22	369345	6247619	10	0.07	-	500	30
Stephens Lake	Run 49	5/Oct/22	364949	6247672	10	0.16	-	500	30
Stephens Lake	Run 50	5/Oct/22	364730	6247343	10	0.17	-	500	30
Stephens Lake	Run 51	5/Oct/22	364640	6247279	10	0.17	-	500	30
Stephens Lake	Run 52	5/Oct/22	364349	6247337	10	0.13	-	500	30
Stephens Lake	Run 53	5/Oct/22	365084	6247710	10	0.12	-	500	30
Stephens Lake	Run 54	5/Oct/22	365805	6247719	10	0.21	-	500	30
Stephens Lake	Run 55	5/Oct/22	365095	6247744	10	0.17	-	500	30
Stephens Lake	Run 56	5/Oct/22	365545	6247852	10	0.12	-	500	30
Stephens Lake	Run 57	5/Oct/22	364890	6247332	10	0.13	-	500	30
Stephens Lake	Run 58	5/Oct/22	364960	6247359	10	0.15	-	500	30
Keeyask reservoir	Run 59	6/Oct/22	331339	6242946	9	0.13	-	500	30
Keeyask reservoir	Run 60	6/Oct/22	331082	6243209	9	0.11	-	500	30
Keeyask reservoir	Run 61	6/Oct/22	331445	6243363	9	0.18	-	500	30
Keeyask reservoir	Run 62	6/Oct/22	331703	6242899	9	0.13	-	500	30
Keeyask reservoir	Run 63	6/Oct/22	331692	6242906	9	0.20	-	500	30
Stephens Lake	Run 64	6/Oct/22	365025	6247759	9	0.16	-	500	30

Table A1-2: Boat electrofishing survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	UTM Coordinates		Water Temp (°C)	Duration (dec. hours)	Settings		
			Easting	Northing			Frequency (Hz)	Voltage (V)	Pulse Width
Stephens Lake	Run 65	6/Oct/22	365001	6247719	9	0.32	-	500	30
Stephens Lake	Run 66	6/Oct/22	365085	6247752	9	0.17	-	500	30
Keeyask reservoir	Run 67	8/Oct/22	331329	6242992	8	0.16	-	500	30
Keeyask reservoir	Run 68	8/Oct/22	331053	6243210	8	0.15	-	500	30
Keeyask reservoir	Run 69	8/Oct/22	331423	6243395	8	0.21	-	500	30
Keeyask reservoir	Run 70	8/Oct/22	331659	6242894	8	0.21	-	500	30
Keeyask reservoir	Run 71	8/Oct/22	331612	6242881	8	0.24	-	500	30
Keeyask reservoir	Run 72	8/Oct/22	331634	6242892	8	0.08	-	500	30
Stephens Lake	Run 73	8/Oct/22	364994	6247742	8	0.14	-	500	30
Stephens Lake	Run 74	8/Oct/22	364941	6247464	8	0.19	-	500	30
Stephens Lake	Run 75	8/Oct/22	364661	6247317	8	0.20	-	500	30
Stephens Lake	Run 76	8/Oct/22	364341	6247332	8	0.12	-	500	30
Stephens Lake	Run 77	8/Oct/22	364529	6247316	8	0.09	-	500	30
Keeyask reservoir	Run 78	9/Oct/22	331335	6242969	8	0.08	-	500	30
Keeyask reservoir	Run 79	9/Oct/22	331189	6243249	8	0.20	-	500	30
Keeyask reservoir	Run 80	9/Oct/22	331610	6242896	8	0.18	-	500	30
Keeyask reservoir	Run 81	9/Oct/22	331614	6242900	8	0.17	-	500	30
Stephens Lake	Run 82	9/Oct/22	365057	6247775	8	0.17	-	500	30
Stephens Lake	Run 83	9/Oct/22	365047	6247798	8	0.16	-	500	30
Stephens Lake	Run 84	9/Oct/22	365009	6247744	8	0.13	-	500	30
Stephens Lake	Run 85	9/Oct/22	364945	6247434	8	0.15	-	500	30
Stephens Lake	Run 86	9/Oct/22	364858	6247355	8	0.13	-	500	30
Stephens Lake	Run 87	9/Oct/22	364858	6247346	8	0.13	-	500	30
Keeyask reservoir	Run 88	10/Oct/22	331300	6242873	8	0.21	-	500	30

Table A1-2: Boat electrofishing survey information from the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	UTM Coordinates		Water Temp (°C)	Duration (dec. hours)	Settings		
			Easting	Northing			Frequency (Hz)	Voltage (V)	Pulse Width
Keeyask reservoir	Run 89	10/Oct/22	331150	6243240	8	0.22	-	500	30
Keeyask reservoir	Run 90	10/Oct/22	331413	6243375	8	0.11	-	500	30
Keeyask reservoir	Run 91	10/Oct/22	331591	6242884	8	0.11	-	500	30
Keeyask reservoir	Run 92	10/Oct/22	331607	6242902	8	0.19	-	500	30
Stephens Lake	Run 93	10/Oct/22	364996	6247823	8	0.17	-	500	30

Table A1-3: Drift trap survey information from the Keeyask reservoir, spring 2022.

Location	Site	UTM Location		Date	Water Temp (°C)	Duration (dec. hours)
		Easting	Northing			
Keeyask reservoir	DT-1	332896	6243667	27-May-22	5	22.5
Keeyask reservoir	DT-1	332896	6243667	28-May-22	5	25.92
Keeyask reservoir	DT-1	332896	6243667	29-May-22	5	49.25
Keeyask reservoir	DT-1	332896	6243667	31-May-22	5	48.17
Keeyask reservoir	DT-2	332671	6243433	27-May-22	5	22.43
Keeyask reservoir	DT-2	332671	6243433	28-May-22	5	25.58
Keeyask reservoir	DT-2	332671	6243433	29-May-22	5	49.33
Keeyask reservoir	DT-2	332671	6243433	31-May-22	5	48.5
Keeyask reservoir	DT-3	335677	6244361	28-May-22	5	24.62
Keeyask reservoir	DT-3	335677	6244361	29-May-22	5	49.58
Keeyask reservoir	DT-3	335677	6244361	31-May-22	5	48.17
Keeyask reservoir	DT-3	335677	6244361	2-Jun-22	6	22.63
Keeyask reservoir	DT-4	335056	6244466	28-May-22	5	24.48
Keeyask reservoir	DT-4	335056	6244466	29-May-22	5	49.67
Keeyask reservoir	DT-4	335056	6244466	31-May-22	5	48.17
Keeyask reservoir	DT-4	335056	6244466	2-Jun-22	6	22.95

Table A1-4: Neuston tow survey information from the Keeyask reservoir, spring 2022.

Location	Site	Date	Start UTM		End UTM		Water Temp (°C)	Duration (dec. hours)	Volume Sampled (m³)
			Easting	Northing	Easting	Northing			
Keeyask reservoir	NT-01	26-May-22	358847	6245670	358038	6245476	5	0.72	324.00
Keeyask reservoir	NT-02	27-May-22	333299	6243155	331700	6242887	5	0.38	283.50
Keeyask reservoir	NT-03	27-May-22	332676	6243446	332896	6243657	5	0.10	88.56
Keeyask reservoir	NT-04	27-May-22	332955	6243895	334488	6244182	5	0.37	270.00
Keeyask reservoir	NT-05	28-May-22	334845	6244320	335953	6244846	7	0.35	189.00
Keeyask reservoir	NT-06	28-May-22	338459	6245357	338975	6244694	7	0.38	229.50
Keeyask reservoir	NT-07	28-May-22	338472	6244262	337638	6244676	7	0.27	148.50
Keeyask reservoir	NT-08	31-May-22	354577	6245508	354644	6245802	7	0.42	243.00
Keeyask reservoir	NT-09	2-Jun-22	354405	6247311	354647	6247543	6	0.52	229.50
Keeyask reservoir	NT-10	2-Jun-22	356549	6245114	355951	6245159	6	0.28	135.00
Keeyask reservoir	NT-11	3-Jun-22	360639	6245517	360285	6245312	5	0.18	95.45
Keeyask reservoir	NT-12	3-Jun-22	352638	6242012	352931	6241859	5	0.27	202.50
Keeyask reservoir	NT-13	3-Jun-22	351143	6244062	351272	6243777	5	0.17	87.62
Keeyask reservoir	NT-14	3-Jun-22	349854	6245932	350258	6246277	5	0.17	70.07
Keeyask reservoir	NT-15	3-Jun-22	350589	6244422	351149	6244591	5	0.08	85.32
Keeyask reservoir	NT-16	4-Jun-22	342355	6243481	342015	6243335	6.5	0.18	31.86
Keeyask reservoir	NT-17	4-Jun-22	342014	6244015	342224	6244148	6.5	0.08	39.02
Keeyask reservoir	NT-18	4-Jun-22	345019	6244150	345246	6244390	6.5	0.08	49.95
Keeyask reservoir	NT-19	4-Jun-22	346222	6245193	346874	6244757	6.5	0.23	123.12
Keeyask reservoir	NT-20	4-Jun-22	348936	6245041	349762	6244848	6.5	0.27	162.00
Keeyask reservoir	NT-21	4-Jun-22	349762	6244848	347467	6243447	6.5	0.18	84.11
Keeyask reservoir	NT-1001	29-May-22	337082	6244662	337033	6244852	5	0.12	30.38

APPENDIX 2:
BIOLOGICAL AND TAG INFORMATION FOR LAKE WHITEFISH, NORTHERN PIKE, AND WALLEYE CAPTURED IN THE KEEYASK RESERVOIR AND STEPHENS LAKE, SPRING AND FALL 2022.

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022.

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-03	27-May-22	NRPK	NSC	84262	-	620	1920	-	-
Keeyask reservoir	GN-03	27-May-22	NRPK	-	-	-	304	200	-	-
Keeyask reservoir	GN-03	27-May-22	WALL	NSC	84263	-	401	880	-	-
Keeyask reservoir	GN-04	27-May-22	NRPK	NSC	84264	-	690	2650	-	-
Keeyask reservoir	GN-04	27-May-22	NRPK	NSC	84265	-	452	690	M	7
Keeyask reservoir	GN-05	27-May-22	NRPK	NSC	84266	-	519	870	-	-
Keeyask reservoir	GN-05	27-May-22	NRPK	NSC	84267	-	496	1030	-	-
Keeyask reservoir	GN-05	27-May-22	WALL	NSC	84268	-	454	1250	M	8
Keeyask reservoir	EF-2	27-May-22	WALL	NSC	55267	-	431	1050	-	-
Keeyask reservoir	EF-2	27-May-22	NRPK	NSC	55266	-	505	1000	-	-
Keeyask reservoir	EF-2	27-May-22	NRPK	NSC	55265	-	790	5500	-	-
Keeyask reservoir	EF-3	27-May-22	NRPK	NSC	55264	-	409	600	-	-
Stephens Lake	SL-GN-01	27-May-22	WALL	NSC	117337	-	357	480	M	8
Stephens Lake	SL-GN-01	27-May-22	WALL	NSC	117339	-	404	760	-	-
Stephens Lake	SL-GN-01	27-May-22	WALL	NSC	117340	-	323	420	M	8
Stephens Lake	SL-GN-01	27-May-22	WALL	NSC	117341	-	457	1160	M	8
Stephens Lake	SL-GN-02	27-May-22	WALL	NSC	117343	-	254	200	-	-
Stephens Lake	SL-GN-02	27-May-22	NRPK	NSC	117344	-	419	560	-	-
Stephens Lake	SL-GN-03	27-May-22	WALL	NSC	117345	-	433	840	M	8
Stephens Lake	SL-GN-03	27-May-22	WALL	NSC	117342	-	452	980	M	8
Stephens Lake	SL-GN-03	27-May-22	WALL	NSC	117348	-	467	980	M	8
Stephens Lake	SL-GN-03	27-May-22	WALL	NSC	117349	-	444	940	M	8
Stephens Lake	SL-GN-03	27-May-22	NRPK	NSC	117338	-	615	1740	-	-
Stephens Lake	SL-GN-04	27-May-22	WALL	NSC	122977	-	338	440	-	-
Stephens Lake	SL-GN-04	27-May-22	WALL	NSC	122978	-	365	540	M	8

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	SL-GN-04	27-May-22	WALL	NSC	122979	-	336	420	-	-
Stephens Lake	SL-GN-04	27-May-22	WALL	NSC	122980	-	338	480	M	8
Stephens Lake	SL-GN-04	27-May-22	WALL	NSC	122981	-	404	780	M	8
Stephens Lake	SL-GN-04	27-May-22	WALL	NSC	122982	-	391	560	M	8
Stephens Lake	SL-GN-04	27-May-22	NRPK	NSC	122983	-	297	140	-	-
Keeyask reservoir	GN-07	28-May-22	NRPK	NSC	84269	-	518	1130	-	-
Keeyask reservoir	GN-07	28-May-22	NRPK	NSC	84270	-	513	1070	M	8
Keeyask reservoir	GN-08	28-May-22	WALL	NSC	84271	-	315	350	-	-
Keeyask reservoir	GN-08	28-May-22	NRPK	NSC	84272	-	528	1380	-	-
Keeyask reservoir	GN-08	28-May-22	NRPK	NSC	84273	-	510	1040	M	8
Keeyask reservoir	GN-08	28-May-22	NRPK	NSC	84274	-	558	1270	-	-
Keeyask reservoir	GN-09	28-May-22	WALL	NSC	120242	-	474	1150	-	-
Keeyask reservoir	GN-09	28-May-22	WALL	NSC	120243	-	415	860	-	-
Keeyask reservoir	GN-09	28-May-22	NRPK	NSC	120244	-	820	-	F	3
Keeyask reservoir	GN-09	28-May-22	NRPK	NSC	120245	-	527	1080	F	3
Keeyask reservoir	GN-11	28-May-22	NRPK	NSC	120246	-	443	650	-	-
Keeyask reservoir	GN-12	28-May-22	NRPK	NSC	120247	-	463	720	-	-
Keeyask reservoir	EF-4	28-May-22	NRPK	NSC	55263	-	503	1100	-	-
Keeyask reservoir	EF-4	28-May-22	NRPK	NSC	55262	-	276	325	-	-
Keeyask reservoir	EF-4	28-May-22	NRPK	NSC	55261	-	627	2150	F	3
Keeyask reservoir	EF-4	28-May-22	NRPK	NSC	55260	-	602	2075	-	-
Keeyask reservoir	EF-5	28-May-22	NRPK	NSC	55259	-	511	650	-	-
Keeyask reservoir	EF-5	28-May-22	NRPK	NSC	55258	-	455	800	M	7
Keeyask reservoir	EF-5	28-May-22	NRPK	NSC	55257	-	664	2450	M	7
Keeyask reservoir	EF-5	28-May-22	NRPK	NSC	55256	-	570	1900	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	KR-GN-01	28-May-22	WALL	NSC	122984	-	526	1620	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122985	-	506	980	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122986	-	415	220	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122987	-	752	2080	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122988	-	644	1940	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122989	-	714	2260	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122990	-	710	1540	-	-
Keeyask reservoir	KR-GN-01	28-May-22	NRPK	NSC	122991	-	823	2440	-	-
Keeyask reservoir	KR-GN-02	28-May-22	NRPK	NSC	122993	-	682	1300	-	-
Keeyask reservoir	KR-GN-02	28-May-22	NRPK	NSC	122994	-	800	1960	F	3
Keeyask reservoir	KR-GN-02	28-May-22	NRPK	NSC	122995	-	900	2640	-	-
Stephens Lake	GN-15	29-May-22	NRPK	NSC	120248	-	685	2300	-	-
Stephens Lake	GN-13	29-May-22	WALL	NSC	120249	-	320	400	-	-
Stephens Lake	GN-13	29-May-22	WALL	-	-	-	404	770	-	-
Stephens Lake	GN-13	29-May-22	NRPK	NSC	113701	-	505	875	M	7
Stephens Lake	GN-13	29-May-22	NRPK	NSC	113702	-	396	480	M	8
Stephens Lake	GN-13	29-May-22	NRPK	NSC	113703	-	471	730	M	8
Stephens Lake	GN-14	29-May-22	WALL	NSC	113704	-	360	530	M	8
Stephens Lake	GN-14	29-May-22	NRPK	NSC	113705	-	857	-	F	3
Stephens Lake	GN-14	29-May-22	NRPK	NSC	113706	-	616	2100	-	-
Stephens Lake	GN-14	29-May-22	NRPK	NSC	113175	-	510	860	-	-
Stephens Lake	GN-14	29-May-22	NRPK	NSC	113172	-	434	550	M	8
Stephens Lake	GN-16	29-May-22	WALL	NSC	113171	-	375	550	M	8
Stephens Lake	GN-16	29-May-22	WALL	NSC	113170	-	470	1250	M	8
Stephens Lake	GN-17	29-May-22	NRPK	-	-	-	287	150	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	GN-18	29-May-22	WALL	NSC	113169	-	525	1600	-	-
Stephens Lake	GN-18	29-May-22	NRPK	-	-	-	410	-	M	8
Stephens Lake	GN-18	29-May-22	NRPK	NSC	113168	-	489	750	-	-
Stephens Lake	GN-18	29-May-22	NRPK	NSC	117800	-	560	1100	-	-
Stephens Lake	EF-6	29-May-22	NRPK	NSC	55255	-	469	680	M	8
Stephens Lake	EF-6	29-May-22	NRPK	NSC	55254	-	565	1300	-	-
Stephens Lake	EF-6	29-May-22	NRPK	NSC	55253	-	452	-	-	-
Stephens Lake	EF-6	29-May-22	WALL	NSC	55252	-	385	-	-	-
Stephens Lake	EF-7	29-May-22	WALL	NSC	124477	-	377	-	-	-
Stephens Lake	EF-7	29-May-22	LKWH	NSC	124478	-	445	1600	-	-
Stephens Lake	EF-7	29-May-22	LKWH	NSC	124479	-	415	1200	-	-
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124480	-	470	800	M	8
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124481	-	461	700	M	7
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124482	-	730	3200	-	-
Stephens Lake	EF-7	29-May-22	LKWH	NSC	124483	-	509	2200	-	-
Stephens Lake	EF-7	29-May-22	LKWH	NSC	124485	-	478	1600	-	-
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124484	-	454	550	-	-
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124486	-	525	950	M	8
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124487	-	649	1800	-	-
Stephens Lake	EF-7	29-May-22	NRPK	NSC	124488	-	328	300	-	-
Stephens Lake	EF-7	29-May-22	WALL	NSC	124489	-	429	900	-	-
Stephens Lake	EF-7	29-May-22	LKWH	-	-	-	528	2800	-	-
Stephens Lake	EF-7	29-May-22	LKWH	NSC	124492	-	440	1150	-	-
Stephens Lake	EF-7	29-May-22	LKWH	NSC	124493	-	277	300	-	-
Keeyask reservoir	KR-GN-05	29-May-22	NRPK	NSC	122996	-	620	960	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	KR-GN-05	29-May-22	NRPK	NSC	122997	-	689	1120	-	-
Keeyask reservoir	KR-GN-04	29-May-22	WALL	NSC	122998	-	400	740	-	-
Keeyask reservoir	KR-GN-04	29-May-22	NRPK	NSC	122999	-	564	640	-	-
Keeyask reservoir	KR-GN-04	29-May-22	NRPK	NSC	123000	-	570	980	F	3
Keeyask reservoir	KR-GN-03	29-May-22	NRPK	NSC	122272	-	920	5000	-	-
Keeyask reservoir	KR-GN-03	29-May-22	NRPK	NSC	122874	-	1155	5380	-	-
Keeyask reservoir	KR-GN-03	29-May-22	WALL	NSC	121627	-	583	1760	M	8
Keeyask reservoir	KR-GN-03	29-May-22	WALL	NSC	122873	-	467	920	-	-
Keeyask reservoir	KR-GN-03	29-May-22	WALL	NSC	122872	-	452	800	M	8
Keeyask reservoir	KR-GN-03	29-May-22	WALL	NSC	122870	-	425	740	M	8
Keeyask reservoir	KR-GN-03	29-May-22	NRPK	NSC	122869	-	544	1100	-	-
Keeyask reservoir	KR-GN-03	29-May-22	NRPK	NSC	122868	-	327	280	-	-
Keeyask reservoir	GN-20	31-May-22	NRPK	NSC	117797	-	476	750	M	8
Keeyask reservoir	GN-21	31-May-22	NRPK	NSC	117796	-	556	1300	-	-
Keeyask reservoir	GN-22	31-May-22	NRPK	NSC	117790	-	594	1650	M	8
Stephens Lake	GN-100	31-May-22	NRPK	NSC	124494	-	590	1250	-	-
Stephens Lake	GN-101	31-May-22	NRPK	NSC	124495	-	501	815	-	-
Stephens Lake	GN-101	31-May-22	NRPK	-	-	-	302	175	-	-
Stephens Lake	GN-101	31-May-22	WALL	NSC	124496	-	425	875	M	8
Stephens Lake	GN-102	31-May-22	NRPK	NSC	124497	-	912	-	-	-
Stephens Lake	GN-102	31-May-22	NRPK	NSC	124498	-	721	2325	F	2
Stephens Lake	GN-102	31-May-22	NRPK	NSC	124499	-	688	2325	F	4
Stephens Lake	GN-102	31-May-22	NRPK	-	-	-	319	200	F	2
Stephens Lake	GN-101	31-May-22	NRPK	NSC	124500	-	508	975	-	-
Stephens Lake	GN-101	31-May-22	NRPK	NSC	123976	-	417	550	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	GN-101	31-May-22	NRPK	NSC	123977	-	815	5200	-	-
Stephens Lake	GN-104	31-May-22	NRPK	NSC	123978	-	870	-	M	7
Stephens Lake	GN-104	31-May-22	NRPK	NSC	123979	-	911	-	F	3
Stephens Lake	GN-104	31-May-22	NRPK	NSC	123980	-	930	-	F	3
Stephens Lake	GN-104	31-May-22	WALL	NSC	123981	-	464	1050	-	-
Stephens Lake	GN-104	31-May-22	NRPK	NSC	123982	-	482	700	-	-
Keeyask reservoir	GN-25	2-Jun-22	NRPK	NSC	117791	-	658	2200	F	3
Keeyask reservoir	GN-29	2-Jun-22	NRPK	NSC	117792	-	520	1000	M	8
Keeyask reservoir	GN-28	2-Jun-22	NRPK	NSC	117793	-	449	650	-	-
Stephens Lake	GN-106	2-Jun-22	NRPK	NSC	123984	-	422	500	M	8
Stephens Lake	GN-106	2-Jun-22	NRPK	NSC	123985	-	490	650	-	-
Stephens Lake	GN-106	2-Jun-22	NRPK	NSC	123986	-	576	1100	-	-
Stephens Lake	GN-106	2-Jun-22	NRPK	NSC	123987	-	831	4200	-	-
Stephens Lake	GN-106	2-Jun-22	WALL	NSC	123988	-	370	550	-	-
Stephens Lake	GN-106	2-Jun-22	WALL	NSC	123989	-	415	750	-	-
Stephens Lake	GN-106	2-Jun-22	WALL	NSC	123990	-	390	650	M	7
Stephens Lake	GN-107	2-Jun-22	NRPK	NSC	123991	-	391	300	-	-
Stephens Lake	GN-107	2-Jun-22	NRPK	NSC	123992	-	420	500	-	-
Stephens Lake	GN-107	2-Jun-22	NRPK	NSC	123993	-	629	1750	-	-
Stephens Lake	GN-107	2-Jun-22	WALL	NSC	123994	-	449	950	-	-
Stephens Lake	GN-107	2-Jun-22	NRPK	NSC	123995	-	878	5500	-	-
Stephens Lake	GN-108	2-Jun-22	WALL	NSC	123996	-	377	600	-	-
Stephens Lake	GN-108	2-Jun-22	WALL	NSC	123998	-	380	550	-	-
Stephens Lake	GN-106	2-Jun-22	NRPK	NSC	123999	-	483	650	-	-
Stephens Lake	GN-106	2-Jun-22	NRPK	-	-	-	627	1600	F	2

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	GN-109	2-Jun-22	NRPK	NSC	123975	-	846	5500	-	-
Keeyask reservoir	GN-31	3-Jun-22	NRPK	NSC	117794	-	556	1000	F	3
Keeyask reservoir	GN-31	3-Jun-22	NRPK	-	-	-	296	150	-	-
Keeyask reservoir	GN-32	3-Jun-22	NRPK	NSC	115175	-	608	-	M	8
Keeyask reservoir	GN-32	3-Jun-22	WALL	NSC	117795	-	424	-	-	-
Stephens Lake	GN-110	3-Jun-22	LKWH	NSC	123974	-	471	1860	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123973	-	590	1420	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123972	-	781	3740	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123971	-	983	-	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123970	-	609	1420	-	-
Stephens Lake	GN-111	3-Jun-22	WALL	NSC	123969	-	418	840	M	8
Stephens Lake	GN-111	3-Jun-22	WALL	NSC	123968	-	414	760	-	-
Stephens Lake	GN-111	3-Jun-22	WALL	NSC	123967	-	457	-	-	-
Stephens Lake	GN-111	3-Jun-22	WALL	NSC	123966	-	389	-	-	-
Stephens Lake	GN-112	3-Jun-22	NRPK	NSC	123965	-	535	1220	F	3
Stephens Lake	GN-112	3-Jun-22	NRPK	NSC	123964	-	492	640	-	-
Stephens Lake	GN-112	3-Jun-22	WALL	NSC	123963	-	350	560	M	8
Stephens Lake	GN-113	3-Jun-22	NRPK	NSC	123962	-	426	580	-	-
Stephens Lake	GN-113	3-Jun-22	NRPK	NSC	123961	-	430	420	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123960	-	469	680	-	-
Stephens Lake	GN-111	3-Jun-22	WALL	NSC	123959	-	333	400	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123958	-	825	4520	-	-
Stephens Lake	GN-111	3-Jun-22	WALL	NSC	123957	-	449	1100	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123956	-	620	1460	-	-
Stephens Lake	GN-111	3-Jun-22	NRPK	NSC	123955	-	771	3240	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	GN-114	3-Jun-22	NRPK	NSC	123954	-	474	700	-	-
Keeyask reservoir	GN-33	4-Jun-22	NRPK	NSC	115172	-	615	1800	-	-
Keeyask reservoir	GN-33	4-Jun-22	NRPK	NSC	115174	-	435	650	M	8
Keeyask reservoir	GN-33	4-Jun-22	NRPK	NSC	115173	-	469	760	-	-
Keeyask reservoir	GN-34	4-Jun-22	NRPK	-	-	-	337	250	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	115171	-	515	1250	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	115170	-	445	700	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	115169	-	447	750	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	115168	-	630	2450	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	115167	-	630	2300	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	115166	-	795	-	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	117986	-	660	-	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	117987	-	823	-	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	117988	-	743	-	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	117989	-	640	2100	-	-
Keeyask reservoir	GN-35	4-Jun-22	NRPK	NSC	117990	-	555	1550	-	-
Keeyask reservoir	GN-115	4-Jun-22	NRPK	NSC	123953	-	318	240	-	-
Keeyask reservoir	GN-115	4-Jun-22	NRPK	NSC	123952	-	300	160	-	-
Keeyask reservoir	GN-115	4-Jun-22	NRPK	NSC	123951	-	708	2340	F	3
Keeyask reservoir	GN-115	4-Jun-22	NRPK	NSC	124151	-	805	4200	-	-
Keeyask reservoir	GN-116	4-Jun-22	NRPK	NSC	124152	-	539	1040	-	-
Keeyask reservoir	GN-117	4-Jun-22	WALL	NSC	124153	-	297	340	-	-
Keeyask reservoir	GN-117	4-Jun-22	NRPK	NSC	124155	-	344	280	-	-
Keeyask reservoir	GN-117	4-Jun-22	NRPK	NSC	124156	-	485	840	-	-
Keeyask reservoir	GN-117	4-Jun-22	NRPK	NSC	124157	-	450	640	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-117	4-Jun-22	NRPK	NSC	124158	-	410	460	-	-
Keeyask reservoir	GN-117	4-Jun-22	NRPK	NSC	124159	-	452	560	-	-
Keeyask reservoir	GN-117	4-Jun-22	NRPK	NSC	124160	-	354	320	-	-
Keeyask reservoir	GN-118	4-Jun-22	NRPK	NSC	124161	-	342	220	-	-
Keeyask reservoir	GN-118	4-Jun-22	NRPK	NSC	124162	-	622	1740	-	-
Keeyask reservoir	GN-118	4-Jun-22	NRPK	NSC	124163	-	571	1560	-	-
Keeyask reservoir	GN-119	4-Jun-22	WALL	NSC	124164	-	435	760	-	-
Keeyask reservoir	GN-119	4-Jun-22	WALL	NSC	124165	-	381	580	-	-
Keeyask reservoir	GN-119	4-Jun-22	NRPK	NSC	124166	-	504	1040	M	8
Keeyask reservoir	GN-119	4-Jun-22	NRPK	NSC	124167	-	524	1220	-	-
Keeyask reservoir	GN-119	4-Jun-22	NRPK	NSC	124168	-	550	1560	-	-
Keeyask reservoir	GN-120	4-Jun-22	LKWH	NSC	124169	-	518	3020	-	-
Keeyask reservoir	GN-120	4-Jun-22	WALL	NSC	124170	-	452	1200	-	-
Keeyask reservoir	GN-120	4-Jun-22	NRPK	NSC	121521	-	985	-	-	-
Keeyask reservoir	GN-36	5-Jun-22	NRPK	NSC	117991	-	372	400	-	-
Keeyask reservoir	GN-36	5-Jun-22	NRPK	NSC	117992	-	576	1430	M	8
Keeyask reservoir	GN-37	5-Jun-22	NRPK	NSC	117993	-	360	350	-	-
Keeyask reservoir	GN-38	5-Jun-22	NRPK	NSC	117994	-	497	900	M	8
Keeyask reservoir	GN-38	5-Jun-22	NRPK	NSC	117995	-	350	300	-	-
Keeyask reservoir	GN-38	5-Jun-22	NRPK	-	-	-	275	110	-	-
Keeyask reservoir	GN-38	5-Jun-22	NRPK	NSC	117324	-	645	1900	-	-
Keeyask reservoir	GN-38	5-Jun-22	NRPK	NSC	117997	-	890	-	-	-
Keeyask reservoir	GN-38	5-Jun-22	WALL	NSC	117996	-	350	500	M	8
Keeyask reservoir	GN-39	5-Jun-22	WALL	NSC	117998	-	325	350	-	-
Keeyask reservoir	GN-41	5-Jun-22	NRPK	NSC	117999	-	490	950	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-41	5-Jun-22	NRPK	NSC	118000	-	608	1750	M	8
Keeyask reservoir	GN-42	5-Jun-22	NRPK	-	-	-	290	150	-	-
Keeyask reservoir	GN-121	5-Jun-22	WALL	NSC	124172	-	379	-	-	-
Keeyask reservoir	GN-121	5-Jun-22	NRPK	NSC	124173	-	286	-	-	-
Keeyask reservoir	GN-121	5-Jun-22	NRPK	NSC	124174	-	630	-	-	-
Keeyask reservoir	GN-122	5-Jun-22	NRPK	NSC	124175	-	431	-	-	-
Keeyask reservoir	GN-122	5-Jun-22	NRPK	NSC	124178	-	317	-	-	-
Keeyask reservoir	GN-123	5-Jun-22	NRPK	NSC	124179	-	510	-	M	8
Keeyask reservoir	GN-123	5-Jun-22	NRPK	NSC	124180	-	545	-	-	-
Keeyask reservoir	GN-124	5-Jun-22	NRPK	NSC	124181	-	575	-	M	8
Keeyask reservoir	GN-125	5-Jun-22	NRPK	-	-	-	303	-	-	-
Keeyask reservoir	GN-125	5-Jun-22	NRPK	NSC	124184	-	596	-	-	-
Keeyask reservoir	GN-125	5-Jun-22	NRPK	NSC	124185	-	600	-	-	-
Keeyask reservoir	GN-126	5-Jun-22	NRPK	NSC	124186	-	480	-	M	8
Keeyask reservoir	GN-47	6-Jun-22	LKWH	-	-	-	200	120	-	-
Keeyask reservoir	GN-46	6-Jun-22	WALL	NSC	108451	-	302	300	-	-
Keeyask reservoir	GN-46	6-Jun-22	NRPK	NSC	108452	-	528	1200	-	-
Keeyask reservoir	GN-46	6-Jun-22	NRPK	NSC	108453	-	454	600	M	8
Keeyask reservoir	GN-46	6-Jun-22	NRPK	NSC	108454	-	487	850	-	-
Keeyask reservoir	GN-46	6-Jun-22	NRPK	-	-	-	243	100	-	-
Keeyask reservoir	GN-46	6-Jun-22	NRPK	NSC	108455	-	830	-	F	3
Keeyask reservoir	GN-45	6-Jun-22	WALL	NSC	108456	-	376	500	-	-
Keeyask reservoir	GN-45	6-Jun-22	NRPK	NSC	108457	-	377	400	M	8
Keeyask reservoir	GN-45	6-Jun-22	NRPK	NSC	108458	-	334	400	-	-
Keeyask reservoir	GN-45	6-Jun-22	NRPK	NSC	108459	-	363	375	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-49	6-Jun-22	NRPK	NSC	108460	-	537	1300	-	-
Keeyask reservoir	GN-49	6-Jun-22	NRPK	NSC	108461	-	703	3200	-	-
Keeyask reservoir	GN-127	6-Jun-22	NRPK	NSC	124187	-	487	820	-	-
Keeyask reservoir	GN-127	6-Jun-22	NRPK	NSC	124188	-	499	780	-	-
Keeyask reservoir	GN-127	6-Jun-22	NRPK	NSC	124189	-	515	800	-	-
Keeyask reservoir	GN-127	6-Jun-22	NRPK	NSC	124191	-	380	280	M	8
Keeyask reservoir	GN-127	6-Jun-22	NRPK	NSC	124192	-	326	120	-	-
Keeyask reservoir	GN-127	6-Jun-22	WALL	NSC	124193	-	236	120	-	-
Keeyask reservoir	GN-128	6-Jun-22	NRPK	NSC	124194	-	520	800	-	-
Keeyask reservoir	GN-130	6-Jun-22	NRPK	NSC	124195	-	546	1180	M	8
Keeyask reservoir	GN-130	6-Jun-22	NRPK	NSC	124197	-	472	780	M	8
Keeyask reservoir	GN-131	6-Jun-22	NRPK	NSC	124196	-	581	1520	M	8
Keeyask reservoir	GN-131	6-Jun-22	NRPK	NSC	124198	-	496	900	-	-
Keeyask reservoir	GN-132	6-Jun-22	NRPK	NSC	124199	-	515	1960	-	-
Keeyask reservoir	GN-132	6-Jun-22	NRPK	NSC	124200	-	722	2560	-	-
Keeyask reservoir	GN-52	7-Jun-22	WALL	NSC	108462	-	461	1000	-	-
Keeyask reservoir	GN-52	7-Jun-22	WALL	-	-	-	448	900	-	-
Keeyask reservoir	GN-52	7-Jun-22	WALL	-	-	-	462	1200	-	-
Keeyask reservoir	GN-52	7-Jun-22	NRPK	-	-	-	602	1500	-	-
Keeyask reservoir	GN-52	7-Jun-22	NRPK	-	-	-	479	850	-	-
Keeyask reservoir	GN-52	7-Jun-22	NRPK	-	-	-	675	2500	-	-
Keeyask reservoir	GN-54	7-Jun-22	WALL	NSC	111414	-	397	800	-	-
Keeyask reservoir	GN-54	7-Jun-22	NRPK	NSC	111416	-	305	210	-	-
Keeyask reservoir	GN-55	7-Jun-22	WALL	NSC	111415	-	444	1010	-	-
Keeyask reservoir	GN-56	7-Jun-22	NRPK	NSC	111417	-	895	-	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-133	7-Jun-22	NRPK	NSC	123876	-	292	180	-	-
Keeyask reservoir	GN-133	7-Jun-22	NRPK	NSC	123877	-	518	1060	-	-
Keeyask reservoir	GN-133	7-Jun-22	NRPK	NSC	123878	-	521	980	-	-
Keeyask reservoir	GN-134	7-Jun-22	NRPK	NSC	123879	-	915	-	-	-
Keeyask reservoir	GN-135	7-Jun-22	NRPK	NSC	123880	-	303	180	-	-
Keeyask reservoir	GN-57	8-Jun-22	NRPK	NSC	111418	-	312	210	-	-
Keeyask reservoir	GN-57	8-Jun-22	NRPK	NSC	111419	-	310	200	-	-
Keeyask reservoir	GN-59	8-Jun-22	NRPK	NSC	111420	-	963	-	-	-
Keeyask reservoir	GN-59	8-Jun-22	WALL	NSC	111421	-	394	600	-	-
Keeyask reservoir	GN-59	8-Jun-22	WALL	NSC	111422	-	268	240	-	-
Keeyask reservoir	GN-59	8-Jun-22	WALL	-	-	-	223	100	-	-
Keeyask reservoir	GN-60	8-Jun-22	WALL	NSC	111423	-	393	650	-	-
Keeyask reservoir	GN-60	8-Jun-22	WALL	NSC	111424	-	344	400	-	-
Keeyask reservoir	GN-60	8-Jun-22	WALL	NSC	111425	-	260	190	-	-
Keeyask reservoir	GN-60	8-Jun-22	NRPK	NSC	107965	-	292	190	-	-
Keeyask reservoir	GN-61	8-Jun-22	NRPK	-	-	-	192	160	-	-
Keeyask reservoir	GN-136	8-Jun-22	NRPK	NSC	123882	-	350	-	-	-
Keeyask reservoir	GN-136	8-Jun-22	NRPK	NSC	123883	-	488	-	-	-
Keeyask reservoir	GN-136	8-Jun-22	LKWH	-	-	-	485	-	-	-
Keeyask reservoir	GN-137	8-Jun-22	NRPK	NSC	123884	-	489	-	-	-
Keeyask reservoir	GN-137	8-Jun-22	NRPK	NSC	123885	-	540	-	-	-
Keeyask reservoir	GN-137	8-Jun-22	NRPK	NSC	123886	-	519	-	-	-
Keeyask reservoir	GN-137	8-Jun-22	NRPK	NSC	123887	-	623	-	-	-
Keeyask reservoir	GN-137	8-Jun-22	LKWH	NSC	123888	-	527	-	-	-
Keeyask reservoir	GN-137	8-Jun-22	WALL	NSC	123889	-	535	-	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-138	8-Jun-22	WALL	NSC	123890	-	358	-	-	-
Keeyask reservoir	GN-138	8-Jun-22	NRPK	-	-	-	317	-	M	6
Keeyask reservoir	GN-139	8-Jun-22	WALL	NSC	123891	-	319	-	-	-
Keeyask reservoir	GN-139	8-Jun-22	WALL	NSC	123892	-	295	-	-	-
Keeyask reservoir	GN-139	8-Jun-22	WALL	NSC	123893	-	215	-	-	-
Keeyask reservoir	GN-139	8-Jun-22	WALL	-	-	-	323	-	M	7
Keeyask reservoir	GN-140	8-Jun-22	WALL	NSC	123894	-	310	-	-	-
Keeyask reservoir	GN-140	8-Jun-22	WALL	NSC	123895	-	347	-	M	8
Keeyask reservoir	GN-64	9-Jun-22	WALL	NSC	107966	-	462	900	-	-
Keeyask reservoir	GN-64	9-Jun-22	WALL	NSC	107967	-	510	1400	-	-
Keeyask reservoir	GN-64	9-Jun-22	NRPK	NSC	107969	-	384	400	-	-
Keeyask reservoir	GN-63	9-Jun-22	WALL	NSC	107970	-	382	650	-	-
Keeyask reservoir	GN-63	9-Jun-22	WALL	NSC	107971	-	342	400	M	8
Keeyask reservoir	GN-63	9-Jun-22	WALL	NSC	107972	-	352	450	M	8
Keeyask reservoir	GN-63	9-Jun-22	WALL	NSC	107973	-	461	1090	-	-
Keeyask reservoir	GN-64	9-Jun-22	NRPK	-	-	-	270	140	-	-
Keeyask reservoir	GN-64	9-Jun-22	NRPK	NSC	107974	-	513	790	-	-
Keeyask reservoir	GN-65	9-Jun-22	WALL	-	-	-	247	150	-	-
Keeyask reservoir	GN-141	9-Jun-22	LKWH	NSC	122867	-	521	-	-	-
Keeyask reservoir	GN-141	9-Jun-22	WALL	NSC	122866	-	389	-	-	-
Keeyask reservoir	GN-142	9-Jun-22	WALL	NSC	122865	-	415	-	-	-
Keeyask reservoir	GN-144	9-Jun-22	NRPK	NSC	122864	-	551	-	-	-
Keeyask reservoir	GN-144	9-Jun-22	NRPK	NSC	122863	-	620	-	-	-
Keeyask reservoir	GN-144	9-Jun-22	NRPK	NSC	122862	-	447	-	-	-
Keeyask reservoir	GN-144	9-Jun-22	NRPK	-	-	-	229	-	M	6

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-145	9-Jun-22	WALL	NSC	122861	-	395	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	122860	-	309	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	122859	-	317	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	122858	-	313	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	122857	-	446	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	122856	-	413	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	NRPK	NSC	122855	-	545	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	NRPK	NSC	122854	-	539	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	NRPK	NSC	122853	-	284	-	-	-
Keeyask reservoir	GN-147	9-Jun-22	WALL	NSC	123901	-	475	-	-	-
Keeyask reservoir	GN-147	9-Jun-22	NRPK	NSC	123902	-	445	-	-	-
Keeyask reservoir	GN-147	9-Jun-22	NRPK	NSC	123903	-	815	-	-	-
Keeyask reservoir	GN-148	9-Jun-22	NRPK	NSC	123904	-	570	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	NRPK	NSC	123905	-	430	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	NRPK	NSC	123906	-	523	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	NRPK	NSC	123907	-	319	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	123908	-	492	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	123909	-	412	-	F	3
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	123910	-	379	-	M	8
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	123911	-	387	-	-	-
Keeyask reservoir	GN-146	9-Jun-22	WALL	NSC	123912	-	369	-	-	-
Keeyask reservoir	GN-149	9-Jun-22	WALL	NSC	123913	-	326	-	-	-
Keeyask reservoir	GN-149	9-Jun-22	WALL	NSC	123914	-	409	-	-	-
Keeyask reservoir	GN-150	9-Jun-22	WALL	NSC	123915	-	327	-	-	-
Keeyask reservoir	GN-150	9-Jun-22	WALL	NSC	123916	-	280	-	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-150	9-Jun-22	WALL	NSC	123917	-	437	-	-	-
Stephens Lake	SL-GN-05	9-Jun-22	NRPK	NSC	122801	-	507	1000	-	-
Stephens Lake	SL-GN-05	9-Jun-22	NRPK	NSC	122802	-	424	500	-	-
Stephens Lake	SL-GN-05	9-Jun-22	NRPK	NSC	122803	-	488	600	-	-
Stephens Lake	SL-GN-05	9-Jun-22	WALL	NSC	122804	-	372	550	M	8
Stephens Lake	SL-GN-05	9-Jun-22	WALL	NSC	122805	-	328	400	-	-
Stephens Lake	SL-GN-06	9-Jun-22	WALL	NSC	122808	-	314	350	-	-
Stephens Lake	SL-GN-06	9-Jun-22	WALL	NSC	122806	-	378	550	M	8
Stephens Lake	SL-GN-06	9-Jun-22	WALL	NSC	122807	-	415	760	-	-
Stephens Lake	SL-GN-06	9-Jun-22	WALL	NSC	122811	-	364	525	-	-
Stephens Lake	SL-GN-06	9-Jun-22	NRPK	NSC	122813	-	490	625	-	-
Stephens Lake	SL-GN-06	9-Jun-22	NRPK	NSC	122814	-	440	600	-	-
Stephens Lake	SL-GN-06	9-Jun-22	NRPK	NSC	122812	-	434	600	-	-
Stephens Lake	SL-GN-07	9-Jun-22	NRPK	NSC	122815	-	304	210	-	-
Stephens Lake	SL-GN-06	9-Jun-22	WALL	NSC	122809	122810	484	1175	M	8
Keeyask reservoir	GN-66	10-Jun-22	NRPK	NSC	107975	-	471	700	-	-
Keeyask reservoir	GN-66	10-Jun-22	NRPK	NSC	119526	-	595	1500	M	8
Keeyask reservoir	GN-66	10-Jun-22	NRPK	NSC	119527	-	665	2300	-	-
Keeyask reservoir	GN-67	10-Jun-22	WALL	-	-	-	235	100	-	-
Keeyask reservoir	GN-67	10-Jun-22	NRPK	NSC	119528	-	490	-	-	-
Keeyask reservoir	GN-69	10-Jun-22	WALL	NSC	119530	-	517	1700	-	-
Keeyask reservoir	GN-70	10-Jun-22	WALL	NSC	119531	-	255	150	-	-
Keeyask reservoir	GN-70	10-Jun-22	WALL	NSC	119532	-	455	1000	-	-
Keeyask reservoir	GN-151	10-Jun-22	NRPK	NSC	123918	-	277	-	-	-
Keeyask reservoir	GN-151	10-Jun-22	NRPK	NSC	123919	-	493	-	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	Run 2	27-Sep-22	LKWH	NSC	119050	-	311	460	-	-
Stephens Lake	Run 2	27-Sep-22	LKWH	NSC	119048	-	510	1750	-	-
Stephens Lake	GN-01	28-Sep-22	NRPK	NSC	118641	-	544	1020	-	-
Stephens Lake	GN-02	28-Sep-22	LKWH	NSC	118649	-	355	700	-	-
Stephens Lake	GN-02	28-Sep-22	LKWH	NSC	118648	-	424	1300	-	-
Stephens Lake	GN-02	28-Sep-22	NRPK	NSC	118647	-	987	-	-	-
Stephens Lake	GN-02	28-Sep-22	WALL	NSC	118646	-	445	1000	-	-
Stephens Lake	GN-02	28-Sep-22	WALL	NSC	118645	-	415	720	-	-
Stephens Lake	GN-02	28-Sep-22	WALL	NSC	118644	-	565	2330	-	-
Stephens Lake	GN-02	28-Sep-22	NRPK	NSC	118643	-	454	600	-	-
Stephens Lake	GN-02	28-Sep-22	NRPK	NSC	93850	-	562	1020	-	-
Stephens Lake	GN-02	28-Sep-22	NRPK	NSC	93849	-	564	1450	-	-
Stephens Lake	GN-02	28-Sep-22	NRPK	NSC	93848	-	580	1140	-	-
Stephens Lake	GN-02	28-Sep-22	NRPK	NSC	93847	-	810	-	-	-
Stephens Lake	GN-03	28-Sep-22	WALL	NSC	93846	-	245	130	-	-
Stephens Lake	GN-03	28-Sep-22	WALL	NSC	122002	-	335	400	-	-
Stephens Lake	GN-01	28-Sep-22	LKWH	NSC	93845	-	490	1950	-	-
Stephens Lake	GN-01	28-Sep-22	WALL	NSC	93844	-	361	610	-	-
Stephens Lake	GN-01	28-Sep-22	NRPK	NSC	93843	-	870	5700	-	-
Stephens Lake	GN-01	28-Sep-22	NRPK	NSC	93842	-	554	970	-	-
Stephens Lake	GN-03	28-Sep-22	NRPK	NSC	93841	-	463	580	-	-
Stephens Lake	GN-01	28-Sep-22	NRPK	NSC	93840	-	550	1130	-	-
Stephens Lake	GN-04	28-Sep-22	NRPK	NSC	93839	-	590	1220	-	-
Stephens Lake	GN-04	28-Sep-22	NRPK	NSC	93838	-	817	5200	-	-
Keeyask reservoir	GN-05	29-Sep-22	NRPK	NSC	93837	-	540	1320	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-05	29-Sep-22	NRPK	NSC	118650	-	563	1190	-	-
Keeyask reservoir	GN-05	29-Sep-22	WALL	NSC	118642	-	471	990	-	-
Keeyask reservoir	GN-05	29-Sep-22	WALL	NSC	122676	-	394	590	-	-
Keeyask reservoir	GN-06	29-Sep-22	LKWH	NSC	122677	-	482	1660	-	-
Keeyask reservoir	GN-06	29-Sep-22	LKWH	NSC	122678	-	502	2580	-	-
Keeyask reservoir	GN-06	29-Sep-22	WALL	NSC	122679	-	519	1600	-	-
Keeyask reservoir	GN-06	29-Sep-22	WALL	NSC	122680	-	461	1150	-	-
Keeyask reservoir	GN-06	29-Sep-22	NRPK	NSC	122681	-	539	1200	-	-
Keeyask reservoir	GN-06	29-Sep-22	NRPK	NSC	122682	-	484	830	-	-
Stephens Lake	Run 4	29-Sep-22	NRPK	NSC	119047	-	484	640	-	-
Stephens Lake	Run 5	29-Sep-22	NRPK	NSC	119046	-	609	2020	-	-
Stephens Lake	Run 5	29-Sep-22	NRPK	NSC	119045	-	580	1160	-	-
Stephens Lake	Run 5	29-Sep-22	LKWH	NSC	119044	-	330	450	-	-
Stephens Lake	Run 5	29-Sep-22	LKWH	NSC	119043	-	431	1470	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	NSC	122683	-	435	920	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	NSC	122684	-	376	620	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	-	-	-	399	800	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	NSC	122686	-	326	410	-	-
Keeyask reservoir	GN-07	30-Sep-22	NRPK	NSC	122687	-	690	2550	-	-
Keeyask reservoir	GN-07	30-Sep-22	NRPK	NSC	122688	-	515	1030	-	-
Keeyask reservoir	GN-07	30-Sep-22	NRPK	NSC	122689	-	870	5000	-	-
Keeyask reservoir	GN-08	30-Sep-22	WALL	NSC	122690	-	390	610	-	-
Keeyask reservoir	GN-08	30-Sep-22	WALL	NSC	122691	-	455	1120	-	-
Keeyask reservoir	GN-08	30-Sep-22	WALL	NSC	122692	-	400	660	-	-
Keeyask reservoir	GN-08	30-Sep-22	WALL	NSC	122693	-	377	630	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-08	30-Sep-22	WALL	NSC	122694	-	520	1750	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122695	-	492	870	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122696	-	511	1100	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122697	-	557	1600	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122698	-	564	1660	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122699	-	676	2480	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122700	-	860	5200	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	122685	-	693	2800	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	102101	-	681	2650	-	-
Keeyask reservoir	GN-08	30-Sep-22	WALL	-	-	-	470	980	-	-
Keeyask reservoir	GN-09	30-Sep-22	LKWH	NSC	102102	-	533	2450	-	-
Keeyask reservoir	GN-09	30-Sep-22	LKWH	NSC	102103	-	471	1890	-	-
Keeyask reservoir	GN-09	30-Sep-22	LKWH	NSC	102104	-	410	1220	-	-
Keeyask reservoir	GN-09	30-Sep-22	LKWH	NSC	102105	-	482	1800	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102106	-	636	2070	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102107	-	523	1110	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102108	-	584	1980	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102109	-	647	2190	-	-
Keeyask reservoir	GN-07	30-Sep-22	LKWH	NSC	102110	-	336	420	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	NSC	102111	-	435	820	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	NSC	102112	-	418	770	-	-
Keeyask reservoir	GN-07	30-Sep-22	WALL	NSC	102113	-	453	1060	-	-
Keeyask reservoir	GN-07	30-Sep-22	NRPK	NSC	102114	-	624	2330	-	-
Keeyask reservoir	GN-07	30-Sep-22	NRPK	NSC	102115	-	512	1160	-	-
Keeyask reservoir	GN-07	30-Sep-22	NRPK	NSC	102116	-	765	3750	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	102117	-	860	4055	-	-
Keeyask reservoir	GN-08	30-Sep-22	NRPK	NSC	102118	-	463	800	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102119	-	453	660	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102120	-	718	2710	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102122	-	440	570	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102123	-	577	1700	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102124	-	659	2340	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102125	-	720	2580	-	-
Keeyask reservoir	GN-09	30-Sep-22	NRPK	NSC	102126	-	512	870	-	-
Keeyask reservoir	Run 9	30-Sep-22	NRPK	NSC	122993	-	596	1880	-	-
Keeyask reservoir	Run 9	30-Sep-22	NRPK	NSC	119042	-	559	1240	-	-
Keeyask reservoir	Run 9	30-Sep-22	WALL	NSC	119041	-	490	1340	-	-
Keeyask reservoir	Run 9	30-Sep-22	WALL	NSC	119040	-	457	1100	-	-
Keeyask reservoir	Run 13	1-Oct-22	NRPK	NSC	119039	-	340	240	-	-
Keeyask reservoir	Run 14	1-Oct-22	NRPK	NSC	119038	-	274	140	-	-
Keeyask reservoir	Run 15	1-Oct-22	NRPK	NSC	119037	-	277	130	-	-
Keeyask reservoir	Run 15	1-Oct-22	NRPK	NSC	119036	-	691	2500	-	-
Stephens Lake	GN-10	2-Oct-22	LKWH	NSC	102127	-	438	1070	-	-
Stephens Lake	GN-10	2-Oct-22	NRPK	NSC	123975	-	846	5050	-	-
Stephens Lake	GN-10	2-Oct-22	NRPK	NSC	117978	-	872	6050	-	-
Stephens Lake	GN-11	2-Oct-22	NRPK	NSC	102128	-	685	2900	-	-
Stephens Lake	GN-10	2-Oct-22	LKWH	NSC	102129	-	488	1730	-	-
Stephens Lake	GN-10	2-Oct-22	LKWH	-	-	-	527	2860	F	2
Stephens Lake	GN-10	2-Oct-22	NRPK	NSC	102130	-	863	4800	-	-
Stephens Lake	GN-10	2-Oct-22	NRPK	NSC	102131	-	859	5600	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	GN-10	2-Oct-22	NRPK	NSC	102132	-	822	4800	-	-
Stephens Lake	GN-11	2-Oct-22	NRPK	NSC	102133	-	511	880	-	-
Stephens Lake	Run 20	2-Oct-22	NRPK	NSC	119035	-	514	860	-	-
Stephens Lake	Run 20	2-Oct-22	NRPK	NSC	119034	-	545	940	-	-
Stephens Lake	Run 21	2-Oct-22	LKWH	NSC	119033	-	419	1100	-	-
Stephens Lake	Run 21	2-Oct-22	NRPK	NSC	119032	-	430	440	-	-
Stephens Lake	Run 22	2-Oct-22	NRPK	NSC	119031	-	501	750	-	-
Stephens Lake	Run 24	2-Oct-22	LKWH	NSC	119028	-	465	1600	-	-
Stephens Lake	Run 24	2-Oct-22	NRPK	NSC	119030	-	335	210	-	-
Stephens Lake	Run 24	2-Oct-22	NRPK	NSC	119029	-	687	2250	-	-
Stephens Lake	GN-13	3-Oct-22	WALL	NSC	102134	-	425	760	-	-
Stephens Lake	GN-13	3-Oct-22	WALL	NSC	102135	-	219	100	-	-
Stephens Lake	GN-13	3-Oct-22	WALL	NSC	102136	-	407	820	-	-
Stephens Lake	GN-14	3-Oct-22	WALL	NSC	102137	-	520	1360	-	-
Stephens Lake	GN-14	3-Oct-22	NRPK	NSC	102138	-	381	340	-	-
Stephens Lake	GN-13	3-Oct-22	WALL	NSC	102139	-	380	600	-	-
Stephens Lake	GN-13	3-Oct-22	WALL	NSC	122165	-	399	690	-	-
Stephens Lake	GN-14	3-Oct-22	LKWH	NSC	102140	-	486	2130	-	-
Stephens Lake	GN-14	3-Oct-22	WALL	NSC	102141	-	433	1000	-	-
Stephens Lake	Run 25	3-Oct-22	LKWH	NSC	119027	-	497	1840	-	-
Stephens Lake	Run 25	3-Oct-22	NRPK	-	-	-	500	770	M	7
Stephens Lake	Run 25	3-Oct-22	NRPK	NSC	119025	-	488	650	-	-
Stephens Lake	Run 25	3-Oct-22	NRPK	NSC	119024	-	530	1000	-	-
Stephens Lake	Run 26	3-Oct-22	NRPK	NSC	119023	-	299	200	-	-
Stephens Lake	Run 26	3-Oct-22	NRPK	NSC	119022	-	266	120	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	Run 26	3-Oct-22	NRPK	NSC	119021	-	320	240	-	-
Stephens Lake	Run 27	3-Oct-22	NRPK	NSC	119020	-	479	750	-	-
Stephens Lake	Run 28	3-Oct-22	NRPK	NSC	119019	-	367	260	-	-
Stephens Lake	Run 28	3-Oct-22	NRPK	NSC	119018	-	524	710	-	-
Stephens Lake	Run 29	3-Oct-22	NRPK	NSC	119017	-	1034	-	-	-
Stephens Lake	Run 29	3-Oct-22	NRPK	-	-	-	134	20	-	-
Stephens Lake	Run 30	3-Oct-22	LKWH	NSC	119016	-	413	1040	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119015	-	520	1060	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119014	-	390	420	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119013	-	349	300	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119012	-	355	290	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119011	-	340	250	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119010	-	357	300	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119009	-	370	340	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119008	-	353	270	-	-
Stephens Lake	Run 30	3-Oct-22	NRPK	NSC	119007	-	345	260	-	-
Stephens Lake	Run 32	3-Oct-22	LKWH	NSC	119006	-	300	380	-	-
Stephens Lake	Run 32	3-Oct-22	NRPK	NSC	119005	-	323	220	-	-
Stephens Lake	Run 32	3-Oct-22	NRPK	NSC	119004	-	985	-	-	-
Stephens Lake	Run 33	3-Oct-22	NRPK	NSC	119003	-	360	320	-	-
Stephens Lake	Run 33	3-Oct-22	NRPK	NSC	119002	-	355	250	-	-
Keeyask reservoir	GN-17	4-Oct-22	NRPK	NSC	102142	-	343	300	-	-
Keeyask reservoir	GN-17	4-Oct-22	NRPK	NSC	122260	-	834	5300	-	-
Keeyask reservoir	GN-19	4-Oct-22	LKWH	NSC	102143	-	465	1950	-	-
Keeyask reservoir	GN-19	4-Oct-22	LKWH	NSC	102144	-	244	270	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	102145	-	515	980	-	-
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	102146	-	425	550	-	-
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	102147	-	426	600	-	-
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	102148	-	336	320	-	-
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	102149	-	297	240	-	-
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	102150	-	383	470	-	-
Keeyask reservoir	GN-19	4-Oct-22	NRPK	NSC	93808	-	540	1260	-	-
Stephens Lake	Run 44	4-Oct-22	NRPK	NSC	119001	-	394	350	-	-
Stephens Lake	Run 44	4-Oct-22	NRPK	NSC	122225	-	561	1000	-	-
Stephens Lake	Run 44	4-Oct-22	NRPK	NSC	122224	-	428	440	-	-
Stephens Lake	GN-20	5-Oct-22	LKWH	NSC	93809	-	368	560	-	-
Stephens Lake	GN-20	5-Oct-22	WALL	NSC	93811	-	455	1130	-	-
Stephens Lake	GN-20	5-Oct-22	NRPK	NSC	93810	-	615	1750	-	-
Stephens Lake	GN-20	5-Oct-22	NRPK	NSC	93812	-	893	4700	-	-
Stephens Lake	GN-20	5-Oct-22	NRPK	NSC	93813	-	543	1270	-	-
Stephens Lake	GN-20	5-Oct-22	WALL	NSC	93814	-	305	430	-	-
Stephens Lake	GN-20	5-Oct-22	WALL	NSC	93815	-	471	1270	-	-
Stephens Lake	Run 49	5-Oct-22	NRPK	NSC	118140	-	881	-	-	-
Stephens Lake	Run 50	5-Oct-22	WALL	NSC	122223	-	505	1530	-	-
Stephens Lake	Run 50	5-Oct-22	NRPK	NSC	122222	-	511	900	-	-
Stephens Lake	Run 50	5-Oct-22	NRPK	NSC	122221	-	420	550	-	-
Stephens Lake	Run 50	5-Oct-22	NRPK	NSC	122220	-	356	300	-	-
Stephens Lake	Run 50	5-Oct-22	NRPK	NSC	122219	-	505	800	-	-
Stephens Lake	Run 50	5-Oct-22	NRPK	NSC	122218	-	340	290	-	-
Stephens Lake	Run 51	5-Oct-22	NRPK	NSC	116971	-	846	-	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	Run 51	5-Oct-22	NRPK	NSC	122217	-	511	1010	-	-
Stephens Lake	Run 52	5-Oct-22	NRPK	NSC	122216	-	602	1700	-	-
Stephens Lake	Run 53	5-Oct-22	LKWH	NSC	122215	-	431	1150	-	-
Stephens Lake	Run 53	5-Oct-22	NRPK	NSC	122214	-	405	360	-	-
Stephens Lake	Run 53	5-Oct-22	NRPK	NSC	122213	-	440	510	-	-
Stephens Lake	Run 54	5-Oct-22	LKWH	NSC	122212	-	329	600	-	-
Stephens Lake	Run 54	5-Oct-22	LKWH	NSC	122211	-	338	580	-	-
Stephens Lake	Run 54	5-Oct-22	NRPK	NSC	122210	-	515	1000	-	-
Stephens Lake	Run 57	5-Oct-22	NRPK	NSC	122209	-	465	610	-	-
Stephens Lake	Run 57	5-Oct-22	LKWH	NSC	122208	-	484	2020	-	-
Keeyask reservoir	GN-23	6-Oct-22	WALL	NSC	93816	-	353	540	-	-
Keeyask reservoir	Run 62	6-Oct-22	NRPK	NSC	122207	-	625	2300	-	-
Stephens Lake	Run 64	6-Oct-22	LKWH	NSC	122205	-	401	1050	-	-
Stephens Lake	Run 65	6-Oct-22	LKWH	NSC	122204	-	423	1270	-	-
Stephens Lake	Run 65	6-Oct-22	NRPK	NSC	122203	-	585	1520	-	-
Keeyask reservoir	Run 70	8-Oct-22	WALL	NSC	122202	-	478	1290	-	-
Keeyask reservoir	Run 70	8-Oct-22	NRPK	NSC	122201	-	458	500	-	-
Keeyask reservoir	Run 71	8-Oct-22	NRPK	NSC	121575	-	594	1750	-	-
Stephens Lake	Run 73	8-Oct-22	LKWH	NSC	121574	-	450	1500	-	-
Stephens Lake	Run 73	8-Oct-22	LKWH	NSC	121573	-	472	1860	-	-
Stephens Lake	Run 74	8-Oct-22	NRPK	NSC	121572	-	584	1220	-	-
Stephens Lake	Run 74	8-Oct-22	WALL	NSC	121571	-	445	970	-	-
Stephens Lake	Run 74	8-Oct-22	WALL	NSC	121570	-	414	770	-	-
Stephens Lake	Run 75	8-Oct-22	LKWH	NSC	121569	-	418	1040	-	-
Stephens Lake	Run 75	8-Oct-22	LKWH	NSC	121568	-	504	2100	F	3

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Stephens Lake	Run 75	8-Oct-22	LKWH	NSC	121567	-	480	1800	-	-
Stephens Lake	Run 75	8-Oct-22	LKWH	NSC	121566	-	555	2950	-	-
Stephens Lake	Run 75	8-Oct-22	WALL	NSC	121565	-	415	920	-	-
Stephens Lake	Run 75	8-Oct-22	WALL	NSC	121564	-	465	1350	-	-
Stephens Lake	Run 75	8-Oct-22	WALL	NSC	121563	-	424	950	-	-
Stephens Lake	Run 75	8-Oct-22	WALL	NSC	121562	-	454	1120	-	-
Stephens Lake	Run 77	8-Oct-22	NRPK	NSC	121561	-	663	2200	-	-
Stephens Lake	Run 77	8-Oct-22	NRPK	NSC	121560	-	842	-	-	-
Keeyask reservoir	Run 80	9-Oct-22	NRPK	NSC	121559	-	383	390	-	-
Stephens Lake	Run 82	9-Oct-22	LKWH	NSC	121558	-	405	920	-	-
Stephens Lake	Run 82	9-Oct-22	LKWH	NSC	121557	-	468	1600	-	-
Stephens Lake	Run 85	9-Oct-22	LKWH	NSC	121556	-	403	1100	-	-
Stephens Lake	Run 85	9-Oct-22	NRPK	NSC	121555	-	605	1570	-	-
Stephens Lake	Run 86	9-Oct-22	LKWH	NSC	121554	-	434	1130	M	8
Stephens Lake	Run 86	9-Oct-22	LKWH	NSC	121553	-	417	1150	-	-
Stephens Lake	Run 86	9-Oct-22	LKWH	NSC	121552	-	495	2620	-	-
Stephens Lake	Run 86	9-Oct-22	LKWH	NSC	121551	-	469	2030	-	-
Keeyask reservoir	Run 88	10-Oct-22	WALL	NSC	121576	-	458	1120	-	-
Keeyask reservoir	Run 88	10-Oct-22	NRPK	NSC	121577	-	570	1500	-	-
Keeyask reservoir	Run 89	10-Oct-22	LKWH	NSC	121578	-	460	1700	-	-
Keeyask reservoir	Run 89	10-Oct-22	WALL	NSC	121579	-	495	1400	-	-
Keeyask reservoir	Run 90	10-Oct-22	LKWH	NSC	121580	-	510	2620	-	-
Stephens Lake	Run 93	10-Oct-22	NRPK	NSC	121581	-	543	860	-	-
Keeyask reservoir	GN-26	11-Oct-22	LKWH	NSC	93817	-	510	2550	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	118650	-	563	1290	-	-

Table A2-1: Tagging and biological information for Lake Whitefish, Northern Pike, and Walleye marked with Floy tags in the Keeyask reservoir and Stephens Lake, spring and fall 2022 (continued).

Location	Site	Date	Species	Floy Tag Prefix	Floy tag 1	Floy Tag 2	Fork Length (mm)	Weight (g)	Sex	Maturity
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93818	-	779	3250	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93819	-	631	2070	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93820	-	733	3330	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93821	-	706	2910	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93822	-	552	1340	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93836	-	500	1150	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	93823	-	550	1360	-	-
Keeyask reservoir	GN-26	11-Oct-22	NRPK	NSC	120897	-	878	5250	-	-
Keeyask reservoir	GN-26	11-Oct-22	WALL	NSC	120898	-	411	820	-	-
Keeyask reservoir	GN-26	11-Oct-22	WALL	NSC	120899	-	305	360	-	-
Keeyask reservoir	GN-26	11-Oct-22	WALL	NSC	120900	-	459	1050	-	-
Keeyask reservoir	GN-26	11-Oct-22	WALL	NSC	120070	-	444	1000	-	-
Keeyask reservoir	GN-26	11-Oct-22	WALL	NSC	120071	-	412	800	-	-
Keeyask reservoir	GN-26	11-Oct-22	WALL	NSC	120072	-	345	480	-	-
Keeyask reservoir	GN-27	11-Oct-22	LKWH	NSC	120073	-	474	2090	-	-
Keeyask reservoir	GN-27	11-Oct-22	LKWH	NSC	120074	-	572	3410	-	-
Keeyask reservoir	GN-27	11-Oct-22	NRPK	NSC	120075	-	494	920	-	-
Keeyask reservoir	GN-27	11-Oct-22	NRPK	NSC	119192	-	662	2460	-	-
Keeyask reservoir	GN-27	11-Oct-22	NRPK	NSC	114476	-	741	3650	-	-
Keeyask reservoir	GN-27	11-Oct-22	WALL	NSC	114477	-	510	1660	-	-
Keeyask reservoir	GN-27	11-Oct-22	WALL	NSC	114478	-	415	860	-	-
Keeyask reservoir	GN-27	11-Oct-22	WALL	NSC	114479	-	402	710	-	-
Keeyask reservoir	GN-28	11-Oct-22	NRPK	NSC	114480	-	460	760	-	-
Keeyask reservoir	GN-33	11-Oct-22	WALL	NSC	114481	-	450	970	-	-
Keeyask reservoir	GN-33	11-Oct-22	NRPK	NSC	114482	-	590	1500	-	-