



# 2022 Field Studies Summaries

Issued: December 2022

**Field programs are happening to better understand the existing conditions of the local environment and the potential effects of the Marten Falls First Nation (MFFN) Community Access Road Project on the social, cultural, economic, built and natural environments.**

Field programs studying existing conditions and effects assessments for the following technical disciplines have taken place this past year:

- **Groundwater and Geochemistry;**
- **Aquatics (surface water, fish and fish habitat);**
- **Physiography, terrain and soils;**
- **Vegetation;**
- **Wildlife;**
- **Birds; and**
- **Ungulates (Atik and Mooz; Caribou and Moose).**

Summaries of the work undertaken this past year are provided in this document.

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## Groundwater and Geochemistry

### Spring 2022 Aerial Recon

Date Range: March 30, 2022

#### Work Completed:

Aerial observation of nine proposed groundwater sites to confirm that conditions allow for tree clearing and groundwater drilling and well installation.

#### Conclusions / Key Takeaways:

After completing spring flyovers of the study area, a decision was made to postpone tree clearing and drilling until the Fall of 2022. The majority of the sites in the middle and southern end of the study area had three or more feet of snow, making the conditions unsuitable for safe travel and drilling operations. The work restarted in September 5, 2022 and is ongoing.

### Chimney Swift Habitat Assessment

Date Range: June 27 – July 3, 2022

#### Work Completed:

In support of the groundwater drilling program, proposed groundwater drilling sites were surveyed for the potential presence of chimney swift habitat. Sites were flown in helicopter by experienced avian biologists. Notes on the vegetation community (i.e., ecosite), dominant tree species and the presence of snags (i.e., standing live or dead trees with cavities, peeling bark or evidence of decay) were taken.

#### Conclusions / Key Takeaways:

Most of the sites visited were not suitable for chimney swift nesting, and the few that were, had very little suitability. This is not unexpected since the Local Study Area is well outside the known range and habitat types of this species.

### Wishkobish / Wolverine Denning Survey

Date Range: March 11 – March 14, 2022

#### Work Completed:

In support of the groundwater program, the wishkobish / wolverine denning surveys were conducted within a 4 km radius of each proposed groundwater drill site. Surveyors were looking for signs of wishkobish / wolverine including potential den sites. Twenty proposed groundwater drill sites were to be surveyed, however, due to unsuitable weather conditions for flying and recent signs or observations of atik / caribou, only 10 sites were surveyed. Of those 10 drill sites surveyed, nine showed no signs of wishkobish / wolverine den site observations, and one contained a potential den site.

#### Conclusions / Key Takeaways:

The groundwater drill program was delayed until Fall 2022 and is currently ongoing, outside the sensitive denning period for wishkobish / wolverine.



## Aquatics

### Spring Field Program

Date Range: June 21 to July 2, 2022

#### Work Completed:

This field program included fish habitat assessments, fish sampling, surface water hydrology and water quality sampling of some water bodies that may be crossed by the Community Access Road. The objective was to collect site-specific data at select crossing locations to understand existing conditions. A total of 22 watercourse crossing assessments were completed during this program, and an additional 40 crossings were assessed from the air only, as landing zones were not available for a ground survey. Fish community sampling was conducted using backpack electrofishers and minnow traps.

#### Conclusions / Key Takeaways:

Fish species captured during this field program included 12 small-bodied fish species including minnows and misszay / sculpin, and three large-bodied fish species including namebin / white sucker, najwabe / northern pike and mihzhash / ling. Water samples were collected to document the existing water quality conditions near MFFN.

### Summer Field Program

Date Range: August 15 to August 26, 2022

#### Work Completed:

The August field program included fish sampling, fish habitat, surface water hydrology, water and sediment quality assessments, and benthic invertebrate sampling at some of the waterbodies that may be crossed by the Community Access Road. The primary objective was to collect site-specific data at select crossing locations to characterize existing conditions. A total of 29 water course crossing assessments were completed. An additional two crossings were assessed from the air only, as landing zones were not available for a ground survey. Fish community sampling was conducted using backpack electrofishers and minnow traps.

#### Conclusions / Key Takeaways:

Fish species captured during this field program included Finescale Dace, Northern Redbelly Dace, Brook Stickleback, Northern Pearl Dace, Johnny Darter, Longnose Dace, Najwabe / Northern Pike, Mihzhash / Ling, Miizay/ Sculpin, Common Shiner, Fathead Minnow, Namebin / White Sucker, Iowa Darter, and Lake Chub. Water samples were collected to document existing water quality conditions near MFFN.



## Physiography, Terrain and Soils

### Spring Field Program

Date Range: May 28 – June 6, 2022 &  
September 26 – October 6, 2022

#### Work Completed:

The terrain and soils fieldwork involved accessing previously identified sites within the Local Study Area to inspect soils. Access was by helicopter as close to the sites as possible and then walking to the various locations. A total of 99 sites were completed during this field program. The purpose of the fieldwork was to confirm the preliminary soils mapping including soil parent material, depth to bedrock, topography, slope, drainage, and absence / presence of ongoing geological modifying processes (e.g., seepage, landslides). Soil samples were collected to establish soil quality and characteristics at 13 sites within the proposed Project footprint. Each sampling location also had soil collected for geochemical analyses.

#### Conclusions / Key Takeaways:

The field program completed as many sites as possible given the access limitations. Samples taken during these programs are currently undergoing analysis.

## Vegetation

### Spring / Summer Field Program

Date Range: July 12 – 18, 2022

#### Work Completed:

One field crew of two biologists and one MFFN Field Assistant completed the vegetation field program. This work involved accessing sites within the Local Study Area. Sites were classified into three categories: upland, wetland and riparian. Sites were accessed by helicopter (to get as close to the sites as possible) and then walking to the various locations. A total of 124 sites were completed during this field program. Of these, 28 were ground inspections (which included ecosite verification, detailed botanical inventory, stand and community descriptions, soil samples to a depth of one metre, peat composition surveys and hydrological function information in wetlands) and 96 were visual inspections (which included ecosite verification only). The visual inspections were also carried out by helicopter during fly-overs of the sites. The purpose of the fieldwork was to verify / confirm the preliminary vegetation ecosite mapping and collect data to inform habitat and functional assessments.

#### Conclusions / Key Takeaways:

All of the original survey sites that were targeted for the field program were successfully completed in 2022. Due to revisions to the Project footprint to include potential aggregate sites, however, some additional vegetation field work will be required in 2023.



## Wildlife and Wildlife Habitat

Furbearer Snow Tracking Program  
Date Range: January 20 – 24, 2022

### Work Completed:

Five crews (including 10 biologists and two MFFN Field Assistants) and three helicopters mobilized to the field site. Only one out of 30 transects was completed due to challenges related to weather and health and safety.

### Conclusions / Key Takeaways:

To avoid similar complications in winter 2022 / 2023, a modified approach to winter tracking has been planned where aerial tracking will be substituted for ground-based tracking. The aerial tracking will be completed from helicopter with ground checks in areas with dense cover and at five randomly selected transects.

### Wishkobish / Wolverine Hair Snag

Date Range: February 1 – June 16, 2022 (5 field visits)

### Work Completed:

Fifty-four wolverine hair snag traps were deployed in February 2022. Bait was strung above the trap, and two remote cameras were set up at each station. The hair snags were revisited once a month in March, April and May 2022 to collect hair samples, replace bait and change the SD cards in the remote cameras. In June 2022, the stations were closed; bait was removed, and the trap arms (with clips) and cameras were retrieved. The main components of the traps were left on site for the second year of the program in winter 2023. Hair samples have been submitted to Trent University for DNA analysis and some of the samples that are found to be from wolverine will be submitted to Toronto Zoo for hormone analysis. The second year of this field program is scheduled from February to June 2023.

### Conclusions / Key Takeaways:

From February to June 27 2022, many different species visited the hair snag stations. The table below presents the number of stations visited by key species – what is interesting is seeing the presence of species throughout the months, specifically the increase in presence in the spring.



## Number of species that visited the hair snag stations (February to June, 2022)



**Legend** ● = February / March   ● = March / April   ● = April / May   ● = May / June



## Birds

### Four Season Autonomous Recording Unit (ARU) Program Date Range: March to August 2022

#### Work Completed:

Thirty ARUs (all-season) were deployed in March 2022 and an additional 30 ARUs (breeding season only) were deployed in May 2022. These units have been continuously collecting data since their installation and will be collected in late winter or early spring 2023.

### Spring Aerial Surveys

Date Range: May 2022

#### Work Completed:

A single survey, over a three-day period, was conducted in May 2022. The goal of this program was to search for stick, and other large, nests and to survey for spring stopover of waterfowl. The Local Study Area, including several targeted waterbodies, were surveyed from a helicopter.

#### Conclusions / Key Takeaways:

Although data analysis has not been complete, several species of waterfowl and other waterbirds were identified and there is evidence of potential for waterfowl stopover in the Local Study Area, particularly along the large wetland areas of the Ogoki and Albany rivers. Two active mikisi / eagle nests were identified during these surveys, with both nests having a pair of adults present and eggs.

### Breeding Bird Point Count, Marsh Playback and Breeding Season Aerial Surveys

Date Range: June 1 – July 3, 2022

#### Work Completed:

These programs were completed over two rounds of surveys, each approximately 10 days in length. The first round of surveys was in early to mid June and the second was in late June to early July. Survey types completed included breeding bird point counts, marsh playback point counts and aerial surveys for waterfowl brood and stick nest searches / confirmation. In addition, ARUs for species at risk (i.e., common nighthawk, eastern whip-poor-will, and yellow rail) were deployed during the first round of surveys.

#### Conclusions / Key Takeaways:

During aerial surveys an active osprey nest and trumpeter swan nest were identified in the Local Study Area. The trumpeter swan represents one of the furthest north, if not the furthest north, known nesting records of this species. No waterfowl broods were identified during the first round of aerial surveys, but several were identified during the second round. A total of 92 point count stations were surveyed, most of which were visited twice. To date, Species at Risk ARUs have identified one species, the common nighthawk. Other Species at Risk identified during the breeding season surveys include mikisi / bald eagle, Canada warbler, and olive-sided flycatcher. These results are preliminary and data interpretation is ongoing.



## Fall Aerial Waterfowl Survey Date Range: September 2022

### Work Completed:

Fall aerial waterfowl surveys were completed during two rounds in September. Protocols were similar to the spring surveys, except that they only focused on large waterbodies in the Local Study Area, and no stick nest searches were completed.

### Conclusions / Key Takeaways:

All targeted lakes and rivers in the Local Study Area, and several additional smaller water bodies, were surveyed in both rounds. Data entry and analysis is still preliminary, however, overall small numbers of a few species of waterfowl were observed.

## Ungulates (Atik and Mooz / Caribou and Moose)

### Aerial Survey Date Range: February 6 to 25, 2022

### Work Completed:

A fixed wing aircraft with crew flew transects (6,145 km) in the atik / caribou Local Study Area and identified locations where atik / caribou and mooz / moose signs were observed. An additional crew in a helicopter relocated previously collared atik / caribou and visited these sites to locate and count atik / caribou groups.

### Conclusions / Key Takeaways:

In total, 476 high-certainty moose sites and 208 high-certainty caribou sites were identified on the transects. Nineteen collared cows that were in the study area were located using the VHF signal transmitted from their collars, as well as 18 other atik / caribou groups not associated with a collared animal.

### Mortality Investigations Date Range: May to August 2022

### Work Completed:

Three mortality investigations were conducted in 2022 for collared caribou that died during this year. An additional caribou mortality was investigated, and the collar retrieved, by MNR research scientists in September 2022.

### Conclusions / Key Takeaways:

There are currently 23 collared atik / caribou still alive (from the 30 that were collared in February 2021). Mortality investigations will continue in 2023, at least once per year or when there are three mortalities. Investigations will be scheduled concurrently with other programs, where possible.

