

Annual Weather Station Maintenance Report

2025



Government of Newfoundland & Labrador
Department of Environment, Conservation and
Climate Change
Water Resources Management Division

Prepared by:

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Overview

The Department of Environment, Conservation and Climate Change – Water Resources Management Division (WRMD) operates and maintains a network of automated weather stations across the province. Reliable weather data is needed to support water resources management decisions and policy development. This network (see table below) is maintained by staff within the WRMD.

Automated Weather/Camera Stations in Operation (2025)

	Camera	Snow Water Equivalent (SWE)	Meteorological
Pippy Park in St. John's		✓	✓
Exploits River at Badger East of Stadium	✓		✓
Sandy Lake near Birchy Narrows (Camp 55)	✓	✓	✓
Humber River At Humber Village Bridge	✓		✓
Upper Humber River above Black Brook		✓	✓
Muskrat Falls MET	✓		✓
Metchin River near TLH		✓	✓
TLH between Churchill Falls and Lab City		✓	✓
Mud Lake Road MET			✓
Exploits below Noel Paul's Brook MET	✓	✓	✓
Vale LH1 MET			✓
Vale LH2 MET			✓
Marathon-Gold MET		✓	✓
Conception Bay South MET			✓
Waterford River at Kilbride	✓		
Learys Brook at Prince Philip Drive	✓		
Exploits River at Badger Steps	✓		
Steady Brook 470 meters above Confluence to Humber River	✓		
Churchill River at end of Mud Lake Road - Level	✓		
Churchill River below Traverspine River	✓		
Goose River at Bridge	✓		
Mud Lake Outlet Tributary at Mud Lake	✓		
Churchill River above Grizzle Rapids	✓		
Exploits River at Bishop's Falls Trestle	✓		
Humber River at Nicholville at Bridge	✓		

Purpose

Annual maintenance and accuracy checks are necessary to ensure not only the longevity of the equipment, but more importantly, to ensure the accuracy and validity of the data that is being reported by the stations. This is necessary to ensure ongoing program reliability, effectiveness, and delivery of high-quality results for the existing automated weather station network.

Pippy Park Weather Station

Station Details:

- Station Identification: NLENCL0001
- Station Installed: August 2004
- Parameters measured every fifteen minutes and updated every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Solar Radiation
 - Sunshine Hours
 - Snow Water Equivalent
- Site Selection Rationale: Pilot weather station test site, verified that this technology can be integrated without issues within our existing infrastructure. A microclimate exists at this site due to the height of surrounding trees and development in close proximity to the weather station.
- Date Visited: Throughout 2025
- Location: N 47° 35' 16.7" W 52° 44' 1.3"
- Elevation: 101.2 m

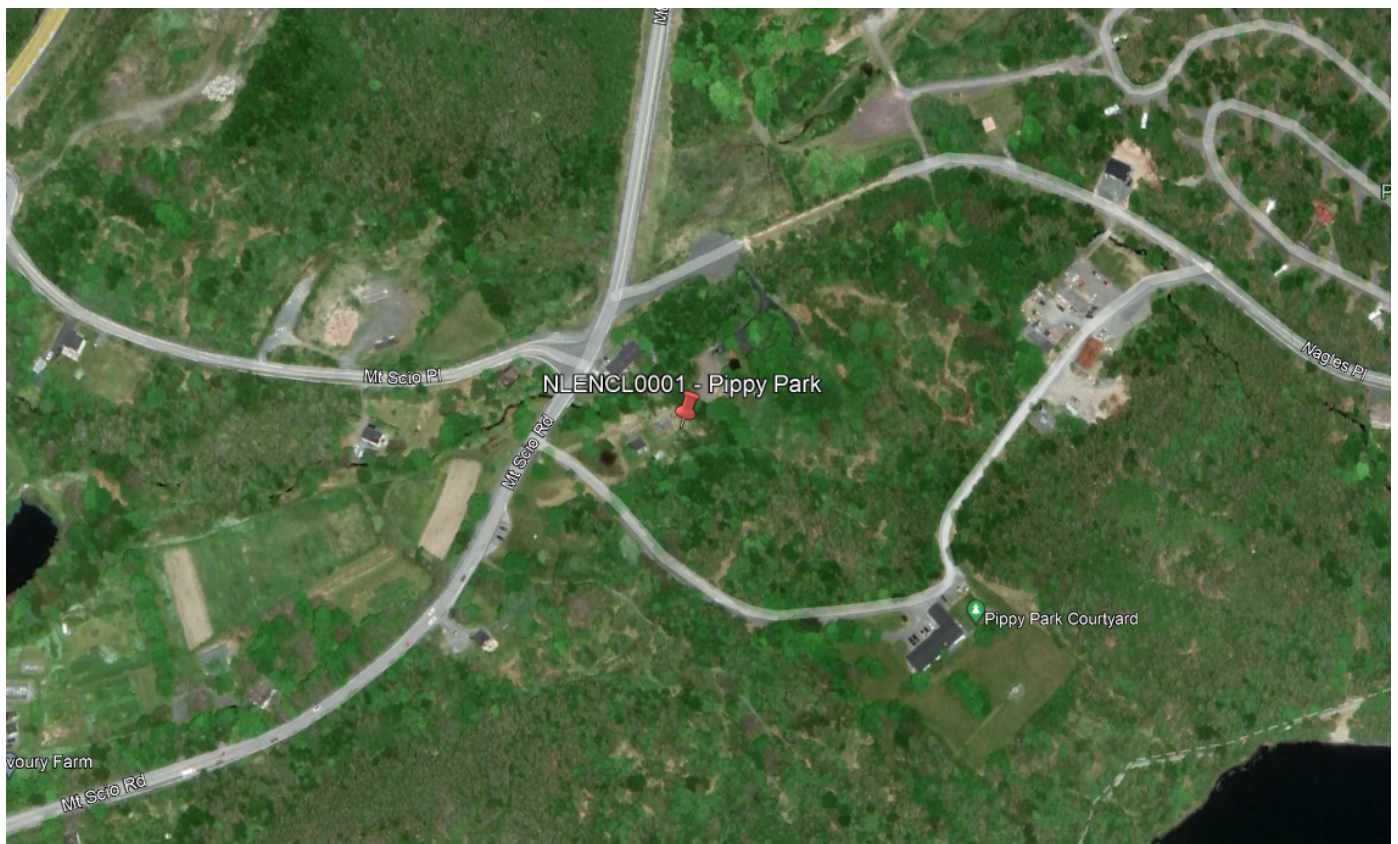


Figure 1: Pippy Park Weather Station Location

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 14253
 - Changed desiccant and humidity indicator card
- Anemometer:
 - Model: 05103-10 RM Young
 - Serial: 57031
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E1337
 - Replaced temp/RH chip
- Barometric Pressure:
 - Model: CS106
 - Serial: BP06403
- Snow Water Equivalent:
 - Model: Fluidless Snow Pillow 5 (FSP5)
 - Attempted various fixes to repair sensor
- Heated Precipitation:
 - Model: H3 rain[e] Heated Tipping Bucket
 - Cleaned funnel and bucket of debris
- Solar Radiation:
 - Model: SPLite 2
 - Serial: 194492
 - Cleaned lens
- Soil Moisture:
 - Model: STEVENS HydraProbe
- Precipitation (Weighing):
 - Model: OTT Pluvio² – Weighing Rain Gauge
 - Emptied catch basin
- Precipitation (BC Standpipe):
 - Model: OTT PLS
 - Newly installed

Follow-up tasks required:

- Regular scheduled maintenance
- Work with Fluidless Snow Pillow manufacturer in order to troubleshoot malfunctioning sensor
- Perform manual snow surveys as a check on Fluidless Snow Pillow measurement accuracy
- Install radar snow depth sensor (GEOLUX LX80-S)
- Level ground across site to create valid target for snow depth sensor measurements
- Perform regular checks on BC Standpipe to ensure antifreeze does not become slushy over the winter

Exploits River at Badger East of Stadium

Station Details:

- Station Identification: NLENCL0002
- Station Installed: September 2008
- Camera image taken and transmitted every hour during the daytime
- Parameters measured every fifteen minutes and updated every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: Weather information collected at this site feeds into a flood forecast modelling system for the community of Badger.
- Date Visited: July 25th 2025
- Location: N 48° 58' 29.83" W 56° 2' 4.43"
- Elevation: 88.1 m



Figure 2: Exploits River at Badger Weather Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Serial: 13443
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: CC5MPX
 - Cleaned camera lens
 - Seal camera lens to avoid moisture build up causing unclear images
- Anemometer:
 - Model: RM Young 05103-10-L
 - Serial: 58072
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E3899
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: SR50A Sonic Ranger
 - Serial: 31665
 - Replaced transducer with grill-less model due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: Young 61205V
 - Serial: BP05005
- Precipitation:
 - Model: Texas Electronics TE525WS
 - Serial: 44701-1007
 - Cleared bucket and funnel of any debris
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE Pyranometer
 - Serial: 080135
 - Cleaned lens
- Solar Panel:
 - Model: 100W Enerwatt EWS-100P

Follow-up tasks required:

- Regular scheduled maintenance
- Installation of 52202 heated tipping bucket

Humber River at Humber Village Bridge

Station Details:

- Station Identification: NLENCL0003
- Station Installed: September 2009
- Image taken hourly and transmitted three times daily
- Parameters measured every fifteen minutes and downloaded hourly:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: Weather information collected at this site is used for flood forecast monitoring of communities along the Humber River.
- Date Visited: July 29th 2025
- Location: N 48° 58' 58.21" W 57° 45' 38.04"
- Elevation: 7.6 m

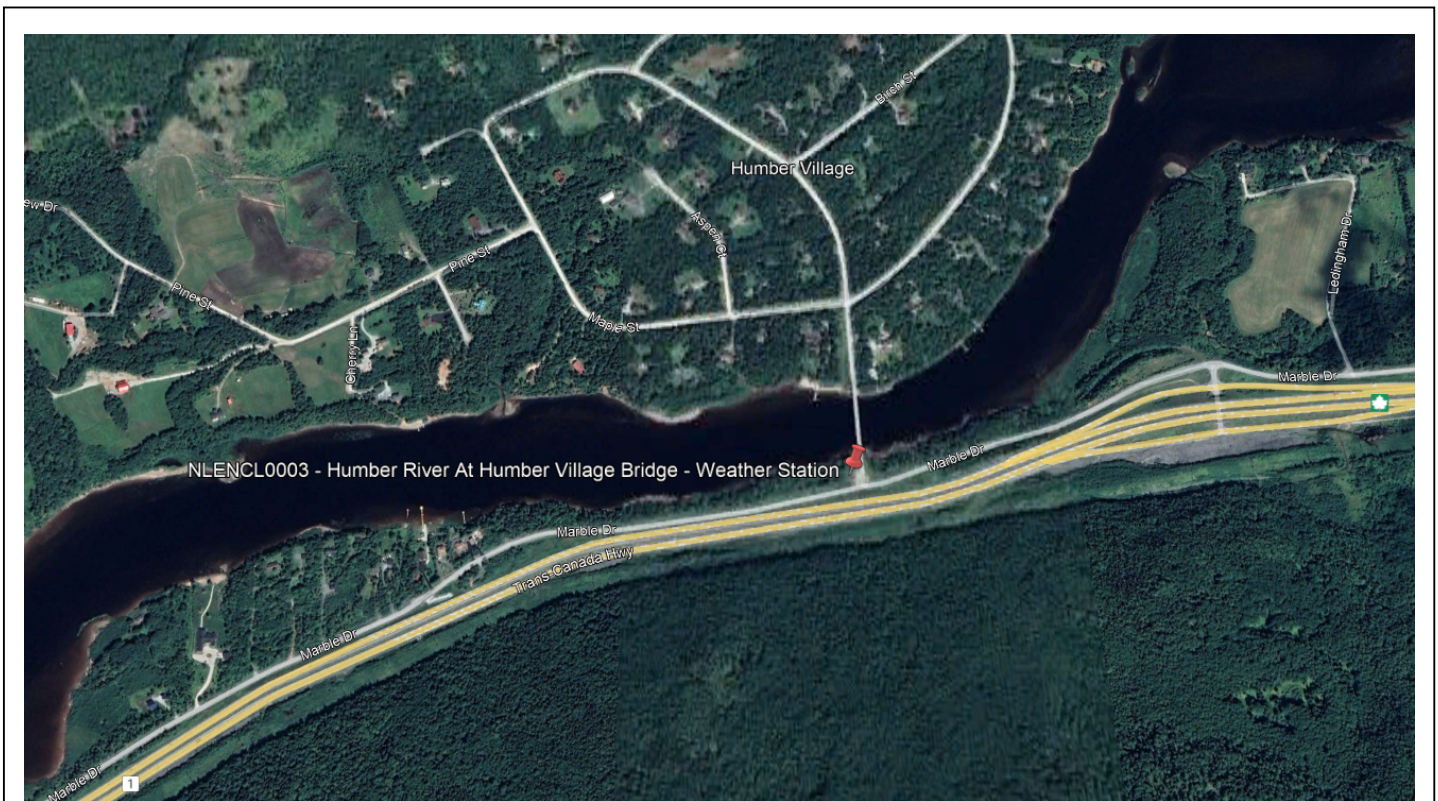


Figure 3: Humber River at Humber Village Bridge Weather Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Serial: 22355
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: CC640
 - Serial: 01511
 - Cleaned enclosure window and lens, replaced desiccant
- Anemometer:
 - Model: RM Young 05103-10
 - Serial: 130198
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E3852
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: Sonic Ranger SR50A
 - Serial: C13213
 - Replaced transducer due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: 61205V
 - Serial: BP05888
- Precipitation:
 - Model: TE525WS Texas Electronics
 - Cleared bucket and funnel of any debris
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE Pyranometer
 - Serial: 080395
 - Cleaned lens
- Compound:
 - Cleared vegetation

Follow-up tasks required:

- Regular scheduled maintenance
- Installation of 52202 heated tipping bucket
- Replace CC640 camera with updated model

Sandy Lake near Birchy Narrows (Camp 55)

Station Details:

- Station Identification: NLENCL0005
- Station Installed: November 2010
- Image taken and transmitted every hour during the daytime
- Parameters measured every fifteen minutes and updated hourly:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Snow Water Equivalent (TI)
 - Snow Water Equivalent (K)
 - Soil Moisture
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: Weather data collected at this site is used in flood forecasting operations for communities along the Humber River that are at risk of flooding during springtime snowmelt.
- Date Visited: July 31st 2025
- Location: N 49° 16' 28.30" W 56° 51' 5.80"
- Elevation: 119.8 m



Figure 4: Sandy Lake near Birchy Narrows (Camp 55) Snow Monitoring Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Serial: 24833
 - Changed desiccant and humidity indicator card
 - Updated datalogger programming to accommodate newly installed TX325 transmitter due to GOES CS2 required upgrade
- Camera:
 - Model: CC640
 - Serial: 01654
 - Cleaned enclosure window and lens, replaced desiccant
- Anemometer:
 - Model: 05103AP-10-L RM Young Wind Monitor Alpine Version
 - Serial: 83400
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: Sonic Ranger SR50A
 - Serial: 2999
 - Replaced transducer due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: Young 61302V
 - Serial: BPA1405
- Precipitation:
 - Model: Texas Electronics TE525WS
 - Serial: 42377-1009
 - Cleared bucket and funnel of any debris
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE Pyranometer
 - Serial: 091169
 - Cleaned lens
- Snow Water Equivalent:
 - Model: CS725
 - Serial: 1015

Follow-up tasks required:

- Regular scheduled maintenance
- Perform manual snow surveys as a check on CS725 measurement accuracy
- Replace CC640 camera with updated model
- Replace old cellular modem with new model to accommodate 3G network retiring

Muskrat Falls MET

Station Details:

- Station Identification: NLENCL0006
- Station Installed: July 2014
- Parameters measured every fifteen minutes and downloaded hourly:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Wind Chill
 - Humidex
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: Provides essential meteorological information for site operations, water level analysis, flood forecasting, hydropower generation, wildlife studies, and climate change adaptation in the province. Provides weather data for accurate interpretation of water quality data and related events along the Churchill River
- Date Visited: November 4th 2025
- Location: N 53° 14' 43.64" W 60° 46' 42.15"
- Elevation: 11.9 m



Figure 5: Muskrat Falls Weather Station Location

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Serial: 56808
 - Changed desiccant and humidity indicator card
 - Adjusted cellular modems on site to turn off periodically to conserve battery level
- Cameras:
 - Model: CC5MPX
 - Serial: 01317, 01314
 - Cleaned both camera lenses
- Anemometer:
 - Model: 05130AP-10-L RM Young Alpine
 - Serial: 98398
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: 6013
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: Sonic Ranger SR50A
 - Serial: 6755
 - Replaced transducer due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: CS106
 - Serial: J1660083
- Precipitation:
 - Model: Texas Electronics TE-525WS
 - Serial: 53322-1012
 - Cleared bucket and funnel of any debris
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE2 Pyranometer
 - Serial: 136646
 - Cleaned lens

Follow-up tasks required:

- Regular scheduled maintenance
- Seeking permission to hook station up to powerline near tower

Upper Humber River above Black Brook

Station Details:

- Station Identification: NLENCL0007
- Station Installed: September 30th 2015
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Snow Water Equivalent (TI)
 - Snow Water Equivalent (K)
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: Weather data collected at this site is used in flood forecasting operations for communities along the Humber River that are at risk of flooding during springtime snowmelt.
- Date Visited: July 30th 2025
- Location: N 49° 37' 6.24" W 57° 17' 41.20"
- Elevation: 302.4 m



Figure 6: Upper Humber River above Black Brook Snow Monitoring Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Replaced faulty datalogger
 - Changed desiccant and humidity indicator card
 - Updated datalogger programming to accommodate newly installed TX325 transmitter due to GOES CS2 required upgrade
- Anemometer:
 - Model: 05103AP-10-L RM Young Wind Monitor Alpine Version
 - Serial: 98399
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: Sonic Ranger SR50A
 - Serial: 1670
 - Replaced transducer due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: 61302V
 - Serial: BPA140
- Precipitation:
 - Model: Texas Electronics TE525WS
 - Serial: 432-30-210
 - Cleared bucket and funnel of any debris
- Precipitation (Weighing):
 - Model: OTT Pluvio² – Weighing Rain Gauge
 - Emptied catch basin
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE Pyranometer
 - Serial: 091168
 - Cleaned lens
- Snow Water Equivalent:
 - Model: CS725
 - The CS725 is not field serviceable

Follow-up tasks required:

- Regular scheduled maintenance
- Perform manual snow surveys as a check on the CS725 measurement accuracy
- Replace bottom segment of aluminum tower due to stress damage and various cracks in the metal

TLH between Churchill Falls and Lab City

Station Details:

- Station Identification: NLENCL0008
- Station Installed: October 2017
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Snow Water Equivalent (TI)
 - Snow Water Equivalent (K)
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: This station provides information for hydropower generation operations and flood forecast monitoring for the Churchill River
- Date Visited: November 6th 2025
- Location: N 53° 21' 35.23" W 65° 33' 41.27"
- Elevation: 542.8 m



Figure 7: TLH between Churchill Falls and Lab City Snow Monitoring Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Changed desiccant and humidity indicator card
- Anemometer
 - Model: 05103AP-10-L RM Young Alpine Version
 - Serial: 113751
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E3382
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: Sonic Ranger SR50A
 - Serial: 9170
 - Replaced transducer due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: CS106
 - Serial: N2250425
- Precipitation:
 - Model: TB4-L
 - Cleared bucket and funnel of any debris
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE2 Pyranometer
 - Serial: 173212
 - Cleaned lens
- Communication:
 - Model: TX321-G GOES Transmitter
 - Antenna: FTS EON2 GOES/Meteosat Antenna
- Compound:
 - Cleared vegetation

Follow-up tasks required:

- Regular scheduled maintenance
- Perform manual snow surveys as a check on the CS725 measurement accuracy

Metchin River near TLH

Station Details:

- Station Identification: NLENCL0009
- Station Installed: October 2017
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Snow Water Equivalent (TI)
 - Snow Water Equivalent (K)
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: This station provides information for hydropower generation operations and flood forecast monitoring for the Lower Churchill River
- Date Visited: November 5th 2025
- Location: N 53° 26' 10.12" W 63° 14' 1.38"
- Elevation: 329.8 m

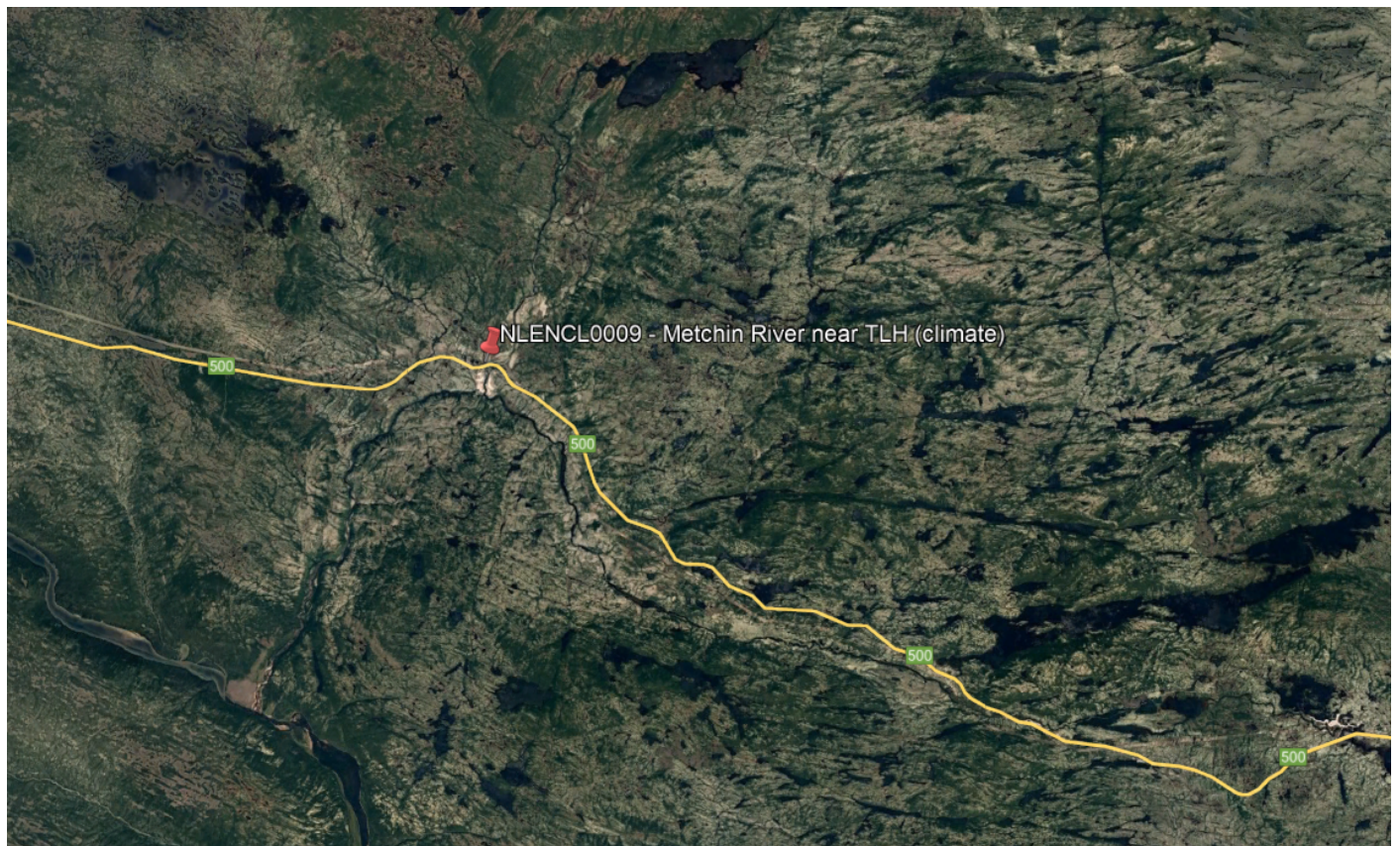


Figure 8: Metchin River near TLH Snow Monitoring Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Changed desiccant and humidity indicator card
- Anemometer
 - Model: 05103AP-10-L RM Young Alpine Version
 - Serial: 152871
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E3384
 - Replaced temp/RH chip
- Snow Depth Sensor:
 - Model: Sonic Ranger SR50A
 - Serial: 9171
 - Replaced transducer due to pitting and peeling of surface foil
- Barometric Pressure:
 - Model: CS106
 - Serial: N2250424
- Precipitation:
 - Model: TB4-L
 - Cleared bucket and funnel of any debris
- Solar Radiation:
 - Model: Kipp & Zonen SP LITE2 Pyranometer
 - Serial: 173211
 - Cleaned lens
- Compound:
 - Cleared vegetation

Follow-up tasks required:

- Regular scheduled maintenance
- Perform manual snow surveys as a check on the CS725 measurement accuracy

Exploits below Noel Paul's Brook MET

Station Details:

- Station Identification: NLENCL0010
- Station Installed: November 2020
- Image taken and transmitted once a day at 11:30 AM NST
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Snow Water Equivalent
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: June 26th 2025
- Location: N 48° 50' 40.8" W 56° 16' 9.9"
- Elevation: 125.6 m

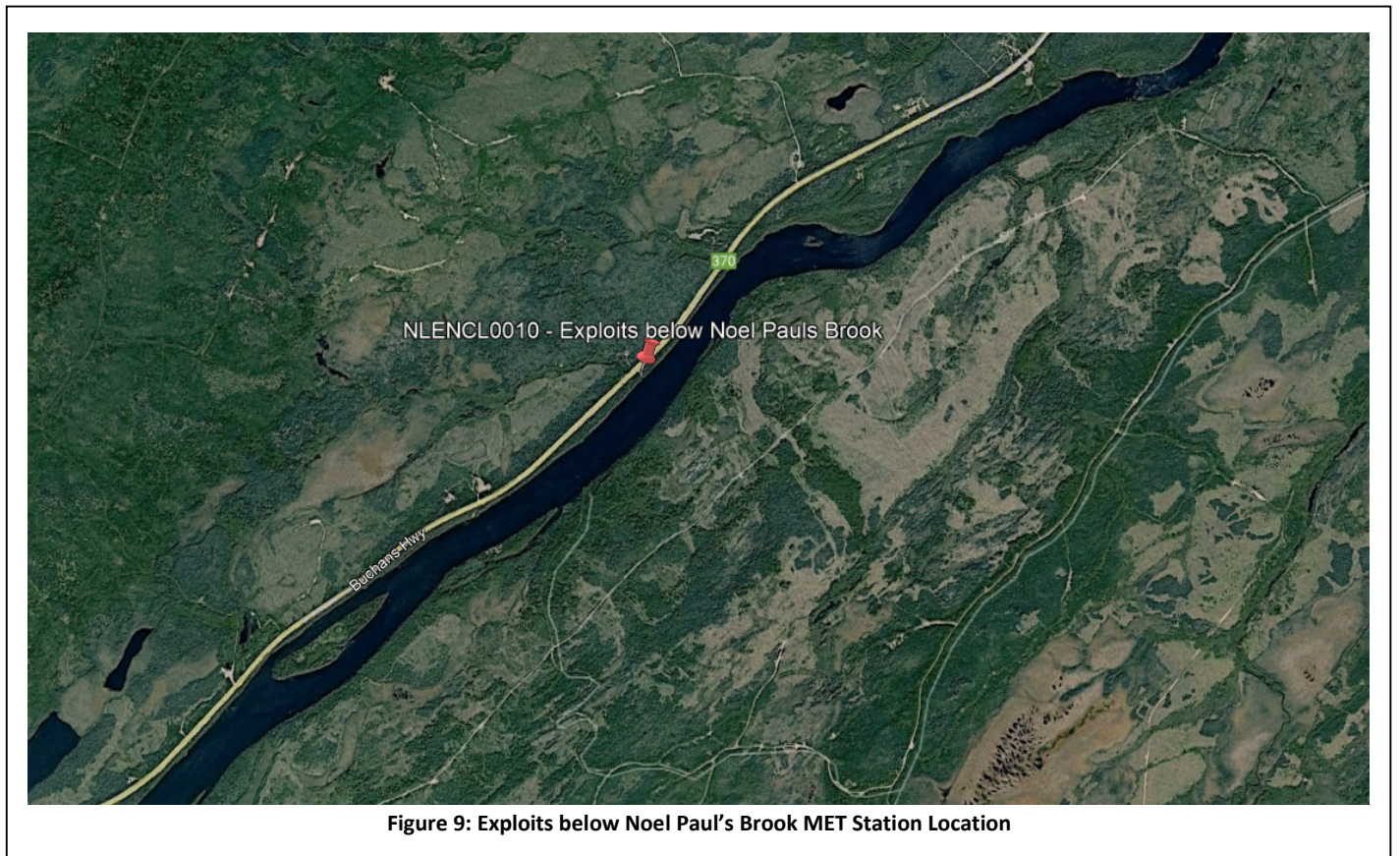


Figure 9: Exploits below Noel Paul's Brook MET Station Location

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 7468
 - Changed desiccant and humidity indicator card
- Snow Depth Sensor:
 - Model: SR50A-EE Sonic Ranger
 - Serial: 11430
 - Replaced transducer due to pitting and peeling of surface foil
- Precipitation:
 - Model: TR-525-M-10-CA Texas Electronics
 - Serial: 77405-818
 - Cleared funnel and bucket of any debris
- Temperature/Relative Humidity:
 - Model: CS215
 - Serial: E21317
 - Replaced temp/RH chip
- Anemometer:
 - Model: 05103AP-10-L RM Young Alpine Version
 - Replaced speed bearings, potentiometer, and vertical shaft bearings
- Barometric Pressure:
 - Model: CS106 Barometric Pressure Sensor
 - This sensor is not field serviceable, nor can it be field calibrated
- Solar Radiation:
 - Model: SP Lite2 Pyranometer
 - Cleaned lens
- GPS Antenna:
 - Model: Trimble GPS Antenna P/N 57861-20
 - Serial: 3480213
- Camera:
 - Model: NuPoint Fixed Sight Satellite Camera System
 - Serial: 13000464

Follow-up tasks required:

- Regular scheduled maintenance
- Perform manual snow surveys as a check on the Fluidless Snow Pillow measurement accuracy

Mud Lake Road MET

Station Details:

- Station Identification: NLENCL0011
- Station Installed: October 2020
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Soil Moisture
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
- Site Selection Rationale: NLENCL0004 needed to be moved as the coastline is deteriorating. This is a relocated site with mostly new equipment. Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: November 4th 2025
- Location: N 53° 20' 6.9" W 60° 11' 23.5"
- Elevation: 0 m



Figure 10: Mud Lake Road MET Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 19389
 - Changed desiccant and humidity indicator card
- Snow Depth Sensor:
 - Model: SR50A-EE Sonic Ranger
 - Serial: 12504
 - Replaced transducer due to pitting and peeling of surface foil
- Precipitation:
 - Model: TE525WS Texas Electronics
 - Serial: 79341-319
 - Cleared funnel and bucket of any debris
 - Replaced wire to datalogger but did not see improvement in readings
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E1342
 - Replaced temp/RH chip
- Anemometer:
 - Model: 05108-45-L40
 - Serial: 175874
 - Changed speed bearings, potentiometer, and vertical shaft bearings
- Barometric Pressure:
 - Model: CS106 Barometric Pressure Sensor
 - Serial: J4430010
- Solar Radiation:
 - Model: SP Lite2 Pyranometer
 - Serial: 205096
 - Cleaned lens
- Soil Moisture:
 - Model: Stevens Hydra-Probe II
 - Serial: 253660
- Communication:
 - Model: Microhard 4GMini
- Antenna:
 - Model: C2444 9dB Yagi Antenna
- Solar Panel:
 - Model: SLP050-12C1D2 – 50 Watt 12 Volt with Mount & Regulator

Follow-up tasks required:

- Regular scheduled maintenance
- Troubleshoot precipitation bucket not reporting values

Vale LH1 MET

Station Details:

- Station Identification: NLENCL0012
- Station Installed: November 2020
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
- Site Selection Rationale: This station was installed in partnership with Vale Long Harbour. Vale required MET data from on site and we have the infrastructure in place already to host their data.
- Date Visited: Site not visited in 2025
- Location: N 47° 25' 27" W 53° 45' 57.7"
- Elevation: 163.1 m



Figure 11: Vale LH1 MET Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 15039
- Precipitation:
 - Model: 52202-L RM Young Heated Rain and Snow Gauge
- Temperature/Relative Humidity:
 - Model: HygroVUE10
- Anemometer:
 - Model: RMY86000 Ultrasonic Anemometer
- Barometric Pressure:
 - Model: CS106 Barometric Pressure Sensor
 - Serial: S1050162
- Communication:
 - Model: Microhard 4GMini
 - Serial: 012-1254949

Follow-up tasks required:

- Industry partner to determine if station will be repaired or decommissioned

Vale LH2 MET

Station Details:

- Station Identification: NLENCL0013
- Station Installed: May 2022
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Wind Speed
 - Wind Direction
- Site Selection Rationale: This station was installed in partnership with Vale Long Harbour. They required MET data from the community and we have the infrastructure in place already to host their data.
- Date Visited: December 2nd 2025
- Location: N 47° 25' 49.23" W 53° 49' 14.36"
- Elevation: 5 m



Figure 12: Vale LH2 MET Station Location

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 15038
 - Changed desiccant and humidity indicator card
- Precipitation:
 - Model: 52202-L RM Young Heated Rain and Snow Gauge
 - Cleared funnel and bucket of any debris
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E7495
 - Reinstalled HygroVUE10 temp/RH sensor
- Anemometer:
 - Model: 05108-45
 - Changed speed bearings, vertical shaft bearings and potentiometer
- Barometric Pressure:
 - Model: CS106 Barometric Pressure Sensor
- Communication:
 - Model: Microhard 4Gmini

Follow-up tasks required:

- Regular scheduled maintenance

Marathon-Gold MET

Station Details:

- Station Identification: NLENCL0014
- Station Installed: June 2023
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Soil Moisture
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
 - Snow Water Equivalent
- Site Selection Rationale: Provides essential meteorological information for site operations, water level analysis, flood forecasting, and climate change adaptation in the province. Provides weather data for accurate interpretation of water quality data and related events in the work area.
- Date Visited: July 8th, August 19th 2025
- Location: N 48° 20' 45.80" W 57° 9' 7.04"
- Elevation: 342 m



Figure 13: Marathon-Gold MET Station Location

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 43543
 - Changed desiccant and humidity indicator card
- Snow Depth Sensor:
 - Model: SnowVUE10
 - Serial: 10293
 - Replaced transducer due to pitting and peeling of surface foil
- Precipitation:
 - Model: ARG314
 - Serial: 223812
 - Cleared funnel and bucket of any debris
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E3851
 - Replace temp/RH chip
- Anemometer:
 - Model: 05108-45-L40
 - Serial: 195560
 - Changed speed bearings, potentiometer, and vertical shaft bearings
 - Swapped entire nose cone assembly as old one had issues properly detecting low wind speeds due to excess friction
- Barometric Pressure:
 - Model: BaroVUE10
 - Serial: 1771
 - Replaced sensor card
- Solar Radiation:
 - Model: SP Lite2 Pyranometer
 - Serial: 222279
 - Lens cleaned
- Snow Water Equivalent:
 - Model: Fluidless Snow Pillow 5
 - Fix from manufacturer applied and sensor now works as intended
 - Sensor is now only powered on for a few minutes to take a measurement and then powers off

Follow-up tasks required:

- Regular scheduled maintenance
- Perform manual snow surveys as a check on Fluidless Snow Pillow measurement accuracy
- Upload new station programming with distance to ground hardcoded to ensure station resets do not cause SnowVUE10 to detect top of snow pack as new ground level

Conception Bay South MET

Station Details:

- Station Identification: NLENCL0015
- Station Installed: October 2024
- Parameters measured every fifteen minutes and transmitted every hour:
 - Air Temperature
 - Relative Humidity
 - Atmospheric Pressure
 - Dew Point Temperature
 - Precipitation
 - Soil Moisture
 - Humidex
 - Wind Speed
 - Wind Direction
 - Snow Depth
 - Solar Radiation
 - Sunshine Hours
 - Snow Water Equivalent
 - Wind Chill
- Site Selection Rationale: This station was installed in partnership with the Town of Conception Bay South. They are looking to monitor the microclimate that exists in the town and we have agreed to host their data.
- Date Visited: December 2nd 2025
- Location: N 47° 29' 2.14" W 53° 1' 0.63"
- Elevation: 60 m

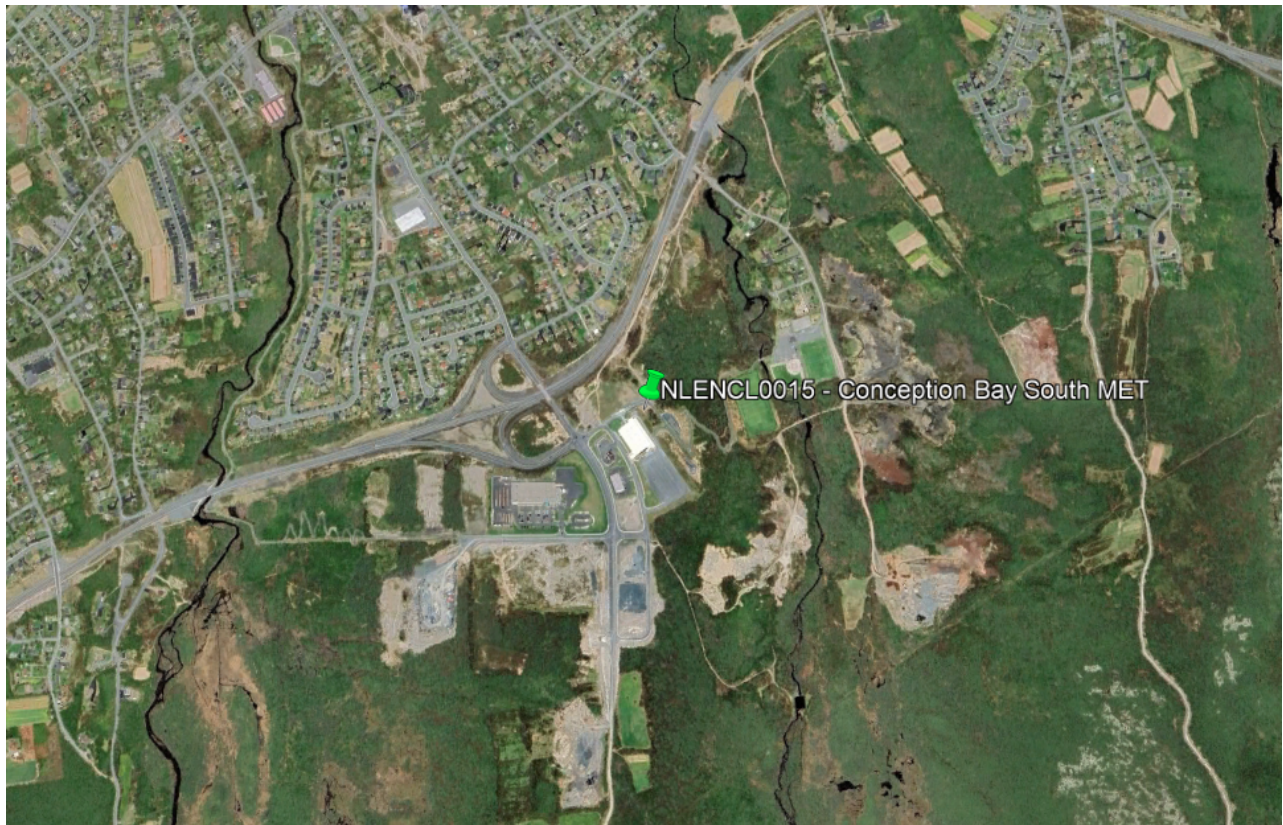


Figure 14: Conception Bay South MET Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 59930
 - Changed desiccant and humidity indicator card
- Snow Depth Sensor:
 - Model: SnowVUE10
 - Serial: 12029
 - Replaced transducer due to pitting and peeling of surface foil
- Precipitation:
 - Model: 52202
 - Serial: TB 19387
 - Cleared funnel and bucket of any debris
 - Alter shield installed around precipitation bucket to reduce effect of wind on measurements
- Temperature/Relative Humidity:
 - Model: HygroVUE10
 - Serial: E60960
 - Replaced temp/RH chip
- Anemometer:
 - Model: 05108-45-L40
 - Serial: WM190811
 - Replaced speed bearings in nose cone
- Barometric Pressure:
 - Model: BaroVUE10
 - Serial: 3480
- Solar Radiation:
 - Model: SP Lite2 Pyranometer
 - Serial: 244692
 - Lens cleaned
- Soil Moisture:
 - Model: TEROS12
- Humidex/Wind Chill:
 - Model: Black Globe
- Modem:
 - Model: Bulletplus-NA2
 - Serial: 012-1562582

Follow-up tasks required:

- Regular scheduled maintenance

Waterford River at Kilbride

Station Details:

- Station Identification: NF02ZM0009
- Station Installed: July 21st 2015
- Image taken and transmitted every half an hour during the daytime
- Site Selection Rationale: Provides essential information for visual image of changing water levels in this urban stream.
- Date Visited: Throughout 2025
- Location: N 47° 31' 44.44" W 52° 44' 41.04"
- Elevation: 32.9 m

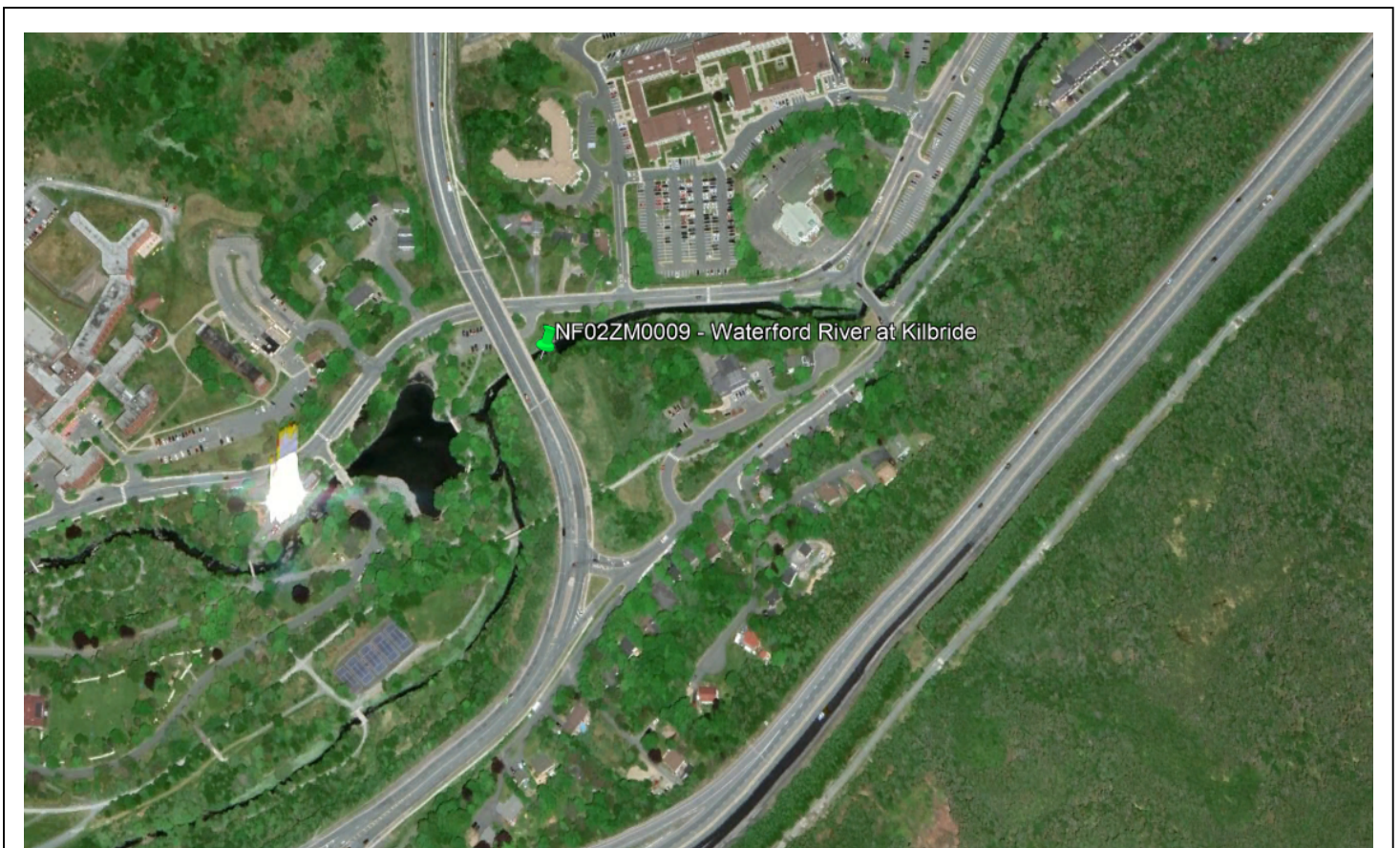


Figure 15: Waterford River at Kilbride Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR800
 - Serial: 29334
 - Replaced desiccant and humidity indicator card
- Camera:
 - Model: CCFC
 - Serial: 2906
 - Newly installed
- Modem:
 - Model: BULLETCAT4-GL 4G Mini
 - Serial: 5958202

Follow-up tasks required:

- Regular scheduled maintenance

Learys Brook at Prince Philip Drive

Station Details:

- Station Identification: NF02ZM0178
- Station Installed: July 21st 2015
- Image taken and transmitted every half an hour during the daytime
- Site Selection Rationale: Provides essential information for visual image of changing water levels in this urban stream.
- Date Visited: Throughout 2025
- Location: N 47° 33' 50.17" W 52° 44' 55.33"
- Elevation: 66.1 m



Figure 16: Learys Brook at Prince Philip Drive Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Camera:
 - Model: Hikvision DS 2CD2012
 - Power cycled
 - Lens wiped
- Modem:
 - Model: BULLETCAT4-GL 4G Mini
 - Serial: 12-1559113

Follow-up tasks required:

Regular scheduled maintenance

Exploits River at Badger Steps

Station Details:

- Station Identification: NLENM0001
- Station Installed: November 2009
- Image taken and transmitted every hour during the daytime
- Site Selection Rationale: Snow monitoring provides essential information for flood forecasting, hydropower generation and for climate change adaptation in the province. WRMD provides flood forecasting services, in which snow monitoring has been integrated, for the community of Badger in the Exploits River Basin.
- Date Visited: June 25th 2025
- Location: N 48°56'25.86" W 55°58'42.98"
- Elevation: 100.6 m

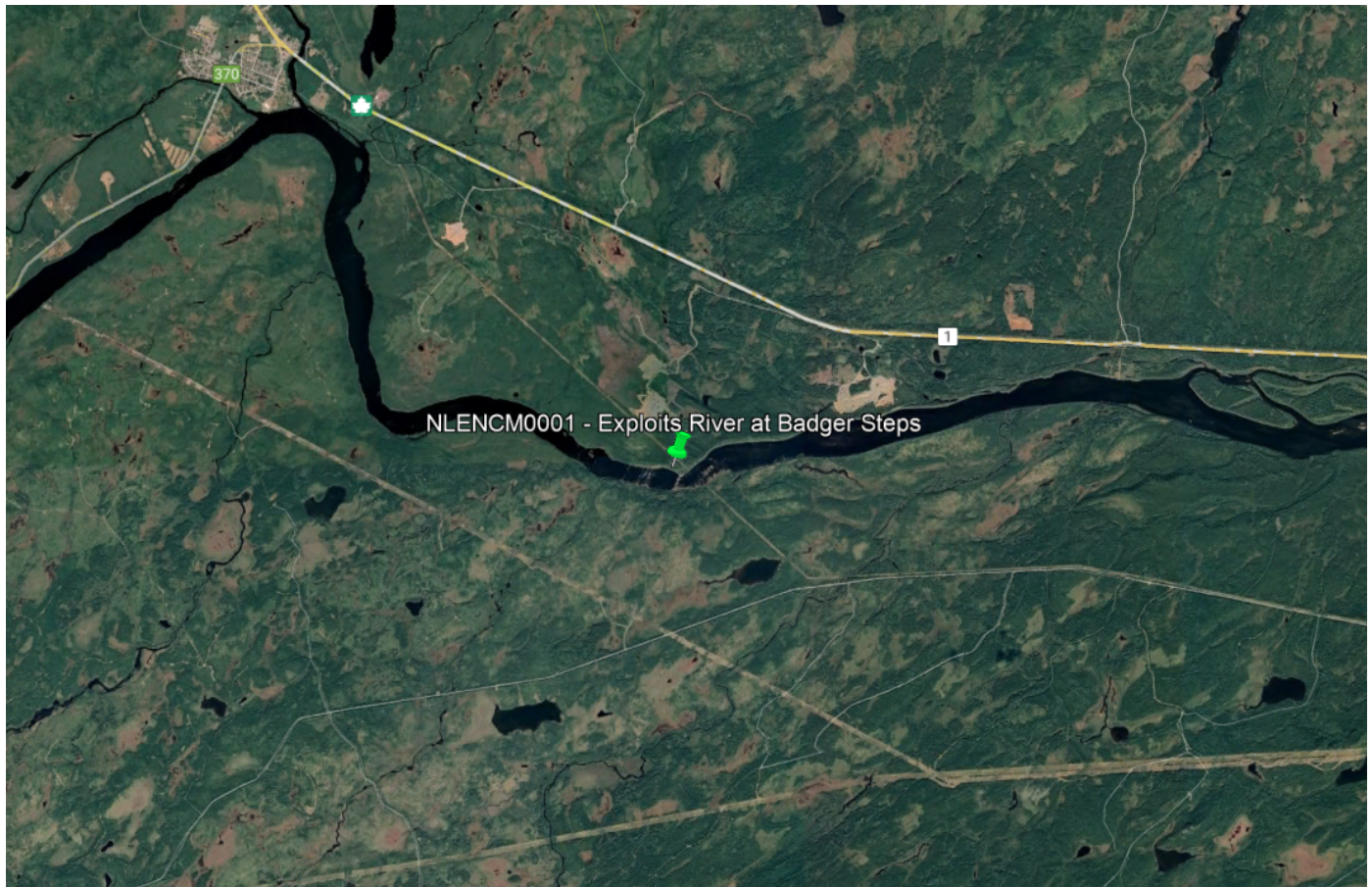


Figure 17: Exploits River at Badger Steps Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000
 - Replaced desiccant and humidity indicator card
 - Cleared memory of USB drive
- Camera:
 - Model: CC5MPX
 - Wiped camera lens
- Compound:
 - Trees cleared on site to provide solar panel with additional sun coverage

Follow-up tasks required:

- Regular scheduled maintenance

Steady Brook 470 meters above Confluence to Humber River

Station Details:

- Station Identification: 02YL012
- Station Installed: June 23rd 2015
- Images taken up and down stream, transmitted every hour during the daytime
- Two cameras: one aimed upstream, one aimed downstream
- Site Selection Rationale: WRMD provides flood forecasting services, in which snow monitoring has been integrated, for the communities of Deer Lake and Steady Brook in the Humber River Basin.
- Date Visited: July 29th 2025
- Location: N 48° 57' 11.59" W 57° 49' 40.02"
- Elevation: 7.3 m



Figure 18: Steady Brook 470 meters above Confluence to Humber River Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR1000X
 - Serial: 43548
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: 2 x CCFC
 - Serial: 2507/2508
- Compound:
 - Replaced solar panel with larger module to accommodate double camera setup
 - Replaced solar controller to accommodate larger module panel

Follow-up tasks required:

- Regular scheduled maintenance
- Monitor battery levels to ensure new solar controller works during peak sunlight hours

Churchill River at end of Mud Lake Road – Water Level

Station Details:

- Station Identification: 03OE018
- Station Installed: Oct 24, 2018
- Image taken and transmitted every hour during the daytime
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: November 4th 2025
- Location: N 53°20'5.24" W 60°11'18.18"
- Elevation: 1.2 m

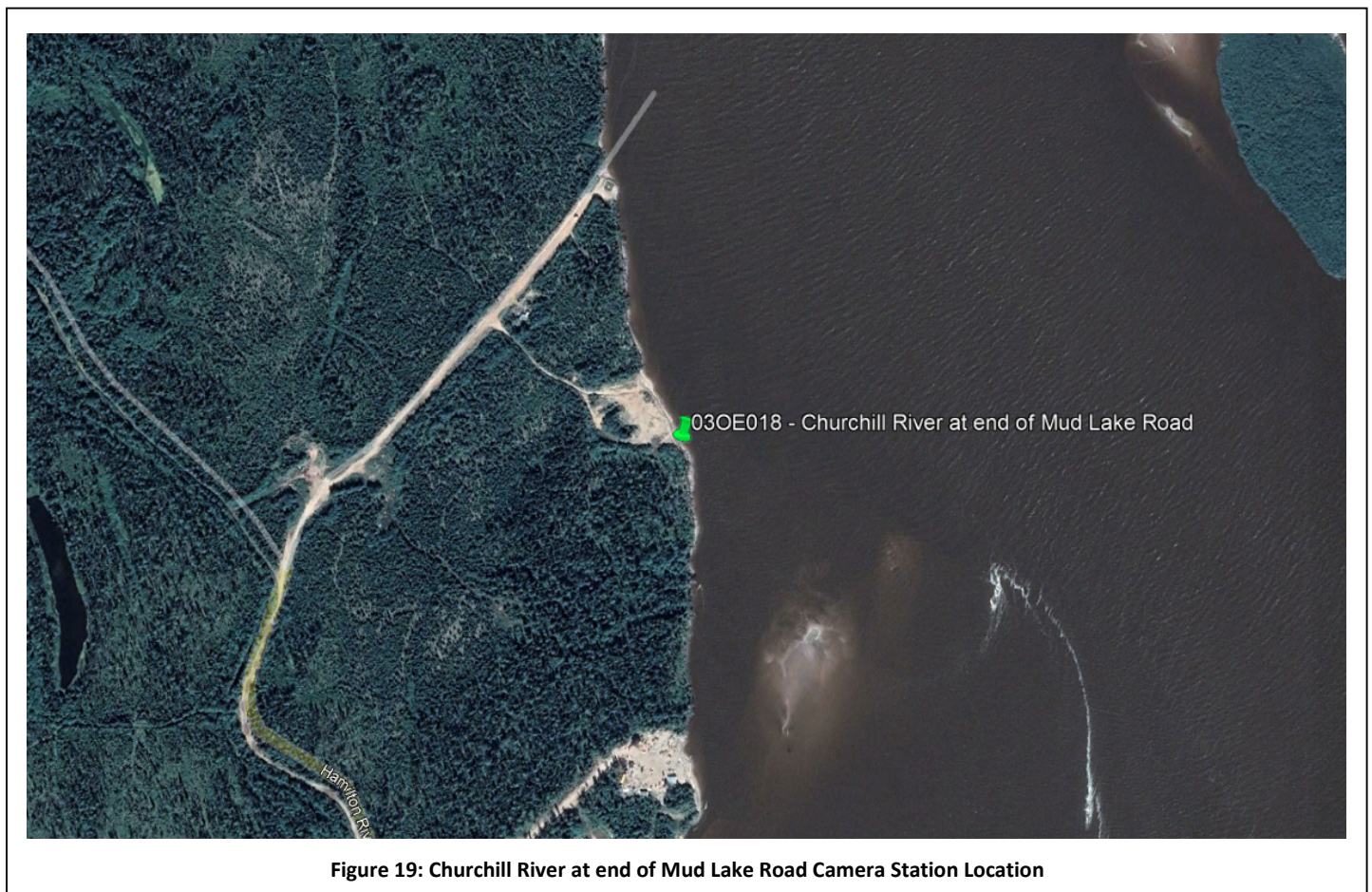


Figure 19: Churchill River at end of Mud Lake Road Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR800
 - Serial: 28914
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: CCFC
 - Cleaned lens
- Modem:
 - Model: BulletCAT4-GL 4G Mini
 - Serial: 012-1557626

Follow-up tasks required:

- Regular scheduled maintenance
- Monitor connectivity to station – cellular service in the area is unreliable

Churchill River below Traverspine River

Station Details:

- Station Identification: 03OE019
- Station Installed: Sept 23, 2018
- Image taken and transmitted every hour during the daytime
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: Not visited in 2025
- Location: N 53°17'28.20" W 60°13'16.49"
- Elevation: 1.2 m



Figure 20: Churchill River below Traverspine River Camera Station Location

Tasks accomplished:

- Site not visited

Follow-up tasks required:

- Replace CR800 Datalogger due to ground reference disconnect on datalogger's board

Goose River at Bridge

Station Details:

- Station Identification: NLENHM0001
- Station Installed: Sept 23, 2018
- Image taken and transmitted every hour during the daytime
- Site Selection Rationale: Selected for use in flood forecasting models.
- Date Visited: November 4th 2025
- Location: N 53°23'35.07" W 60°25'12.05"
- Elevation: 1.2 m

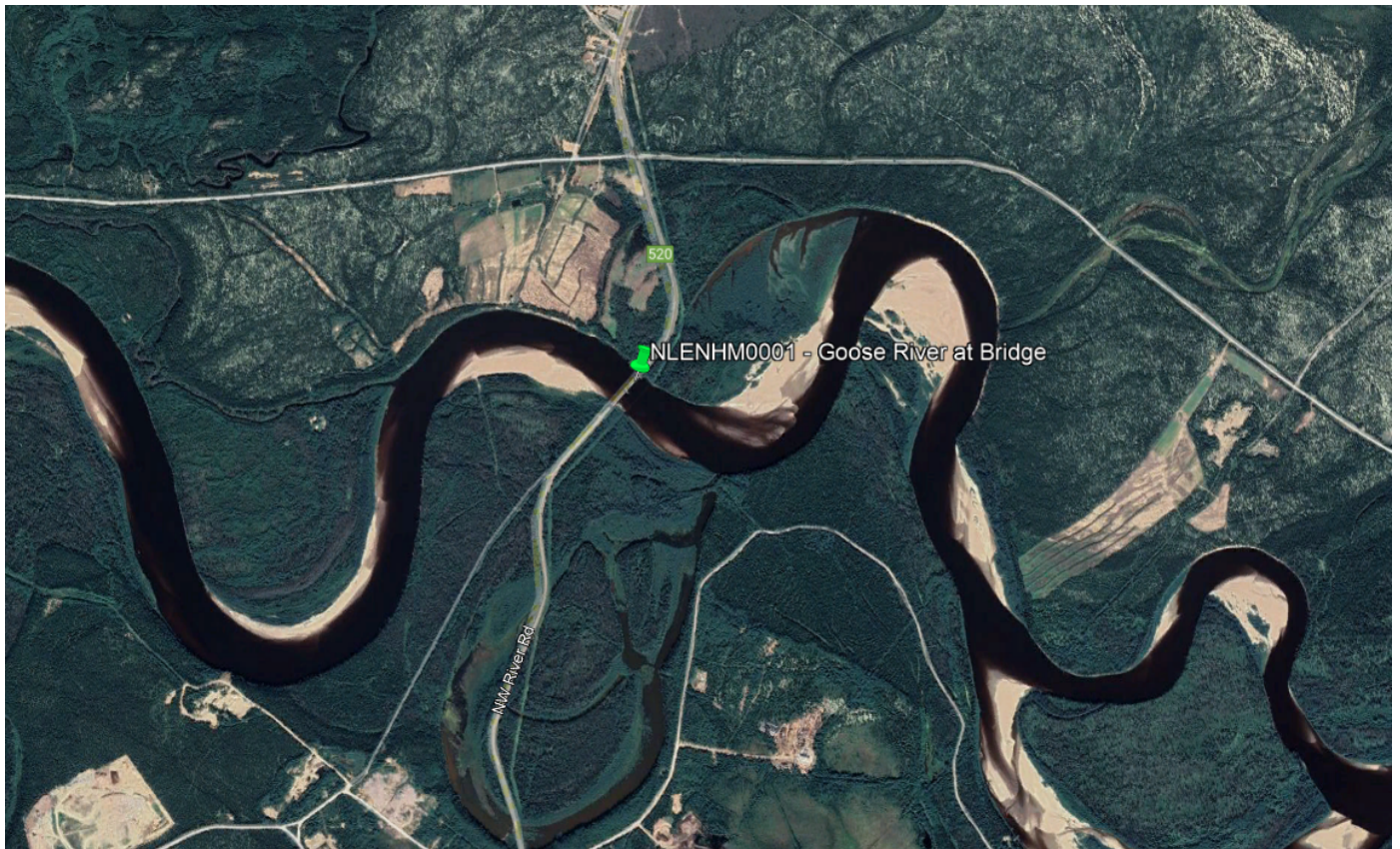


Figure 21: Goose River at Bridge Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR800
 - Serial: 43340
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: CCFC
 - Cleaned lens

Follow-up tasks required:

- Regular scheduled maintenance

Mud Lake at Mud Lake

Station Details:

- Station Identification: 03OE017
- Station Installed: Sept 23, 2018
- Image taken and transmitted once a day at 10:30 AM NST
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: Not visited in 2025
- Location: N 53°18'14.10" W 60°10'2.37"
- Elevation: 1.2 m

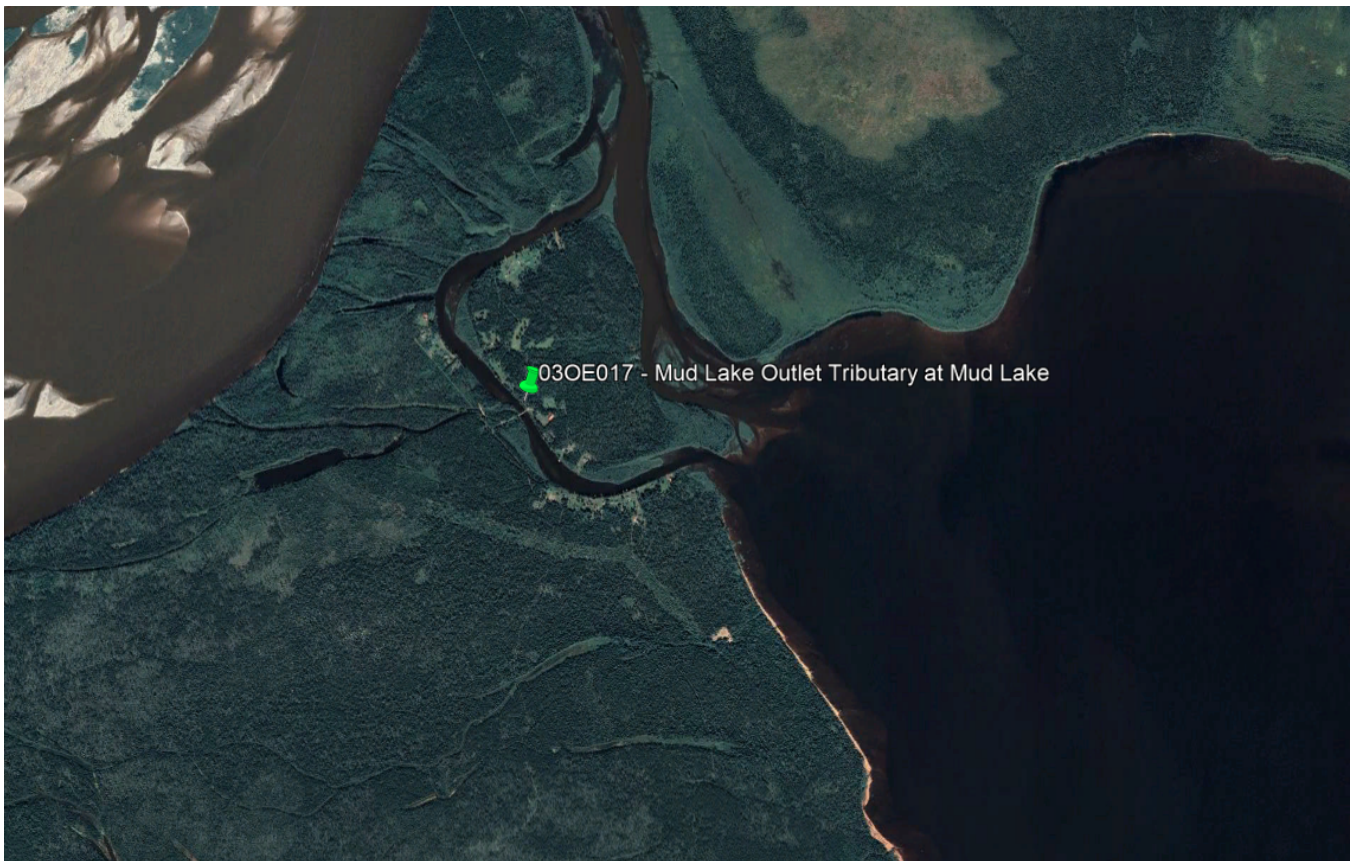


Figure 22: Mud Lake at Mud Lake Camera Station Location

Tasks accomplished:

- Camera:
 - Model: NuPoint Fixed Sight Satellite Camera System
 - Serial: 13000468

Churchill Falls above Grizzle Rapids

Station Details:

- Station Identification: 03OE013
- Station Installed: July 3rd 2019
- Image taken and transmitted once a day at 10:30 AM NST
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: Not visited in 2025
- Location: N 52°58'12.22" W 61°26'43.48"
- Elevation: 62.5 m



Tasks accomplished:

- Camera:
 - Model: NuPoint Fixed Sight Satellite Camera System
 - Serial: 14000078

Exploits River at Bishop's Falls Trestle

Station Details:

- Station Identification: NLENHM0003
- Station Installed: Sept 9 - 10, 2019
- Image taken and transmitted every hour during the daytime
- Parameters measured every fifteen minutes and transmitted every hour:
 - Distance from Bridge to Water
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: June 24th 2025
- Location: N 49° 0'29.50" W 55°29'23.80"
- Elevation: 36.0 m

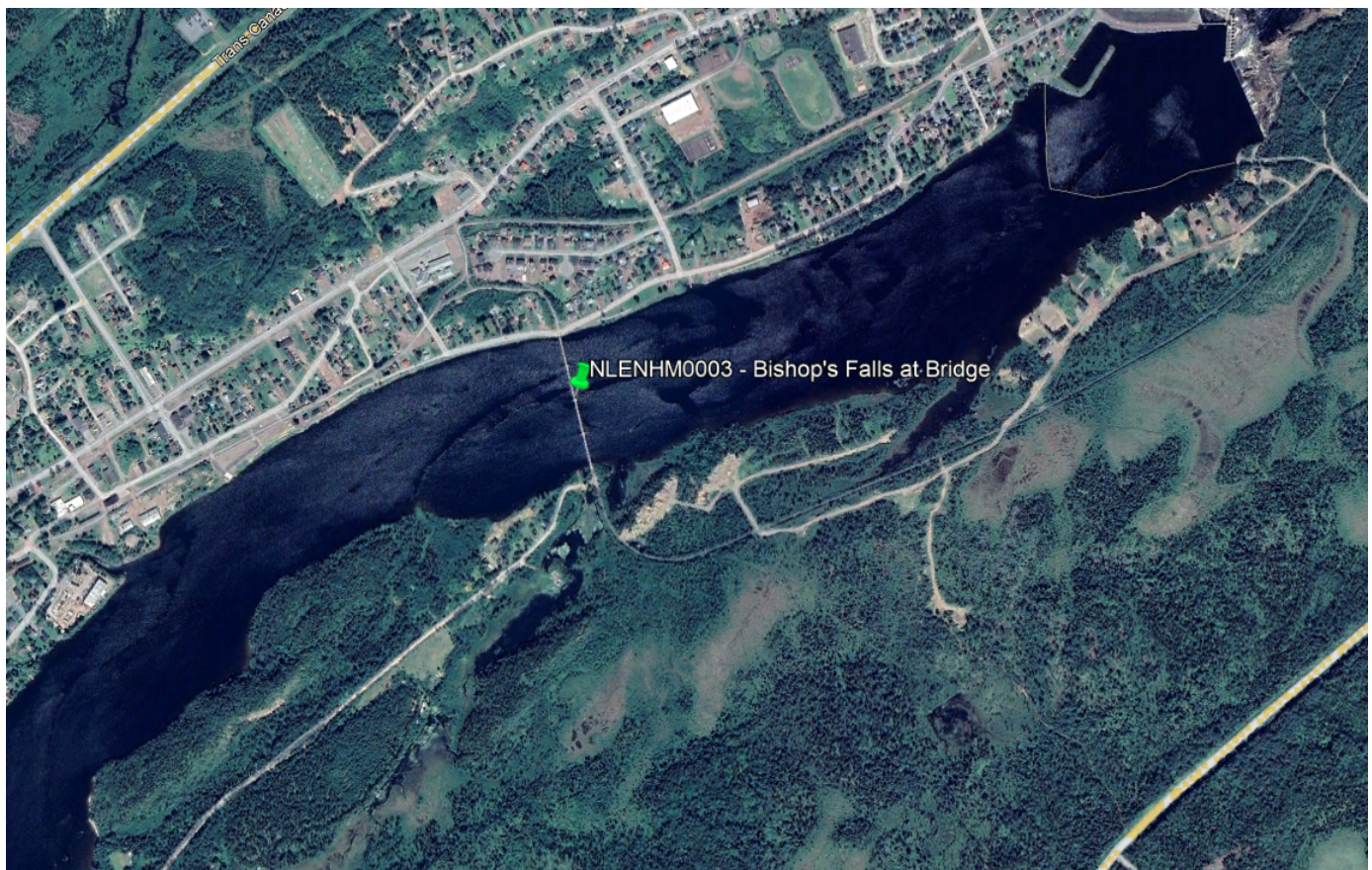


Figure 24: Exploits River at Bishop's Falls Trestle Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR800
 - Serial: 44026
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: CC5MPX
 - Serial: 01293
 - Cleaned lens

Follow-up tasks required:

- Regular scheduled maintenance

Humber River at Nicholsville Bridge

Station Details:

- Station Identification: NLENHM0004
- Station Installed: Sept 10 - 11, 2019
- Image taken and transmitted every hour during the daytime
- Parameters measured every fifteen minutes and transmitted every hour:
 - Distance from Bridge to Water
- Site Selection Rationale: Selected with consultation from Environment Canada and for use in flood forecasting models.
- Date Visited: July 31st 2025
- Location: N 49°11'18.98" W 57°26'52.32"
- Elevation: 30.8 m



Figure 25: Humber River at Nicholsville Bridge Camera Station Location

Weather Station Annual Maintenance - 2025, Newfoundland and Labrador

Tasks accomplished:

- Datalogger:
 - Model: CR800
 - Serial: 44027
 - Changed desiccant and humidity indicator card
- Camera:
 - Model: CCFC
 - Cleaned lens

Follow-up tasks required:

- Regular scheduled maintenance

The next scheduled annual maintenance cycle will be completed by December 2026.