



# English and Wabigoon Rivers Remediation Approved Projects



## ASUBPEESCHOSEEWAGONG NETUM ANISHINABEK (ANA) GRASSY NARROWS FIRST NATION

### ➤ 2018 FIELD SAMPLING PROGRAM

STATUS: **COMPLETED**

- Characterize mercury levels in sediment and fish
- Improve current understanding of mercury transport, storage, bioavailability and remobilization

### ➤ MERCURY MODELLING PROPOSAL FOR THE ENGLISH-WABIGOON RIVER SYSTEM

STATUS: **COMPLETED**

- Better understand mercury in the existing system
- Help design and predict the response of the English and Wabigoon Rivers to potential remediation actions
- Support the identification of data gaps and needs
- Evaluate proposed remediation options
- Employ adaptive management in implementation of remediation plans
- Design pre and post remediation monitoring programs

### ➤ DATED CORE ANALYSES PROJECT

STATUS: **COMPLETED**

EVALUATE:

- Whether there are ongoing sources of mercury
- How much mercury is stored in different parts of the river system
- Role of riparian wetlands in mercury storage and recovery
- How long it will take the river to recover naturally after any ongoing mercury sources have been controlled

### ➤ NEARSHORE RIVERBANK SEDIMENT AND POREWATER SAMPLING NEAR THE DRYDEN MILL PROJECT

STATUS: **COMPLETED**

SAMPLE:

- Riverbank sediment
- Wabigoon River water
- Pore water

EVALUATE:

- Whether mercury is continuing to be released from the Dryden Mill Site into the Wabigoon River

### ➤ 2019 SEDIMENT, WATER AND BIOTA SAMPLING PROGRAM

STATUS: **COMPLETED**

SAMPLE:

- Sediment
- Water
- Biota

EVALUATE:

- Where mercury is located
- How mercury moves through the river system
- Where mercury is being deposited
- How mercury gets into fish and edible plants

### ➤ 2019 SEDIMENT, WATER AND BIOTA SAMPLING PROGRAM

STATUS: **COMPLETED**

SAMPLE:

- Sediment
- Water
- Biota

EVALUATE:

- Where mercury is located
- How mercury moves through the river system
- Where mercury is being deposited
- How mercury gets into fish and edible plants



## WABAUSKANG FIRST NATION (WFN)

### ➤ GIS, DATABASE MANAGEMENT AND RESEARCH CAPACITY BUILDING

STATUS: **COMPLETED**

- Build technical capacity within First Nations participating on the Panel

DEVELOP SKILLS IN:

- Research
- Mapping
- Building Geographic Information Systems

### ➤ 2018 GIS, DATABASE MANAGEMENT AND RESEARCH CAPACITY BUILDING

STATUS: **COMPLETED**

- Build technical capacity within First Nations participating on the Panel
- Train two community technicians from each of the communities

DEVELOP SKILLS IN:

- Conducting community mapping interviews
- Building Geographic Information Systems
- Conducting historical and technical research

### ➤ 2019 GIS, DATABASE MANAGEMENT AND RESEARCH CAPACITY BUILDING

STATUS: **COMPLETED**

- Build on 2018 project of the same name
- Inform future remediation activities

REFINE SKILLS REQUIRED FOR:

- Fieldwork
- Data management
- Verifying datasets
- Developing community GIS Systems
- Collection of high-frequency water level data

### ➤ DATA MANAGEMENT STRATEGY ASSESSMENT PROGRAM

STATUS: **COMPLETED**

- Assess data management needs
- Develop options for long-term solution

### ➤ PROJECT MANAGEMENT AND SUPPORT FOR DATABASE DEVELOPMENT

STATUS: **ONGOING**

- Develop proposal to manage and support preparation, distribution, and review of the Request for Proposals process
- Develop database for the Panel

### ➤ SCIENTIFIC DATABASE DEVELOPMENT

STATUS: **ONGOING**

- Provide professional and technical support for the issuance and management of a contract for:
  - Development of a database of results of Member and Participant monitoring activities

### ➤ LONG-TERM DATABASE MANAGEMENT

STATUS: **ONGOING**

- Provide professional and technical support to oversee a contract for:
  - Management and maintenance of the scientific database between April 1, 2022 and March 31, 2024.

### ➤ WABIGOON RIVER AND ENGLISH RIVER BATHYMETRY AND LIDAR MAPPING PROJECT

STATUS: **ONGOING**

- Provide detailed mapping of the rivers and surrounding lands to support the development of remedial options



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## WABASEEMOONG INDEPENDENT NATIONS (WIN) ONE MAN LAKE, SWAN LAKE, WHITEDOG

### ➤ 2019-2020 FIELD PROGRAM

STATUS: **COMPLETED**

- Monitor English River within the Wabaseemoong Independent Nations Traditional Land Use Area
- Understand effects and distribution of mercury in the aquatic environment
- Monitor fish movement

**SAMPLE:**

- Water quality
- Sediment
- Fish
- Aquatic vegetation
- Benthic invertebrates
- Wild rice

### ➤ 2020 FIELD PROGRAM

STATUS: **COMPLETED**

- Understand effects and distribution of mercury in the aquatic environment
- Complete final year of fish movement study

**SAMPLE:**

- Water quality
- Sediment
- Fish
- Aquatic vegetation
- Benthic invertebrates

### ➤ 2021 PHYTOPLANKTON AND ZOOPLANKTON STUDY

STATUS: **ONGOING**

- Understand current and legacy effects and distribution of mercury in the aquatic environment

**SAMPLE:**

- Phytoplankton
- Zooplankton

### ➤ 2022-2023 MONITORING PROGRAM

STATUS: **ONGOING**

- Collect long-term monitoring of ecosystems
- Compare against baseline data
- Detect and identify any significant changes



## MIGISI SAHGAIGAN FIRST NATION EAGLE LAKE FIRST NATION (ELFN)

### ➤ WETLAND MERCURY CHARACTERIZATION IN EAGLE LAKE FIRST NATION'S TRADITIONAL TERRITORIES

STATUS: **COMPLETED**

- Characterize mercury contamination in wetlands
- Understand the role of wetlands in mercury transport and cycling

**SAMPLE:**

- Water quality
- Sediment
- Biota

### ➤ 2020 SURFACE WATER SAMPLING PROGRAM

STATUS: **COMPLETED**

- Build on the results of previous surface water sampling studies
- Understand spatial extent and fate of mercury in surface water

### ➤ 2021 WATER LEVEL PROGRAM AND CLAY LAKE SURFACE WATER SAMPLING

STATUS: **COMPLETED**

- Monitor water levels and flows
- Sample surface water in Clay Lake
- Capture extent of methylation near Clay Lake bottom
- Understand significance of lake turnover events in the transport of mercury in the system

**SAMPLE:**

- Surface water in Clay Lake

### ➤ 2022 SAMPLING PROGRAM

STATUS: **ONGOING**

**CARRY OUT FIELD STUDIES:**

- Baseline Assessment of Wildrice Lake
- Assessment of Mercury Concentrations in Biota of Wetlands
- Tributary Water Level, Flow and Chemistry



## WAABIGONII ZAAGA'IGAN ANISHINAABEG WABIGOON LAKE OJIBWAY NATION (WLOn)

### ➤ BACKGROUND ENVIRONMENTAL AND WATER REGIME STUDY

STATUS: **COMPLETED**

- Determine current environmental conditions in Wabigoon Lake and its tributaries within the Wabigoon Lake Ojibway Nation traditional territory
- Characterize mercury concentrations in the area
- Review history of Wabigoon Lake water regime and existing studies to determine sampling locations

**SAMPLE:**

- Sediment
- Surface water

### ➤ 2020 FIELD PROGRAM

STATUS: **COMPLETED**

- Understand current environmental conditions in Wabigoon Lake and its tributaries within the Wabigoon Lake Ojibway Nation traditional territory
- Assess aquatic biota in the Wabigoon River from Dryden to Clay Lake
- Analyze fish diet

**SAMPLE:**

- Sediment
- Large-bodied (sport) fish

### ➤ REFERENCE SITES SAMPLING PROGRAM

STATUS: **STAGE 1 COMPLETED**

- Identify suitable reference lakes to provide a better estimate of background mercury levels not subject to Dryden Mill Site effluent impacts
- Set expectations for future remediation targets

### ➤ EROSION PILOT STUDY

STATUS: **ONGOING**

- Define contribution of riverbed and bank erosion to existing and future sediment loads
- Survey and assess erosion at five sites with elevated mercury in sediment
- Inform the Grassy Narrows First Nation Mercury Modelling Project

## PROJECT SAMPLE SUBJECTS

