

WATERSHED CHARACTERISTICS Lakehead Source Protection Area

The Watershed Characterization Report is a documentation of the water resources within the boundaries of the Lakehead Source Protection Area. Included is scientific data, historical accounts, background information and maps that define the geography, geology, hydrology, and socio-economic makeup of the watershed. The report is divided into two sections:

Description of the natural environment of the watershed.

- Geology
- Topography
- Soil Types
- Hydrology

Description of the human influences of the watershed.

- Population Size and Distribution
- Land Use
- Industrial and Commercial Development
- Stakeholders and Partners involved in Source Protection Planning

Area of the jurisdiction of the Lakehead Region Conservation Authority = 2,719 square kilometers

Area of the Jurisdiction of the Lakehead Source Protection Area = 11,526 square kilometres

Area within the Lakehead Source Protection Area that are wetlands = 50,815 hectares

Area within the Lakehead Source Protection Area that are Provincially Significant Wetlands = 3,851 hectares

Population of the Lakehead Source Protection Area = 121,829 (indicates a decline from 126,454 in 1991)

Member Municipalities

City of Thunder Bay *

Municipality of Oliver Paipooonge *

Municipality of Shuniah

Municipality of Neebing

Township of Conmee

Township of O'Connor

Township of Gillies

Township of Dorion

* Municipalities with Municipal residential drinking water systems.



All water flows predominately in a southeasterly direction in the Lakehead Source Protection Area and drains into Lake Superior. The majority of the rivers, streams and creek within the watershed are cold or cool water supporting fish species such as trout, whitefish, salmon, pickerel, perch and pike.

Physical Description

- Topography and Soils are extremely variable in Lakehead Source Protection Area due to glacial activity, post glacial melt water and river outwash activity. Organic soil deposits are formed in poorly drained bedrock depressions. Organic soils are the deepest soils in the area.
- Two distinct forest regions: Great Lakes-St. Lawrence Forest (southern part of watershed south of City of Thunder Bay) and Boreal Forest (northern part of watershed north of City of Thunder Bay).
- Mean annual temperatures tend to be lower, frost free periods are shorter and the average annual precipitation is higher in the Boreal Forest.
- Climate is typical of a mid-latitude inland location with a Great Lakes moderating influence. The climate is categorized as “modified continental”, meaning that the mean temperature difference between summer and winter is at least 30 degrees Celsius.
 - Mean daily temperatures for January are -18.7 degrees Celsius and for July are 18.5 degrees Celsius.
 - Typically displays a pattern of low winter and high summer precipitation.
 - Spring and fall periods are characterized by relatively cool temperatures during the day and evening and a greater occurrence of strong winds.

Main Tributaries in the Lakehead Source Protection Area

- Kaministiquia River – 7770 square kilometres
- Neebing River – 216 square kilometres
- McIntyre River – 155 square kilometres
- McVicar Creek – 42 square kilometres
- Current River – 702 square kilometres
- McKenzie River – 38 square kilometres
- Wolf River – 736 square kilometres
- Cloud River – 18 square kilometres
- Pine River – 393 square kilometres

Land Uses that Can Affect Source Water

- Forestry
- Urbanization
- Industrial activities
- Agriculture
- Mining, including gravel extraction.
- Power Generation; hydro, coal
- Oil and gas
- Waste water treatment and storm water
- Transportation
- Recreation; water and land activities
- Landfill sites