

1.5 Meteor Creek, Rosie Creek and Silvester Creek Subwatersheds



General Description

- **Total area:** 543.9 km²; Meteor Creek (299.53km²), Rosie Creek (87.42 km²) and Silvester Creek (156.98 km²).
- **Drainage:** These three subwatersheds are the headwaters to the Wanapitei River.
 - Meteor Creek is split into 2 branches (31.45km and 21.0km) both with a fall of 15.24m, resulting in a gradient of 0.48 m/km and 0.72m/km)
 - Rosie Creek has a length of 21.1kms, with a fall of 15.24m, resulting in a gradient of 0.71m/km.
 - Silvester Creek has a length of 28.65kms with a fall of 15.24m, resulting in a gradient of 0.53 m/km.
- **Topography:**
 - The mean elevation of the Meteor Creek subwatershed is 339.2 m.a.s.l with a maximum elevation of 470.5 m.a.s.l.
 - The mean elevation of the Rosie Creek subwatershed is 388.2 m.a.s.l. with a maximum elevation of 473.9 m.a.s.l.
 - The mean elevation of the Sylvester Creek subwatershed is 389.9 m.a.s.l with a maximum elevation of 518.3 m.a.s.l.
- **Geology:**
 - **Bedrock Geology:** Precambrian bedrock of the Superior Province in Meteor Creek subwatershed, with bedrock of the Huronian Province occurring mainly throughout Rosie Creek and Sylvester Creek subwatersheds.
 - **Quaternary Geology:** Mainly exposed bedrock, sometimes covered by a discontinuous, thin layer of drift. A large area of glaciolacustrine deposits spreads across all 3 subwatersheds, consisting of sands, gravelly sands and gravels.
- **Soils:** Most surface substrates within these three subwatersheds are made up of stable bedrock and sandy loams, with some much smaller areas of sand, organic soil, and gravelly-sandy loams.
- **Groundwater:**
 - A large portion of the area within these subwatersheds is classified as 'Highly Vulnerable Aquifers'.
 - A small southwest area within the Meteor Creek subwatershed contains a Significant Groundwater Recharge Area that it shares with the Upper Wanapitei subwatershed.
- **Land cover:** The land use is characterized by numerous lakes, ponds, bedrock outcrops and muskeg swamps. The remaining areas are usually forested by both deciduous and coniferous trees.
 - Forest covers an area of 476.41 km², 87.6 % of these subwatersheds.
 - Wetlands cover an area of 77.85 km², 14.3 % of these subwatersheds.

- Lakes cover an area of 20.95 km², 3.8 % of these subwatersheds.
- **Land Use Type:**
 - **Zoning:** Because of its northern range, none of the area within these subwatersheds are subject to the City of Greater Sudbury's Zoning By-law.

Indigenous Communities and Traditional Territories

- The majority of these subwatersheds fall within the Robinson-Huron Treaty Area #61, of 1850. The western half of the Meteor Creek subwatershed fall within the Robinson-Huron Treaty Area #9, of 1905-1906.
- This area also falls within the traditional territory of the Wahnapiatae First Nation and the Atikameksheng Anishnawbek First Nation.

Development Pressure

Overall: Low - Some seasonal cottages are assumed within these subwatersheds but very few permanent residents exist.

- **Settlement Area:** There are no official settlement areas identified in these subwatersheds.
- **Municipal Wastewater Facilities:** There are no municipal wastewater facilities within these subwatersheds.
- **Forestry:** Located within the Temiskaming Forest, these subwatersheds are heavily impacted by past and future forestry. There are many areas that are identified for harvest in the 2020-2030 Temiskaming Forest Management Plan. Forestry roads and trails provide most of the access opportunities within these subwatersheds.
- **Aggregates:** There is currently 1 active and 1 inactive aggregate operation.
- **Mining:**
 - Historically, there are no records of a producing mine in these subwatersheds.
 - No active exploration reported within the last year (February 2023-January 2024)
 - There are currently 3 active Mining Plans and Permits registered to these subwatersheds.

Recreational Use

- Access to these subwatershed is limited to logging roads and trails, making it more difficult to use for recreational purposes. The areas are undoubtedly still used for hunting, fishing, trail riding, hiking, canoeing and kayaking (particularly in the Meteor Lake area).

Water Use

- There are currently no active Permits to Take Water.

Notable Waterbodies

- Many small to medium sized lakes; access is difficult in this area, apart from those accessible by logging road.
 - Meteor Lake is one of the larger lakes within these subwatersheds which also falls within a Conservation Reserve (see Significant Features).

Previously Identified Management Issues

- A tributary of the Wanapitei River, Meteor Creek exhibits erosion along its banks due to the characteristics of underlying material which involved a meandering flow through silty-sand lacustrine deposits that erode easily. Raven Creek (Also in Meteor Creek Subwatershed) exhibits similar characteristics to those of Meteor Creek (NDCA Watershed Inventory, 1980).

Natural Hazard Identification and Regulation

Hazards and features regulated by Conservation Sudbury include flood and erosion hazards, wetlands, unstable soils, rivers, streams, creeks, and small inland lakes. More on these regulations can be found in the Conservation Authorities Act, O. Reg. 686/21 that addresses the risks of natural hazards.

- **Floodplain mapping:** Currently, there is no floodplain mapping for this area.
 - In the absence of floodplain mapping, flood hazards are estimated based on site conditions. Typically, the extent of the flood hazard is estimated at 1.2 m above the bankfull elevation or high-water elevation.
- **Erosion hazard mapping:** Currently, erosion hazards are evaluated based on the general guidance from the MNRF for confined and unconfined systems.

Water Control Structure

- There are no water control structures within these subwatersheds. Unregulated flow conditions exist.

Drinking Water Source Protection

- There are no municipal drinking water sources within these subwatersheds. They are, however, the headwaters of the Wanapitei River Drinking Water System, a municipal drinking water source.
- All watercourses within these subwatersheds and the lands immediately around them are classified as Intake Protection Zone 3 as the water ultimately drains towards the Wanapitei River drinking water intake.

Water Quality Indicators

- There are no known sources of water quality data in these subwatersheds.

Significant Features

- The 'Meteor Lake Outwash Fans' Conservation Reserve is partially located within the Meteor Creek subwatershed, covering an area of 9.8 km². The conservation reserve was identified for its exceptional sand dune complexes and its provincially significant outwash fans.
- Wildlife Values:
 - There are 385 moose related wildlife value areas, covering a total area of 1.73 km².
 - There is 1 Great Blue Heron area identified.
 - There are 5 wildlife value points identified as raptor nesting locations.
- There are no ANSI ecological areas of interest.

Management and Stewardship

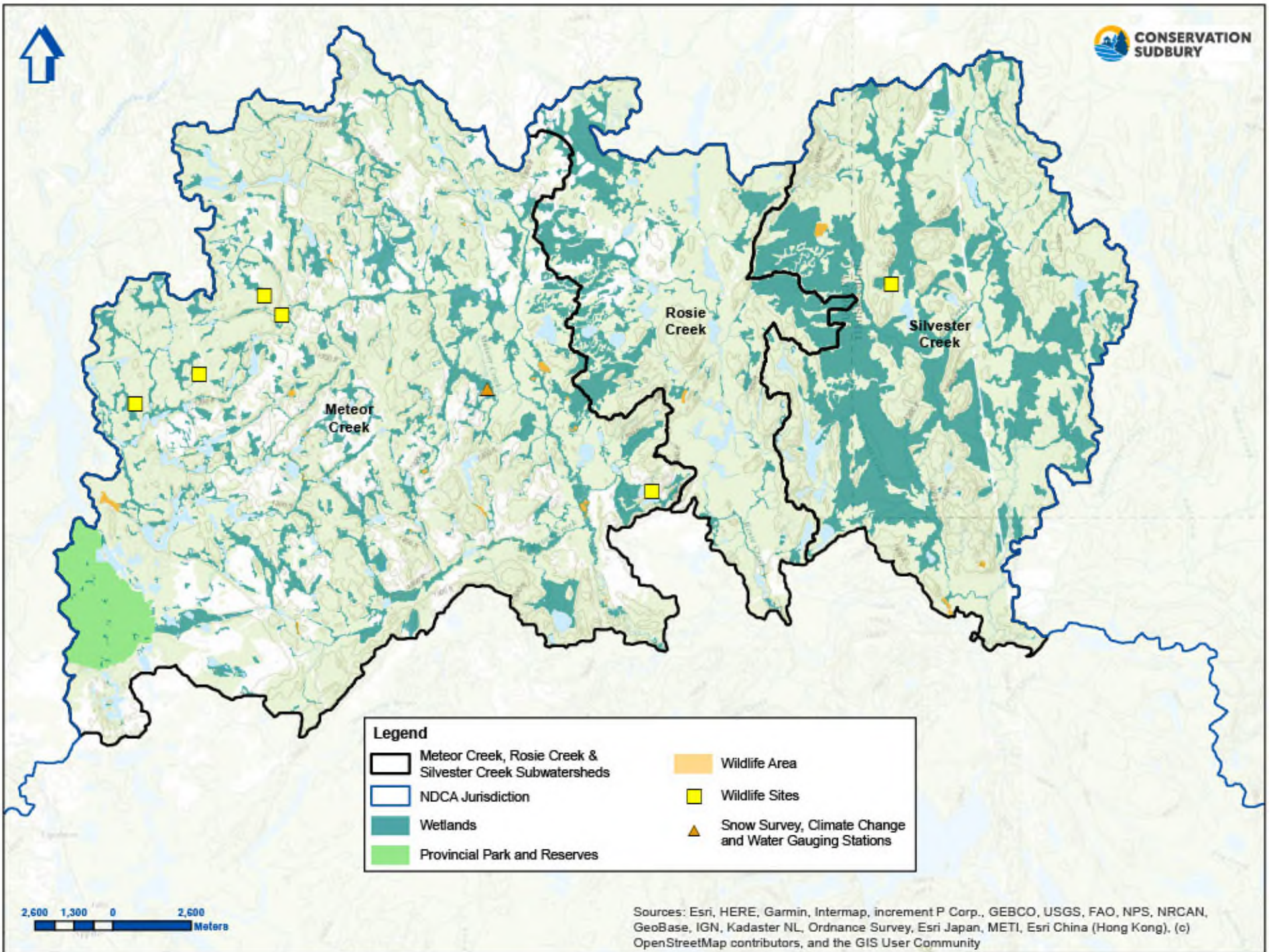
- **Wahnapiatae First Nation** and **Atikameksheng Anishnawbek First Nation**: Their traditional territories include the area within these subwatersheds. They are land holders of the area and, as such, are significant stewards of the land.

Data available

- No known data collected within these subwatersheds.

Supporting Documents

Nickel District Conservation Authority, **NDCA Watershed Inventory**, September 1980.



2,600 1,300 0 2,600
Meters

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong). (c) OpenStreetMap contributors, and the GIS User Community

