

# Jane Goodall Reclamation Trail, Greater Sudbury

## Healing Greater Sudbury's Landscape

GPS co-ordinates: N46° 29.690', W80° 50.443'

Greater Sudbury is one of those rare places where one generation has passed on a better environment than it inherited. The combined impacts of logging, open air roasting of ores, and smelter emissions in the Greater Sudbury area from the 1890s to the 1970s resulted in extensive rock barrens devoid of vegetation. However, environmental concerns led to pollution controls and land reclamation in the 1970s. Today, many damaged areas have been revegetated as part of the City of Greater Sudbury's Regreening Program and Greater Sudbury is recognized as a world leader in the environmental restoration of mining landscapes. The Jane Goodall Reclamation Trail provides a self-guided tour of one such reclamation site.

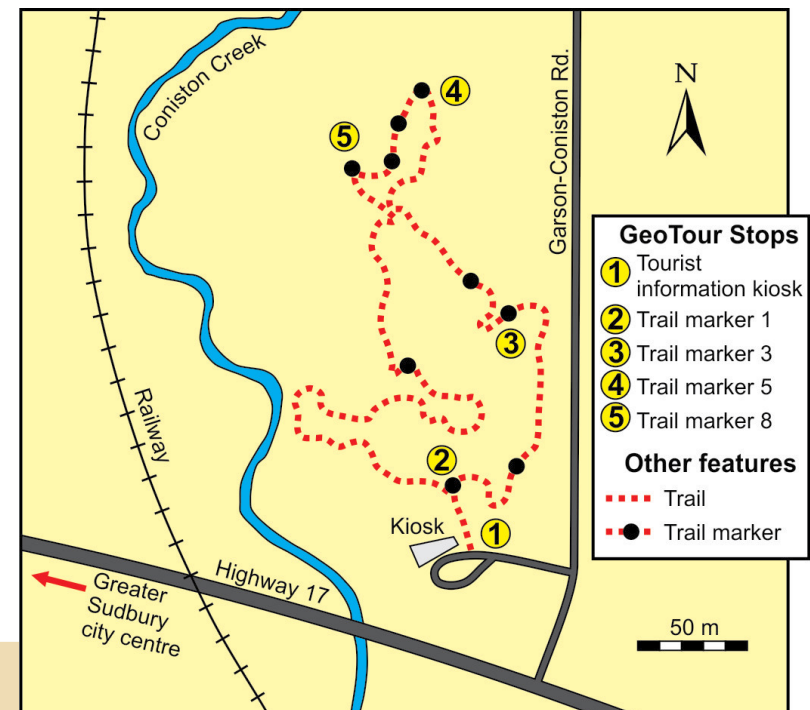
The trail is named for Dr. Jane Goodall, an environmental advocate who has travelled around the world to increase awareness and appreciation for the environment. Dr. Goodall planted an oak tree on this trail in 2001.

## How to get to there

The Jane Goodall Reclamation Trail is located at the Coniston tourist information kiosk on Highway 17, about 12 km east of Greater Sudbury's city centre. The 1 km trail loops through young forest to 2 lookouts (stops 4 and 5 on map). A trail guide (available at [www.rainbowroutes.com/index.php/routes/jane-goodall/](http://www.rainbowroutes.com/index.php/routes/jane-goodall/)) describes 9 points of interest that are marked with posts along the trail. This GeoTour provides additional commentary about the sites at several marker posts.



The trail starts at the Coniston tourist information kiosk and follows a route through the forest behind the kiosk.

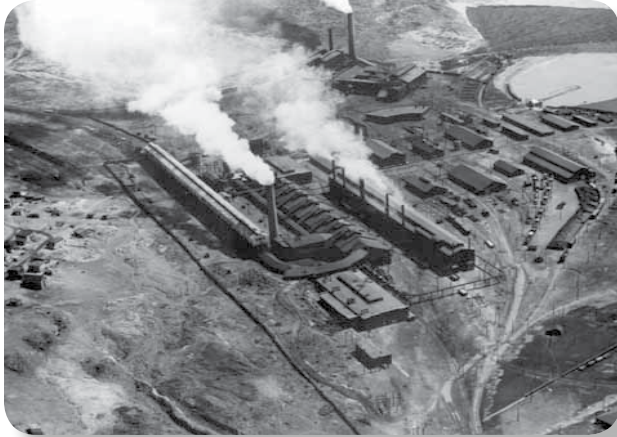


A map of the Jane Goodall Reclamation Trail.

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## Early environmental damage

Until the late 1920s, Greater Sudbury's nickel-copper ores were burned in open-air roast yards prior to smelting. Ore was spread across flat-topped piles of logs, several hectares in size. The wood was then set on fire, often burning the ore for months. Roast yards released great smoky clouds of sulphur dioxide gas that blew across the land. The sulphur dioxide gas combined with moisture and nitrogen in the air to form sulphuric acid, turning soils acidic and killing vegetation. This practice ended in the 1920s with the construction of smelters.



However, the smelters created a larger problem. The hot sulphurous emissions from the taller smelter stacks carried metal-rich dust particles which, in combination with the acidity of sulphur dioxide, were even more damaging to vegetation and soils. By the 1970s, the combined environmental damage due to logging, 40 years of fuel wood collection for open air roasting of ore, and nearly a century of mining and smelting had stripped or stunted the vegetation from over 80 000 hectares of land in the Greater Sudbury area.

Greater Sudbury's Copper Cliff smelter about 1916. The use of the unsophisticated technology of the day resulted in damage to the environment from the acidic and metal-bearing chimney fumes.

*Photo courtesy of the Greater Sudbury Historical Database.*

## Regreening and transforming the landscape

The regreening program began in 1978, after air pollution controls were implemented by the mining industry in the early 1970s coupled with soil enhancements that allowed plants to grow well on the Greater Sudbury barrens. When crushed limestone, fertilizer and grass seed were applied to barren soils, trees could be planted successfully the following season. Limestone decreased the acidity of the soil and phosphorus-rich fertilizer promoted early growth of herbs, trees and shrubs. Grasses and legumes stabilized the soil and provided nitrogen, another key nutrient.



The barren surrounds of Wahnapiatae east of Coniston in 1981 (left) changed into a green landscape by 2008 (right).

*Photo courtesy of the City of Greater Sudbury.*

Today, about 13 million trees and 80 000 shrubs have been planted by the community and industry, regreening about 500 km<sup>2</sup> of barren and semi-disturbed areas. This reclaimed area represents about 60% of the total area of environmental damage.



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**Stop 1:** View to the south from tourist information kiosk across Highway 17 towards the twin chimneys of the former Coniston smelter.

## ➤ **Stop 1: Coniston tourist information kiosk**

The tourist information kiosk has a view to the south of the Coniston region and the distinctive twin chimneys of the former Coniston smelter on the skyline. In 1978, the tourist information kiosk site and the area around it were rocky barrens without vegetation. Coniston was the site of a mine, an early roast bed and a smelter that operated from 1913 to 1972.



**Stop 1:** A view of impacted landscape in 2005 south of the twin chimneys of the former Coniston smelter. Emissions from the smelter severely damaged the vegetation in the Coniston area. *Photo courtesy of the City of Greater Sudbury.*

## ➤ **Stop 2 (trail marker 1): A remarkable community project**

As you walk along this trail, you pass the results of 3 decades of reclamation projects that began in 1978. At trail marker 1 is a red pine that celebrates the 2 millionth tree planted in the re-greening efforts of the Greater Sudbury area.

This remarkable reclamation effort reflects the hard work of 10 000 volunteers and 4500 land reclamation employees in a partnership between the City of Greater Sudbury, mining companies, volunteer groups, Provincial and Federal governments and local businesses. Regreening has helped lakes to return to their natural acidity, slowed rainwater run-off into creeks and culverts, and reduced erosion. This transformation has changed the image of Greater Sudbury, help to attract new businesses and increase tourism, and give residents a new respect for their environment. Reclaimed areas now support wildlife, recreation and walking trails. The City of Greater Sudbury has received numerous awards for its leadership in the environmental restoration of mining landscapes.



**Stop 2:** A marker celebrating the planting of the 2 millionth tree in 1994.



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## ➤ Stop 3 (trail marker 3): The original forest

Many preserved stumps like these can be found throughout the Greater Sudbury area. Logging employed more people than mining for 30 years after the discovery of Greater Sudbury's ores. When forest trees were cut, and the remaining trees, shrubs and grasses were destroyed by the emissions from smelting, the soil washed away into streams and lakes. The exposed roots of this tree reflect such soil loss.



**Stop 3:** This stump is a reminder of the forests that once covered the Greater Sudbury region prior to logging and mining. The young reclamation forest surrounds the stump.

## ➤ Stop 4 (trail marker 5): A healing landscape

The young forests around the lookout reflect 30 years of reclamation work. The majority of the trees planted were pine and spruce. The forest has become a mixture of these planted trees and natural invaders such as birch, poplar, willow, herbs, mosses and lichens.



**Stop 4:** The view to the north from the first lookout, at trail marker 5, across the valley of Coniston Creek and adjacent hills.



**Stop 4:** Rock outcroppings near trail marker 5 have a black pitted surface (left side of photo). Where the surface has been recently broken (right side of photo), the black colour is revealed to be a stain covering a green-grey igneous rock with a coarse salt-and-pepper texture. Penny for scale.

Rock exposed at the lookout, and in many areas around Greater Sudbury, has a uniform dull black stain and finely pitted surface. Decades of acidic and metal-rich smelter emissions have corroded and stained rocks throughout the Greater Sudbury region.



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## ➤ Stop 5 (trail marker 8): The impact of reclamation



**Stop 5:** The view from the second lookout, at trail marker 8, illustrates the value of reclamation work. On the hills in the distance, thick forest to the left (west) was limed, fertilized and seeded with grass in 1979, and trees were planted from 1983 to 1997. The barren hill to the right has not been treated or planted.

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