

## 4 Project Setting

### 4.1 Project Location

The Wolverine project area is located 280 km east-northeast of Whitehorse, 170 km northwest of Watson Lake and 140 km east-southeast of Ross River in southeastern Yukon Territory (see Figure 1.2-1). The proposed mine site is in the Campbell Range on the northeast side of the Pelly Mountains. Elevations on the property range between 1200 and 1300 m above sea level (asl). Coordinates for the area are latitude 61°25' N, longitude 130°07' W on NTS map sheet 105G, Finlayson Lake.

### 4.2 Physical Environment

The Campbell Range forms the eastern-most extent of the Pelly Mountains, and abuts the broad Yukon Plateau to the north and east. The area consists of rolling, glacially scoured mountains with no significant peaks. Bedrock exposure is sporadic and is confined to the higher-relief drainages and along mountainous ridges. The main valleys are wide and U-shaped. Glacial till covers the majority of the lower lying valleys and there is significant infilling by post-glacial sediments.

The proposed mine is located at the height of land between Go Creek watershed to the south and Wolverine Creek watershed to the north. Go Creek flows to Money Creek which drains east to Frances Lake. Frances Lake drains south to Liard River. Wolverine Creek flows north to Wolverine Lake. Wolverine Lake is drained by Nougha Creek northeast to Finlayson River, which flows southeast to Frances Lake.

The mine portal and proposed industrial complex are located along the Wolverine Creek-Go Creek watershed divide. This area is a gently sloping subalpine ridge with an elevation ranging from 1200-1250 m asl. North of the mine area, slopes climb steeply to open alpine ridge with a summit elevation of approximately 1850 m asl (Figure 4.2-1). West and northwest of the mine area, the Wolverine-Little Wolverine Lake system is oriented roughly southwest-northeast for approximately 10 km. This lake system fills the wide U-shaped valley. (Figure 4.2-2). The airstrip and proposed camp infrastructure is located near the headwaters of Go Creek. To the south, the land slopes gently into the Money Creek watershed.

The climate of the Wolverine Project area is typical of the northern Cordilleran interior with over 50% of precipitation falling as snow. The snow-pack generally peaks in early April although snow may continue to accumulate later in the year at higher elevations. Precipitation is higher on the windward side of Pelly Mountains to the west of the site, and there is a general trend toward higher precipitation in the direction of the Selwyn and Logan Mountains, to the north-east of the site. Snow-melt and ice break-up in area streams generally begins between late April and early May and lasts until June or early July, and this is when flow is high in watercourses. Summer thunderstorms, particularly during late stages of break up can result in significant peak flows throughout the months of May to September, although such events are most likely to occur in June or July. For more details on climate and hydrology, see Section 7.1: Climate and Section 7.4: Surface Water Hydrology.



**Figure 4.2-1      Looking Northwest from Go Creek Watershed to the Go-Wolverine Watershed Divide**

The airstrip is in the distance and the proposed tailings facility location is at center left. The steep slope above the mine area rises past the airstrip to the right.



**Figure 4.2-2 Looking Northwest from the Mine Site Across the Broad Wolverine Lake Valley**

### **4.3 Ecological Characterization**

Canada has 15 ecozones which are representative of large and generalized ecological units characterized by interactive and adjusting abiotic and biotic factors. An ecoregion is a subdivision of an ecozone and is characterized by distinctive factors such as climate, physiography, vegetation, soil, water and fauna. The project area is within the Boreal Cordillera ecozone, and at the junction of three ecoregions: Liard Basin, Pelly Mountains, and Yukon Plateau-North. Smith et al. (2004) characterized the three ecoregion areas as follows:

- Liard Basin – spans the British Columbia-Yukon boundary to incorporate the Liard Plain, a broad, rolling, low-lying area mantled with glacial drift and outwash deposits in which the Liard River is entrenched. The mean annual temperature for the area is approximately  $-3^{\circ}\text{C}$  with a summer mean of  $10.5^{\circ}\text{C}$  and a winter mean of  $-18.5^{\circ}\text{C}$ . Annual precipitation is 350-450 mm, varying with elevation.
- Pelly Mountains – encompasses the Pelly and northern Cassiar Mountains spanning the BC-Yukon border. The mean annual temperature for the area is approximately  $-3^{\circ}\text{C}$  with a summer mean of  $11^{\circ}\text{C}$  and a winter mean of  $-18.5^{\circ}\text{C}$ . Annual precipitation is 500-1000 mm, varying with elevation.
- Yukon Plateau – North – lies within the Stewart, MacMillan, and Pelly plateaus and the southern foothills of the Selwyn Mountains. The terrain includes rolling uplands,

small mountain ranges, and nearly level tablelands dissected by deeply cut, generally broad, U-shaped valleys. The Tintina Trench, a straight, steep-sided valley 5-22 km wide, dissects the ecoregion from southeast to northwest. The mean annual temperature for the area is approximately -4°C with summer mean of 10.5°C and a winter mean of -20°C. Mean annual precipitation ranges from 300 mm in the major valleys and up to 600 mm in the mountains to the northeast.

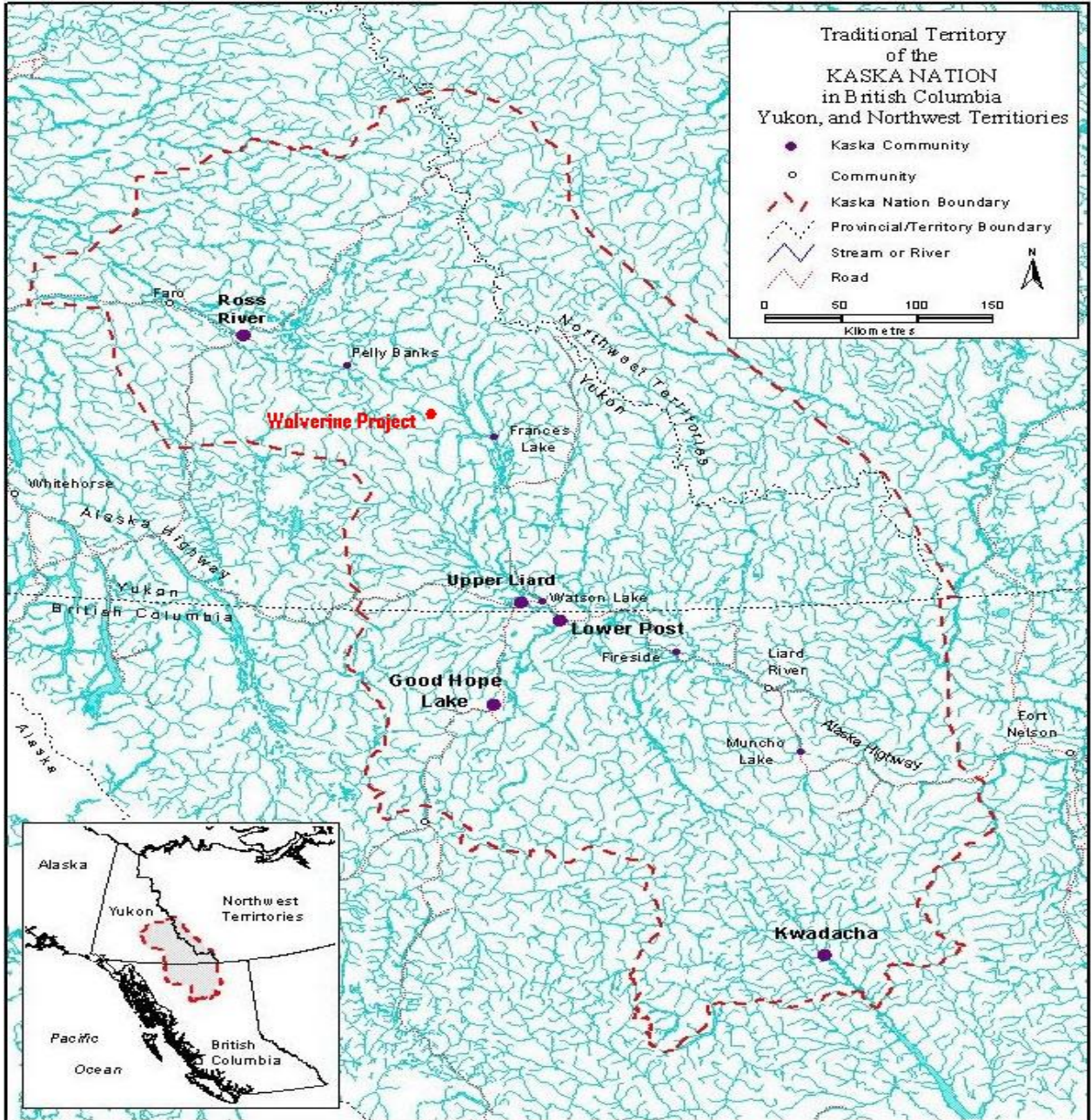
Vegetation in the project area ranges from open forest on lower elevation areas to dwarf shrub, herb, grass and lichen ecosystems at high elevations in the alpine. The majority of the mine site is within the subalpine zone, and the proposed mine access road route crosses mostly boreal highland zone with some subalpine zone. These areas are dominated by open forests of sub-alpine fir, black and white spruce and lodgepole pine. Willow and scrub birch are common in riparian areas, areas with recent fire history, and steeper upland areas. A detailed vegetation description is presented in Section 7.9.

#### **4.4 Social and Cultural Environment**

The Wolverine Project is in the Kaska Dena Traditional territory (Figure 4.4-1). The Kaska Nation is comprised of five Kaska First Nations in B.C. and the Yukon, with a total membership of 3500. The traditional territory covers 350,000 km<sup>2</sup>, which represents approximately 25% of the Yukon, adjacent areas of Northwest Territories and about 10% of British Columbia. The two Yukon First Nations are the Ross River Dena Council and the Liard First Nation. The Wolverine Project is within the Ross River Dena territory. Each Kaska First Nation is represented by an elected chief and council. Most Kaska live in the communities of Ross River and Watson Lake in the Yukon and in Lower Post, Good Hope Lake, and Fireside in British Columbia.

The Kaska traditional territory is rich in natural resources, and the Kaska are working cooperatively with industry and government to create opportunities for new investment and economic development (Kaska Dena Council 2005). Forestry, oil & gas, tourism, and mining initiatives are currently being pursued. For the Kaska, meaningful involvement in development takes the form of joint-ventures, cooperation and participation agreements, impact benefit agreements, and ownership of projects. The Kaska look forward to working in partnership with industry to further develop natural resources in a responsible way that respects the land (Kaska Dena Council 2005).

Negotiations with the Federal government continue in land claim settlements for the Ross River Dena Council.



**Source:** Adapted from Canadian Parks and Wilderness Society (2005)

**Figure 4.4-1** Traditional Territory of the Kaska Nation in British Columbia, Yukon and Northwest Territories

