

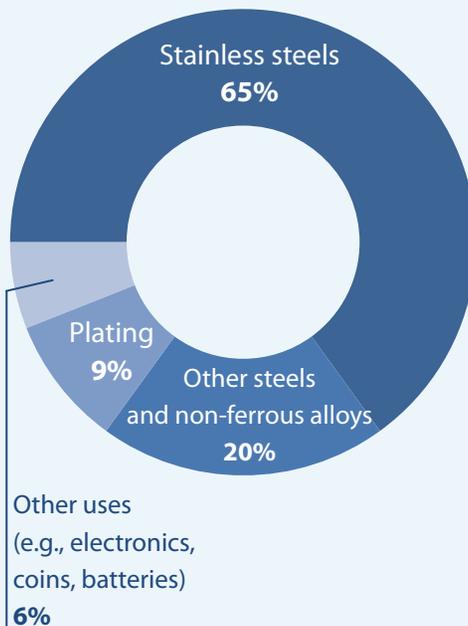
Attributes of nickel

- ▶ Corrosion and oxidation resistant
- ▶ High melting point
- ▶ Extremely ductile
- ▶ Easily forms alloys with other metals
- ▶ Durable with long lifespan
- ▶ Magnetic at room temperature
- ▶ Can be used for electroplating

Source: Nickel Institute

Uses of nickel

Nickel is mainly used as an alloy with other metals, such as chromium, to make heat resistant and stainless steels. These steels are then used to make everything from domestic appliances to jet airframes.



Source: Nickel Institute



Turnagain: magmatic pyrrhotite with interstitial pentlandite hosted in serpentinized wehrlite (Image courtesy of Hard Creek Nickel Corporation)

Turnagain

- ▶ Owned and operated by Hard Creek Nickel Corporation
- ▶ Estimated mine life of 27 years, average annual production of 75M pounds of nickel (2011 Preliminary Economic Assessment)
- ▶ Clean, high-grade nickel concentrate of 18% with less than 8% magnesium oxide
- ▶ Total ore resource: 865 Mt at 0.21% Ni and 0.014% Co in Measured and Indicated categories
- ▶ Ranked among the top ten deposits worldwide in terms of contained Ni metal



Decar: serpentinite speckled with awaruite (nickel-iron alloy)

Decar

- ▶ Owned and operated by First Point Minerals Corp.
- ▶ Estimated 1.44 Mt recoverable Ni in the Indicated category
- ▶ Estimated mine life of 24 years, average annual production of 82M pounds (2013 Preliminary Economic Assessment)
- ▶ Proposed recovery method using gravity-magnetic concentration (without the use of chemical reagents) would reduce environmental impact

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Nickel in British Columbia

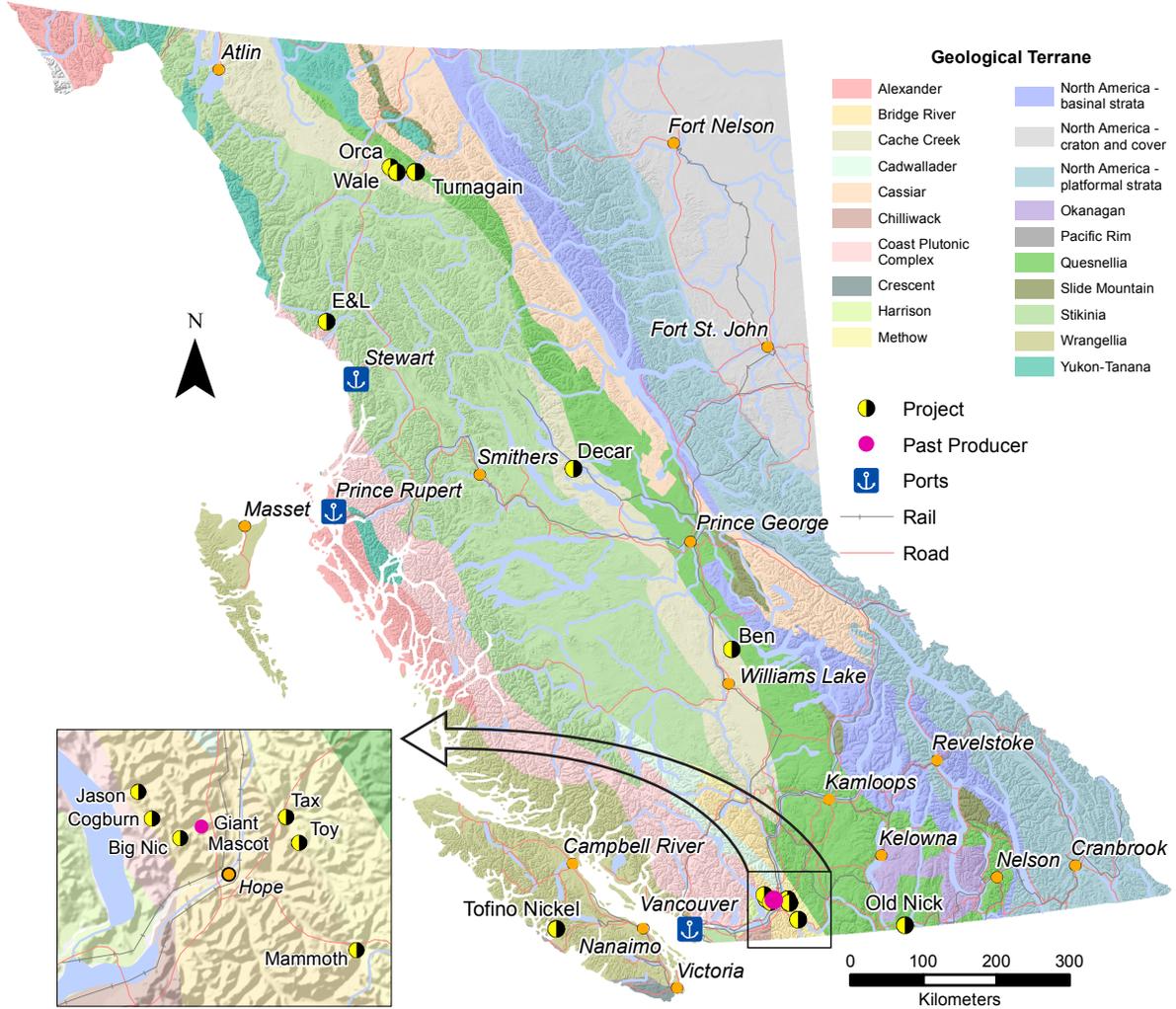
British Columbia Geological Survey Information Circular 2015-8



Ministry of
 Energy and Mines

Selected Nickel Deposits in British Columbia

Although nickel is not currently being mined in the province, the Giant Mascot (Pacific Nickel) mine operated north of Hope between 1958 and 1974. The former mine site might hold exploration potential at depth although the current owner (Barrick Gold Corporation) considers it a reclamation site. Surrounding prospects remain at early stages. Two projects in the northern part of the province (Turnagain and Decar) have reached advanced stages.



Geology and Deposit Types

The British Columbia Geological Survey's MINFILE inventory lists 69 occurrences with nickel as a primary commodity. Four are listed as past-producers, however three were exploited as part of the same Giant Mascot operation (MINFILE 092HSW004, 093, 125) between 1958 and 1974; this was the province's only significant producer of nickel.

The most significant nickel occurrences identified to date belong to a newly recognized and underexplored group of magmatic Ni-Cu-PGE sulphide deposits at convergent margins. The Ni-sulphide deposits are contained in narrow subvertical conduits (e.g. Giant Mascot) or form bulk tonnage deposits amenable to open pit mining (e.g. Turnagain).

Currently there are two advanced active nickel exploration projects in B.C. Turnagain (MINFILE 104I 014) is an Alaskan-type ultramafic with a disseminated Ni-sulphide deposit (Horsetrail zone) and a separate Cu-PGE prospect (DJ-DB zone). Decar (MINFILE 093K 039) is also a disseminated, bulk tonnage target, however nickel is in the form the naturally occurring nickel-iron alloy awaruite. Host rocks are serpentinized peridotites of an ophiolitic ultramafic complex. Other, less developed examples of these deposit types exist within the province.

Ultramafic intrusions near the Giant Mascot mine are prospective for mineralized bodies similar to those exploited during production (e.g. Jason, MINFILE 092HSW076; Big Nic, MINFILE 092HSW168).

The E&L (MINFILE 104B 006), a gabbro-hosted sulphide Ni-Cu prospect, has a historical resource estimate but has not been intensively explored since the late 1980s. In 2013, work on the Ben project identified large nickel sulphide-in-serpentine targets in the Cache Creek Terrane. The Ben project has been the subject of recent exploration drilling campaigns.



For more information on B.C. mineral deposit profiles, visit: www.empr.gov.bc.ca/Mining/Geoscience/MineralDepositProfiles