

Exploration and mining in the Southwest Region, British Columbia



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1. Introduction

The Southwest Region (Fig. 1) has a long history of mining. This history includes: the use of native copper by Indigenous Peoples; silver, gold, and coal mining by the mid-19th century; mining of iron in the mid-20th century; and substantial copper production throughout the 20th century. Although mining and exploration for metals continues in the region, most mining is for construction materials, mainly aggregates for local markets with some exports from the largest coastal quarries.

The area recently had one major polymetallic metal mine, **Myra Falls** (Myra Falls Mine Ltd., Trafigura Mining Group). Operations have been episodic since the mine was placed on care and maintenance in 2015. Although the mine restarted in April 2019, it was once again placed on care and maintenance in December 2023.

Northisle Copper and Gold Inc. was active with drilling and geophysics on northern Vancouver Island. More than 30 other exploration projects were tracked, mainly grass roots or early stage and small scale. Estimates for exploration expenditures, drilling programs, and other metrics were captured in the British Columbia Mineral and Coal Exploration Survey, a joint initiative of the Province of British Columbia Ministry of Mining and Critical Minerals, the Association for Mineral Exploration (AME), and EY LLP. For the Southwest Region, exploration expenditures are estimated at \$8.3 million. The estimate for exploration drilling is 6800 m (Clarke et al., 2025; EY LLP, 2025).

2. Geological overview

Metallogeny in British Columbia is closely linked to the tectonic evolution of the Canadian Cordillera, first as an accretionary orogen consisting of allochthonous terranes that were welded to and deformed with the western margin of Ancestral North America, primarily during the Jurassic, and then as the site of post-accretionary tectonism and magmatism (e.g., Nelson et al., 2013).

The Southwest Region includes parts of the Insular, Coast, and Intermontane morphogeological regions. Most of the area is underlain by rocks of the Wrangell terrane and the Coast Plutonic complex (Fig. 1). Wrangellia is a Devonian to

Jurassic island arc terrane that underlies most of Vancouver Island and Haida Gwaii. The oldest rocks on Vancouver Island are Devonian volcanic arc andesites, basalts, breccias, tuffs, and tuffaceous sediments of the Sicker Group and allied intrusive rocks, which are overlain by Mississippian-Permian limestones, argillites, and minor conglomerate of the Buttle Lake Group. This Paleozoic basement is exposed in two major uplifts on southern and central Vancouver Island. The Cowichan anticlinorium and the Buttle Lake anticlinorium host the past volcanogenic massive sulphide polymetallic producers at **Mount Sicker** and the mine at **Myra Falls**.

Unconformably overlying the Paleozoic rocks are Middle to Upper Triassic oceanic flood basalts and related sedimentary rocks of the Vancouver Group. The upper part of the Vancouver Group contains numerous skarn occurrences adjacent to Jurassic intrusions (Island Plutonic suite). The Tasu past producer on Haida Gwaii is one of the larger examples of numerous iron and iron-copper skarns. Between 1914 and 1983, it produced 12 Mt of iron concentrate as well as copper, gold, and silver.

The Vancouver Group is overlain by arc rocks of Bonanza Group (Upper Triassic-Middle Jurassic), a volcanosedimentary succession of subaerial basalts to rhyolitic flows and tuffs (Nixon and Orr, 2007). The Bonanza Group north of Holberg Inlet hosts the past-producing Island Copper Cu-Mo-Au porphyry mine and other undeveloped porphyry and epithermal prospects where they are intruded by Island Plutonic suite granodiorite and quartz diorite.

On the east coast of Vancouver Island, in the Strait of Georgia and on the western mainland, Wrangellia is buried by rocks of the Nanaimo Group, an Upper Cretaceous continental to marine molassoid succession containing debris derived from unroofing of the Coast belt and northern Cascades (Mustard, 1994). The Comox Formation, the basal unit of the Nanaimo Group, hosts economically important coal deposits that were mined historically in the Nanaimo area.

The Coast Mountain range is underlain by the Coast Plutonic complex, a large northwest-trending batholith consisting largely of diorite, quartz diorite, tonalite, and granodiorite calc-alkaline rocks with less abundant high-grade metamorphic rocks. For the most part, uplift and erosion have removed

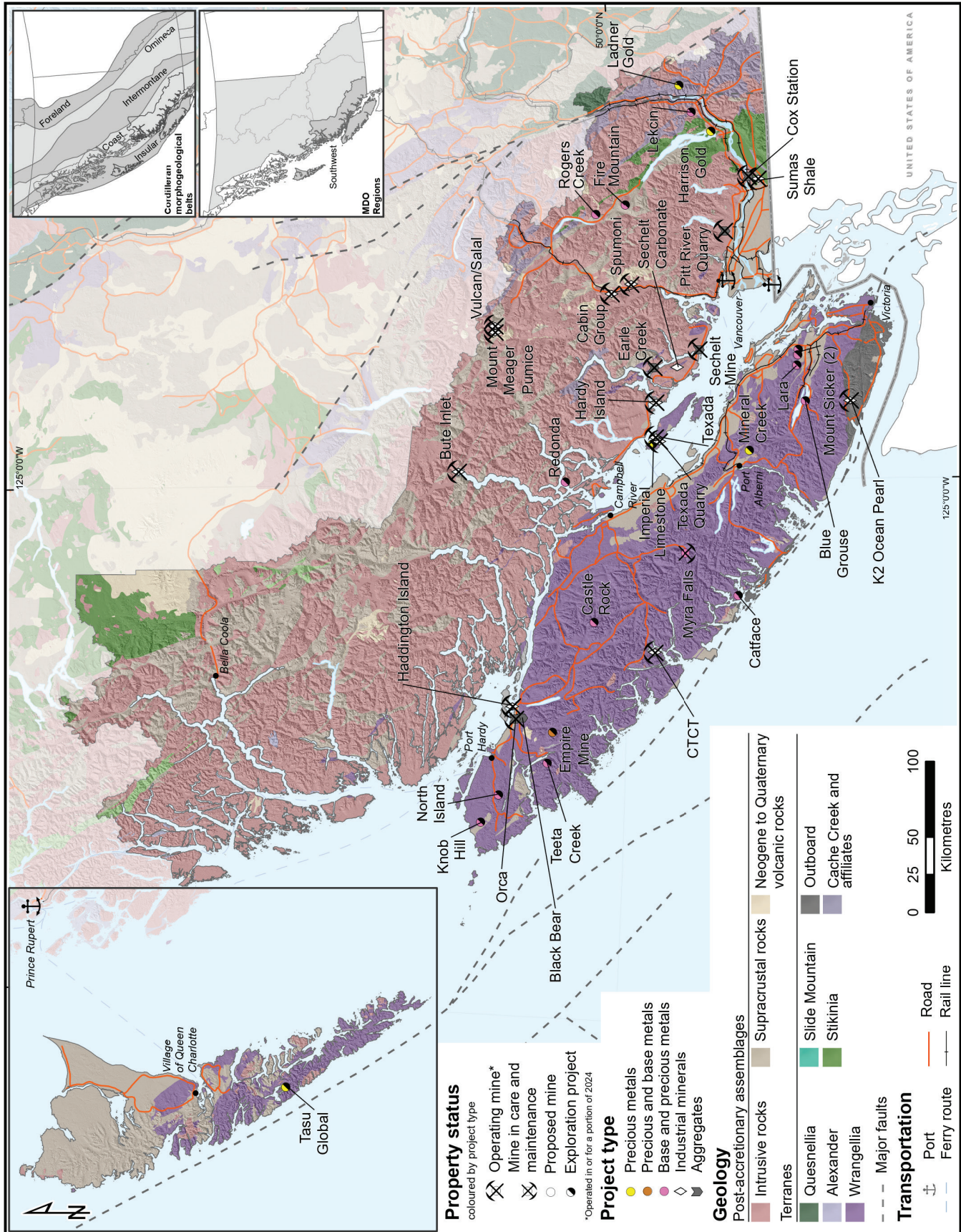


Fig. 1. Mines, proposed mines and selected exploration projects, Southwest Region, 2024. Terranes after Nelson et al. (2013).

the levels at which epithermal and porphyry mineralization form, with some exceptions. At the southern end of the Coast Plutonic complex, economically important deposits occur in pendants of the Gambier Group, overlapping Late Jurassic to Mid-Cretaceous arc-related volcanic and sedimentary rocks. The most productive of these deposits was the Britannia mine, a Kuroko-type polymetallic volcanogenic massive sulphide deposit that produced 517,000 t of copper along with zinc, silver, gold, lead, and cadmium between 1905 and 1974. At the southeastern edge of the Coast ranges, the Giant Mascot ultramafic-mafic intrusive suite (Late Cretaceous, Manor et al., 2014, 2015, 2016, 2017) hosts the province's only past-producing nickel mine, Giant Mascot Nickel, which operated between 1958 and 1974.

Eocene to Miocene ancestral Cascades arc magmatism extended as far northward as southwestern British Columbia, as does present day Cascades magmatism. Evidence of forearc Paleocene to Miocene magmatism can be traced from southern Oregon through Alaska (Madsen et al., 2006). Mount Washington Copper (Eocene) produced 3548 t of copper, 131 kg gold, and 7235 kg silver. Catface Copper (Eocene) has a significant undeveloped resource. Other presumably Cenozoic targets include Giant Copper and Okeover. Harmony, on Graham Island, Haida Gwaii (Fig. 1) is a Miocene epithermal deposit with a significant undeveloped gold resource. Some recent exploration targets Neogene mineralization along a magmatic belt between the Brooks Peninsula and Alert Bay on northern Vancouver Island (Nixon et al., 2011a, b; 2020).

Quaternary Cascades magmatism has produced pumice and other volcanic rocks quarried for construction, landscaping, and other applications. The Mount Meager area has also been investigated as a possible source of geothermal energy.

On Vancouver Island, the western and southern margins of Wrangellia are structurally juxtaposed with the Pacific Rim terrane, which consists of possible mélangé deposits (Rusmore and Cowan, 1985; Brandon, 1989) and the Leech River complex, an assemblage of greenschist- to amphibolite-grade mudstones, sandstones, and mafic volcanic rocks cut by granitic bodies (Groome et al., 2003). Slate and siltstone are quarried for building stone in the Leech River complex. The Leech River has been an active placer gold camp since 1864. Gold quartz veins have been the subject of recent exploration near the Leech River fault, along the southern margin of the terrane.

The Crescent terrane represents Eocene accretion of Late Cretaceous or Paleocene to Early Eocene seamounts. The Leech River fault marks the boundary of Pacific Rim and Crescent terranes. The Metchosin Igneous complex, a partial ophiolite and northernmost extent of the Coast Range basalt province (Massey, 1986), contains three tholeiitic intrusion-hosted past producers of copper and precious metals, the most significant of which was the Sunro mine.

The southeastern Coast belt, north of the international border is underlain by the Nooksack-Harrison and Chilliwack terranes (equivalent to Stikinia; Monger and Struik, 2006), and

the Bridge River, Cadwallader, and Methow terranes, allied with the main Cache Creek terrane (Fig. 1). These represent slices of oceanic and arc-related rocks enclosed between Intermontane and Insular terranes during Middle Jurassic to Middle Cretaceous regional sinistral faulting (Bustin et al., 2013; Monger and Brown, 2016). Gambier Group-equivalent overlap deposits and parts of the Nooksack-Harrison terrane are prospective for VMS mineralization. The Coquihalla serpentine belt, along the Hozameen fault between the Bridge River terrane to the west and the Methow terrane to the east, hosts several gold prospects and five past producers including the Carolin mine, which operated between 1981 and 1984.

Tectonic uplift, erosion, and glaciation produced sand and gravel deposits important to the construction and transportation industries of the Lower Mainland. Most are products of the most recent retreat of the Cordilleran Ice Sheet in the Pleistocene (e.g., Howes, 1983; Clague and Ward, 2011).

3. Mines

The Southwest Region has numerous industrial minerals and aggregate operations (Fig. 1; Tables 1-3). Of eight large-scale industrial minerals operations in the region, two entered care and maintenance in 2016 and remained so through 2024. Aggregate operations in the region number in the 100s and only the most prominent (e.g., those producing at least 1 Mty) are reported here.

3.1. Metal mines

There are no producing metal mines in the region. The most recent was the Myra Falls underground Zn-Cu-Pb-Ag-Au mine, which produced for most of the period from 1966 to the end of 2023. In December 2023, Myra Falls Mine Ltd. (part of Trufigra Group Pte. Ltd.) announced that the mine would be placed on long-term care and maintenance. Before the recent shutdown, the mine had a workforce of about 450 people. The company has sought creditor protection and restructuring.

3.2. Coal mines

There are no producing coal mines in the region. Coal was mined on Vancouver Island between ca. 1849 and 2019.

3.3. Industrial minerals and aggregates

Large industrial mineral quarries on the coast (Table 1) serve the Lower Mainland, Vancouver Island, and U.S. Pacific northwest markets by barge. Those with access to freighter loadout facilities can also supply eastern Pacific international markets and Hawaii. Aggregates (Table 1) are an important part of the mining industry on the south coast, generating many more jobs in the region than other mining activities. The area hosts some of the largest aggregate pits and quarries in Canada. Most aggregate quarries serve local markets but the largest also export product. General sales and production trends follow those of the construction industry. Lafarge Canada Inc., Heidelberg Materials Canada Limited, Vulcan Materials Company, and Mainland Construction Materials ULC, a subsidiary of Summit

Table 1. Selected industrial mineral mines and quarries, Southwest Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2024 Production (based on Q1- Q3)	Reserves	Resources	Comments
Bute Inlet	Ironwood Clay Company Inc.	Clay; Sedimentary kaolin or illite	na	na	na	Intermittent mining as needed.
Cabin Group	Northwest Landscape and Stone Supply Ltd.	Landscaping stone	na	na	na	
Cox Station	Mainland Construction Materials ULC	Aggregate; Crushed rock; 092GSE103	Approx. 3-4 Mty	na	na	River and rail access.
CTCT	Vancouver Island Marble Quarries Ltd.	Marble; Limestone; 092E 020	Typically, about 400 t annually	na	na	Supplies Matrix Marble and Stone Inc.
Earle Creek	Lafarge Canada Inc.	Sand and gravel	Typically, >1 Mty	na	na	Material barged.
Haddington Island	Haddington Island Stoneworks Ltd.	Dimension stone	na	na	na	Quarried as product needed. Marketed by Adera Natural Stone Supply Ltd.
Hardy Island	Hardy Island Granite Quarries Ltd.	Dimension stone, building stone; Dimension stone-granite; 092F 425	2000-5000 tpy	na	Approx. 100,000 t	Seasonal quarry.
Imperial Limestone	Imperial Limestone Co. Ltd. (Parent Arcosa Specialty Materials Inc.)	Limestone; 092F 394	500,000 tpy chemical grade limestone plus 50,000 t dolostone	na	75 years	Most of the chemical grade product is shipped to parent company in Seattle.
K2 (Ocean Pearl)	K2 Stone Quarries Inc.	Dimension stone, flagstone; 092C 159	15,000-20,000 t annually	na	na	Production number represents material extracted.
Mount Meager Pumice	Great Pacific Pumice Inc.	Pumice; Volcanic ash; 092JW 039	na	na	na	Production as required.
Orca	Polaris Minerals Corporation (Vulcan Materials Company and 'Namgis First Nation partnership)	Sand and gravel	Up to 6 Mty	na	121.6 Mt initial resource (2005)	Recently 3.5 to 5 Mty. Increase proposed in mine plan. Vulcan Materials Company acquired the previous owner US Concrete Inc. The quarry has a freighter loading facility.

Table 1. Continued.

Pitt River Quarry	Lafarge Canada Inc.	Aggregate; Crushed rock; 092GSE007	Typically, >1 Mty	na	na	River access for barging.
Sechelt Mine	Heidelberg Materials Canada Limited	Sand and gravel	Typically, 4-6 Mty	na	Several decades	Freighter loading facility.
Spumoni	Northwest Landscape and Stone Supply Ltd.	Flagstone; 092GNW100	na	na	na	Seasonal quarry.
Sumas Shale	Sumas Shale Ltd.	Shale, clay, sandstone; Residual kaolin; 092GSE024	500,000 t annually	na	50+ years	Approximately 55% shale, 45% sandstone for cement production.
Texada Quarry	Texada Quarrying Ltd. (Lafarge Canada Inc.)	Limestone, aggregate; 092F 395	6 Mt including waste	na	100+ years	Mostly produces limestone for cement manufacture. Freighter loading facility available.
Vulcan/Salal	Garibaldi Pumice Ltd.	Pumice; Volcanic ash; 092JW 039	No production. (Previous years approximately 10,000-20,000 m ³)	na	In 2014, 11,396,000 m ³ pumice 4,990,000 m ³ pumicite (fines)	No production in 2024.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 2. Selected proposed mines or quarries, Southwest Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resources	Comments
Black Bear	Polaris Materials Corporation (Vulcan Materials Company and 'Namgis First Nation)	Aggregate; Crushed rock	na	20-30 year proposed mine life	Proposed amendment to Orca Quarry's environmental assessment certificate. The additional, adjacent quarry would supply crushed basalt products. Combined production capacity at existing Orca sand and gravel quarry plus Black Bear quarry estimated to be 8.7 Mtpy.
Sechelt Carbonate	Ballinteer Management Inc.	Limestone, dolostone, aggregate; Limestone, Dolomite, Crushed rock; 093GNW031	na	Carbonate rock 76.1 Mt Gabbro >700 Mt	Proponent requests project remain in environmental assessment pre- application stage.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 3. Selected exploration projects, Southwest Region.

Project or Property	Operator (partner)	Commodity; Deposit type; MINFILE	Resources (NI 43-101 operator compliant unless indicated otherwise)	Comments
Blue Grouse	Sasquatch Resources Corp.	Cu, Ag, Au; Cu skarn; 092C 017, 108	na	Sampling of waste and tailings.
Castle Rock	Trailbreaker Resources Ltd.	Au, Cu; Vein, possible porphyry; 092L 399, 398, 288	na	Soil and rock sampling. Rock sampling highlight of 2.19 g/t Au, 0.54% Cu, and 6.2 g/t Ag at the Watchtower zone.
Catface	Imperial Metals Corporation	Cu, Mo, Ag; Porphyry; 092F 120, 251, 231	2009 estimate I: 56.863 Mt 0.040% Cu Inf: 262.448 Mt 0.38% Cu	Reconnaissance rock and soil sampling.
Empire Mine	Coast Copper Corp.	Au, Ag, Cu, Fe, Co; Fe skarn, Cu skarn; 092L 044, 45, 46	Inf: 594,000 t 3.52 g/t Au 0.50% Cu (2023 \$30 CDN NSR cut off)	Results of 2023 CSAMT survey released, identifying three anomalies. 2024 reconnaissance sampling highlights include 7.50% Zn, 1.16% Pb, and 56.45 g/t Ag rock sample at Big Zinc target.
Fire Mountain	Cascade Copper Corp.	Cu, Au, Ag; Porphyry; 092GNE004, 3, 2, 42	na	Highlight rock sample grading 1.88% Cu, 5.51 g/t Au, and 76.5 g/t Ag.
Harrison Gold	Bear Mountain Gold Mines Ltd.	Au, Ag; Au-quartz veins; 092HSW092	(2002 historical non NI 43-101 compliant) I: 1.845 Mt 2.79 g/t Au Inf: 0.6 Mt 2.8 g/t Au	Ore sorter testing.
Knob Hill	Coast Copper Corp.	Au, Cu, Mo; Porphyry/epithermal; 102I 005, 19, 3	na	Highlight rock sample grading 0.16 g/t Au, 41.64 g/t Ag, and 0.67% Cu.
Ladner Gold	Talisker Resources Ltd.	Au, Ag; Au-quartz veins; 092HWN003, 11, 18, 092HSW034	Carolin Inf: 12,352,124 t 1.53 g/t Au (2012) McMaster Inf: 3,575,000 t 0.69 g/t Au (2012) Tailings I: 445,378 t 1.83 g/t Au (2011) Inf: 93,304 t 1.85 g/t Au (2011)	Proposed joint venture to re-process Carolin Mine tailings. Highlight rock sample grading 97.70 g/t Au.

Table 3. Continued.

Lara	Nova Pacific Metals Corp.	Zn, Cu, Ag, Au; Kuroko-type massive sulphide; 092B 129, 128, 110, 37	(2007 historical NI 43-101) at 1% Zn cut off I: 1,146,700 t 3.01% Zn 32.97 g/t Ag 1.05% Cu 0.58% Pb 1.97 g/t Au Inf: 669,600 t 2.26% Zn 32.99 g/t Ag 0.90% Cu 0.44% Pb 1.90 g/t Au	Reconnaissance including mobile metal ion soil geochemistry. Portable drilling highlight: 3.0 m grading 11.67 g/t Au, 373 g/t Ag, 21.33% Zn, 4.23% Pb, and 1.75% Cu.
Lekcin	Omega Pacific Resources Inc.	Ni, Cu, Pd, Pt, Co, Au; Tholeiitic intrusion-hosted Ni-Cu; 092HSW168, 82	na	UAV magnetic survey, mapping, and sampling.
Mineral Creek	Karus Mining Inc.	Au, Ag; Au-quartz veins; 092F 079, 331	(1990 historical non NI 43-101 compliant) Debbie deposit Combined: 471,956 t 6.23 g/t Au 900 deposit Inf: 28,285 t 11.65 g/t Au	Karus Mining Inc. and Theia Gold Corp. amalgamation. Minor follow up of 2023 drilling.
Mount Sicker	Sasquatch Resources Corp.	Cu, Au, Ag, Pb, Zn; Kuroko-type massive sulphide Cu-Pb-Zn; 092B 040, 76, 110, 1	(1952 historical non NI 43-101 compliant) Lenora deposit 317,485 t 140.54 g/t Ag 4.11 g/t Au 1.6% Cu 0.65% Pb 6.6% Zn	Average of 97 samples of waste rock was 1.86 g/t Au, 48.6 g/t Ag, 1.22% Cu, and 3.05% Zn. Testing viability of processing waste rock from historical mining.
Mount Sicker	Kermode Resources Ltd.	Cu, Au, Ag, Pb, Zn; Kuroko-type massive sulphide Cu-Pb-Zn; 092B 099	na	A grassroots project in the Mount Sicker area, separate from Sasquatch Resources. Hand trenching and rock sampling in 2024.
North Island	Northisle Copper and Gold Inc.	Cu, Au, Mo, Re; Porphyry Cu±Mo±Au; 092L 185, 240, 200, 18, 481	Global I: 905.922 Mt 0.16% Cu 0.24 g/t Au 75 ppm Mo 0.42 ppm Re Inf: 213.878 Mt 0.12% Cu 0.22 g/t Au 52 ppm Mo 0.31 ppm Re	New (2024) global resource estimate includes Hushamu, Red Dog and Northwest Expo zones. See text for breakdown. Drilling at West Goodspeed target extended mineralized zone. Highlight intersections include 210 m grading 0.23% Cu, 0.285 g/t Au, 0.007% Mo, 1.19 g/t Ag, and 0.447 g/t Re (Cu eq. 0.5%).

Table 3. Continued.

Redonda	Recharge Resources Ltd. (Stamper Oil & Gas Corp.)	Cu, Mo; Porphyry Cu±Mo±Au; 092K 092, 183, 39, 2	na	2023 drilling results released. Highlights included 142.6 m grading 0.279% Cu, 0.0281 MoS ₂ , and 0.0927 ppm Re.
Rogers Creek	Cascade Copper Corp.	Cu, Mo, Au, Ag; Porphyry Cu±Mo±Au; 092JSE033, 34, 35, 36	na	Reported 3D data compilation including IP inversion modelling. Hyperspectral survey of existing drill core. Permitting for drilling.
Tasu Global	Tasu Global Resources Inc.	Au; Au-quartz veins; 103B 076, 68, 66 103C 004	na	Reconnaissance sampling.
Teeta Creek	Arcwest Exploration Inc.	Au, Cu, Mo; Porphyry; 092L 454, 235	na	Released results of late 2023 deep IP survey.
Texada	Zyrox Mining Company	Au, Cu, Ag; Cu skarn, Au skarn; 092F 364, 516	(1989 Yew deposit historical non 43-101 compliant) Combined: 102,329 t 13.66 g/t Au 1.45% Cu	Surface geology and geochemistry. Obtained a permit for drilling.

M = Measured; I = Indicated; Inf = Inferred

Materials LLC, doing business as Mainland Sand and Gravel Ltd., are the largest participants in the coast area, although hundreds of pits and quarries produce in the region.

One of the largest aggregate-only operations is the **Sechelt Mine**, operated by Heidelberg Materials Canada Limited. The company no longer makes production figures public, but volumes have been in the 4-6 Mt range in recent years. The mine is permitted for up to 7.5 Mty, and the company expect reserves to last several more decades. Barges handle most shipments. There is also a loading facility capable of accommodating Panamax-class freighters.

In addition to the **Texada Quarry**, Lafarge Canada operates two of the largest aggregate quarries in the region each of which typically produces more than 1 Mty and use rivers and tidewater for efficient transportation. The **Pitt River Quarry** produces a crushed rock product, and **Earle Creek** produces both crushed rock and natural sand and gravel.

Polaris Materials Corporation, a subsidiary Vulcan Materials Company, operates the **Orca** quarry near Port McNeill, in partnership with the 'Namgis First Nation, which holds a 12% interest. The owner-operator partnership is Orca Sand and Gravel LP. The quarry produces sand and gravel, mainly for export to California. The deposit had an initial measured aggregate in-situ reserve of 121.6 Mt and, to date, over 50 Mt have been produced from the quarry.

The operation was originally permitted for up to 6 Mty. Production has recently ranged from 3-5 Mty with gradual increases. Polaris plans eventual production of more than

8 Mty. In 2017, Polaris applied to the British Columbia Environmental Assessment Office for an amendment to its Orca project certificate to allow for producing aggregate at a site approximately 4 km from current operations. The new site was previously known as the Black Bear project. In 2020, Polaris revised the proposal to 3-4 Mty, then withdrew from the environmental assessment process and re-applied under new legislation in 2023.

The **Cox Station** quarry, on the north side of Sumas Mountain, is operated by Mainland Sand and Gravel Ltd. More than 95% of the crushed quartz diorite product goes to the Lower Mainland market via barge on the Fraser River. The quarry also has two CN Rail spur lines, which allow shipment by rail. Production and shipments have recently been about 2-4 Mty.

Small operations produce building stone on Vancouver Island. Island Stone Landscape Supply is a producer and supplier of flagstone, as is San Juan Quarries. Vancouver Island Marble Quarries Ltd. continues to quarry marble on Vancouver Island and fabricate a line of products including countertops, sinks, and tiles at Matrix Marble and Stone Inc. They quarry marbles referred to as 'Tlupana Blue Grey' and 'Vancouver Island White' near Hisnit Inlet (**CTCT** quarry). In addition to the original Port Renfrew Ocean Pearl stone, **K2** Stone Quarries Inc. quarries and processes other Vancouver Island products.

Landscaping stone and dimension stone is quarried in the Squamish-Whistler corridor. The largest operator is Northwest Landscape and Stone Supply Ltd., with the **Spumoni** quarry

and their **Cabin Group** property, which now has a Mines Act quarry permit. Others active in the area include Bedrock Granite Sales Ltd., Citadel Stone Ltd., and Alpine Mining Ltd. **Hardy Island Granite Quarries Ltd.** produces up to 5000 tpy seasonally from a Coast Plutonic complex granodiorite unit. They plan about 800 m³ (>2000 t) in 2024. Like **Haddington Island**, it is an historic quarry that mainly serves the local market. Hardy Island has opened another quarry on Valdes Island that supplies sandstone from the Nanaimo Group, another rock type common to many older buildings in Vancouver and Victoria.

3.3.1. Bute Inlet (Ironwood Clay Company Inc.)

Ironwood Clay Company Inc. mines glacial marine clay on the central coast. Until 2015, production was from the De Cosmos Lagoon south of Bella Bella (Fig. 1). The company has a site at the head of **Bute Inlet**, which is mined intermittently. Ironwood manufactures cosmetic products using the clay at its Richmond plant, a business that has continued for 30 years. Glacial Bay Organic Clay Inc. has also extracted material by hand near the head of Bute Inlet. Other individuals and companies supply the cosmetic clay market at smaller scales from locations on the central coast (Kisameet Bay) and Vancouver Island. Generally, Mines Act permits are not required where material is collected by hand, and these glacial marine clay operations are unreported.

3.3.2. Imperial Limestone (Imperial Limestone Co.)

The **Imperial Limestone** quarry near Van Anda on Texada Island (Figs. 1, 2) produces about 500,000 t of mostly chemical grade limestone annually. A 99% CaCO₃ product is shipped to their parent company, Arcosa Specialty Materials Inc. in Seattle. About 50,000 t of dolostone is shipped to Ash Grove Cement Company in Portland. Imperial Limestone Co. also stockpiles limestone that meets specifications for cement, though they do not currently have customers. Quarrying at the Imperial site dates to the 1930s. The company anticipates reserves will last up to 200 years.

3.3.3. K2 Ocean Pearl (K2 Stone Quarries Inc.)

K2 Stone is a natural stone product supplier with a quarry near Port Renfrew on Vancouver Island (**K2**). They extract 15,000-20,000 t annually. The rock is trucked to Nanaimo for processing into masonry and landscaping products.

The company has additional sources near Nanaimo and Courtenay, producing sandstone and a salt-and-pepper granite (granodiorite).

3.3.4. Mount Meager Pumice (Great Pacific Pumice Inc.)

Great Pacific Pumice Inc. produces smaller quantities of pumice than its neighbouring quarry (**Vulcan/Salal**) but has stockpiles in Squamish from which they can ship year-round.

3.3.5. Sumas Shale (Sumas Shale Ltd.)

The **Sumas Shale** quarry of Sumas Shale Ltd., operated by contractor Fraser Pacific Enterprises Inc., delivers sandstone and shale product to the Lafarge and Heidelberg Materials cement plants in Richmond and Ash Grove in Seattle. Production and shipments have been approximately 500,000 tpy or more in recent years. Mining plans include an average 475,000 tpy of approximately 55% shale and 45% sandstone. Because Clayburn's brick and refractory products plant in Abbotsford closed, fire clay is no longer produced separately.

3.3.6. Texada Quarry (Texada Quarrying Ltd.)

The largest limestone quarry on the coast is the **Texada Quarry** operation near Gillies Bay (Figs. 1, 2). Texada Quarrying Ltd. is a subsidiary of Lafarge Canada Inc. The quarry also produces aggregate, mainly from quartz monzonite to gabbro dikes and sills, which would otherwise be waste rock. The site also hosts a white carbonate quarry, one of only a few sources on the coast. The quarry, which has operated for more than 60 years, has extensive reserves and, at current rates of 3.5 to 6 Mt annually, could produce for more than 100 years.

3.3.7. Vulcan/Salal Quarry (Garibaldi Pumice Ltd.)

Garibaldi Pumice Ltd. did not produce pumice in 2024. In recent years it has produced 15,000-20,000 m³ of pumice annually from their quarry (**Vulcan/Salal**). Like the neighbouring Mount Meager quarry, the product is Pliocene to recent dacitic volcanic ejecta of the Mount Meager volcanic complex.

4. Placer gold

Historic placer camps include the Lower Fraser River, Leech River, and China Creek. Although short lived, a gold rush in the Fraser Canyon, which began in 1858 at Hills Bar, led miners



Fig. 2. Lafarge Canada's Texada Quarry limestone operation on Texada Island.

farther up the Fraser River into the Chilcotin and Cariboo; the Lillooet River camp was also on an historic route to the Cariboo. Both camps continue to be worked. In 1864, reports of gold in the Leech River on southern Vancouver Island led to another brief gold rush; it too remains an active placer camp.

5. Mine development

Mine development projects are those for which a decision to produce has been made, key government approvals are in place, and on-site construction has begun. The Southwest Region has no such large-scale projects.

6. Proposed mines

Proposed mines are feasibility-stage projects for which proponents have begun the environmental certification process (in the case of large projects) or have submitted applications for Mines Act permits (in the case of projects below British Columbia Environmental Assessment Act thresholds) or are waiting for existing permit amendments. Projects that have permits in place but have yet to obtain financing to begin site construction are also considered to be at the proposed stage. The Southwest Region had two such projects in 2024 (Table 2); several small-scale and inactive larger projects are not treated in this report.

6.1. Proposed metal mines

The Southwest Region had no proposed major metal mine projects active in 2024.

6.2. Proposed coal mines

The region has no active proposed coal mine projects.

6.3. Selected proposed industrial minerals mines

The Southwest Region has two proposed industrial mineral mines. The **Black Bear** aggregate project, near Port McNeill, was the subject of an application to amend the **Orca** Environmental Certificate. The application was withdrawn with a request for review under new legislation. The **Sechelt Carbonate** project was inactive apart from a request by the owner to remain in the provincial environmental assessment process.

6.3.1. Black Bear (Polaris Materials Corporation)

Polaris Materials Corporation included the **Black Bear** project near its **Orca** sand and gravel quarry in an Environmental Certificate amendment for Orca. If the project proceeds, it will be a source of up to 3-4 Mty of crushed basalt, an increase over the 250,000 tpy proposed in a 2017 project description. Mine life would be extended from 10 to 20 years. This application was withdrawn with a request by the proponent to re-apply under the 2018 Environmental Assessment Act. A 2022 engagement plan between the Province of British Columbia and the Kwakiutl First Nation describes the nature of the Nation's participation in the Environmental Assessment Office's amendment process. Polaris submitted an engagement plan detailing their proposed

engagement activities for the Orca quarry with the Kwakiutl First Nation. Orca prepared and submitted a description of the proposed amendment in November 2023. EAO has responded with amendment procedures.

6.3.2. Sechelt Carbonate (Ballinteer Management Inc.)

Ballinteer Management Inc. now holds the property comprising the **Sechelt Carbonate** project. They filed engineering, archeological, and baseline environmental studies for assessment in 2016; activity was not reported between 2017 and 2024, other than maintenance of tenures. The property contains resources of calcite- and dolomite-bearing carbonate rock and gabbroic rock for potential use as aggregate. The original proposal was for a 4-6 tpy carbonate quarry producing both limestone and dolostone. Product was to be shipped from a barge load out on Sechelt Inlet.

7. Selected exploration activities and highlights

Exploration projects are categorized as grassroots, early stage, advanced, and mine evaluation, depending upon the nature of recent work. Work directed at discovering new resources away from ore bodies in an existing mine plan can be considered mine-lease or on-site exploration. The Southwest Region had one large exploration program in 2024 (the **North Island** project) and numerous smaller programs (Table 3).

7.1. Selected precious metal projects

This section includes projects for which precious metals are the main commodities sought.

7.1.1. Harrison Gold (Bear Mountain Gold Mines Ltd.)

Bear Mountain Gold Mines commissioned a study to review the concept of a small underground gold mining operation with low environmental impact and a compact footprint at **Harrison Gold**. An operation employing underground crushing, sorting, and direct shipping of the product appeared technically feasible and warranted further study. Further testing of a 450 kg sample with TOMRA X-ray and laser systems show that laser sorting effectively separates fragments with gold-bearing quartz-pyrrhotite veins. Quantitative evaluation of gold recoveries is among the next steps in the evaluation.

7.1.2. Ladner Gold (Talisker Resources Ltd.)

Talisker Resources Ltd. signed a letter of intent with Regeneration Enterprises Inc. for a proposed joint venture to re-process historic Carolin mine tailings at their **Ladner Gold** project. Regeneration, a private company, would manage and fund the project. There is a resource estimate for the tailings and the past-producing Carolin mine and the McMaster zone (Table 3). Talisker released results of its 2023 mapping and sampling at **Ladner Gold**. A highlight composite rock sample returned 97.70 g/t Au.

7.1.3. Mineral Creek (Karus Mining Inc.)

Karus Mining Inc. acquired Theia Gold Corp. in 2024. The

amalgamated company is in the process of seeking a stock exchange listing. Theia holds the **Mineral Creek** property. Results of a >\$1 million drilling program by Theia at Mineral Creek in 2023 are not yet released, nor are details of reported follow up work in 2024. Mineral Creek is an orogenic-type gold vein (Fig. 3) prospect hosted by Sicker Group volcanic rocks (Paleozoic).

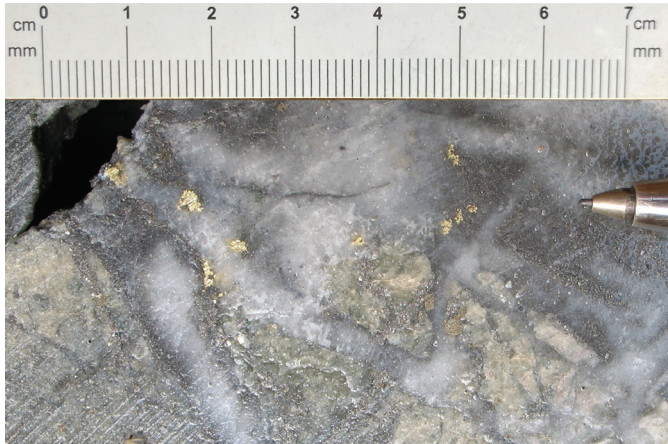


Fig. 3. Visible gold in a quartz vein at the Mineral Creek property (Karus Mining Inc.).

7.1.4. Tasu Global (Tasu Global Resources Inc.)

Tasu Global Resources Inc. carried out reconnaissance sampling at the **Tasu Global** property, which includes the Corlett Gold zone. High-grade gold in quartz veins discovered in the early 2000s are the primary targets at Corlett. Porphyry Cu-Mo and skarn mineralization is also on the property.

7.1.5. Texada Project (Zyrox Mining Company)

Zyrox Mining Company reported geochemical work for assessment on their long-held **Texada** project properties in 2023 and 2024, following recent soil geochemical and ground magnetic surveys. They recently obtained a multi-year area-based permit that includes exploration drilling at the Yew and Bolivar gold prospects over a 5-year period. Yew has a historical resource (Table 3).

7.2. Selected precious and base metal projects

This category includes projects for which precious metals represent the primary target commodities, with base metals as significant potential co- or by-products.

7.2.1. Empire Mine (Coast Copper Corp.)

Coast Copper Corp. announced that it had exercised its option on the **Empire Mine** property to acquire 100% of the mineral claims surrounding the block of Crown grants extending across historical mines. Field work included reconnaissance geochemical sampling. The company released results of a 2023 controlled source audio frequency magnetotelluric survey with new targets northwest and south of the Benson Lake mine. The deposits are Cu-Fe skarns in Vancouver Group and lower

Bonanza Group rocks intruded by diorite to gabbro of the Island Plutonic suite.

7.3. Selected base and precious metal projects

Jurassic porphyry mineralization is a target on Vancouver Island. Southwestern British Columbia also has several advanced Eocene to Miocene porphyry copper targets. Base and precious metals targets can include other deposit types such as VMS and mafic-ultramafic hosted mineralization.

7.3.1. Blue Grouse (Sasquatch Resources Corp.)

Sasquatch Resources Corp. entered an option agreement on the **Blue Grouse** past-producing mine. They sampled waste piles with average copper values of 2.37% Cu and 12.8 g/t Ag in 60 samples at the Blue Grouse deposit and 4.31% Cu and 8.91 g/t Ag in 16 samples at the adjacent Sunnyside deposit. They also sampled tailings and collected surface grab samples.

7.3.2. Castle Rock (Trailbreaker Resources Ltd.)

Trailbreaker Resources Ltd. carried out surface exploration at its **Castle Rock** property, including prospecting, rock sampling, and soil geochemistry. They reported a 350 by 200 m northwest-trending gold-in-soil anomaly at the Watchtower zone. Work included infill sampling and initial sampling at other zones. The targets are gold and porphyry copper mineralization.

7.3.3. Catface (Imperial Metals Corporation)

Imperial reported reconnaissance rock and soil sampling in areas of the property with little previous coverage. **Catface** is an Eocene porphyry Cu-Mo deposit with an existing resource estimate.

7.3.4. Fire Mountain (Cascade Copper Corp.)

Cascade Copper Corp. released results of surface sampling with a highlight of 1.88% Cu, 5.51 g/t Au, and 76.5 g/t Ag for its **Fire Mountain** project. 3D modelling included magnetic inversion modelling. The target is recently discovered porphyry copper mineralization.

7.3.5. Knob Hill (Coast Copper Corp.)

Coast Copper Corp. carried out reconnaissance sampling at **Knob Hill**, at the northwestern extent of the trend of targets currently the focus of Northisle Copper and Gold Inc.'s work at the North Island project. A highlight rock sample returned 0.16 g/t Au, 41.64 g/t Ag, and 0.67% Cu.

7.3.6. Lara (Nova Pacific Metals Corp.)

Nova Pacific Metals Corp. optioned the **Lara** VMS project. They completed a mobile metals ion orientation survey over known mineralization at the Coronation zone portable drilling, and a preliminary field reconnaissance archaeological report for permitting purposes. They also filed a NI 43-101 technical report and began an analysis of existing data, including a 2007 resource estimate for the Coronation zone which has 1,146,700 t grading 3.01% Zn, 32.97 g/t Ag, 1.05% Cu, 0.58% Pb, and

1.97 g/t Au in the Indicated category, with additional Inferred resources (Table 3). Nova Pacific has an option to acquire additional tenures along the mineralized trend to the northwest.

7.3.7. Lekcin (Omega Pacific Resources Inc.)

Omega Pacific has an option to earn 100% interest in the **Lekcin** property. Their 2024 exploration included a UAV magnetometer survey, mapping, and rock sampling. Their objective was to identify near-surface mafic-ultramafic intrusions that may host sulphide Ni-Cu mineralization like that at the neighbouring Giant Mascot Nickel past-producing mine.

7.3.8. Mount Sicker (Sasquatch Resources Corp.)

Sasquatch Resources Corp. undertook a grid sampling survey across several waste dumps at their **Mount Sicker** property. The average of 97 samples was 1.86 g/t Au, 48.6 g/t Ag, 1.22% Cu, and 3.05% Zn. Sasquatch is investigating the viability of re-processing the waste from historical early to mid-20th century mining at the site. Of a 528 kg random sample submitted for test sorting, 58% of coarse material was accepted as high grade and returned values of 6.43 g/t Au, 180 g/t Ag, 4.92% Cu, 8.70% Zn, and 0.69% Pb. Work included metallurgical testing of sorted material. Mount Sicker hosts several past-producing VMS deposits in Sicker Group volcanic rocks (Paleozoic) and Mount Hall gabbro (Triassic).

7.3.9. Mount Sicker (Kermode Resources Ltd.)

Kermode Resources has an option to acquire properties in the **Mount Sicker** area, including the 911 zone 1-2 km northeast of the past-producing mines. They reported prospecting, hand trenching, and rock sampling with initial XRF results for copper.

7.3.10. North Island (Northisle Copper and Gold Inc.)

Northisle Copper and Gold Inc. drilled the West Goodspeed target of their **North Island** project and released results including a highlight interval of 210 m grading 0.23% Cu, 0.285 g/t Au, 0.007% Mo, 1.19 g/t Ag, and 0.447 g/t Re. They also continued drilling at the Northwest Expo zone (Fig. 4), with a highlight of 132.8 m grading 1.19 g/t Au, 0.27% Cu, 50 ppm Mo, and 0.60 ppm Re. An updated global resource comprising three deposits has 906 Mt grading 0.16% Cu, 0.24 g/t Au, 75 ppm Mo, and 0.42 ppm Re in the Indicated category. Of more than seven porphyry Cu-Au-Mo±Re targets and deposits spanning approximately 40 km west-northwest of the past-producing Island Copper mine, three deposits now have resource estimates. In the Indicated category, using a \$11.50 NSR cut off: Hushamu has 778 Mt grading 0.16% Cu, 0.21 g/t Au, 87 ppm Mo, and 0.49 ppm Re; Red Dog has 83 Mt grading 0.18% Cu and 0.25 g/t Au; Northwest Expo has 45 Mt grading 0.11% Cu and 0.64 g/t Au. All three deposits have additional Inferred resources.

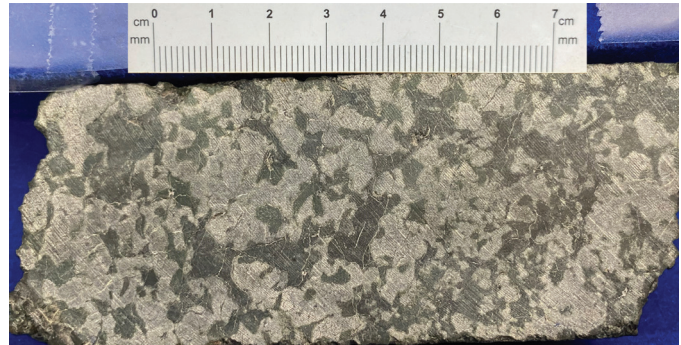


Fig. 4. Chlorite-magnetite alteration from an interval grading 1.06 g/t Au and 0.2% Cu. North Island project, Northwest Expo zone (Northisle Copper and Gold Inc.).

7.3.11. Redonda (Recharge Resources Ltd.)

Stamper Oil & Gas Corp. reported results of fall 2023 drilling and released a technical report on the **Redonda** property. Work in 2024 included an airborne geophysical survey, geological mapping, sampling, and metallurgical testing. Highlights of drilling included 142.6 m grading 0.279% Cu, 0.0281 MoS₂, and 0.0927 ppm Re. Recharge Resources Ltd. obtained an option to acquire 50% of the property and released results of metallurgical tests with up to 96% Cu recovery and 95.6% Mo recovery. The target is Cu-Mo mineralization, undrilled since 1979 when Teck Corp. intersected lower grade porphyry mineralization. The porphyry copper-molybdenum occurrence is at the western edge of the Coast Plutonic complex, a setting like other presumably Tertiary targets and deposits.

7.3.12. Rogers Creek (Cascade Copper Corp.)

Cascade Copper Corp. reported 2023 and early 2024 work for their **Rogers Creek** project that included a 3D data compilation with IP inversion modelling and hyperspectral surveying of existing drill core. A notice of work permit for drilling is in process for a proposed 1500 m drill program.

7.3.13. Teeta Creek (Arcwest Exploration Inc.)

Arcwest Exploration Inc. reported results of a 3D induced polarization survey at its **Teeta Creek** project at the end of 2023. They describe a chargeability anomaly at depth, bellow the Teeta Creek Valley, as nearly untested by drilling. The target is Cu-Mo-Au porphyry mineralization.

8. Geological research

Bain and Waugh (2024) described ore and alteration textures at the Merry Widow past-producing mine, a cobalt-bearing iron skarn on Vancouver Island. Bain et al. (2025) used scanning electron microscopy-mineral liberation analysis (SEM-MLA) on samples from iron skarns on Vancouver Island and Texada Island to establish the mineralogical siting of bismuth, cobalt, and tellurium (elements on the 2024 version of the Canadian critical minerals list). Morris and Canil (2024) and Morris et al. (2024) examined the relationships between mafic intrusive bodies and host carbonate rocks in the Merry Widow deposit

area and concluded that CO₂ release and metal enrichment by contact metamorphism along small, shallow-level dikes and sills and transport by fluids is far more significant than magma assimilation of limestone at contacts with a larger, deeper-level stalled pluton. Green and Canil (2024) investigated the conditions of pyrite stability and chalcophile element mobility in sulphide-bearing carbonaceous sediments of the Pacific Rim terrane on Vancouver Island. Canil and Morris (2024) proposed a three-stage model for the evolution of the Bonanza arc on Vancouver Island, with growth in an oceanic realm on a thick, pre-existing marine plateau. Giroto et al. (2024), developed a sequence of paleogeographic reconstructions for 90–80 Ma forearc basin sedimentation of the Nanaimo Group on eastern Vancouver Island.

Rusmore et al. (2024) examined structural, geochronologic, and geobarometric data from the Coast Mountain batholith in southern British Columbia and inferred a history of episodic deformation in the interval 114 to 61 Ma that was tied to three high-magmatic flux events. Fischer et al. (2024) examined tourmaline breccia pipes (A.M. breccia) of the Giant Copper porphyry system.

A.M. Wilson et al. (2024) released a series of detailed maps of the Garabaldi volcanic belt, and M.C. Wilson et al. (2024) related surviving Lílwat oral traditions to present-day evidence of events surrounding eruptions within the Mount Meager complex (Q̓welq̓welústen) ca. 2360 years ago.

Tepper and Clarke (2024) proposed that initiation of the Cascade arc at ca. 46 Ma was related to the transition of a transform margin to convergent one rather than an outboard jump of subduction, and Olivia et al. (2024) investigated seismically active sections of the predominantly transform Queen Charlotte plate boundary west of Haida Gwaii and suggested that highly oblique motions along transform boundaries could lead to initiation of subduction.

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