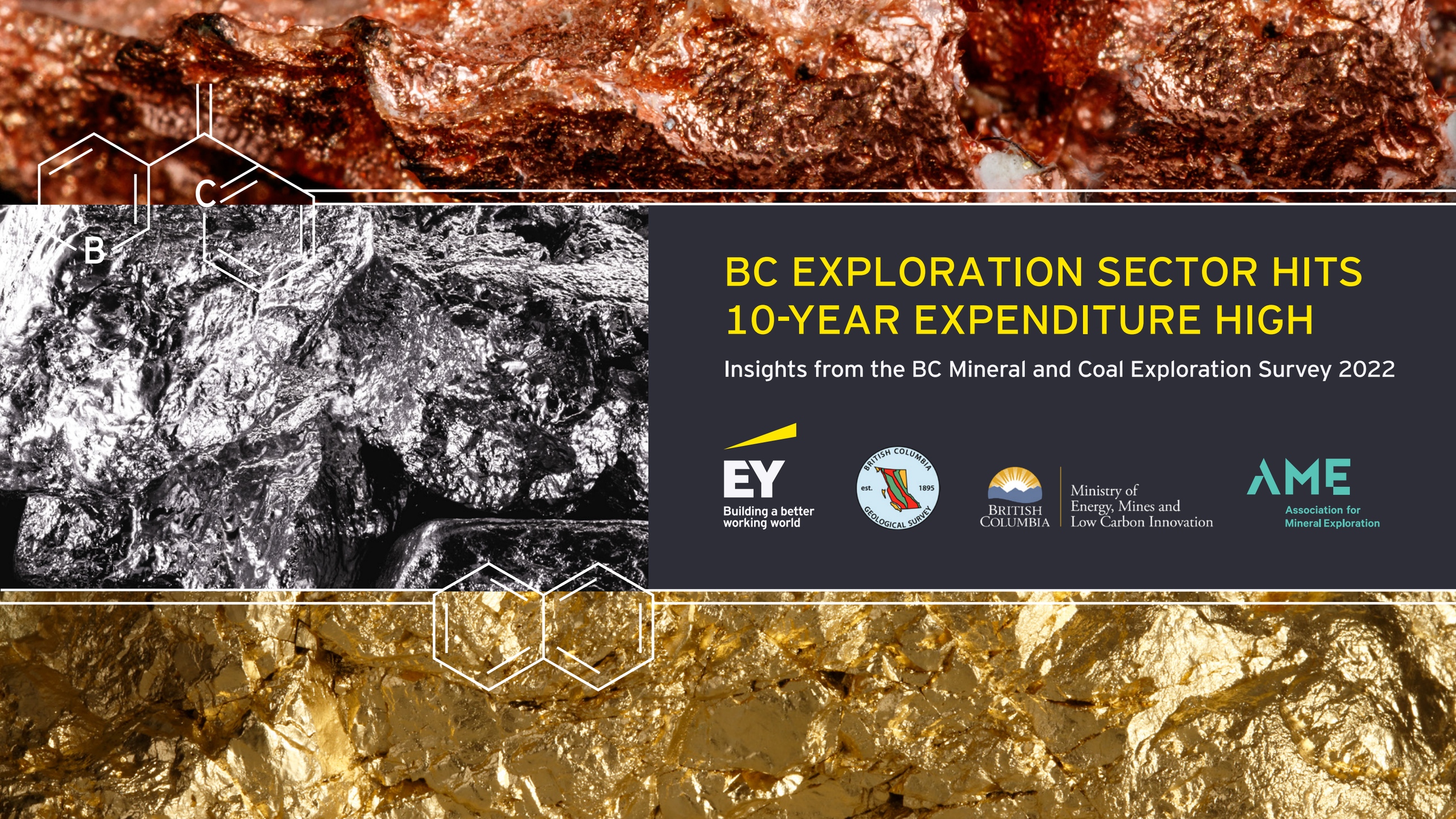

BC EXPLORATION SECTOR HITS 10-YEAR EXPENDITURE HIGH

Insights from the BC Mineral and Coal Exploration Survey 2022

EY Building a better working world

British Columbia Geological Survey est. 1895

British Columbia Ministry of Energy, Mines and Low Carbon Innovation

AME Association for Mineral Exploration

FOREWORD

The *British Columbia Mineral and Coal Exploration Survey* is a joint initiative between the Government of British Columbia's Ministry of Energy, Mines and Low Carbon Innovation (EMLI), the Association for Mineral Exploration (AME) and EY. The survey was conducted to provide a view of the current state of the mineral and coal exploration sector in British Columbia (BC).

Data and analysis presented in this report are for the period January 1 through December 31, 2022 and are based on survey responses and information collected from financial reports and press releases from 170 companies operating in BC, which collectively represent 230 projects across the province.

For ease of completion, the survey is designed to be similar to Natural Resources of Canada's (NRCAN) *Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures*.

Thank you to our survey participants who spent their time and shared their information.

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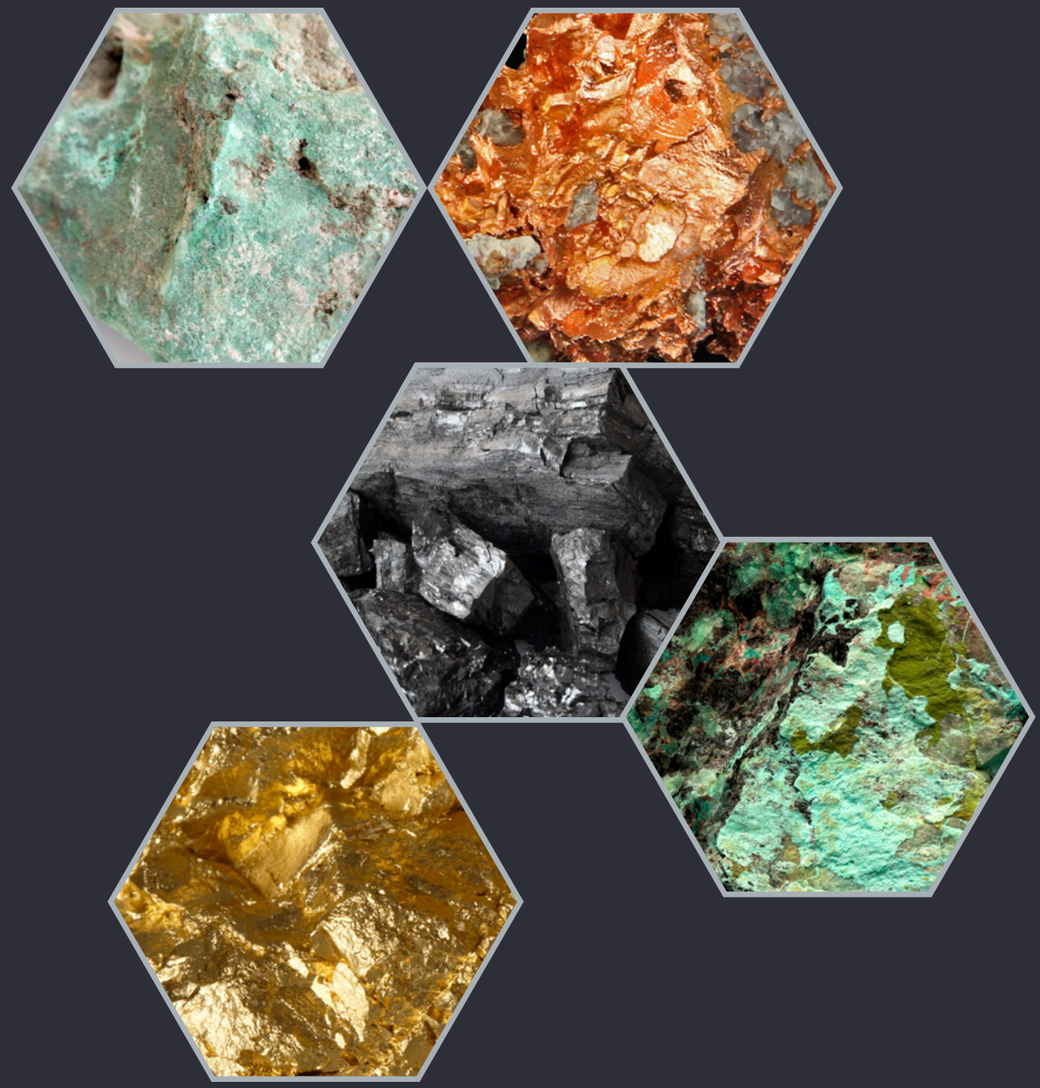
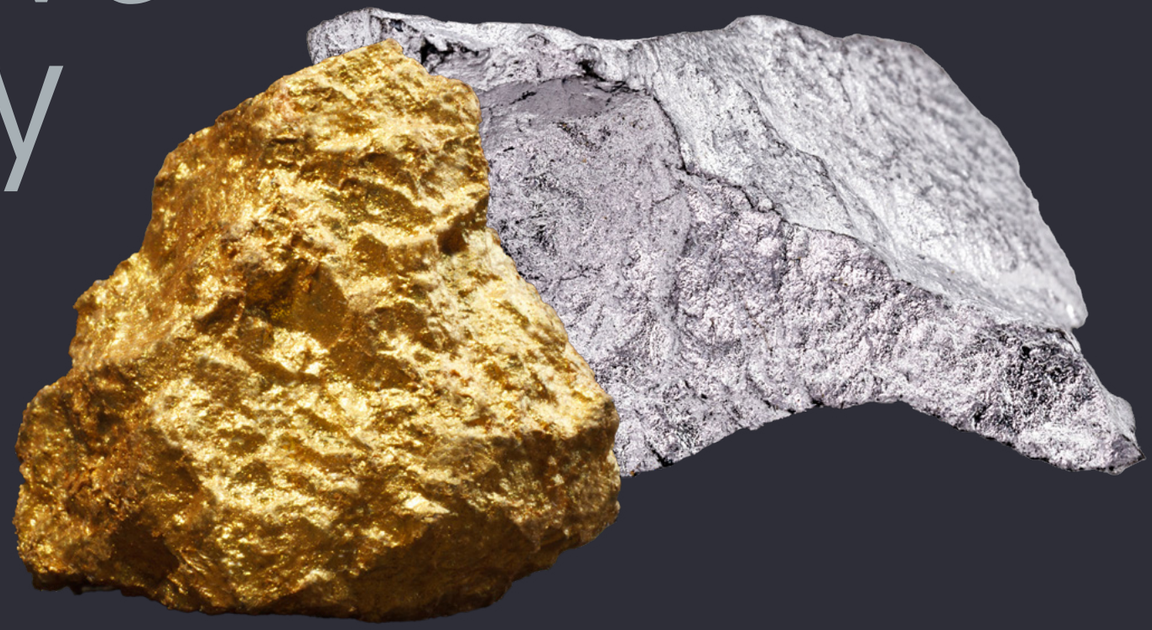


Executive summary

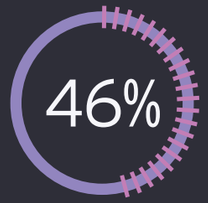


For the seventh year, we are pleased to present the findings of the 2022 *British Columbia Mineral and Coal Exploration Survey*. Data and analysis presented in the survey are based on information collected from 170 mineral and coal exploration companies operating in BC. Collectively, they represent 230 exploration projects across the province.

2022 marked a year of volatility of metals prices, through a combination of macroeconomic and geopolitical factors that had a range of both positive and negative impacts. The reduced risk of pandemic related shutdowns and full reopening of economies countered by the outbreak of the Russia-Ukraine war and the energy crisis in its wake created an environment of uncertainty in the commodity market. With this backdrop considered, the year also marked a record-year for exploration in British Columbia. BC recorded $740m spent on exploration in 2022, a 10-year high that surpasses the previous record held by the $681m spent in 2012.

of all provincial exploration spend was in the Northwest region

24% decrease in exploration projects from 2021



of respondents consider gold their primary commodity

84% jump in copper spending

BC exploration sector hits 10-year expenditure high

Exploration spending across the province hit $740m, surpassing the previous 10-year high of $681m seen in 2012 by almost 10%. Conversely, number of projects reported in 2022 were down 24%, from 301 reported projects in 2021 to 230 in 2022.

Total metres drilled also decreased by 20% from 2021, consistent with a shifting focus towards grassroots and early stage exploration. A possible reason for reduction in drilling may be that projects that have completed significant drilling are advancing through the exploration lifecycle and shifting focus towards investment in economic studies and constructing ancillary infrastructure.

Inflationary pressures may also be a contributing factor to reduced drilling. Over the course of the year, the Canadian Consumer Price Index (CPI) was reported to have risen 6.8% year over year, with energy prices up 22.5% in the same time frame.[1] This increase in fuel prices, wages, as well as rising costs of inputs such as drilling steel would have also likely contributed to reduced drilling.

The Northwest region continued to serve as the centre of exploration in BC, accounting for 61% of all provincial exploration spend, increasing its market share from 56% in 2021.

Copper spending resurgent while gold continued to garner significant interest

Exploration for copper was the driving force behind a record-setting year for provincial spending. Fueled by favourable market conditions and demand, copper exploration spending jumped 84% year over year in 2022, rising from $128m in 2021 to $235m. Copper, which was identified as a critical mineral by the Joint Action Plan on Minerals Collaboration released by the US and Canadian Governments in 2020, is integral for the global push towards sustainable economic growth.[2] This Joint Action Plan is further supported by Canada's Critical Minerals Strategy, released in December 2022, which allocates $3.8b in federal funding covering a range of industrial activities, from geoscience and exploration to mineral processing and technological deployment, focusing on opportunities along the value chain for the 31 critical minerals identified.[3]

With the prevalence of porphyry deposits (copper-rich polymetallic deposits) in the province and the growing need for copper in the transition to a greener economy, BC has the opportunity to position itself as a leader in the copper supply market.

Gold spending retained the record-high levels of spending seen in 2021, decreasing by a marginal 2% year over year from $431m in 2021 to $422m in 2022. Despite this downturn, survey responses indicate interest in gold has not dwindled. Approximately 46% of survey respondents indicated gold as the primary commodity of exploration, compared to 30% for copper. The Northwest region of British Columbia is home to some of the largest gold and copper projects in the province, such as Eskay and Galore Creek. The region saw a 23% increase in spending on the back of continued interest from both local and international players seeking to benefit from the porphyry and precious metal deposits in the area. All other regions in BC saw a decrease in spending, with the exception of the North Central and Southwest regions.

A shift back towards grassroots exploration

Recent years have seen a shift away from early-stage exploration towards advanced-stage projects as BC exploration experienced a lifecycle reset. This four-year trend seemed to break in 2022 as the proportion of funding directed towards riskier, grassroots projects increased to pre-pandemic levels. Grassroots and early-stage exploration accounted for 39% of total exploration spending in 2022, compared to 24% in 2021 and 33% in 2020. With the reduced risk of pandemic-induced shutdowns and producers accumulating healthier revenues through sustained favourable market conditions, it appears that exploration in BC is shifting towards discovery after years of focus on advancing economics of existing projects. This bodes well for a future pipeline of projects. Grassroots and early-stage projects received 78% more funding year over year, increasing from $161m in 2021 to $285m in 2022. Later stage-projects – those in the advanced, mine-evaluation and mine-lease stages – received 10% less funding, from $506m in 2021 to $455m in 2022.

Looking forward

Although inflation has appeared to moderate in recent months, recessionary fears and forecasts of a weaker global economy loom large over the mining sector, leaving questions over the short-term future for exploration spending. However, the demand for critical metals such as copper is likely to sustain as the push towards wide-scale electrification remains at the top of global agendas. Considering the market outlook for gold in times of volatility, BC has the resources and expertise to capitalize on future demand and weather any further turbulence that may come its way.

Table 1 highlights key statistics and figures for 2022 across all BC regions and shows changes relative to 2021 survey findings.

Table 1: Exploration in BC summary statistics

		BC	Northwest	Northeast	North Central	Southwest	South Central	Southeast
Regional centre			Smithers	Prince George	Prince George	Vancouver	Kamloops	Cranbrook
Projects								
2022 projects	#	230	90	3	40	15	47	35
2021 projects	#	301	115	8	50	24	57	47
% Year-on-year change		-24%	-22%	-63%	-20%	-38%	-18%	-26%
Share of 2022	%		39%	1%	17%	7%	20%	15%
Expenditure								
2022 expenditure	$m	740	451	2	139	11	108	29
2021 expenditure	$m	660	366	5	77	8	147	55
% Year-on-year change	%	12%	23%	-64%	79%	36%	-26%	-47%
Share of 2022	%		61%	0.3%	19%	1%	15%	4%
Drilling								
2022 total drilling	m	1,149,552	661,411	0	163,219	28,574	243,178	53,170
2021 total drilling	m	1,442,319	662,166	9,701	170,900	40,360	462,473	96,719
% Year-on-year change	%	-20%	0%	-100%	-4%	-29%	-47%	-45%
Share of 2022	%		58%	0%	14%	2%	21%	5%

British Columbia's mineral and coal exploration sector

Exploration key to BC economy

The mining and metals industry plays a key role in the BC economy. Survey respondents reported a record $740m invested into the exploration and evaluation of mineral deposits, of which $42m was spent on First Nations community consultation and exploration agreements. This represents a 10-year high in gross spending, beating out the previous peak of $681m seen in 2012. Framed against the global context of a continued recovery from the effects of the pandemic and the market volatility induced by ongoing geopolitical turbulence, this record-breaking level of spending bodes well for the future of mining and exploration in British Columbia.

The companies surveyed range from grassroots, junior exploration companies to large-scale, publicly traded mineral producing companies operating across the world. A healthy exploration industry is foundational to future investment, creation of new jobs and community development. It is also fundamental for maintaining a flow of new projects and the source of new mine development opportunities.

$740m

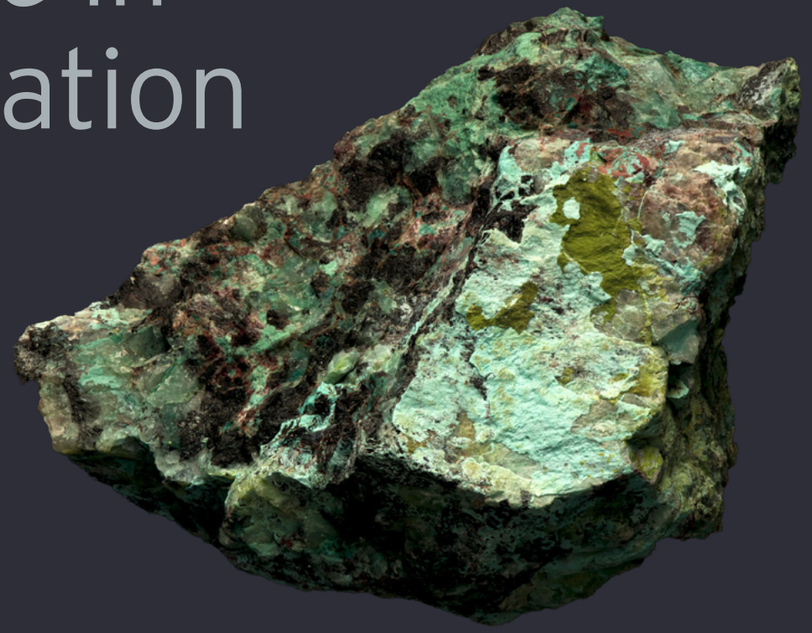
invested into the exploration and evaluation of mineral deposits

$42m

spent on First Nations community consultation and exploration agreements

British Columbia's mineral and coal exploration sector

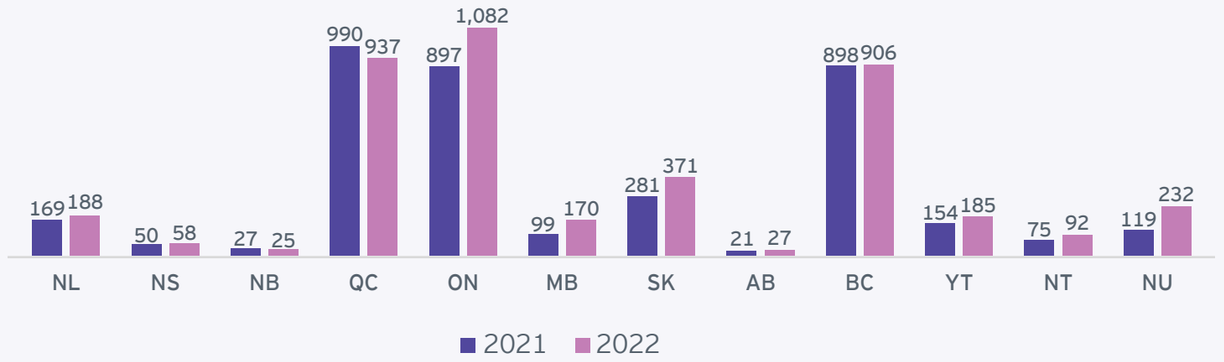
BC's crucial role in national exploration



Using data published by Natural Resources Canada (NRCan), British Columbia's contribution to national mineral exploration and deposit appraisal expenditure based on spending intentions were forecast to remain largely flat year over year from 2021, increasing by 1% from a recorded spend of $898m in 2021 to an $906m spending intention in 2022. The 2022 survey results in this study showed a larger increase of 12% year-over-year with a total exploration spend of $740m in 2022 (compared to $659m in 2020). The difference between this survey and the data released by NRCan is primarily due to survey size, timing of the survey and the total number of respondents, as well as estimates relating to spending intentions rather than actual spending figures. Note, we expect a change in NRCan exploration expenditure for all jurisdictions once finalized spending values are considered. For the purposes of this report, $740m will be considered as BC exploration expenditure for 2022, except in instances where comparisons are being made to other provinces and territories.

At a combined 68% of the national total, Québec (22%), Ontario (25%) and British Columbia (21%) are expected to continue accounting for most of exploration spend intentions. Exploration expenditure intentions increased nationally across 10 of the 13 provinces and territories, with New Brunswick and Québec being the only jurisdictions where spending was forecast to decline year over year. The largest increases in spending intentions were seen in Nunavut (95% increase year over year) and Manitoba (71% increase year over year).

Figure 1: Exploration and deposit appraisal expenditures (2021) and revised spending intentions (2022) by province and territory (C$m)



* Figures shown for 2022 are representative of spending intentions as surveyed by NRCan and may not represent true spending value

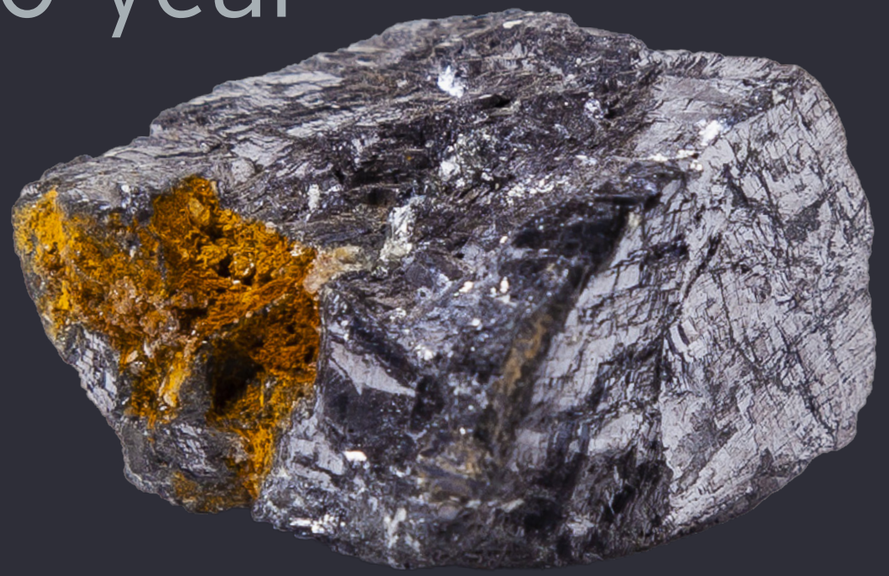
Source: National Resources Canada (2022) Table 27 – Exploration Plus Deposit Appraisal Expenditures, by Province and Territory, 2018 – 2021 Annual and 2022 Revised Spending Intentions (current as of September 2022).

12% increase in year-over-year national spending

21% of exploration spend was in British Columbia

British Columbia's mineral and coal exploration sector

BC exploration spend hits 10-year record high



Our 2022 survey shows exploration spend increased by 12% from $660m in 2021 to $740m in 2022. This figure marks the single largest gross annual exploration spend on coal and metals in the province over the past 10 years and displaces 2021 as the largest recorded spending on metals exploration alone.

The global surge in inflation rates in 2022 has also been taken into consideration in our analysis. Domestically in Canada, the Consumer Price Index (CPI) was reported to have risen 6.8% on an annual average basis in 2022, with this increase marking a 40-year high. This inflation likely had significant impacts on the exploration and mining and metals sectors, with energy prices up 22.5% year over year, alongside rising costs of input materials such as drilling steel and labour.[4] To contextualize the levels of spending and account for inflation in 2022, we have considered 10-year spending indexed to the 2020 CPI. Using adjusted figures, we can see that expenditure in 2022 grew 5% annually from 2021, compared to 12% without inflationary factors considered. Adjusted growth in 2022 from 2020 levels was 59%, compared to the nominal 75% seen using gross expenditure values.

In contrast to spending, the total number of exploration projects in 2022 decreased by 24% year over year. The average expenditure per project, however, showed a 47% increase from $2.2m per project in 2021 to $3.2m per project in 2022.

Figure 2: Annual exploration expenditure in BC, 2012 - 2022 (C$m)

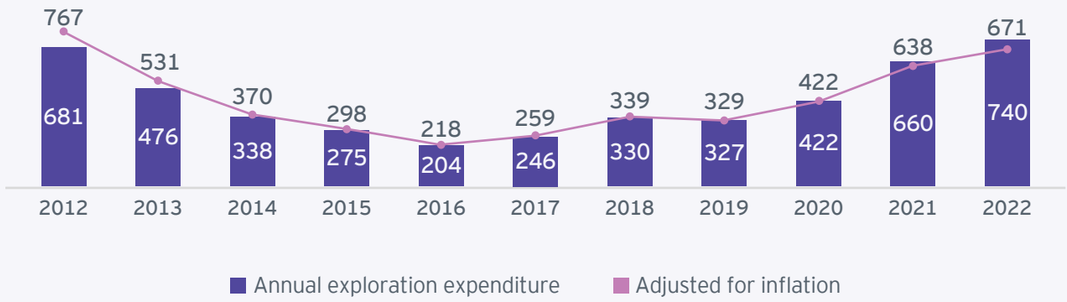


Figure 3: Number of annual exploration projects across BC, 2019 - 2022 (excluding prospectors)

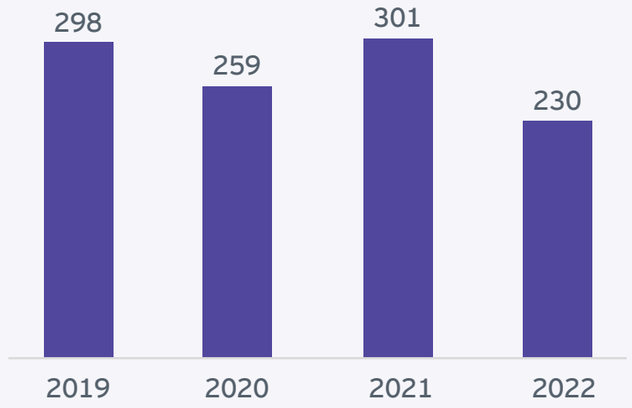
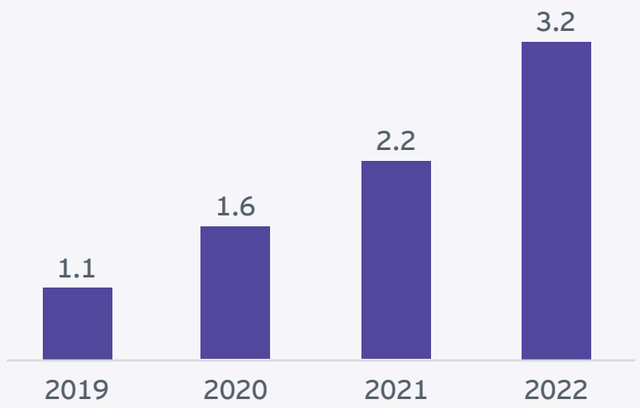
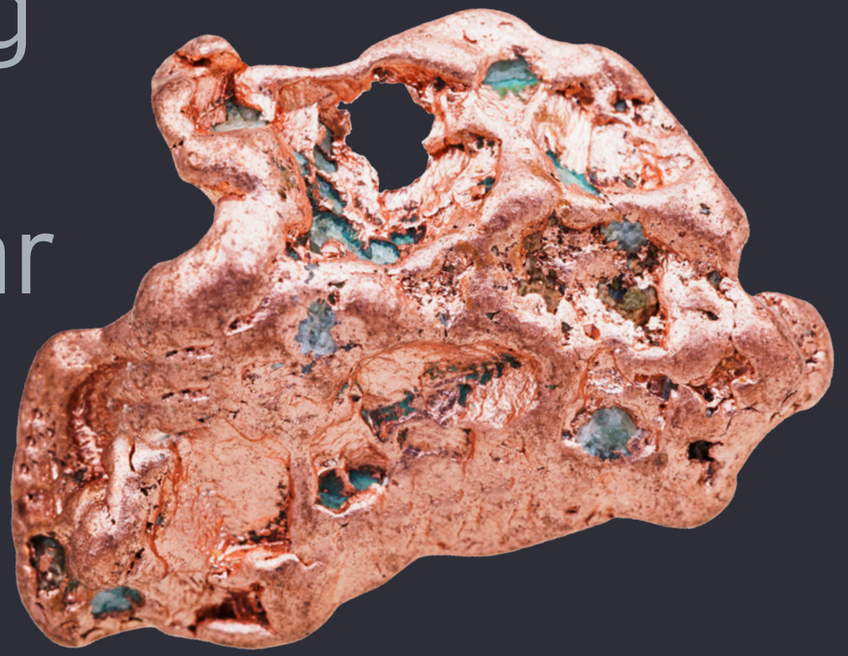


Figure 4: Average expenditure per exploration project (C$m per project)



British Columbia's mineral and coal exploration sector

Copper the driving force behind record-setting year

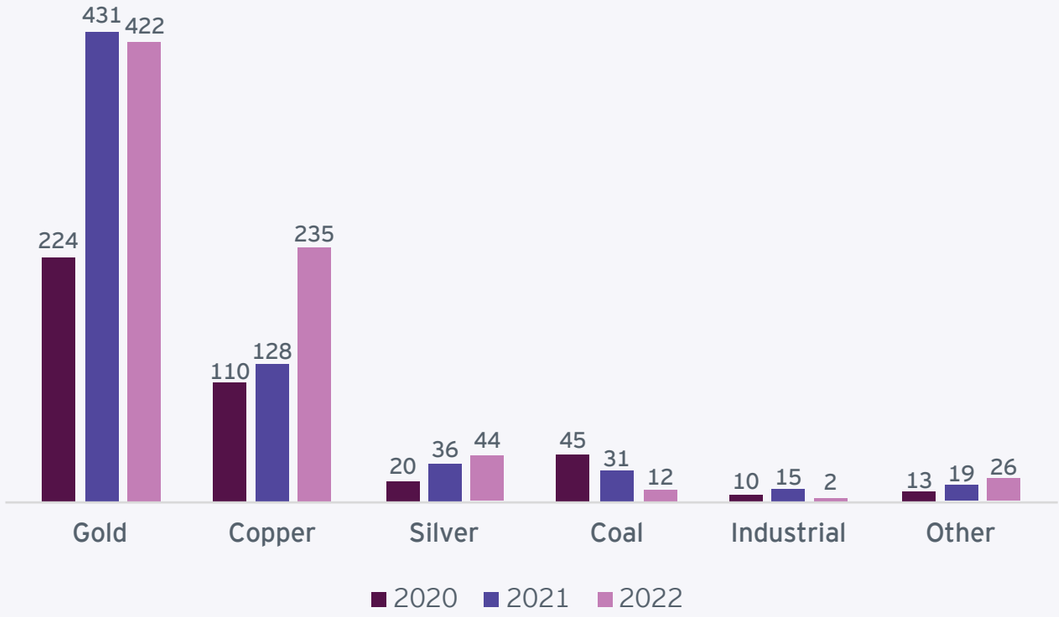


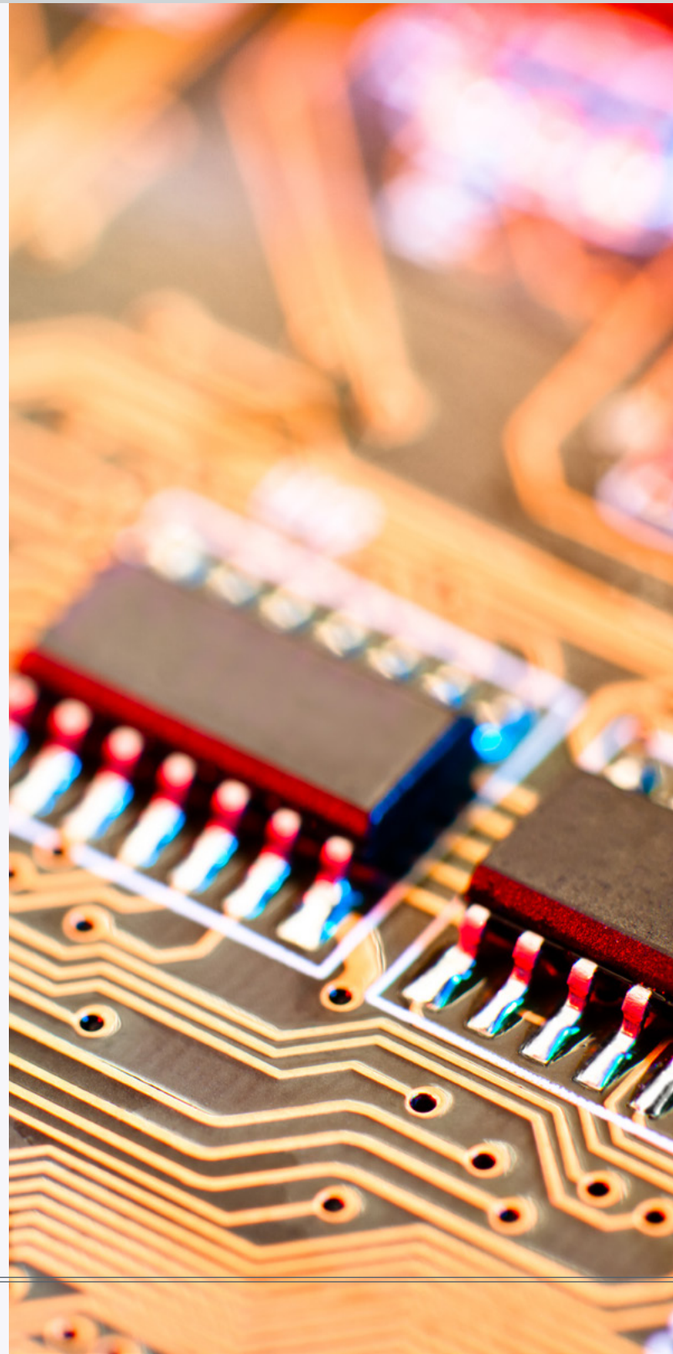
The record-setting spending in exploration in 2022 was driven by both a continued interest in gold and a significant uptick in investment into base metals. While gold exploration spending did not see a similar jump to the one observed between 2020 and 2021, the levels of spending seen in 2021 were maintained last year. Spending decreased by only 2% year-over-year in 2022, indicating significant continued interest in the search for gold.

The other key component of exploration spending in BC last year was the resurgent interest in copper. Copper spending saw a 91% year-over-year, rising from $128m in 2021 to $235m in 2022, accounting for 32% of overall exploration spend in the province.

The silver sector also continued to garner interest, rising 6% from 2021 levels. Coal and industrial minerals (such as silica and gypsum) saw significant decreases in spending. Coal spending was down 59% year over year, while industrials experienced an 87% fall in spending.

Figure 5: Annual exploration expenditure by commodity, 2020 - 2022 (C$m)

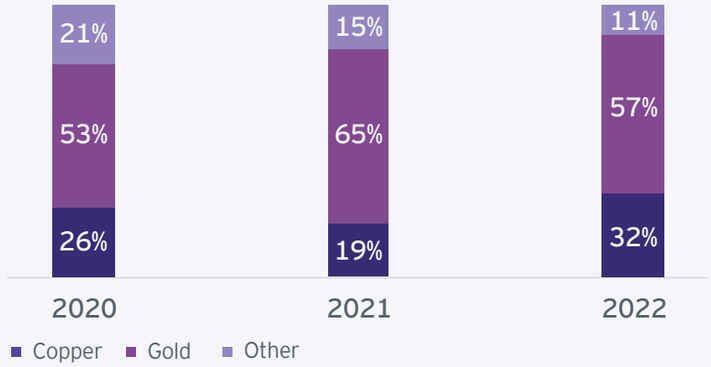


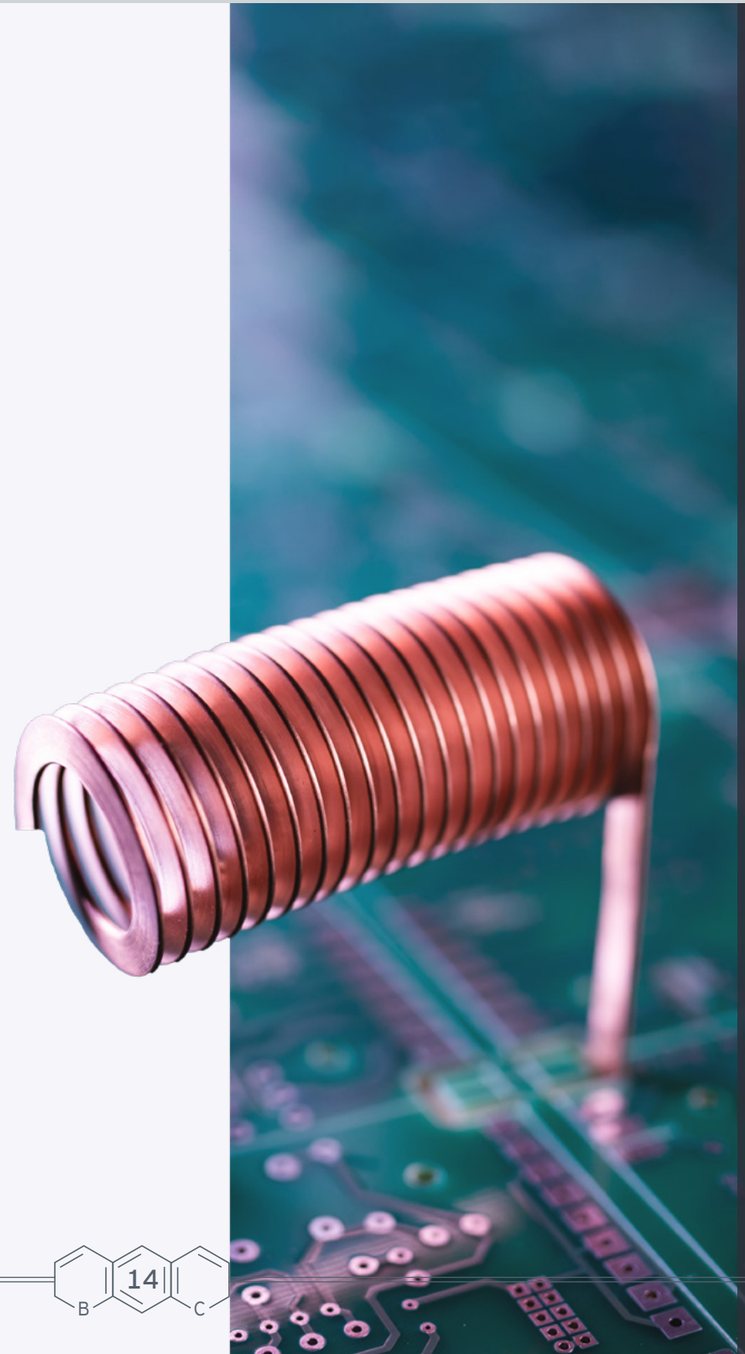


The resurgence of copper as a major part of the exploration spending breakdown aligns closely with market price trends for the metal. Copper prices recovered from the pandemic-induced lows of $2.17/lb in early 2020 up to 10-year highs of $4.7/lb in April 2022.

Copper exploration spend accounted for 32% of all exploration spend in 2022, representing a 13% year-over-year increase in its share of the market. It's worth noting that exploration for copper is also influenced by BC's geology, which is prospective for porphyry deposits that are typically dominated by copper mineralization but can also contain significant, gold, silver and molybdenum. These geological characteristics of BC porphyry deposits mean that the primary commodity reported can change between gold and copper depending on grade and commodity price and this can create variability in what is reported year over year.

Figure 6: Share of total annual exploration spend by year





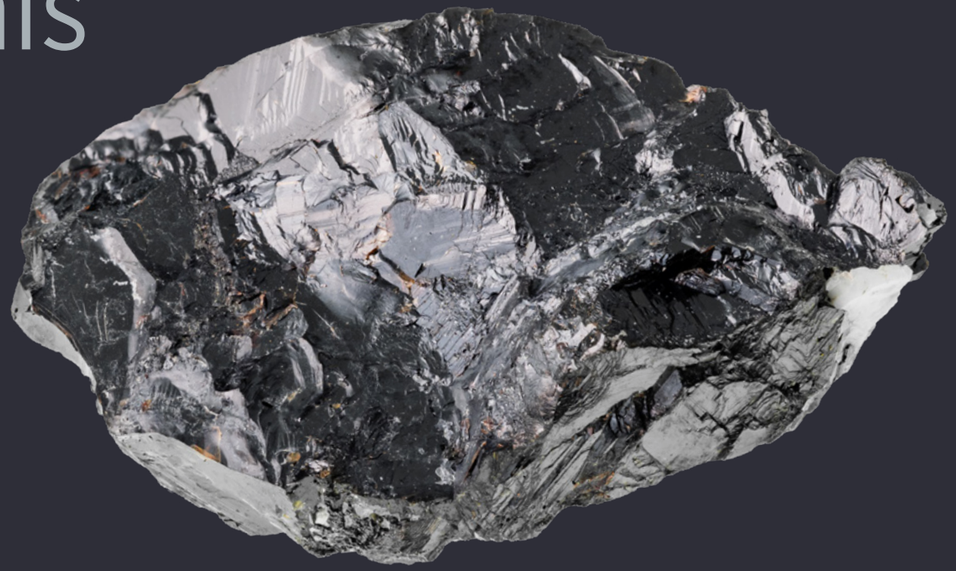
91% increase in year-over-year copper spend

32% of all exploration spend in 2022 was for copper

13% year-over-year increase in copper market share

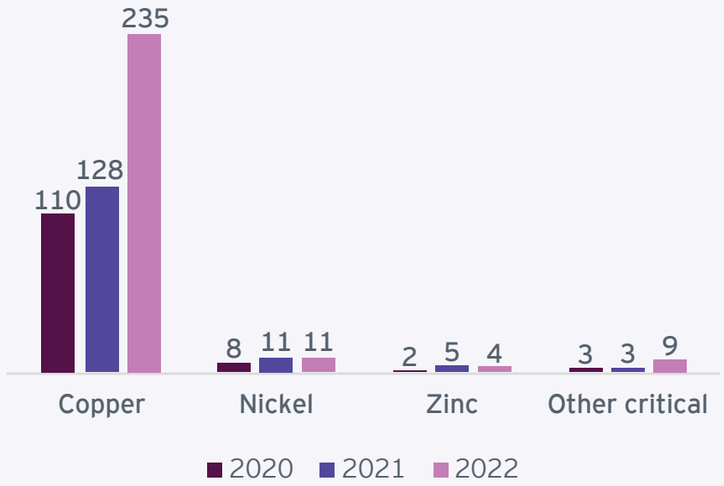
British Columbia's mineral and coal exploration sector

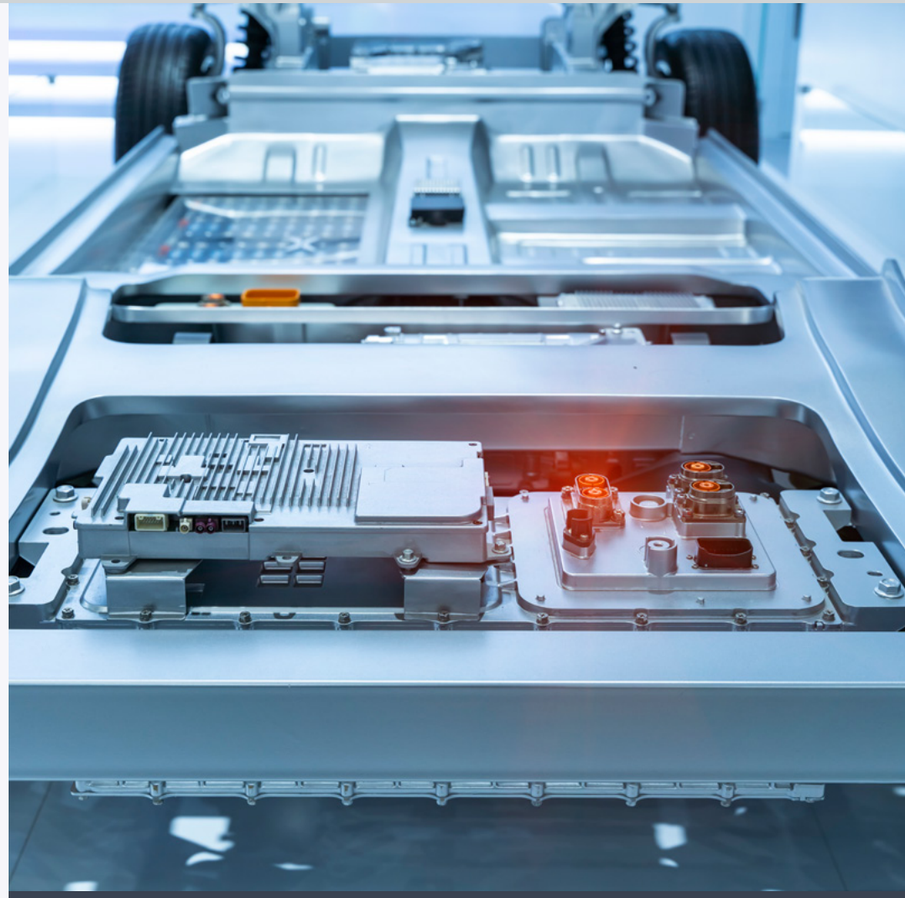
Continued shift to critical metals



In our 2021 Exploration report, we highlighted metals that had been identified as critical minerals by the Canadian and US governments as part of a Joint Action Plan on Minerals Collaboration.[5] This plan, established in mid-2020 as an effort to develop a more robust North American supply for said critical minerals in the work of ongoing geopolitical turbulence, identified a list of select minerals that will play an integral role in the transition to a cleaner, more sustainable economy. This Joint Action Plan has been backed by the Canada Critical Minerals Strategy released by the Ministry of Natural Resources in December 2022. The strategy allocated up to $3.8b in federal funding towards focusing on opportunities at every stage along the value chain for the 31 identified critical minerals across a range of industrial activities, from geoscience and exploration to mineral processing, manufacturing and recycling.[3] The list of identified critical minerals includes metals that show exploration potential in BC — including copper, molybdenum, zinc, nickel, rare earth elements, magnesium and more - creating an opportunity for British Columbia to be a key player in the global green transformation.

Figure 7: Exploration spend by critical metal, 2020 - 2022 (C$m)





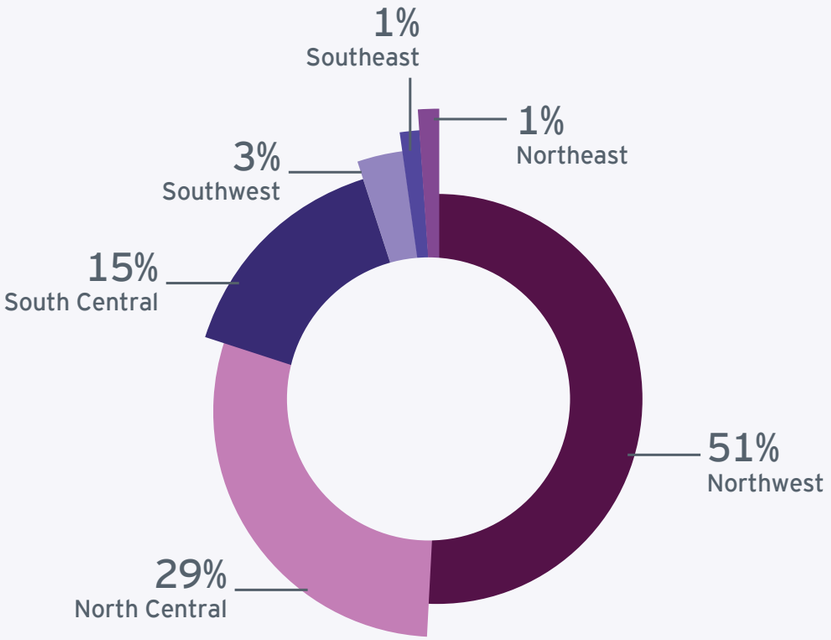
77%

jump in year-over-year critical minerals exploration

Critical metals exploration in BC jumped 77% year-over-year. While much of this increase can be attributed to the copper sector, as detailed previously, the scale at which spending within copper has increased likely points to factors outside of market pricing. Copper is integral to the green transition as a component of many large scale electrification efforts such as electric vehicles and power grids. With a lack of copper projects within the global pipeline, supply is expected to largely lag demand in the long term, creating a favourable outlook for copper price moving forward.

BC produces more than half of Canada's copper output, amounting to 311kt of Canada's total 542kt produced in 2021 (57%).[6] As previously mentioned in this report, copper in British Columbia occurs predominantly in porphyry deposits, which typically contain a combination of copper and either gold, silver, or molybdenum. These polymetallic deposits and other copper primary deposit types will be key to securing the province's place in the push to a greener economy. It is worth nothing that the geological characteristics of BC porphyry deposits mean the primary commodity reported can change between gold and copper depending on grade and commodity price and can create variability in what is reported year over year.

Figure 8: Regional contribution to copper exploration expenditure, 2022



In addition to copper, BC is host to a number of other critical metals. The only operating mine that produces zinc in the province, Myra Falls, continues to receive exploration funding while nickel projects include FPX Nickel Corp.'s Decar Nickel District and Giga Metals Corp.'s Turnagain projects. Both projects also report recoverable cobalt and Turnagain reports recoverable copper. Outside of traditional base metals, critical metals such as rare earth elements through Defence Metals Corp.'s Wicheeda project, and niobium received significant investment in 2022.

Notable critical metals projects

Northwest

Galore Creek – Galore Creek Mining Corp. (Copper)

Thorn – Brixton Metals Corporation (Copper)

Red Chris (East Ridge) – Newcrest Mining Limited (70%) and Imperial Metals Corporation (30%) (Copper)

North Central

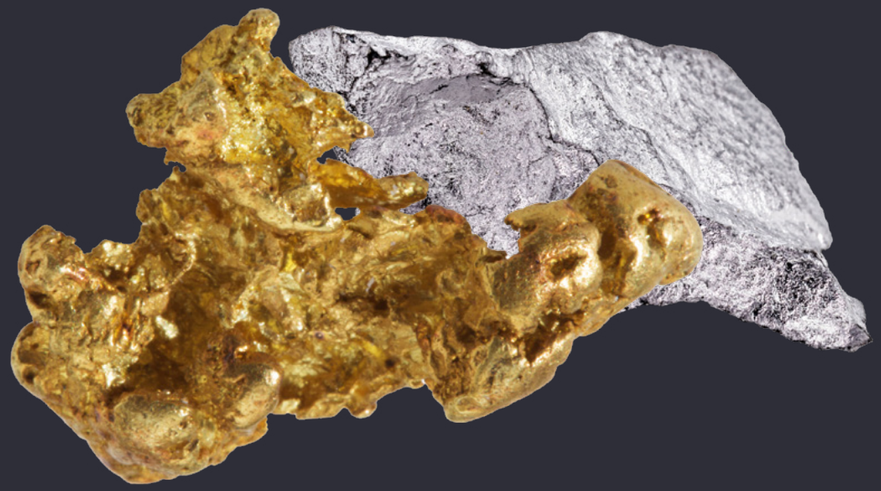
Wicheeda – Defense Metals Corp. (REE)

Joy – Amarc Resources Ltd. (Copper)

Kwanika/Stardust – Northwest Copper Corp. (Copper)

British Columbia's mineral and coal exploration sector

Precious metals spend still strong

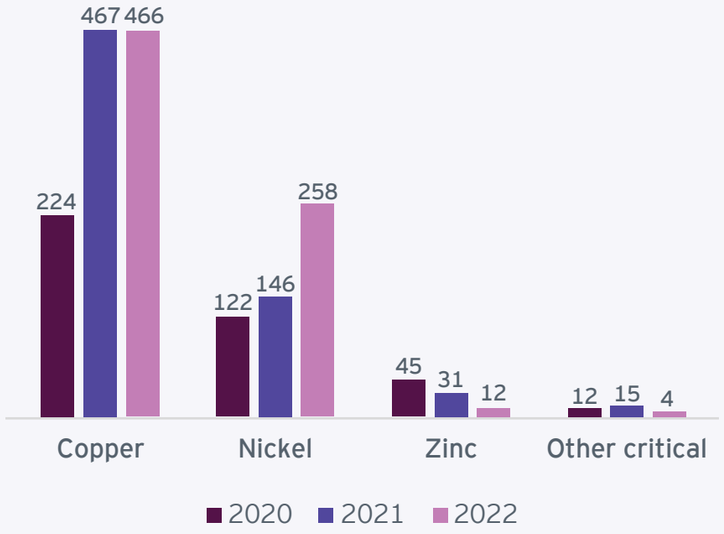


The precious metals (gold and silver) sector showed sustained levels of spending year over year, remaining flat relative to 2021. The $466m spent on precious metals exploration in 2022 is roughly the same as the $467m seen in 2021, and 91% higher than the levels seen in 2020. Approximately 46% of survey respondents indicated gold as the primary commodity of exploration, compared to 30% for copper.

Although the price of gold hit a post-pandemic peak of $1,990/oz in early 2022, provincial exploration spend in the sector was down 2% year over year. However, this spending was 89% higher than the levels seen in 2020. In contrast, spending in the silver sector continued the upward trend, rising 21% year-over-year from 2021 and 116% from 2020.

Regional control over gold spending in BC was retained by the Northwest region, which showed a 14% increase in gold spending year-over-year and accounted for 66% of all gold spending in the province. Other regions in the province, with the exception of the North Central region, showed a decrease in gold spending from 2021 to 2022.

Figure 9: Spending by mineral type (C$m), 2020-2022



▲ 91% increase in precious metals spend from 2020

▲ 89% spending in gold exploration was up from 2020

▼ 2% spending in gold exploration was down from 2021

▲ 21% spending in silver exploration was up from 2021

Figure 10: Gold and silver exploration expenditure (C$m), 2020-2022

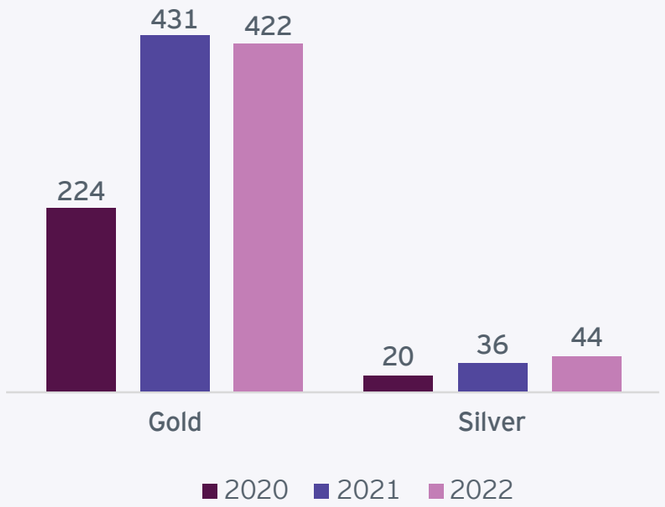
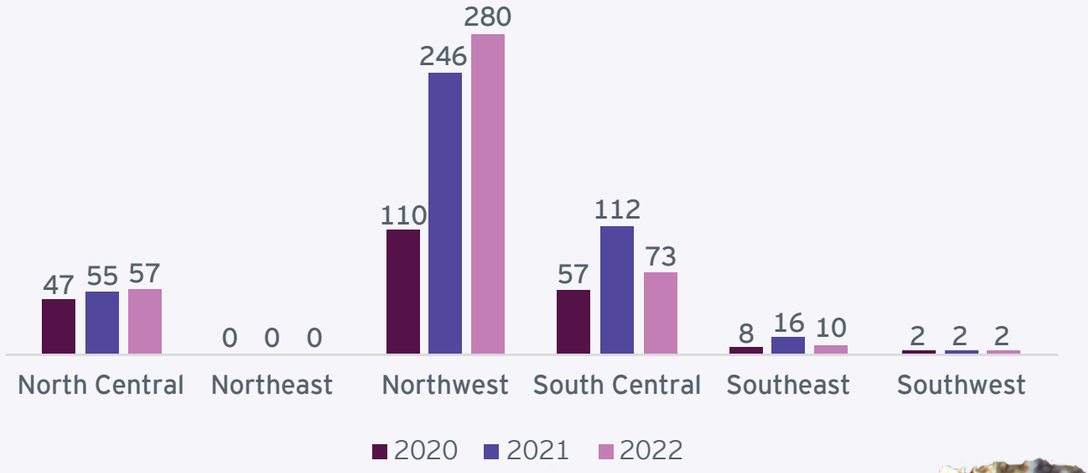
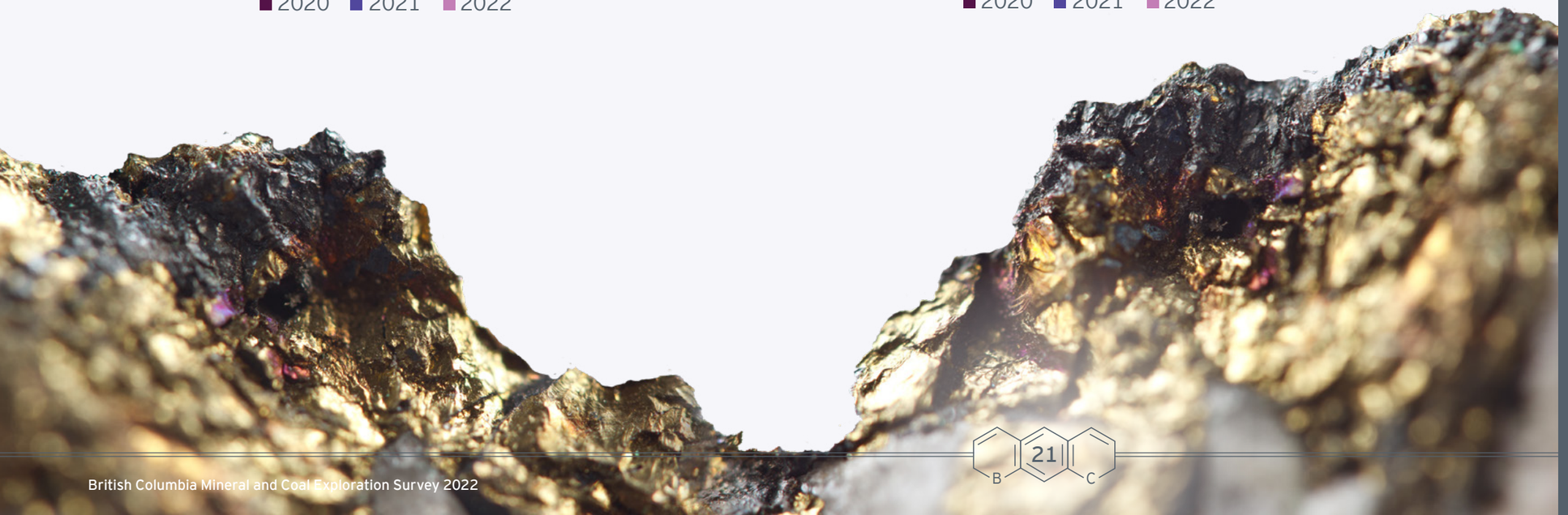


Figure 11: Gold exploration expenditure by region (C$m), 2020-2022





Notable precious metals projects

Northwest

Eskay Creek – Skeena Resources Ltd. (Gold)

Snip Gold – Hochschild Mining Canada Corp. (Gold)

Kistault Valley – Dolly Varden Silver Corp. (Silver)

North Central

Lawyers – Benchmark Metals Inc. (Gold)

South Central

Bralorne – Talisker Resources Ltd. (Gold)

Southeast

Silvana – Klondike Silver Corp. (Silver)

British Columbia's mineral and coal exploration sector

Coal exploration continues downward slide

60%

decrease in year-over-year coal exploration spend

$36m

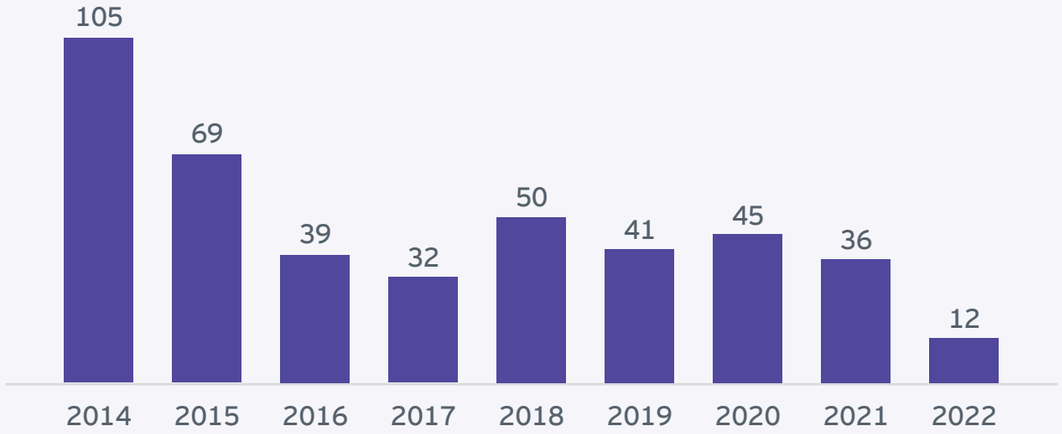
coal exploration spend in 2021

$12m

coal exploration spend in 2022

Since peak levels of around $120m in the early 2010s, coal exploration spending has seen a gradual decline in response to turbulent economic conditions, faltering investor confidence and price volatility. Spending in 2022 fell by almost 60% year over year from $36m in 2021 to $12m in 2022. Spending was concentrated almost entirely in one region over a select few projects. Almost all coal produced and prospected in British Columbia is metallurgical coal, with no reported exploration for thermal coal.

Figure 12: Annual coal exploration expenditure, 2014-2022 (C$m)



The only region that saw significant exploration spending on coal was the Southeast region, where Teck Resources' Elkview, Fording River, Greenhills, and Line Creek operations are located. With the exception of minor spending in the Northeast, all reported spending occurred in the Southeast region. While this is in line with the trend observed in the past three years, 2022 marked the first time where almost no investment was made in the Northwest and Northeast regions. However, due to survey deadlines, some expenditure has been estimated on behalf of reporting companies and the actual numbers in-field may vary.

The Southeast region received $12.3m of a total $12.5m exploration spend on coal (99%), and the funding received by the region in 2022 was down 39% from that received in 2021 ($20m in 2021).

Figure 13: Regional contribution to coal exploration expenditure (2022)

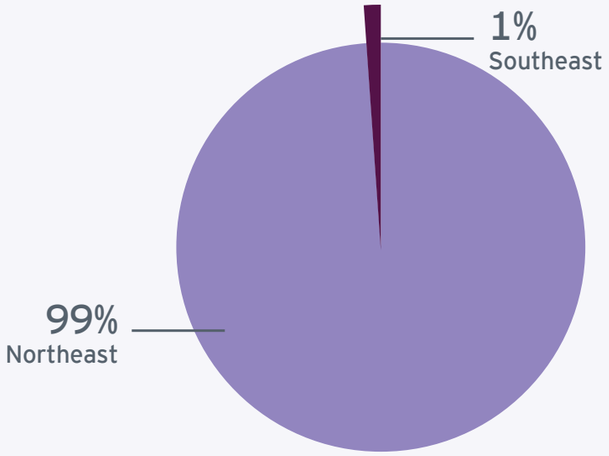
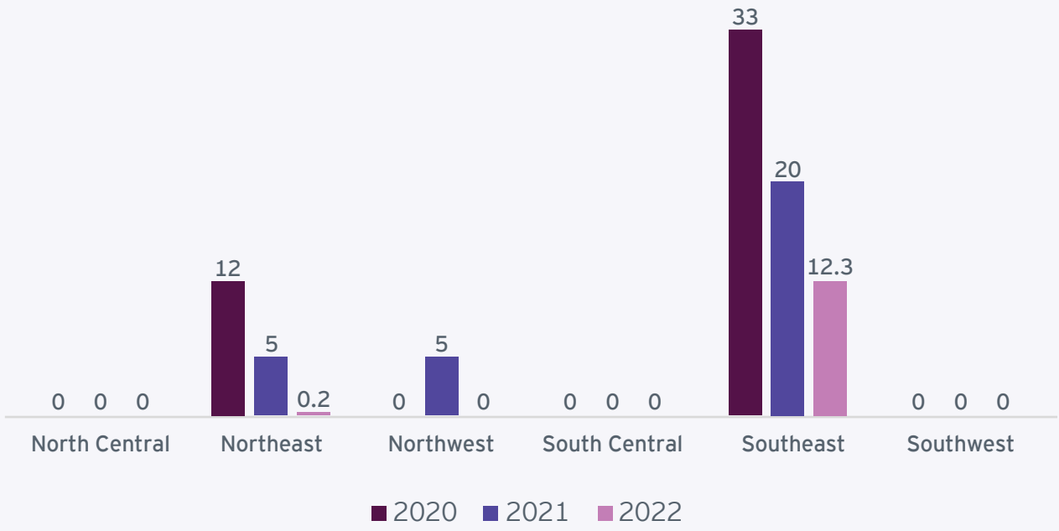


Figure 14: Annual coal exploration expenditure by region, 2020-2022 (C$m)



99%

of total coal exploration spend was in Southeast region in 2022

$12.3m

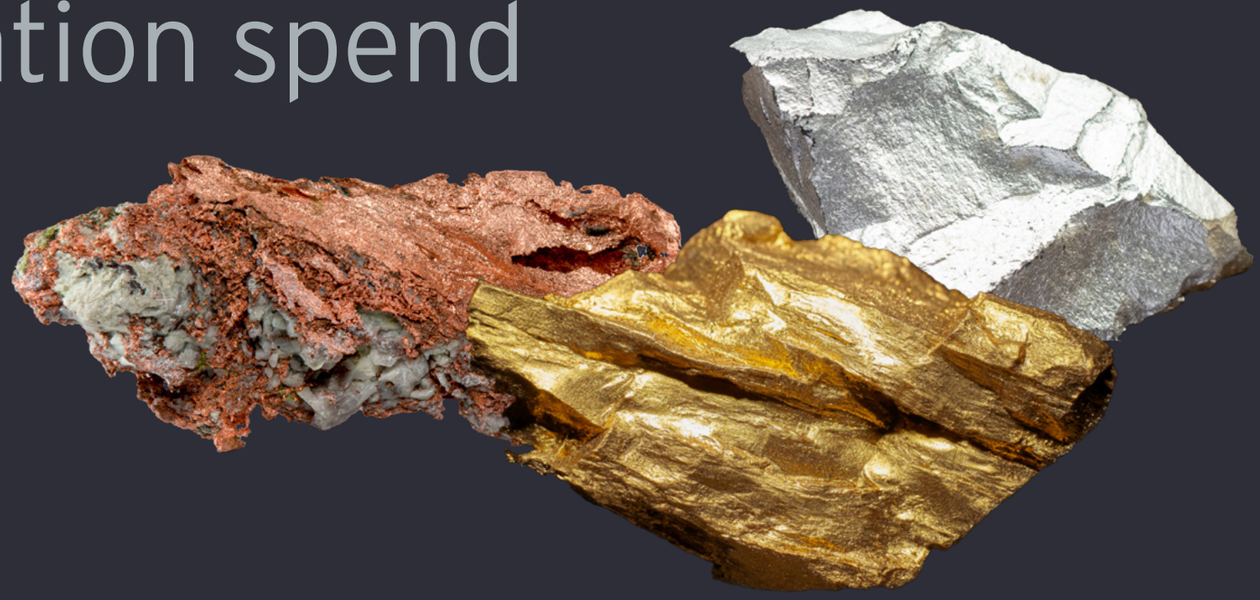
of total $12.5m exploration spend was in Southeast region

39%

reduction in coal exploration funding in 2022

British Columbia's mineral and coal exploration sector

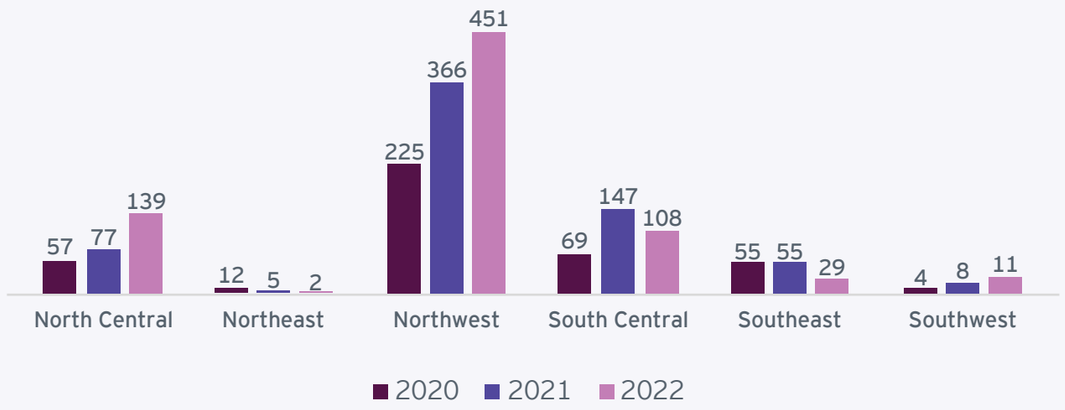
Northwest still leads BC exploration spend



The Northwest region continued to predominate provincial exploration spending in 2022. The Northwest accounted for 61% of all exploration spending in 2022, compared to 53% in 2021 and 50% in 2020. The region saw $451m in exploration related investments, representing a 23% increase from $366m in 2021. Both the North Central region (79% increase year over year) and the Southwest region (36% increase year over year) also saw increases in spending.

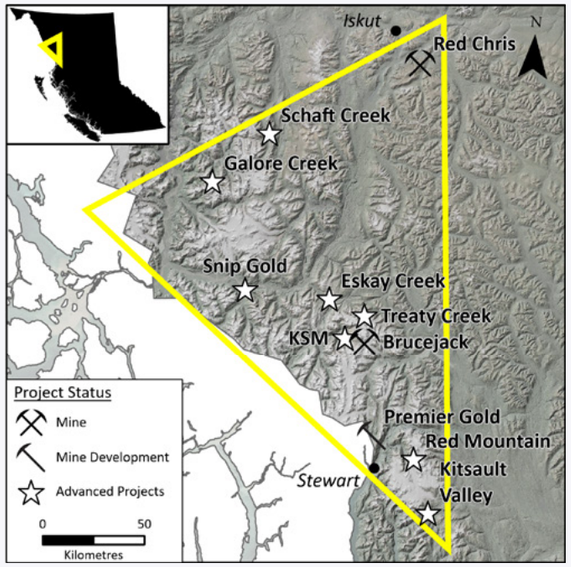
The South Central and Southeast regions saw decreases in spending, with the largest gross decrease in expenditure occurring in the South Central region where spending decreased by $39m (26%) from $147m in 2021 to $108m in 2022.

Figure 15: Annual expenditure by region, 2020-2022 (C$m)



The Northwest region, home to the loosely defined area popularly referred to as the Golden Triangle, saw continued interest from both local companies and major international producers, as shown by continued investment from Newcrest Resources into their Red Chris mine, as well as Skeena Resources' advancement of Eskay Creek. Government funding and commitment to the BC Regional Mining Alliance (BCRMA) have further contributed to the interest in the Northwest region, alongside high-grade deposits and historically high commodity prices.

Figure 16: Golden Triangle, British Columbia



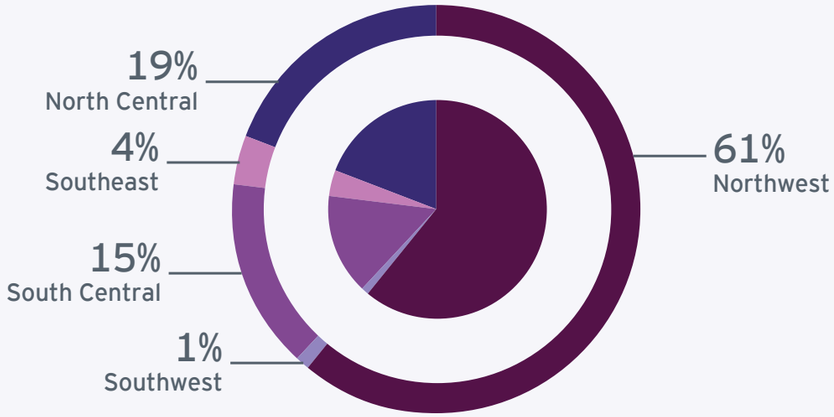
For further context on why these regions saw large spikes in spending, we evaluated the project types that received the most funding and analyzed the implications of their regional distribution for future spending trends.

Precious metal projects (containing only one or both of gold and silver) received 60% of all spending (24% increase in spending year over year), while porphyry deposits (Cu-Mo, Cu-Au-Ag) received 33% (49% increase in spending year over year). Projects exploring for base and precious metals (that cannot be classified as porphyry deposits) received 5%. Together, these three project types accounted for 97% of total exploration spending in 2022.

Precious metal projects, which received $441m of the total $740m in exploration funding, are overwhelmingly represented in the Northwest region. 56 out of a total 90 precious metal exploration projects in the province are located in this region. Other regions with significant precious metals projects are the South Central, Southeast and North Central regions.

Porphyry exploration projects received $224m in funding in 2022 and are distributed across the Northwest, South Central and North Central regions.

Figure 17:
Regional contribution to total exploration spend



61%
of all exploration spending was in the Northwest

49%
increase in year-over-year porphyry spending

33%
of all spending was allocated to porphyry deposits

Figure 18: Total expenditure by project type (C$m), 2022

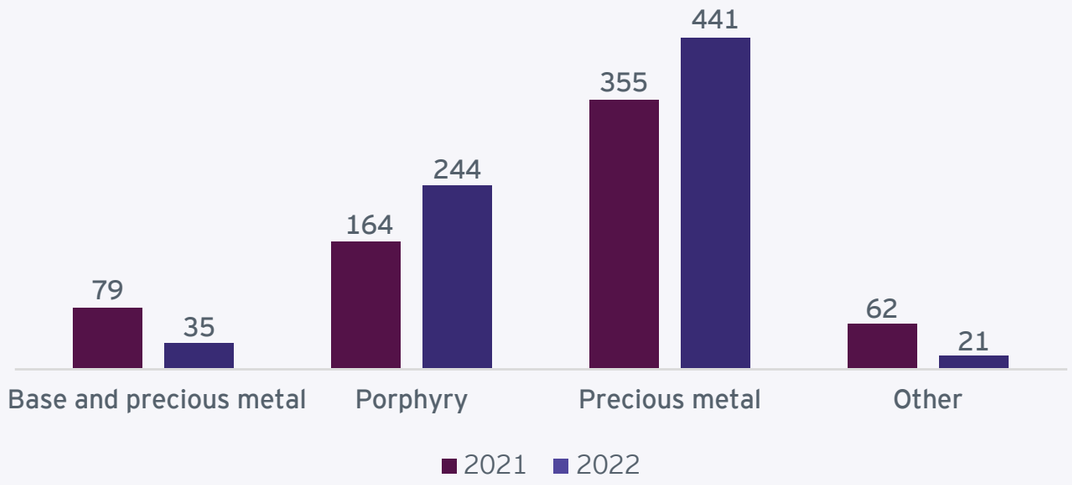
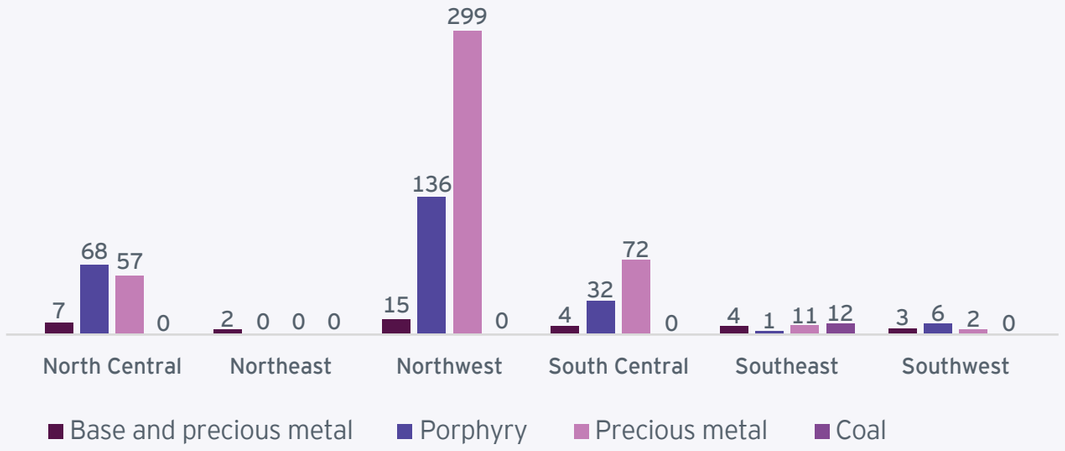


Figure 19: Distribution of expenditure by project type by area, 2022 (C$m)



60%

of all spending was in precious metals

24%

increase in spending year over year

$441m

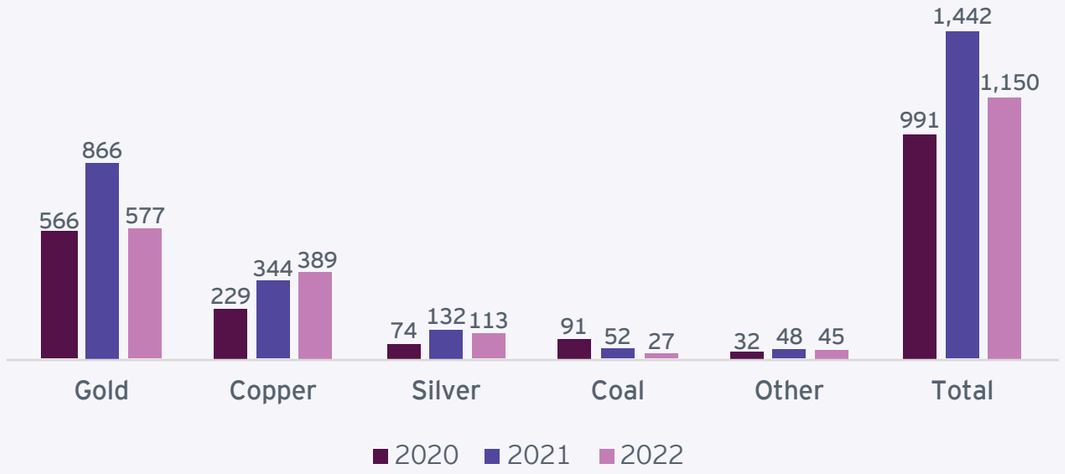
of total exploration funding was invested in precious metal projects

British Columbia's mineral and coal exploration sector

Drilling down as exploration shifts to earlier stages

Drilling in the province decreased by 20% year over year from 1,442,319 metres in 2021 to 1,149,552 metres in 2022. Following a similar trend to spending, copper drilling experienced a significant increase from 344,281 m drilled in 2021 to 388,527 m in 2022, representing a 13% increase. All other commodities saw a decrease in drilling activity, with gold experiencing a 33% decrease year over year relative to 2021. A possible explanation for this decrease may be that gold projects have progressively reached a higher level of maturity along the development lifecycle.

Figure 20: Total meters drilled by commodity, 2020-2022 (000s of meters)



20% decrease in provincial drilling in 2022

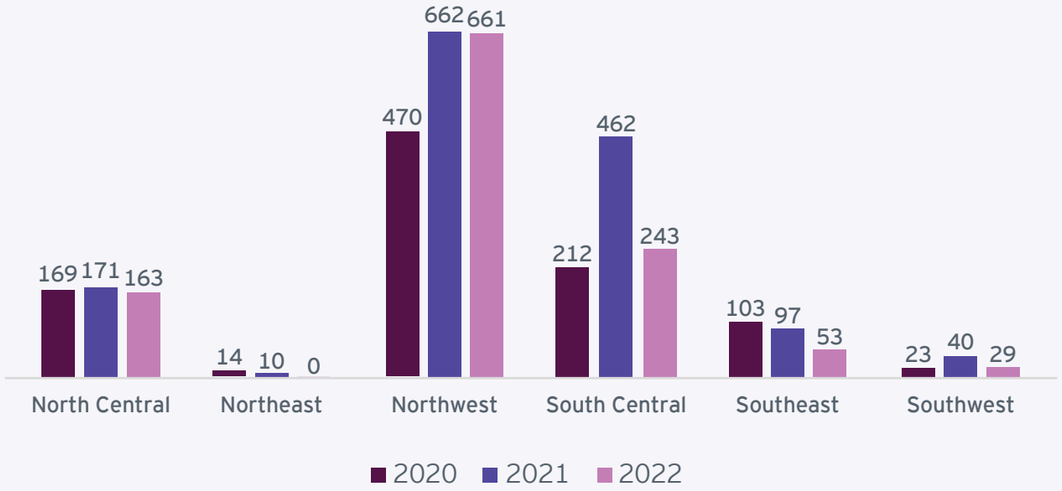
13% increase in copper drilling

33% decrease in gold drilling

Much like spending, drilling was mainly in the Northwest region and, although largely flat year over year, represented 58% of all activity in the province. All other regions showed a decline, with the largest decrease being seen in the Northeast region where no drilling was reported. This may be attributed to no coal drilling outside of known reserves being reported.

A potential reason for the observed decrease in drilling is that some mine evaluation stage projects have completed significant drilling, have defined resources and spent more money on economic studies and ancillary infrastructure such as access roads and prep labs. Another factor to consider is the inflationary increase in drilling costs including increased wages, fuel prices and costs of drilling steel.

Figure 21: Total metres drilled by region, 2020-2022 (000s of metres)

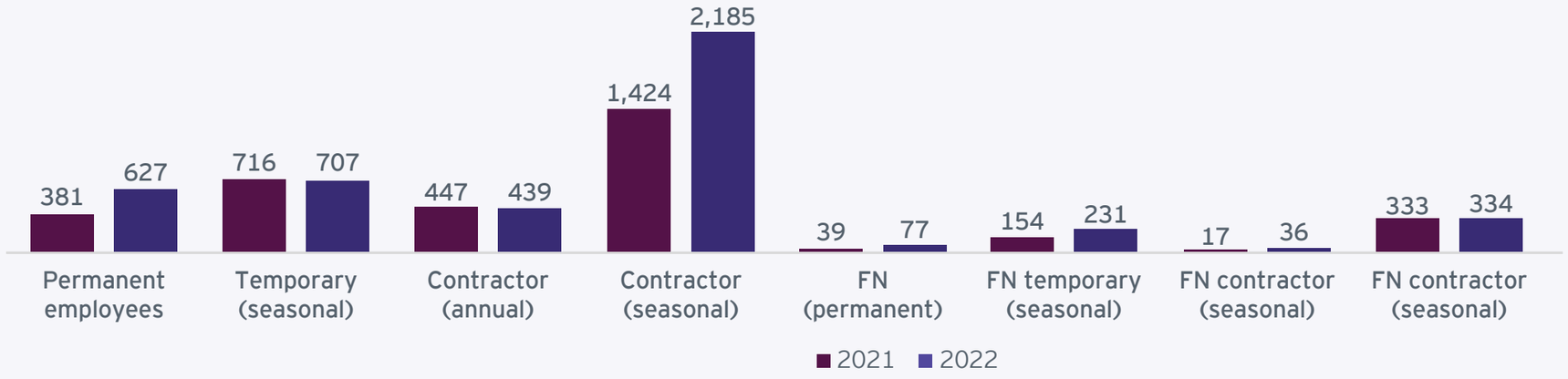


British Columbia's mineral and coal exploration sector

Exploration contributes to BC jobs

The exploration industry continues to play a crucial role as a job creator in BC. Survey respondents indicated a 32% increase in employment within the sector, with total employment increasing from 3,511 jobs in 2021 to 4,636 in 2022. Actual employment within the exploration sector may be higher than stated as only 175 out of a total 230 projects included in the survey provided employment statistics.

Figure 22: Annual workforce employed, by employment type (number of employees)



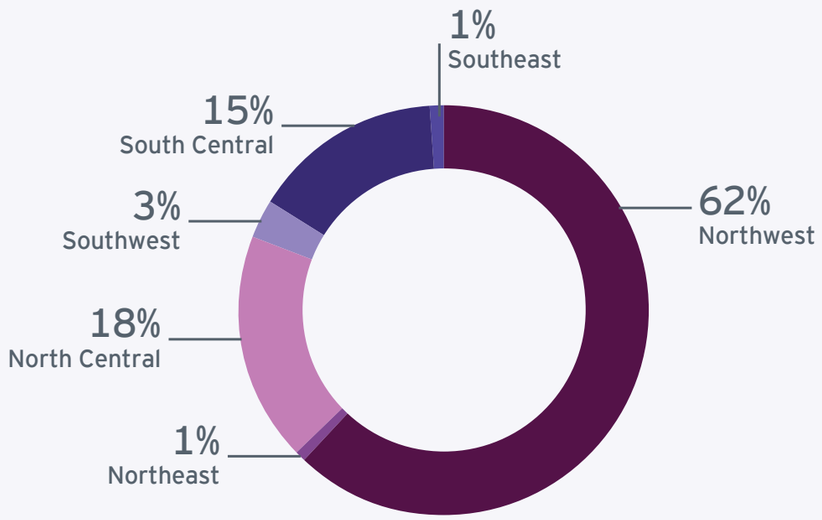
32% increase in employment within the sector

62% of all employment in the sector was in the Northwest region

Seasonal contractors were the driving force for this year over year increase. Seasonal contractor employment rose by 53% in 2022, from 1,424 seasonal contractor employees in 2021 to 2,185 in 2022. Other employment types that saw significant year-over-year increases were permanent First Nations workers (97% increase), permanent workers (65% increase) and First Nations contractors (112% increase).

Regionally, the areas leading spending also led employment. The Northwest region accounted for 62% of all employment within the exploration sector, up 12% from its 50% share of the employment market in 2021.

Figure 23: 2022 employment distribution across all the regions (percentage of total number employed)



53%
rise in season contractor employment

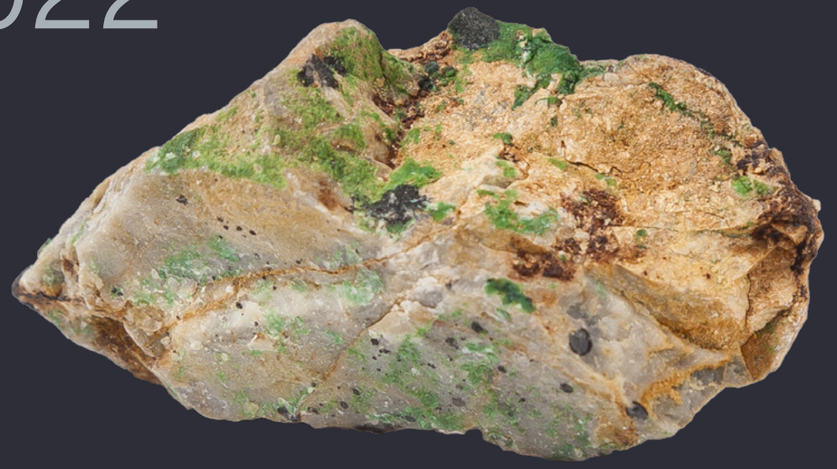
65%
increase in permanent workers

97%
increase in permanent First Nations workers

112%
increase in First Nations contractors

British Columbia's mineral and coal exploration sector

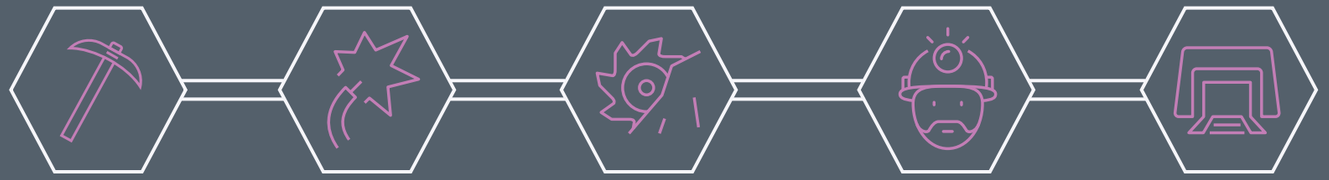
Grassroots and early-stage prioritized in 2022



The stage in the exploration lifecycle which receives investment can lend conclusions to the risk appetite possessed by companies in the sector. During periods of volatility and relative uncertainty, junior exploration companies have tended to focus capital on proven assets, as opposed to riskier, early-stage projects while larger companies opt to maximize the value of their existing operations.

Illustrated below are the five core stages of the exploration lifecycle.

Exploration stages



Grassroots exploration

prospecting, sampling, airborne geophysics

Early stage exploration

ground geophysics, geochemistry, trenching, drilling

Advanced exploration

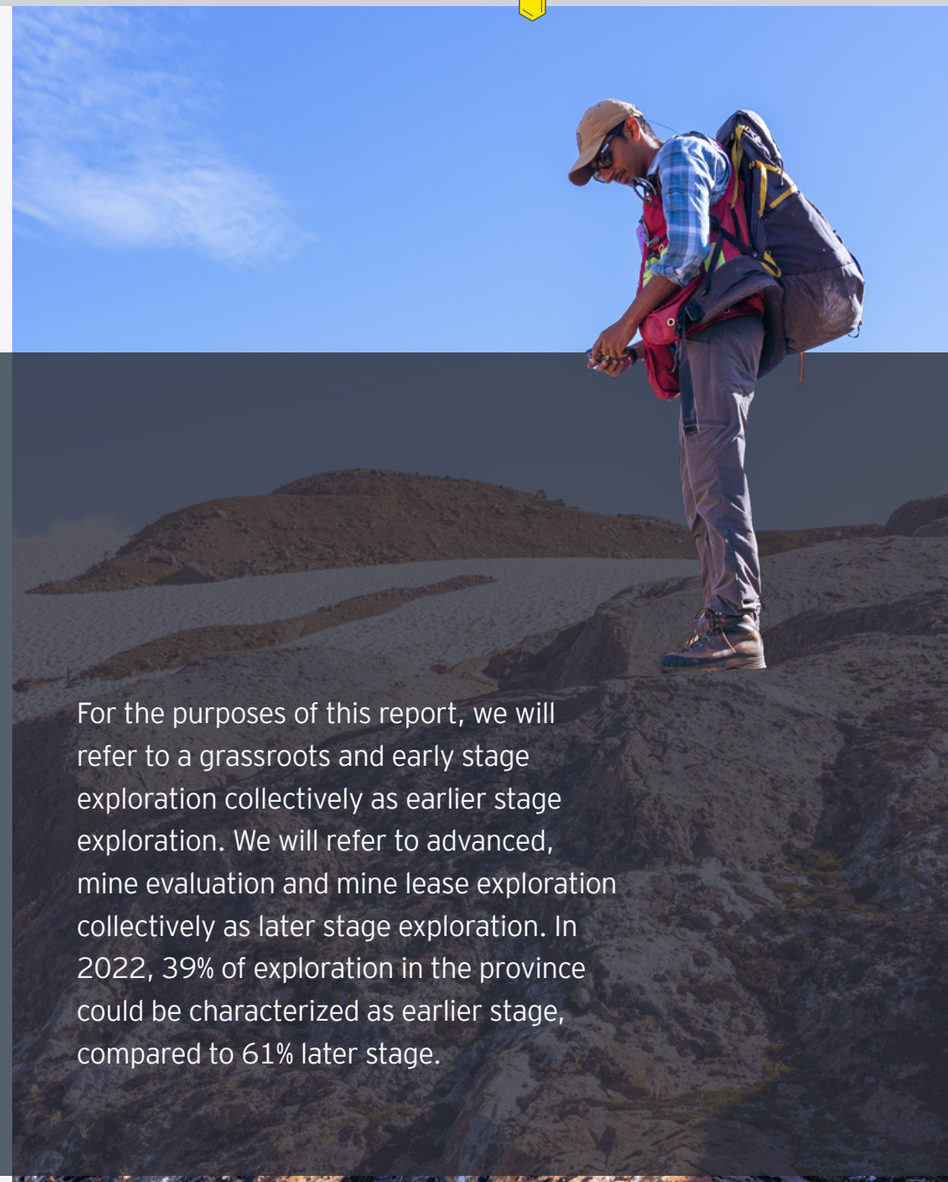
resource definition, environmental baseline studies, bulk sampling, metallurgical studies

Mine evaluation exploration

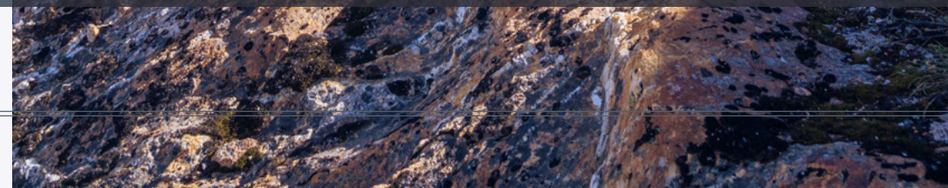
environmental assessment and permitting, economic studies, environmental work, geotechnical and engineering work

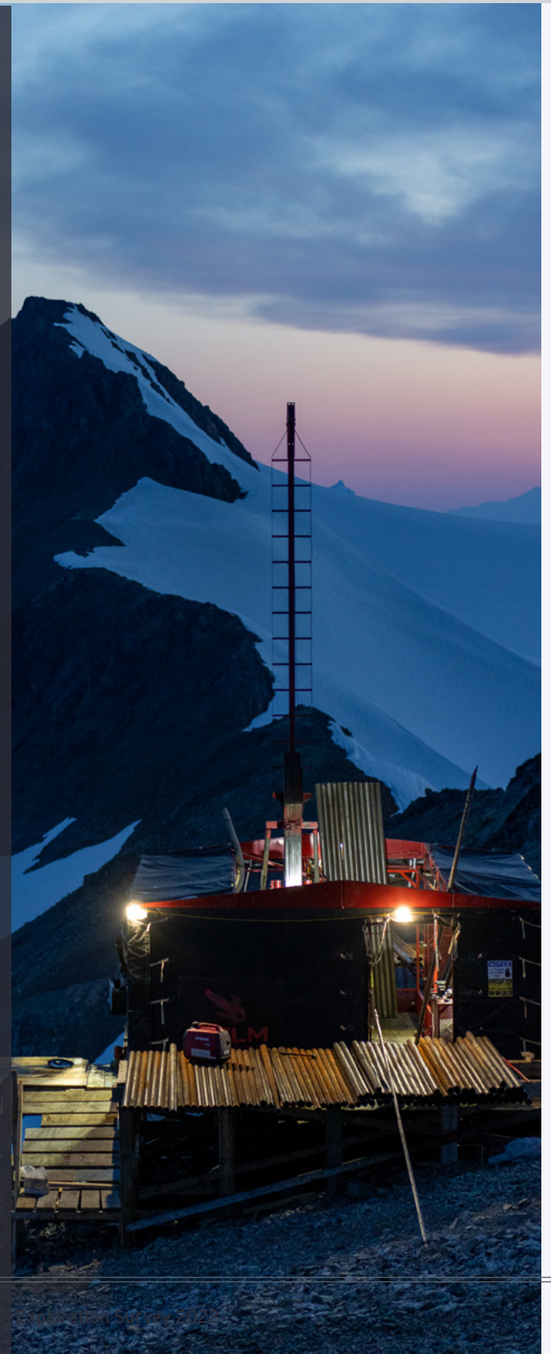
Mine lease exploration

work on mining lease outside of an existing orebody



For the purposes of this report, we will refer to a grassroots and early stage exploration collectively as earlier stage exploration. We will refer to advanced, mine evaluation and mine lease exploration collectively as later stage exploration. In 2022, 39% of exploration in the province could be characterized as earlier stage, compared to 61% later stage.





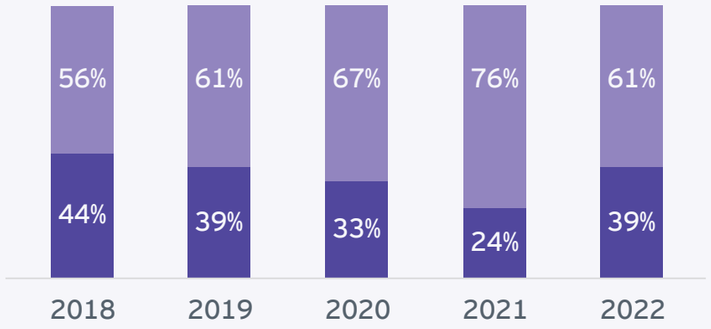
39%

of provincial exploration was grassroots or early stage

61%

of provincial exploration was late-stage/ mine lease

Figure 24: Exploration expenditure by stage - early vs. late 2018-2022



With a further reduced risk of pandemic-related shutdowns, 2022 saw a return to pre-pandemic levels of spending going towards grassroots and early stage projects. This reduced volatility, coupled with large producers having accumulated healthier revenues due to sustained high commodity prices, may explain the movement of funding towards new discoveries and attempts to strengthen the project pipeline. This is further evidenced when the size of survey respondents are analyzed.

Publicly traded large scale producing companies (≥$500M capitalization plus earning revenue from a mineral resource) and large junior exploration companies (≥$10M market capitalization) accounted for 92% of all exploration expenditure in 2022. Large producers accounted for 25% (compared to 19% in 2021) and large exploration juniors accounted for 67% (compared to 56% in 2021).

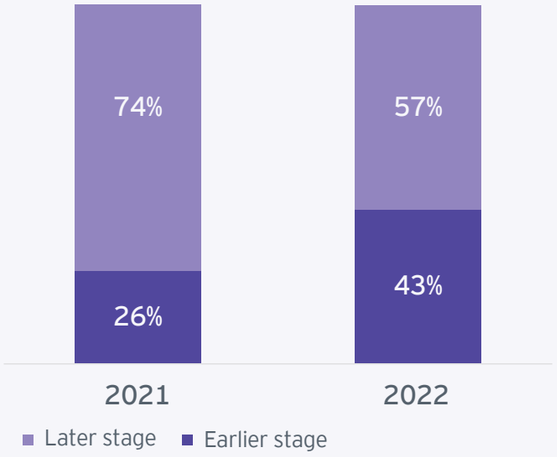
Early stage funding increased 78% in 2022 from 2021, increasing from $161m in 2021 to $285m in 2022. Grassroots spending increased twofold year-over-year in 2022, jumping by 105% from $24m in 2021 to $50m in 2022. Early stage spending increased by 73% year over year from $136m in 2021 to $235m in 2022.

Most of the increased spending in grassroots exploration can be attributed to large junior exploration companies. These companies invested $29m into grassroots exploration in 2022, representing a 209% increase from the $9m invested in 2021. Large producing companies also increased their contribution to grassroots exploration from $7m in 2021 to $15m in 2022 (an increase of 123%).

Late stage funding saw a total decrease by 10%, falling from $506m in 2021 to $455m in 2022. While mine evaluation and mine lease spending increased, advanced stage funding fell significantly in 2022. The stage, which typically represents the dominant stage of spending within the exploration lifecycle, saw 31% less funding in 2022.

Lifecyle analysis at the commodity level reflects the larger macroeconomic trends being observed in the commodity markets. For copper, where demand is driven by uses within the green transition and supply is expected to lag this demand, a market deficit is being forecast in the long-term. Companies within the sector are therefore choosing to direct funding towards advancing existing discoveries, with 64% of provincial copper exploration funding in 2022 going towards later stage exploration.

Figure 25: Exploration stage spending by large junior exploration companies



64% of provincial copper exploration funding is towards late-stage

Figure 26: Distribution of exploration expenditure by stage 2020-2022 ($m)

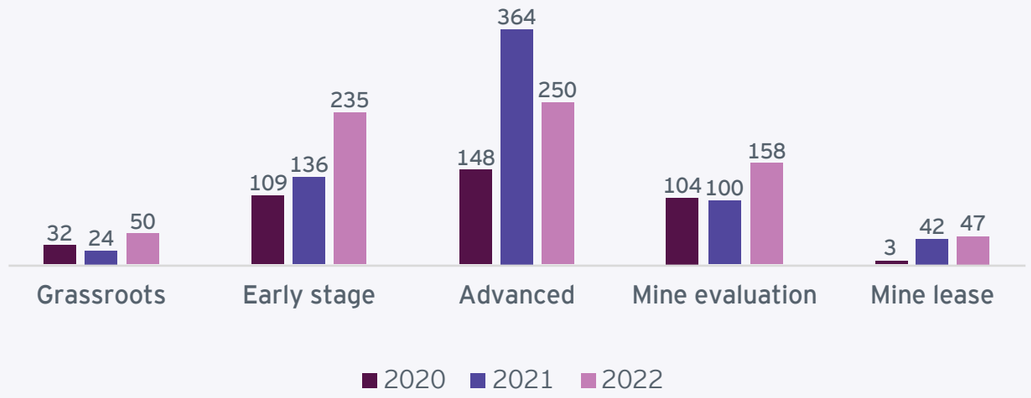
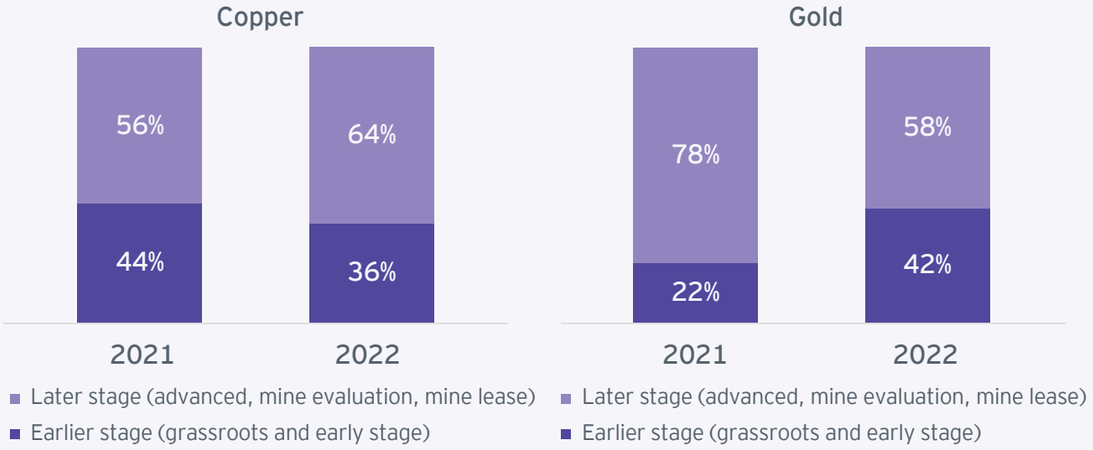


Figure 27: Project lifecycle analysis, copper and gold, 2021-2022

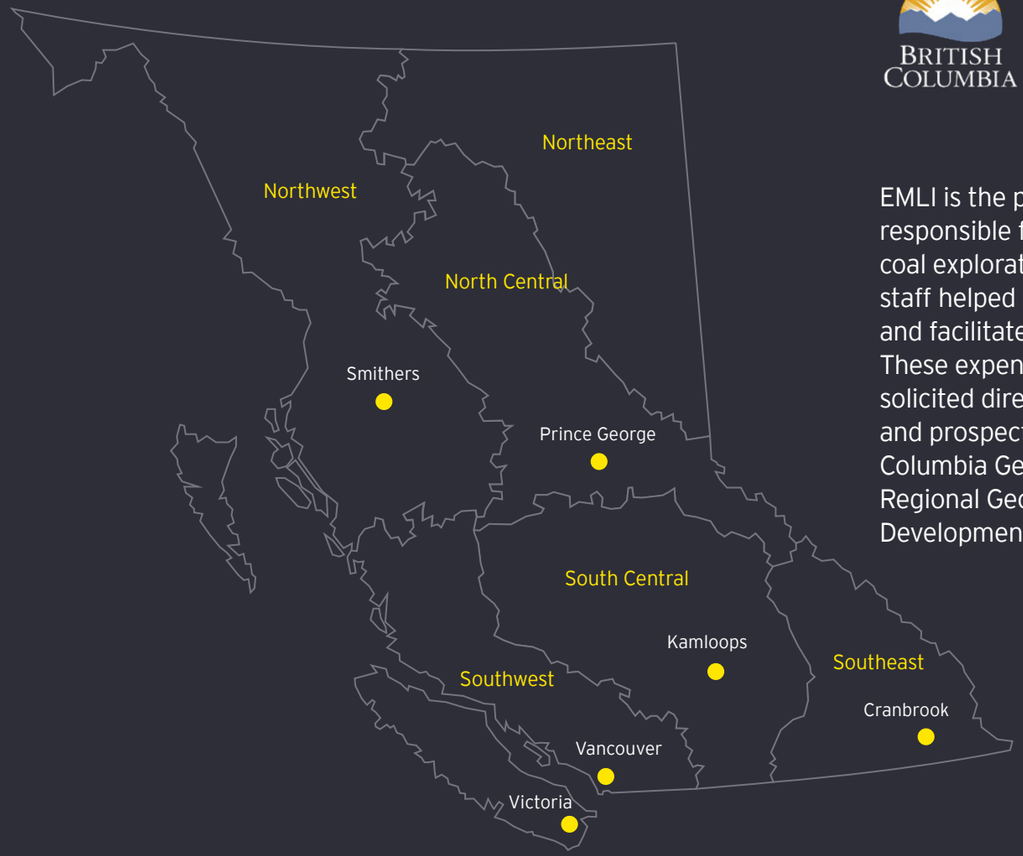


Conversely, in the gold sector where gold demand is tied to its status as a safe-haven investment in times of economic volatility, a return to normal after the turbulence induced by the pandemic has caused investors to focus more on new discoveries. However, with rising inflation and increased geopolitical turbulence, this is not expected to continue in the short-term. Additionally, gold projects that received significant investment in 2021 are likely to have moved to a higher level of maturity in 2022, which may explain the shift towards earlier stages of exploration.

In 2022, gold exploration in BC shifted focus towards earlier stage projects, where 42% of all funding went towards grassroots and earlier stage exploration. For comparison, in 2021, 22% of funding went towards earlier stage projects.

of all gold funding was for grassroots and early-stage exploration

ABOUT THE COLLABORATORS



BRITISH COLUMBIA | Ministry of Energy, Mines and Low Carbon Innovation

EMLI is the provincial government Ministry responsible for overseeing mineral and coal exploration activity in BC. Ministry staff helped in the design of the survey and facilitated response generation. These expenditure data were either solicited directly from the companies and prospectors or estimated by British Columbia Geological Survey (BCGS) Regional Geologists who staff the Mineral Development Office.

AME Association for Mineral Exploration

AME is the lead association for the mineral exploration and development industry based in BC. Established in 1912, AME represents, advocates, protects and promotes the interests of thousands of members who are engaged in mineral exploration and development in BC and throughout the world. AME encourages a safe, economically strong and environmentally responsible industry by providing clear initiatives, policies, events and tools to support its membership in delivering responsible projects that advance reconciliation and provide benefit to all British Columbians.

EY Building a better working world

The transition to a low-carbon future demands that mining and metals companies reshape their role in what will be a new energy world. Bolder strategies that embrace digital innovation can help overcome productivity and cost pressures, create long-term value and secure a stronger licence to operate. EY's Global Mining & Metals team brings together the breadth of experience and talent needed to approach the entire transformation process. By considering four key pillars of change – structure and culture, customers, technology, and skills and capabilities – we can help you adapt for today and reap the opportunities of tomorrow. And together we can build a better working world.

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1 Annual review, 2022, Statistics Canada, January 2023.

2 Natural Resources Canada 2021, Critical Minerals | March 2021

3 Minister Wilkinson Releases Canada's $3.8-billion Critical Minerals Strategy to Seize Generational Opportunity for Clean, Inclusive Growth," Natural Resources Canada, December 2022.

4 The Daily — Consumer Price Index: Annual review, 2022 (statcan.gc.ca)

5 Canada and U.S. Finalize Joint Action Plan on Critical Minerals Collaboration - Canada.ca

6 Copper Facts, Natural Resources Canada, February 2022.

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Disclaimer

EY has relied upon unaudited financial information provided by mineral and coal exploration companies and prospectors in BC, third party research, and information provided by other data sources and relevant associations and bodies. EY has not audited, reviewed or otherwise attempted to verify the accuracy or completeness of such information.

Financial information referred to in this report was prepared based on figures provided by entities, estimates and assumptions. As such, readers are cautioned that variations between estimations and actuals could be material.

Unless otherwise stated all monetary amounts contained herein are expressed in Canadian dollars.

EMLI staff assisted in the collection of survey data and information. Specifically, where a response had incomplete or inconsistent information, key points of data were solicited directly from the companies and prospectors themselves by Regional Geologists at the Mineral Development Office of the British Columbia Geological Survey and assessed using professional opinion and experience. Financial statement data and press release information were used in selected instances where no response was received from companies.