

Yukon Mineral Exploration Program 2020 update

Derek Torgerson, Scott Casselman and Carolyn Relf*
Yukon Geological Survey

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Program summary

The Yukon Mineral Exploration Program (YMEP) is a funding program which provides financial support to proponents exploring for minerals in Yukon. Individual prospectors, partnerships, and private and publically listed companies are eligible to apply. YMEP funding has led to numerous discoveries and provided significant economic benefits to the territory through both direct program spending and development investments.

There are four modules in the program: three modules (Grassroots, Focused Regional and Target Evaluation) support hard rock projects at different stages of exploration, and one module supports exploration for placer resources. Detailed information on project modules and levels of funding can be found in the YMEP guidebooks (<https://yukon.ca/en/mineral-exploration-funding>).

YMEP 2020

Based on input from clients, in January 2020 YGS made administrative changes to the program. Anticipating challenges in raising capital, YGS increased the maximum YMEP contribution for projects in the Target Evaluation module from 50% to 60%. Based on this change, companies would be required to spend \$66 667 to receive the maximum \$40 000 grant; previously, the minimum spending requirement for a \$40 000 grant was \$80 000. The other program changes focused on the Grassroots module: the requirement for 30-person-days of fieldwork was eliminated, the confidentiality period for Grassroots reports was reduced to two years, and priority was given to applications for work in underexplored areas of the territory.

In the spring of 2020, financing of Yukon exploration projects on equity markets faced unprecedented levels of uncertainty due to the COVID-19 pandemic. The enactment of Civil Emergency Measures Acts across Canada led to border closures and self isolation measures, creating a challenging start to the 2020 exploration season. 2020 exploration spending projections, estimated at close to \$100M for Yukon in February (<https://sead.nrcan-rncan.gc.ca/expl-expl/ExploTable.aspx?FileT=032019&Lang=en>) had dropped dramatically by late March.

* derek.torgerson@yukon.ca

To help support exploration and sustain economic activity in the territory, Yukon government increased YMEP funding to \$2.5M (up from \$1.4M in 2019) in June. YGS had received 130 applications seeking in excess of \$4.0M, including 11 applications for Grassroots grants. The latter is a significant increase over previous years. The bump in funding enabled one hundred and two applicants to be offered funding: sixty one for hard rock exploration projects (six Grassroots, thirteen Focused Regional, and forty-two Target Evaluation); and forty-one for placer. The success rate for funding and the breakdown of recipient classes is presented in Table 1. As the field season progressed ten proponents indicated they would not be proceeding with their projects, leaving 57 active hard rock and 35 active placer projects at the time of writing.

As the realities of the pandemic set in over the summer, money began rushing into safe haven investments such as precious metals. Gold and silver prices both went on runs with gold reaching approximately US \$2065 and silver hitting around US \$29. As a result of this trend, capital became available to many Yukon gold and silver exploration projects late in the season.

Figure 1 illustrates the locations of the ninety two active 2020 YMEP projects. The majority of placer projects (twenty) are centered in the Klondike placer district; three projects are in the Fortymile and Sixtymile areas; four projects are in the Mayo/Keno area; two are in the Clear Creek area; three are in the Kluane region; and three are in the Livingstone region. Hard rock projects are distributed across the territory and are targeting a variety of commodities. Gold is the most sought-after hard rock commodity with thirty proponents exploring for structurally-controlled, epithermal, Carlin-type, intrusion related, or orogenic gold. Other targets include vein-hosted silver (8), porphyry copper (7), vanadium (3), cobalt (2), tin (3), zinc (2), magmatic massive sulphide copper/nickel/PGE prospects (1) and tantalum (1). The breakdown of target commodities by YMEP projects is illustrated in Figure 2.

Table 1 shows the number of hard rock versus placer projects and the proportion of funding to each between 2015 and present. The table also records the breakdown among proponents. Since the creation of the Placer module in 2015 there has been a steady increase in the percentage of funding allocated to placer exploration. Prior to 2015, placer exploration was typically funded in the Target Evaluation module and historically averaged 25% of the allocated funding. In 2020, placer exploration accounted for 41% of YMEP funding; an increase of 4% over 2019.

Table 1. YMEP funding allocation.

Approved projects	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding	No. of projects	% of funding
Placer	15	28	15	26	21	35	22	36	18	37	41	41
Hard rock	47	72	34	74	38	65	40	64	33	63	61	59
Total projects	62		57		59		62		51		102	
Prospectors/ individuals	24	34	24	39	18	29	28	46	19	37	38	37
Private companies	21	32	16	30	22	26	17	27	18	35	30	29
Public companies	17	34	17	31	19	45	17	47	14	28	34	34

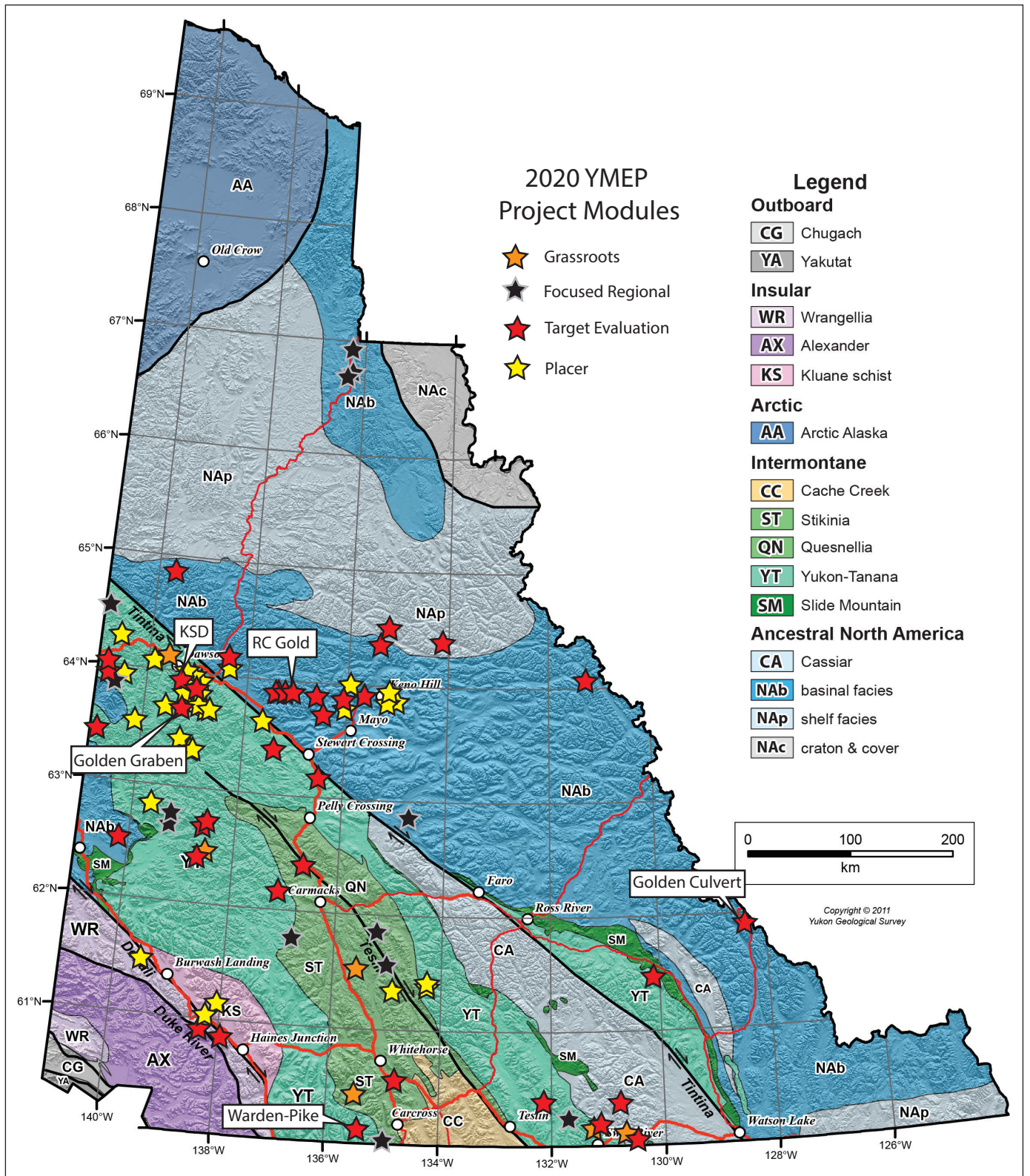


Figure 1. Approved YMEP projects in 2020.

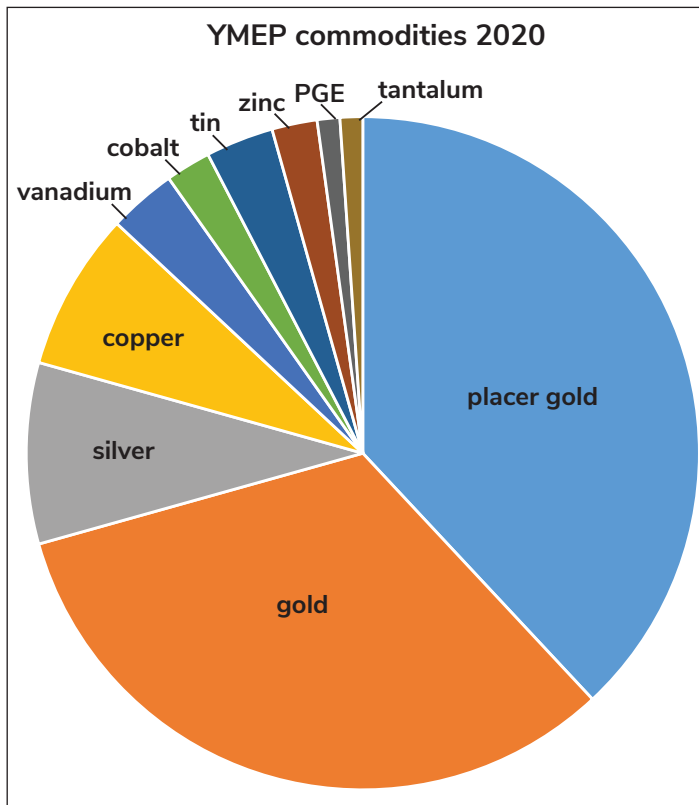


Figure 2. Breakdown of targeted commodities by YMEP project.

As of mid-December, the majority of YMEP projects have been successfully completed and preliminary results suggest there are several potentially significant discoveries resulting from the work. Many additional projects are still awaiting assay results.

Economic benefits of YMEP

Economic benefits of YMEP can be divided into three general categories: short-term local economic impacts, same-year discoveries, and longer term successes.

Short-term local economic benefits

Short-term economic benefits of YMEP include spending by proponents on local hiring, contracting, and purchasing. To help quantify these benefits YGS and the Yukon Bureau of Statistics conducted a survey of 2020 YMEP recipients in September. The survey included questions on the number of Yukoners hired,

the types and value of local services contracted, and value of goods purchased from local businesses. Respondents reported investing \$3 795 132 in goods and services, and the employment of 148 Yukoners totaling \$1 021 080 in salaries. This represents an immediate and direct \$4.8M benefit to Yukoners and Yukon based businesses during the field season.

2020 YMEP successes

2020 exploration successes are those projects that resulted in new discoveries and those that have potential to lead to further exploration and discovery. Every year a number of YMEP funded projects stand out as having demonstrated exceptional initial results. Some of these projects are able to raise new funding on equity markets to conduct additional work in the same field season; others are able to enter into property option agreements. New discoveries commonly fuel property and district-scale exploration well into the future, and some progress to advanced stages of exploration. This section highlights some of the 2020 projects that yielded early success (Fig. 1).

RC gold project

In 2020 Sitka Gold Corp. received Target Evaluation module funding for its RC gold project located in the Clear Creek area. Exploration on the property has been focused on identifying an intrusion-related gold system (“IRGS”). The RC property is part of the “Tombstone Gold Belt” which is host to a number of IRGS deposits in Yukon and Alaska (e.g., Fort Knox, Eagle, Red Mountain). Sitka’s exploration program consisted of diamond drilling (6 holes, 1500 m), soil and rock sampling, trenching, a 42 km² LiDAR airborne survey, and additional claim staking. Due to strong initial soil and rock sampling results, Sitka was able to allocate additional funding for drilling; they also explored two other projects in the district and incorporated them into their 2020 drill program. By the end of the season, the initial YMEP investment had resulted in excess of \$1.2M in exploration expenditures. Promising results from Sitka’s drilling include gold grades locally as high as 9.57 g/t over 0.9 m and one interval of over 100 m at 0.82 g/t (<https://www.sitkagoldcorp.com/news---12162020.html>).

Golden Culvert project

Another successful 2020 YMEP project was Stratabound Minerals' Golden Culvert project (Fig. 1). The initial Target Evaluation grant supported the collection of 116 soil and 157 rock samples, ground geophysics and geological surveys on property-wide targets. This work delineated a 1 km long mineralized trend with gold grades up to 320 g/t gold (http://www.stratabound.ca/images/stories/2020/stratabound_corporate_presentation_december_2020.pdf).

Upon completion of the YMEP-supported work, Stratabound was able to leverage their strong results into a \$6.7M dollar cash raise on equity markets and undertake a late season drill program. The diamond drilling program consisted of 17 holes for 3217 m. Due to bottlenecks at assay labs the results for this drilling are pending.

KSD project

In 2020 Kestrel Gold Inc. completed a Target Evaluation-supported program of prospecting, excavator trenching and RC drilling on their KSD property. The property is located in the Klondike (Fig. 1) at the headwaters of significant placer gold producers Hunker, Dominion and Gold Bottom creeks. Kestrel is exploring KSD for the hard rock source(s) of this placer gold. Prospecting yielded up to 305.7 g/t gold from a quartz vein at the historic Mitchell Shaft and 0.867 g/t gold and 1302 g/t silver from a quartz vein in the Sheba zone area. Trenching was undertaken to locate new mineralized showings distinct from existing occurrences. Numerous quartz veins were encountered with individual assays of up to 6.15 g/t gold and 99.2 g/t silver. Based on these promising results, a decision was made to conduct a late season 12-hole 515 m RC drill program. Core was sampled top to bottom yielding a total of 389 samples. Assays are still pending for this drilling (Bernie Kreft, personal communication).

Grabben Gold project

Bernie Kreft received a Target Evaluation grant to support a program of prospecting and hand trenching at his Grabben Gold property. The property, located in the heart of the Klondike (Fig. 1) covers a sequence

of mid-Cretaceous sedimentary rocks overlain and intruded by Late Cretaceous volcanic and intrusive rocks. Soil samples returned up to 598 ppb gold while rock samples returned up to 1.17 g/t gold and 28.5 g/t silver. Pathfinder elements associated with precious metals include As-Bi-Sb. The Grabben Gold project has now advanced to a drill-ready stage with several well-defined geochemical targets with strong pathfinder support.

Warden and Pike projects

Prospector Ryan Burke explored his Warden and Pike properties in southwestern Yukon with support from a grant under the Target Evaluation module. Fieldwork consisted of soil and rock sampling, a ground magnetic survey, and a high resolution drone survey targeting polymetallic Au-Ag-Cu-Mo ± Pb-Ag quartz veins hosted by Eocene Mount Skukum and Bennett Lake volcanic complexes. Rock assays identified multiple mineralized areas on the properties with individual samples returning values up to 48.1 g/t Au, 643 g/t Ag, 7.49% Cu, 3.63% Pb, 0.27% Zn, 0.87% Mo, 0.12% Sb and 0.30% Bi. Till geochemical data have yielded moderate to strong geochemical responses in a number of areas, with peak values of 390.9 ppb Au, 1.2 ppm Ag, 28.7 ppm Mo, 107.6 ppm Pb, 272 ppm Zn, 1.1 ppm Sb and 2.6 ppm Bi (Ryan Burke, personal communication).

Placer successes

In addition to the hard rock successes outlined above, a number of YMEP-funded placer exploration projects have yielded early success from 2020 fieldwork. These include NBC Contracting's project on Dominion Creek, Daval Mining's work on Hunker Creek and Earth and Iron's exploration on Keystone Creek. In all three cases, their exploration results have led to a decision to proceed to mining in the future. Details of these projects are presented in Bond and van Loon (2021; this volume).

Longer-term YMEP successes

The YMEP projects above are examples of short-term successes that can be attributed to YMEP funding. They are only a few of the projects that yielded promising results this year. In the longer term, the impact of YMEP can be measured by projects that advance further

along the exploration-mining cycle: for example to the resource definition, feasibility and/or production stages. The further a project advances, the more significant its impacts for Yukon in terms of employment, business opportunities and infrastructure development. Two examples of longer-term YMEP successes are presented below.

Between 1986 and 2003, various owners of the Dublin Gulch claims received four YMEP grants totalling \$44k; this funding supported the discovery of mineralization and led to the consolidation of the claims and ultimately, acquisition by Victoria Gold Corp. The company immediately began an aggressive exploration program on the property and went into production in the fall of 2019. To date, Victoria Gold has outlined 3.3 Moz of gold with a current value in excess of \$6 billion (<https://vgcx.com/site/assets/files/6480/jds-vit-eagle-gold-ni-43-101-fs-report-20191206.pdf>). Victoria Gold currently employs approximately 200 Yukoners, of which half are members of Yukon First Nations. Since the initial \$44k YMEP investment, exploration expenditures at Dublin Gulch are in excess of \$110M and development expenditures are greater than \$600M. The leveraged dollars on exploration expenditures alone represent a leverage ratio of 2517:1. To date, the Eagle Gold project has produced 70,925 oz of gold with an estimated value of \$156M (<https://vgcx.com/news/victoria-golds-eagle-gold-mine-produces-13-828-ounces-of-gold-in-june/>; <https://vgcx.com/news/victoria-gold-eagle-gold-mine-q3-2020-production-results/>).

Another success story is that of Strategic Metals Limited's Mount Hinton project. Initial exploration, consisting of prospecting and soil sampling, began in 2018 with support from a YMEP grant. Early results yielded evidence of gold, silver and lead-rich quartz veins, leading to further exploration in 2019 and 2020. To date, Strategic has invested \$2.5M in the project, corresponding to a YMEP leveraging ratio of more than 60:1. The exploration targets that were defined over the past three years will provide additional economic benefits well into the future.

YMEP success can be measured by a number of indicators such as private sector dollars leveraged, numbers of new discoveries and the value of option agreements resulting from discoveries. Table 2 documents a number of successful YMEP projects. All were initially discovered by individuals with support from YMEP, and all are now held by publically traded exploration companies.

Summary

Due to the global COVID-19 pandemic the Yukon exploration industry experienced unprecedented challenges in 2020. The Government of Yukon recognized these challenges early in the year and increased the funding for YMEP to support the mineral industry. This year's projects made a substantial contribution to the Yukon economy by leveraging \$4.8M in direct investments into Yukon workers and businesses during the pandemic. In addition to this immediate-term benefit, a number of projects yielded discoveries that are likely to spur exploration and generate economic benefits well into the future.

References

Bond, J. and van Loon S., 2021 (this volume). Yukon placer mining 2020 development and exploration overview. In: Yukon Exploration and Geology Overview 2020, K.E. MacFarlane (ed.), Yukon Geological Survey, p. 19–32.

Table 2. Examples of successful YMEP projects.

YMEP Successful Options (2000–2020)				
YMEP#	Property Name	Total YMEP Contribution(s)	Optioned by	Company investment or work commitment
01-011 and 15-030	Ice/Red Mountain	\$52 500	AM Gold	~\$7.7M
03-079	White Gold	\$10 000	White Gold Corp. Kinross Gold	~\$71.2M
04-072 and 05-043	Blende	\$30 000	Blind Creek Resources	\$5.5M
05-058	Andrew	\$14 400	Overland Resources	~\$16M
09-046 09-062 10-008 11-019 12-049	Golden Culvert	\$117 000	Stratabound Minerals	~\$6.77M
04-041 and 07-043	Coffee	\$35 000	Gold Corp. Kaminak Gold Corp.	~\$301M
07-056, 08-012 and 09-112	Toni/Sixty Mile	\$33 000	Radius Gold	~\$4.7M
03-023, 06-033 and 09-137	Scheelite/Gold Dome	\$75 000	Golden Predator	~\$1.4M
09-015	Clear Creek	\$10 450	Golden Predator	~\$4.1M
09-016 and 017	Ten Mile Creek	\$25 600	Radius Gold	~\$0.63M
09-158	Prospector Mountain	\$30 750	Silverquest Resources	~\$3.85M
09-116	Cynthia	\$15 350	Golden Predator	~\$1.7M
10-118 14-010	3 Aces	\$93 130	Northern Tiger Golden Predator	~\$32M
10-097	Portland	\$14 320	Taku Gold	~\$1.25M
00-069, 06-005, 06-006 and 15-014	Mariposa	\$76 000	Pacific Ridge	~\$4.9M

