

# Yukon Mineral Exploration Program 2021 update

*Derek Torgerson*  
Yukon Geological Survey

Torgerson, D., 2022. Yukon Mineral Exploration Program 2021 update. In: Yukon Exploration and Geology Overview 2021, K.E. MacFarlane (ed.), Yukon Geological Survey, p. 29–34.

## Program Summary

The Yukon Mineral Exploration Program (YMEP) is a Government of Yukon funding program which provides financial support to proponents exploring for minerals in Yukon. Individual prospectors, partnerships, 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 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 2021

YMEP funding for the 2021–22 season was \$1.4M. The Canadian Northern Economic Development Agency (CanNor) contributed an additional \$80 000 to the YMEP budget. The funding ratio for Target Evaluation and Placer projects remained at a 60/40 (YMEP/proponent) for up to \$40 000 of funding for the 2021–22 season. The funding ratio for Focused Regional programs is 75/25 (YMEP/proponent) for up to \$25 000 of funding, and 100% for Grassroots projects for up to \$15 000 of funding.

The ongoing COVID-19 measures, while lessened, continued to affect exploration activities in 2021. The NRCan exploration spending projection for the territory was estimated to be \$98.5M for the 2021 season (<https://mmsd.nrcan-rncan.gc.ca/expl-expl/ExploTable.aspx?FileT=022020&Lang=en>). This estimate is slightly greater than the 2020 expenditures and indicated a recovery in exploration and a return to more normal, pre-pandemic levels.

In 2021, 76 applications were submitted, seeking in excess of \$2.4M of funding. These included 5 applications for the Grassroots module, 14 for the Focused Regional module, 24 for the Target Evaluation module and 33 for the Placer module. Fifty-two projects were selected for funding: 32 hard rock exploration projects (1 Grassroots, 9 Focused Regional, and 22 Target Evaluation); and 20 placer projects.

\* [Scott.Casselmann@yukon.ca](mailto:Scott.Casselmann@yukon.ca)

Table 1 shows the project approval statistics from 2016 to the present. The table also shows the distribution of funding between individuals, private companies and public companies. Since the creation of the Placer module in 2015 there has been a steady increase in the percentage of funding allocated to placer projects. Prior to 2015 placer exploration was typically funded in the Target Evaluation module and historically averaged 25% of the allocated funding. In 2021, placer exploration accounted for 41% of YMEP funding; the same proportion as in 2020.

Figure 1 shows the location of the 52 active YMEP projects in 2021. The majority of placer projects are centered in the Klondike placer district (nine); one project is in the Fortymile area; four projects are in the Mayo/Keno area; two are in the Clear Creek area; two are in the Kluane region; one is in the Mt. Nansen area; and one is in the Livingstone Creek area. The majority of hard rock projects are concentrated in the area between Dawson and Mayo/Keno. The remaining projects are scattered from the Dempster Highway in the north to the Yukon-BC border in the south, and from the Alaska border in the west to the Northwest Territories border to the east. Gold is the most sought after hard rock commodity with seventeen proponents exploring for structurally-controlled, epithermal, Carlin

style, intrusion related, or orogenic gold. Other targets of interest include vein-hosted silver (5), porphyry copper (3), vanadium (1), cobalt (1), zinc (1), magmatic massive sulphide copper/nickel/PGE prospects (1) and rare earth elements (1). The distribution of targeted commodities is illustrated in Figure 2.

As of the end of November, the majority of YMEP projects have been successfully completed. Final results and reports are expected in early 2022.

## Economic benefits of YMEP

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

### Short-term local economic benefits

Short-term economic benefits of YMEP include spending by proponents on local hiring, local contracting and local purchasing. To help quantify these benefits YGS has added a survey to the Final Report Form, which is to be completed by grant recipients upon submission of their final report. This submission will quantify direct expenditures which benefit Yukon-based employees contractors, service and supply businesses.

**Table 1.** YMEP funding allocation from 2016–2021.

Approved projects	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22	
	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	26	21	35	22	36	18	37	41	41	20	41
Hard rock	34	74	38	65	40	64	33	63	61	59	32	59
Total projects	49		59		62		51		102		52	
Prospectors/ individuals	24	39	18	29	28	46	19	37	38	37	21	37
Private companies	16	30	22	26	17	27	18	35	30	29	17	35
Public companies	17	31	19	45	17	47	14	28	34	34	14	28

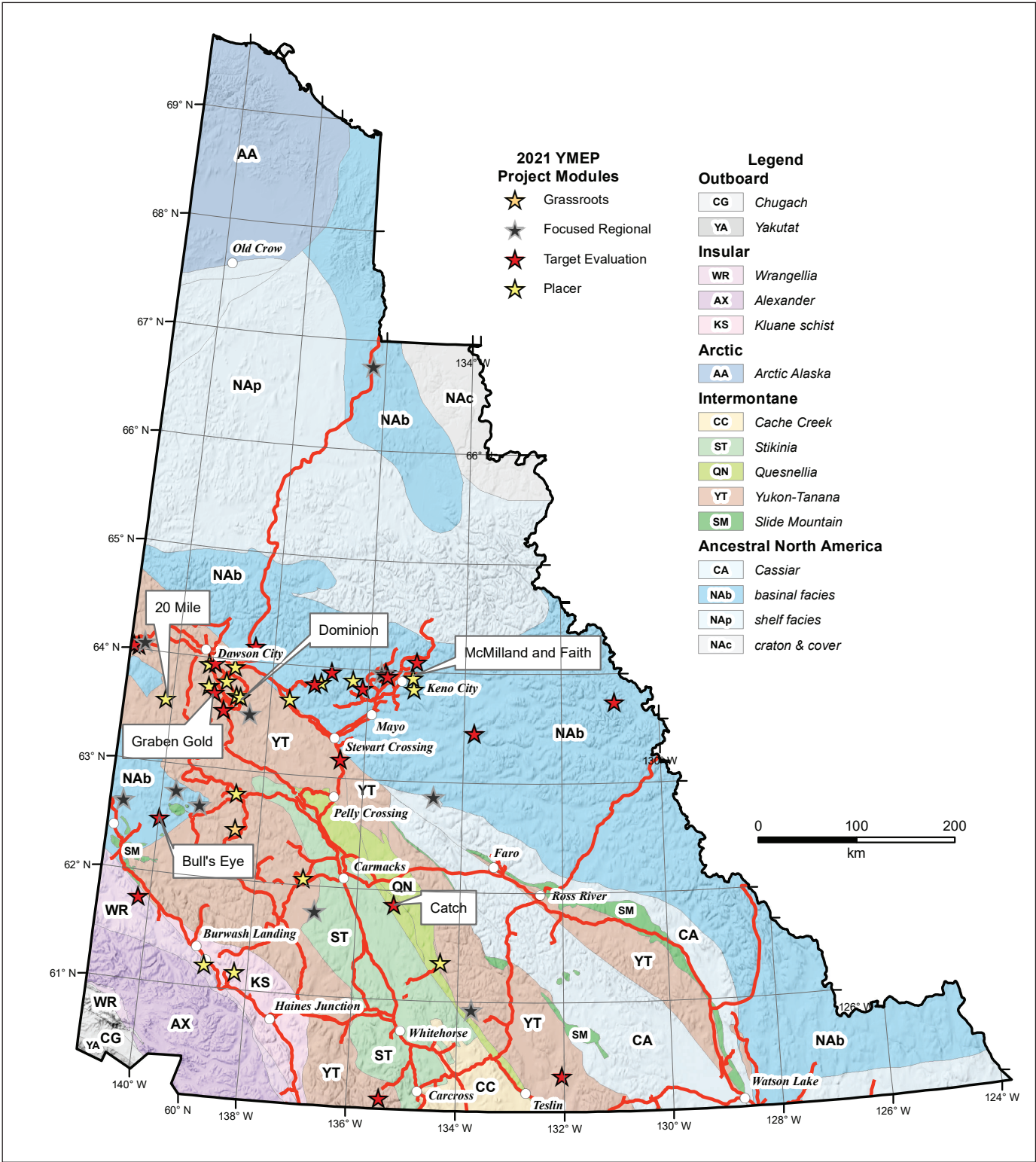
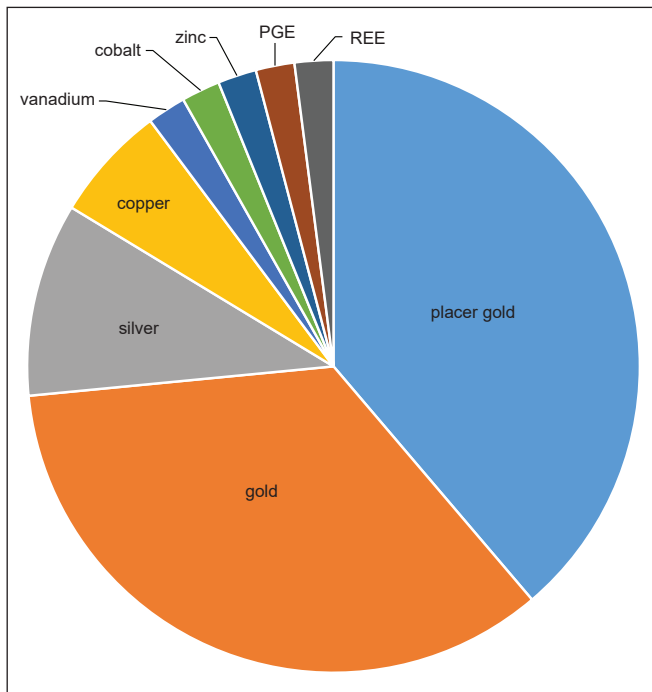


Figure 1. Approved YMEP projects in 2021.



**Figure 2.** Commodities targeted by YMEP projects in 2021.

### Same-year discoveries (2021 successes)

Exploration successes for 2021 are projects that have resulted in new discoveries or have made a significant advancement of an lesser understood previous discovery that we believe have potential to lead to further investment in mineral exploration. 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 2021 projects that yielded early success.

#### Bullseye Property

In 2021, Golden Sky Minerals Corp. completed a Target Evaluation-supported RC drilling program on their Bullseye property. The property is located in the newly emerging Wels gold district, north of Wellesley Lake.

The 384.05 m, 5 hole program was designed to test the Gold Crest Zone along a 150 m strike length and up to 100 m depth. The Gold Crest Zone is marked by a significant 500 × 200 m gold-in-soil anomaly with values up to 216 ppb gold. The soil anomaly is open to the north and south and appears to follow a major regional shear which has developed along a schist-mafic intrusive contact. Trenching in 2020 defined a significant mineralized zone that assayed 0.69 g/t gold over 78 m, including 1.03 g/t gold over 44 m. Highlights from the 2021 drill campaign include 25.91 m of 1.88 g/t gold, with a narrower interval of 12.19 m of 2.54 g/t gold in hole BERC-21-4 (<https://goldenskyminerals.com/golden-sky-minerals-corp-drills-1-03-g-t-au-over-80-77-meters-in-discovery-drill-hole-at-bullseye-property-yukon-territory/>).

#### Grabben Gold Project

Kestrel Gold Inc. received a Target Evaluation grant to support a program of RC drilling at their Grabben Gold property. The property, located in the heart of the Klondike, covers a sequence of mid-Cretaceous sedimentary rocks overlain and intruded by Late Cretaceous volcanic and intrusive rocks. The company targeted two areas in the Grid Zone, an open-ended 900 m long by 250 m wide gold-arsenic-bismuth-antimony soil anomaly. They drilled nine holes for a total of 557.9 m. Intervals of variably clay altered, bleached, limonitic and fractured intrusive rocks as well as a similarly altered and fractured sedimentary sequence consisting of alternating mudstone, siltstone and conglomerate were encountered in all of the holes. The geological setting and geochemical signature suggest the potential for an intrusion-related gold system. Highlights of the program include hole GRB21-007 which returned 6.1 m of 0.34 g/t gold and 66.12 g/t silver. The Grabben Gold project has advanced from a grassroots project which was discovered by a local Yukon prospector to a drilled prospect warranting further drill testing (<https://www.kestrelgold.com/news/august-03-2021>).

#### The Catch Property

Prospector Ryan Burke received YMEP funding for a grassroots exploration play north of Whitehorse in 2020. This led to the discovery of interesting soil

geochemical anomalies of gold and copper and the staking of quartz claims known as the Catch property. In 2021, Burke received a Target Evaluation grant to conduct further evaluation of the property. Fieldwork consisted of geological mapping, soil, till and rock sampling, and hand trenching of the copper-gold soil anomalies. The target at Catch is porphyry-style mineralization hosted by Triassic volcanoclastic rocks which may be intruded by a mid-Cretaceous intrusion. Assay results from 2021 rock sampling include values up to 52.4 g/t gold and 41.7 g/t silver. Till geochemical results have yielded significant geochemical responses in a number of areas, with peak values of 2.4 g/t gold and >10 000 ppm copper (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 2021 fieldwork. These include NBC Contracting's project on Dominion Creek, GroundTruth Explorations work on Twenty Mile Creek, and Earth and Iron's exploration on McMillan and Faith creeks. In all three cases, the exploration results have defined areas that have led to a mining decision. Details of these projects are presented in van Loon and Bond (2022).

### YMEP successes over the long term

The impact of YMEP can be measured by projects that advance further along the exploration-mining cycle, to the resource definition, feasibility and/or production stages. The more a project advances, the more significant its impacts for Yukon in terms of employment, business opportunities and infrastructure development. An example of a longer-term YMEP success is presented below.

### Aurex-McQueston (AurMac) Property

In 2016, StrataGold Corp. conducted a Target Evaluation-funded program in the amount of \$51 793 on its Aurex project, located near Keno. The program consisted of the collection of 757 soil samples and 8 rock grab samples. Assays up to 315 ppb gold were returned for soil samples. In 2017, Banyan

Gold Corp. optioned the property and completed an exploration program consisting of a property-wide soil geochemical survey (1114 soil samples), 464 m of trenching and 1422 m diamond drilling in 10 holes (<https://www.banyangold.com/news-releases/2017/banyan-completes-first-year-earn-in-commitments-on-the-aurex-mcquesten-gold-project-yukon/>).

Between 2018 and 2020, Banyan applied for, and received YMEP funding under the Target Evaluation module to advance exploration on the property. They conducted additional soil geochemical sampling, geological mapping, trenching, airborne geophysics and diamond drilling. This work eventually led to Banyan releasing a maiden resource estimate for Aurex. In 2020, Banyan released a NI 43-101 compliant inferred resource estimate of 52 576 520 tonnes grading of 0.535 g/t gold for a total of 903,945 contained oz of gold (<https://www.banyangold.com/news-releases/2020/banyan-files-technical-report-for-aurmac-property-903-945-gold-ounce-initial-mineral-resource-estimate-yukon-canada/>). This resource estimate represents an approximate contained value in excess of CDN\$2.0B at current gold prices. Since 2016 YMEP has invested \$145 896.50 in the Aurex project. This investment has resulted in total exploration expenditures of greater than \$18M to date and a leverage ratio of 126:1 (company investment: YMEP investment).

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

In an attempt to provide a level of certainty and confidence in investment the Government of Yukon includes mineral exploration and mining as essential industries and they continue to invest in the YMEP program. The 2021–22 YMEP programs made a substantial contribution to the Yukon economy by

leveraging an estimated \$4.3M in additional investment. 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

van Loon, S. and Bond, J.D., 2022 (this volume). Yukon placer mining 2021 development and exploration overview. *In: Yukon Exploration and Geology Overview 2021*, K.E. MacFarlane (ed.), Yukon Geological Survey, p. 17–27.

**Table 2.** Examples of successful YMEP projects.

YMEP successful options (2000-2021)				
YMEP#	Property name	Total YMEP contribution(s)	Optioned by	Company investment or work commitment
01-011 and 15-030	Ice/Red Mountain	\$52 500	St James Gold	~\$14.6M
03-079	White Gold	\$10 000	White Gold Corp Kinross Gold	~\$86M
04-072 and 05-043	Blende	\$30 000	Blende Silver Corp	\$7.3M
05-058	Andrew	\$14 400	Overland Resources	~\$35M
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	Newmont/Gold Corp.	~\$382M
07-056, 08-012 and 09-112	Toni/Sixty Mile	\$33 000	Radius Gold	~\$4.9M
03-023, 06-033 and 09-137	Scheelite/Gold Dome	\$75 000	Golden Predator	~\$1.4M
09-015	Clear Creek	\$10 450	Victoria Gold	~\$4.2M
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 and 14-010	3ACES	\$93 130	Northern Tiger Golden Predator	~\$43M
10-097	Portland	\$14 320	Taku Gold	~\$1.25M
00-069, 06-005, 06-006 and 15-014	Mariposa	\$76 000	Pacific Ridge	~\$7.3M