

From the Mineral Inventory Files

Let's Play TAG

Thermal Aureole Gold (TAG) deposits are much in vogue with the exploration community. Exciting results from one example, Freewest Resources Canada Ltd.'s Clarence Stream Project in southwest New Brunswick, raise the question of whether there are similar deposits in geologically comparable settings in Nova Scotia. A cluster of mineral prospects in the French Road-Oceanview area of southeast Cape Breton Island could be one such target (Fig. 1).

What is a TAG deposit? A decade ago there wasn't such a deposit class, and perhaps there still shouldn't be. There is no formal definition for TAG deposits: the junior exploration community simply coined the term to describe deposits bearing certain common features. Mineralized zones occur within the contact aureole of a mineralizing granite stock or pluton. Generally, but not exclusively, these granites are derived from igneous source rock (I-type granites) and have alteration and mineral assemblages indicative of reduced conditions. Furthermore, calc-silicate or skarn alteration usually accompanies the mineralized zones. In years past, these deposits would probably have been called an intrusion-related gold deposit, or a type of gold-bearing skarn deposit, or perhaps even a porphyry-related exo-contact deposit.

Does Nova Scotia have anything befitting this recipe? Yes, I think so. Discovery of base metal-bearing float near Gabarus Bay (Fig. 1) by Hugh Fletcher of the GSC in 1876 led to a 30 m deep shaft at the French Road prospect. Not much more was done there until the 1950s and 60s when several more occurrences of Cu-Zn-Ag were found within zones of diopside-garnet (grossularite and uvarovite) skarn and tourmaline-rich

calc-silicate alteration zones developed in the Cambrian rocks of the area. It was also noted that, although the regional metamorphic grade of these rocks is usually very low, in the French Road-Blue Mountain area a considerable degree of thermal metamorphism is present. Since no plutons are known in that area, it was deduced that one or more stocks of igneous rock must occur at shallow depth. This interpretation is supported by the presence nearby of Lower Devonian granite stocks at Gillis Mountain and Deep Cove (Fig. 1). Both of these intrusions are altered, I-type granitoids with Cu-Mo, porphyry-style mineralization. In all likelihood, similar plutons underlie the French Road-Blue Mountain area.

Throughout the 1970s and 80s, St. Joseph Exploration Limited and French Road Explorations Limited continued exploration and turned up several more mineralized sites. The Oceanview property is perhaps the most significant of

these, with anomalous concentrations of gold found in the soil and till geochemical surveys (up to 3192 ppb) and the discovery of gold-bearing float. Unlike the other sites in the area, the Oceanview property is underlain by mixed volcanic and meta-sedimentary rocks of the late Precambrian Main à Dieu Group. However, like the other prospects, a thermal metamorphic halo suggests that a subcropping granite pluton exists below.

Features indicative of TAG mineralization are present at French Road and Oceanview. Most of the previous exploration on these properties was concerned with delineating the base metal-bearing skarn zones. The more Cu-dominated and Au-bearing occurrences present at the Oceanview property clearly need better understanding and further study. Let's hope they get TAG'd for more exploration in the near future.

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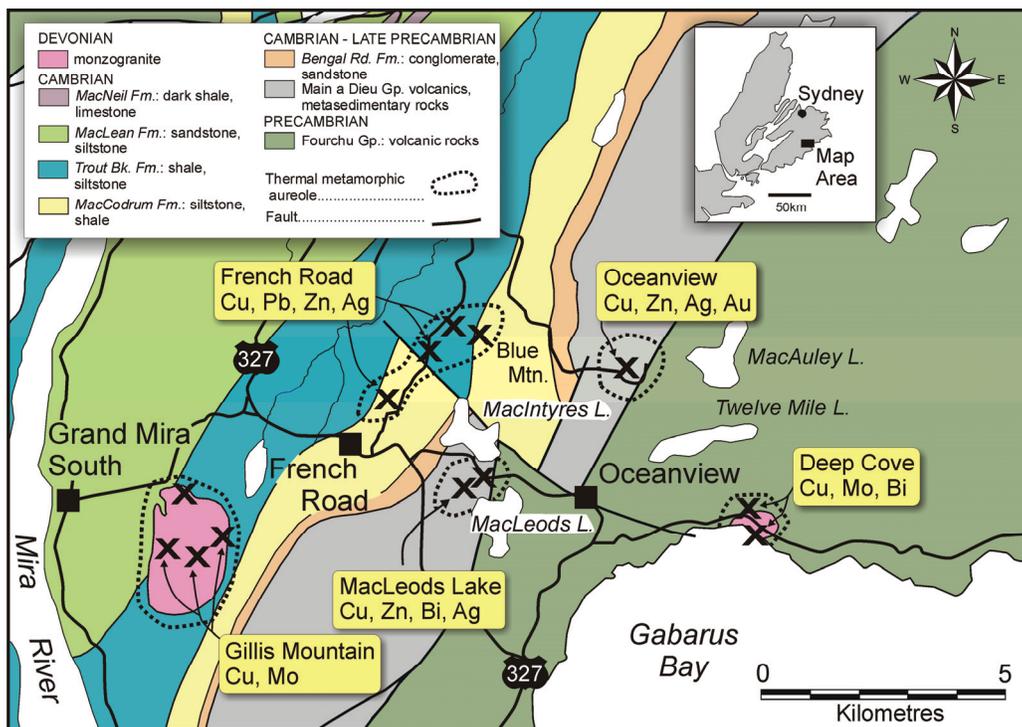


Figure 1. Geological map showing mineral occurrences in the Gabarus Bay area.