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## An overview of proven and probable Devonian mineralization in the Newfoundland Appalachians

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From a metallogenic perspective, the Newfoundland Appalachians are best known for volcanogenic massive sulphide deposits formed during the Cambrian and Ordovician, in Iapetan island arcs and related marginal basins. Mesothermal (“orogenic”) gold deposits are also widespread; direct and indirect evidence suggests that many of these are Silurian. This presentation reviews diverse mineralization of proven or probable Devonian age in the region, which is not as well-known as its older counterparts.

The best examples of Devonian mineral deposits are granite-related deposits in southern and south-central Newfoundland. These include the St. Lawrence fluorite deposits, two potential bulk-tonnage Mo±Cu deposits at Moly Brook and Granite Lake, and vein-style tungsten mineralization near Grey River. U-Pb ages and Re-Os (molybdenite) determinations from host rocks and mineralization suggest a Middle Devonian (Frasnian; 380 to 374 Ma) age for these systems. Vein-style base-metal, silver, and barite mineralization in the region around Placentia Bay is probably related to a large granitoid body of similar age concealed beneath coastal waters. Absolute age constraints are lacking for these minor deposits and the present knowledge of the age pattern of late magmatism remains incomplete. In central and northern Newfoundland, some mesothermal gold mineralization must also be Devonian or younger, based on dates from igneous host rocks. Many other such occurrences hosted by Cambrian-Ordovician sequences are not constrained by geochronology, and could also be post-Silurian. Epithermal-style gold mineralization is also locally present in east-central Newfoundland, and some of these veins and stockworks are hosted by late Silurian sedimentary rocks. This near-paleosurface style of mineralization may also be of Devonian age, and perhaps related to magmatic activity that is not manifested at the present erosion level. The vein-style antimony deposit at the Beaver Brook mine, which has not yet been dated, may also belong to this group of deposits.