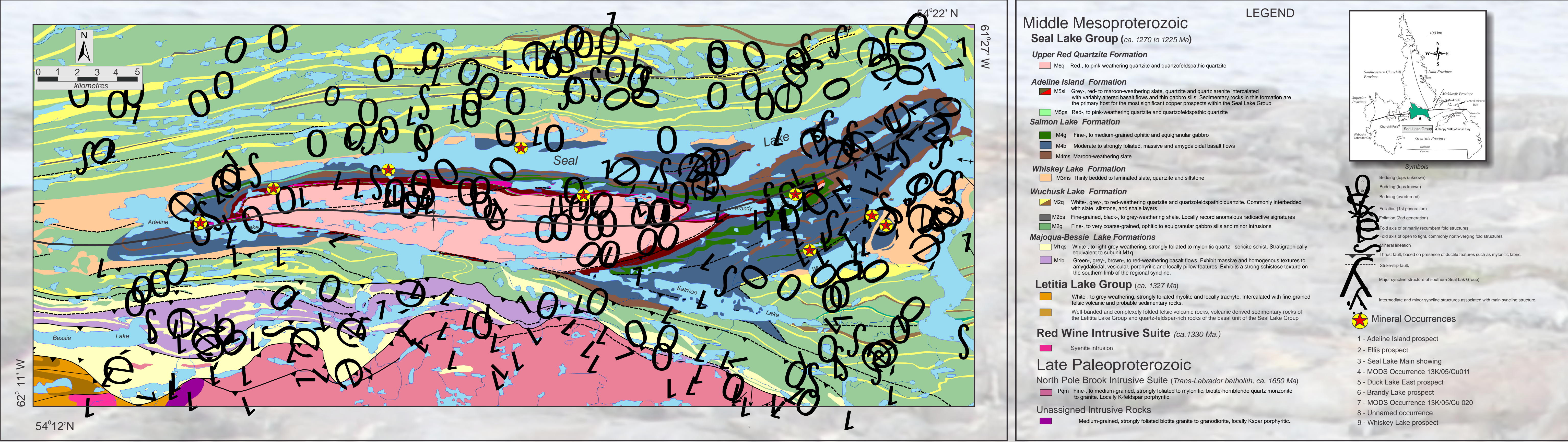


Copper Mineralization in the Mesoproterozoic Seal Lake Group, Central Mineral Belt, Labrador

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The Mesoproterozoic Seal Lake Group (ca.1270-1225 Ma.) is host to several significant copper prospects and numerous indications associated with localized shear zones, fractures and veins along variably deformed contacts of clastic sedimentary rocks, basalt flows and gabbro sills in two of the upper formations of the stratigraphy. Mineralization in the Salmon Lake Formation occurs primarily as chalcocite ± bornite ± native copper ± molybdenite in quartz ± calcite veins associated with contact zones of basalt flows, slate, quartzite and gabbro sills. In the overlying Adeline Island Formation chalcocite ± bornite ± chalcopyrite ± molybdenite ± sphalerite is hosted in slate, phyllite, quartzite and siltstone units, and locally basalt flows associated with quartz ± calcite veining, small-scale shear zones and fold hinges. The association of the majority of mineralization with early, commonly deformed veins, localized shear zones and in the hinge zones of early fold structures suggests that the mineralization is related to deformation and may have formed during syn- to post-early Grenvillian thrusting (D1?) of the southern margin of the Seal Lake Group. Hematization of many host rocks, particularly native copper associated with strongly hematized basalt flows and red slate in the Salmon Lake Formation, and chalcocite in red slate and quartzite in the Adeline Island Formation indicates a presumed link with a post-depositional hematite alteration and suggests that the copper mineralization is epigenetic in origin.



Chalcocite-bornite-malachite mineralization hosted in strongly deformed grey-green-weathering slate unit (by hammer) and in quartz veins cutting underlying pink-weathering quartzite unit. Bedding tops are towards the top of photograph, MODS Occurrence 13L/08/Cu001, Adeline Island east prospect, Adeline Island Formation.



Chalcocite-malachite hosted in deformed quartz + calcite veins and along fracture surfaces in moderately deformed intercalated green-weathering slate and quartzite units, Ellis Prospect, MODS Occurrence 13K/05/Cu002, Adeline Island Formation.



Malachite-azurite alteration and native copper nuggets hosted in deformed quartz + calcite veins and lenses within strongly altered basalt flow near contact with red slate unit, Seal Lake main showing, MODS Occurrence 13K/05/Cu001, south shore of Seal Lake, Salmon Lake Formation.



Bornite-chalcocite mineralization hosted in boudined quartz + calcite veins within strongly epidotized and brecciated basalt flow. Contact of Salmon Lake and Whiskey Lake formations, MODS Occurrence 13K/05/Cu011, north shore of Seal Lake.



Chalcocite-malachite mineralization hosted in bedding-parallel quartz + calcite veins in strongly hematized red-weathering slate and thin interbedded quartzite layers, Duck Lake East prospect, MODS Occurrence 13K/05/Cu193, Adeline Island Formation.



Chalcocite-malachite mineralization along fracture surface of strongly altered basalt flow near contact with grey-weathering slate unit, Brandy Lake prospect (A-Zone), MODS Occurrence 13K/05/Cu030, Adeline Island Formation.



Boudined native copper seam (with black tarnish) with associated malachite-azurite and deformed quartz + calcite veins hosted in strongly altered and foliated basalt flow, MODS Occurrence 13K/05/Cu020, Salmon Lake Formation.



Coarse chalcocite mineralization (as aggregates to right of pen) hosted in weakly deformed, cross-cutting, vertical quartz veins within strongly foliated and altered basalt flow, unnamed occurrence, Salmon Lake Formation, north of Whiskey Lake.



Chalcopyrite-malachite mineralization hosted in locally deformed, zoned quartz+calcite vein cutting fine-grained altered gabbro sill margin, Whiskey Lake north prospect, MODS Occurrence 13K/05/Cu003, Salmon Lake Formation.