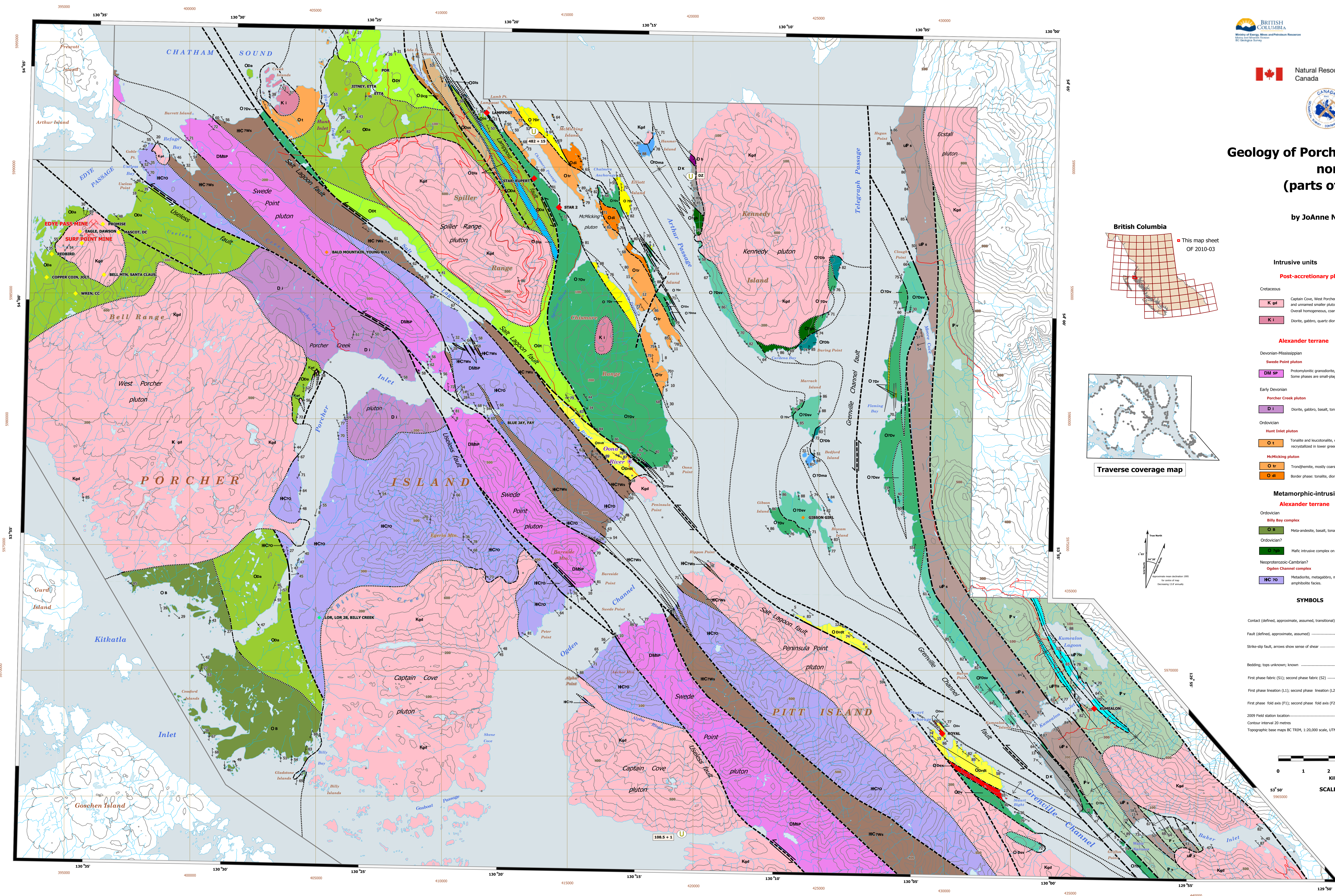
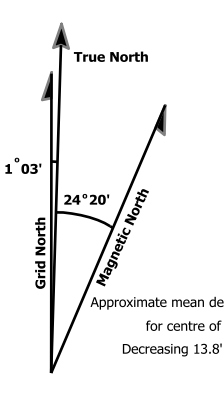
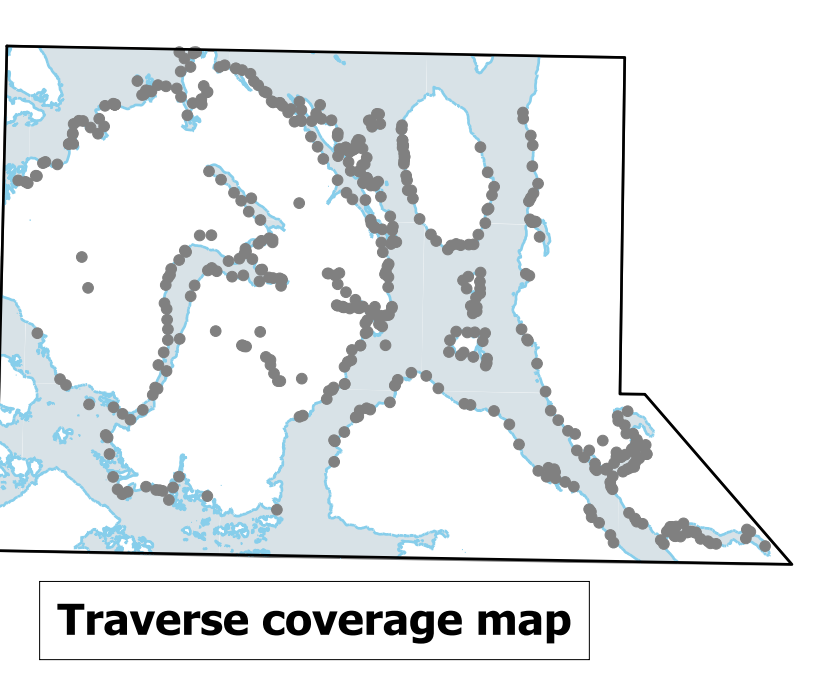
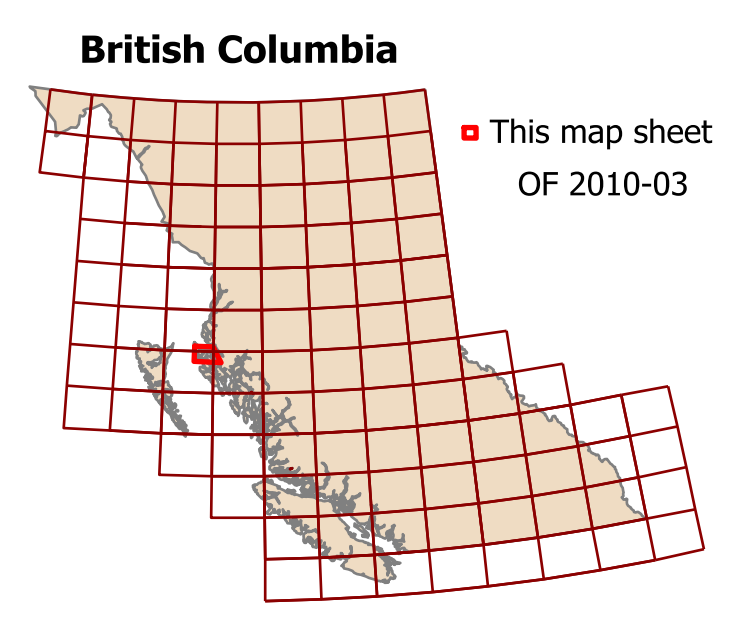




Geology of Porcher Island and northern Grenville Channel,
northwestern British Columbia
(parts of 103G/15, 16, H/13, J/1 and J2)

by JoAnne Nelson, Brian Mahoney, George Gehrels and Cees van Staal



LEGEND

Intrusive units

Post-accretionary plutons

- K pl** Captain Cove, West Porcher, Peninsula Point, Spiller Range, Kennedy and unexposed smaller plutons: granodiorite, minor tonalite and diorite
- K i** Overall heterogeneous, coarse-grained, marginal agnatic.
- K i** Diorite, gabbro, quartz diorite; heterogeneous, multi-phase.

Alexander terrane

Devonian-Mesozoic

- DM SP** Pelitic-volcanic granodiorite, granite, tonalite, diorite. Some phases are small, pegmatite, anorthite.

Early Devonian

- D i** Diorite, gabbro, basalt, tonalite; very heterogeneous, multi-phase.

Oronidian

- O i** Tonalite and leucodiorite, commonly with blue quartz veins. Primary mafic minerals recrystallized in lower greenschist facies (epidote, chlorite, basalt).

McKicking pluton

- O w** Trondhjemite, mostly coarse-grained, equigranular; uniform composition.
- O m** Border phase: tonalite, diorite in cross-cutting bodies; variable textured.

Metamorphic-intrusive complexes

Alexander terrane

Oronidian

- O s** Meta-andesite, basalt, tonalite, granodiorite, diorite-intrusive complex.

Oronidian?

- O s** Meta-volcanic complex on southern Kennedy Island: metagabbro, metabasalt.

Neoproterozoic-Cambrian?

- HC 10** Gneiss Channel complex.
- HC 10** Neodiorite, metagabbro, metatonsalite complex; polydeformed and in amphibolite facies.

SYMBOLS

Contact (defined, approximate, assumed, transitional)

Fault (defined, approximate, assumed)

Strike-slip fault, arrows show sense of shear

Bedding, tops unknown; known

First phase fabric (S1); second phase fabric (S2)

First phase lineation (L1); second phase lineation (L2)

First phase fold axis (F1); second phase fold axis (F2)

2000 Field station location

Contour interval 20 metres

Topographic base map: BC TMAP, 1:20,000 scale, UTM Zone 19 projection

0 1 2 3 4 5 Kilometres

SCALE 1:50,000

Stratified units

Gravina belt/Yukon-Tanana terrane?

Upper Paleozoic or possibly Mesozoic

- UP s** Kurekton classic unit: plane-bedded grey sandstone with pelitic interlayers, minor pelitic beds.

Paleozoic

Yukon-Tanana terrane?

- UP s** Limestone; limestone with lufaceous horizons; contains rare solitary corals, brachiopods.
- P s** Meta-andesite, metabasalt, minor meta-rhyolite; also includes metamorphosed fine-grained diorite.

Devonian

Alexander terrane

- D s** Pelite local.
- D s** Limestone, minor pelitic beds and volcanic-pelitic and quartz-pelitic conglomerates.
- D s** Cross-stratification well developed in Kennedy Island exposures.

Oronidian

Devonian formation

- O s** Northern Porcher Island (SW of Langford fault).
- O s** Volcanic pelitic conglomerate, sandstone.
- O s** Volcanic: lithic, andesite and wacke.
- O s** Basalt and andesite tuff and lufaceous sedimentary beds.
- O s** Limestone with tuff interbeds, fine-grained andesite breccia.
- O s** Dacite tuff.
- O s** Andesite tuff, tuff tuff and basalt (greenish facies).
- O s** Neoproterozoic (P2) dated - Stuart Archange.
- O s** Meta-andesite tuff, non-laminated (amphibolite facies).
- O s** Intermediate to felsic meta-tuff, iron formation.
- O s** Meta-tuff (rhyolite, dacite, andesite composition); meta-ebullite with the andesite, andesite.
- O s** Thick-layered meta-tuff, pelite.

Oronidian?

- O s** Pelite local, basalt (amphibolite facies).
- O s** Marble with thin green meta-tuff interbeds.
- O s** Basalt: andesite, pelite, meta-tuff, minor thin marble and calc-silicate.
- O s** Meta-rhyolite and meta-andesite, andesite to quartz (felsic); also quartz-metachert andesite.
- O s** Meta-andesite, metabasalt; includes metamorphosed fine-grained diorite and meta-hyaline metabasalt. Volcaniclastic: includes preserved locally.
- O s** Includes meta-scale removal of the layered marble and meta-tuff.

Neoproterozoic-Cambrian?

- HC 10** Laminated metasedimentary unit: pelite, calc-silicate, marble, quartzite, in Ogden Channel complex, intruded by metaplutonic bodies.

Metallic mineral occurrences

- Gold-quartz vein
- Gold-quartz vein (gold producer), Porcher Island gold mine
- Iron formation (stromatolite, stromatolite, in Devonian Formation)
- Copper-silver-silver
- Porphyry Mo
- Porphyry Mo-Cu

Published UTM data; also completed, unpublished dental sample (ds)

Reference: Nelson, J., Mahoney, J.B., Gehrels, G.E., van Staal, C. and Potter, J.J., 2010. Geology and Mineral Potential of Porcher Island, northern Grenville Channel, and vicinity, northwestern British Columbia. In Geological Notes 2010, BC Ministry of Energy, Mines and Petroleum Resources Paper 2010-1, p. 19-42.

Note: Some unit ages on this map supersede those presented in the above article, as they are based on preliminary U-Pb data that were not available at time of publication (J.B. Mahoney, unpublished data 2010).

Questions on unit ages reflect remaining uncertainties.

All local unit names are informal.

Geology of most island areas is based on interpretation of SPOT satellite imagery and low-altitude flight observations.

This publication is the result of the Natural Resources Canada Geoscience for Energy and Minerals Program, Multi-media Northwest Cordillera Project, in collaboration with the BC Ministry of Energy, Mines and Petroleum Resources.