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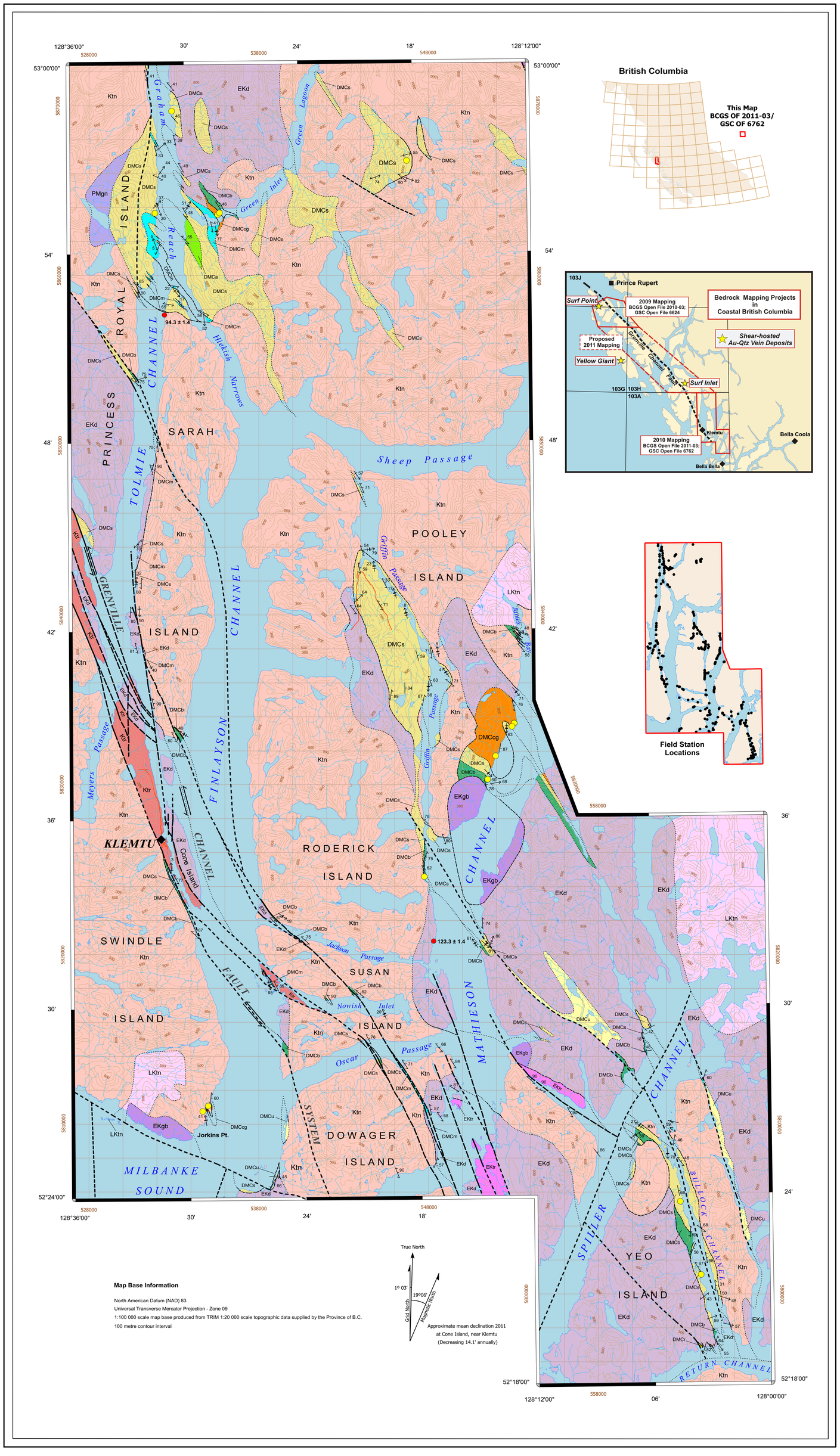

Map Base Information

North American Datum (NAD) 83
Universal Transverse Mercator Projection - Zone 09
1:100 000 scale map base produced from TRIM 1:20 000 scale topographic data supplied by the Province of B.C.
100 metre contour interval

Approximate mean declination 2011
at Cone Island, near Klemtu
(Decreasing 14.1' annually)

British Columbia Geological Survey
OPEN FILE 2011-03

Geological Survey of Canada
OPEN FILE 6762

GEOLOGY OF THE MID-COAST REGION OF BRITISH COLUMBIA NEAR KLEMTU

(Parts of Laredo Sound map area, NTS 103A/08,09,15 and 16)

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Scale 1:100 000

0 — Kilometres — 10

LEGEND

Stratified Rocks

Alexander terrane

Devonian

Mathieson Channel Formation

- DMCu — Mathieson Channel, undivided or unmapped in this study.
- DMCs — Metasiltstone and metasandstone wackes (feldspar-quartz+/-biotite) alternate with variable amounts of marble and calcsilicates; drab grey-green to rusty reddish brown, thinly to thickly parallel laminated.
- DMCcg — Conglomerate; contains elongate rounded tonalite, granodiorite, basalt and rhyolitic clasts, siltstone-sandstone and less commonly carbonate matrix; interlayered greywacke. Near Jorkins Pt. quartzite, lesser volcanic clasts.
- DMCm — Marble; white, coarsely crystalline on fresh surfaces, yellow-tan weathered, massive to parallel layered and laminated; discontinous layers and enclaves of mafic igneous rock, plastically deformed into tight folds.
- DMCb — Metabasite; dark green, massive, rare pillows and breccia; carbonate lenses, layers and matrix to volcaniclastic units.
- DMCr — Metarhyolite; off-white, sparsely pyritic, oxidized orange weathering, relict flow laminations, occurs as rare thin layers or lenses associated with unit DMCb.
- DMCa — Metamorphosed mafic rocks of uncertain intrusive or extrusive parentage; dark green, fine to coarsely crystalline, in part with possible fragmental texture.

Intrusive Rocks

Late Cretaceous (Circa 80 Ma)

- LKtn — Tonalite; white, medium grained, weak foliation; cross-cut by white pegmatite dikes.

Mid-Cretaceous (Circa 94-105 Ma)

- Ktr — Trondhjemite and granodiorite: medium grained to small-plagioclase porphyritic; highly strained with protomylonitic textures. Localized along Grenville Channel fault near Klemtu.
- Ktn — Tonalite and quartz-diorite; greenish grey-white, medium to coarse grained, weak to moderately strained; characteristic elliptical-shaped enclaves of mafic composition.

Early Cretaceous (Circa 123 Ma)

- EKd — Predominantly diorite with pyroxenite, gabbro and trondhjemitic phases; dark green, complex internal contact relationships, moderately strained with zones of protomylonitic fabric.
- EKgb — Gabbro amd meta-gabbro, coarse-grained, equigranular, originally pyroxene-bearing; zones of ultramafic cumulates.
- EKtr — Trondhjemite and granodiorite; off white to pinkish white, coarse grained, moderately strained to locally protomylonitic.

Paleozoic or Mesozoic (?)

- PMgn — Gneissic rocks, undivided.

SYMBOLS

- Contact (defined, approximate, assumed)
- Fault (defined, approximate, assumed)
- Strike-slip fault (defined, approximate, assumed; arrows show sense of shear)
- Bedding (tops unkown)
- Penetrative planar fabric
- Lineation (first, second phases)
- Fold axis (first, second, third phases)
- U-Pb zircon date (crystallization date, detrital sample in progress; age in Ma)
- Road (abandoned and typically overgrown)

References

Baer, A.J. (1973): Bella Coola-Laredo Sound map areas, British Columbia; Geological Survey of Canada, Memoir 372, 122 pages, 1:250,000 scale maps.

Gehrels, G.E. and Boghossian, N.D. (2000): Reconnaissance geology and U-Pb geochronology of the west flank of the Coast Mountains between Bella Coola and Prince Rupert, coastal British Columbia; in Stowell, H.H. and McClelland, W.C., editors, Tectonics of the Coast Mountains, southeastern Alaska and British Columbia, Geological Society of America, Special Paper 343, pages 61-76.

Gehrels, G., Rusmore, M., Woodsworth, G., Crawford, M., Andronicos, C., Hollister, L., Patchett, J., Ducea, M., Butler, R., Klepeis, K., Davidson, C., Friedman, R., Haggart, J., Mahoney, B., Crawford, W., Pearson, D. and Girardi, J. (2009): U-Th-Pb geochronology of the Coast Mountains batholith in north-coastal British Columbia: Constraints on age and tectonic evolution; Geological Society of America Bulletin, Volume 121, pages 1341-1361.

Nelson, J.L., Mahoney, J.B., Gehrels, G.E., van Staal, C. and Potter, J.J. (2010a): Geology and mineral potential of Porcher Island, northern Grenville Channel and vicinity, northwestern British Columbia; B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 2009, pages 19-42.

Nelson, J.L., Mahoney, J.B. and Gehrels, G.E. (2010b): Geology and mineral potential of the Porcher Island - Grenville Channel area, northwestern British Columbia; B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 2010-03 (also, Geological Survey of Canada, Open File 6654), 1:50,000 scale.

Nelson, J.L., Diakow, L.J., Karl, S., Mahoney, J.B., Gehrels, G.E., Pecha, M. and van Staal, C. (2011a): Geology and mineral potential of the southern Alexander terrane and western Coast Plutonic Complex near Klemtu, northwestern British Columbia; B.C. Ministry of Forests, Mines and Lands, Geological Fieldwork 2010, pages 73-97.

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