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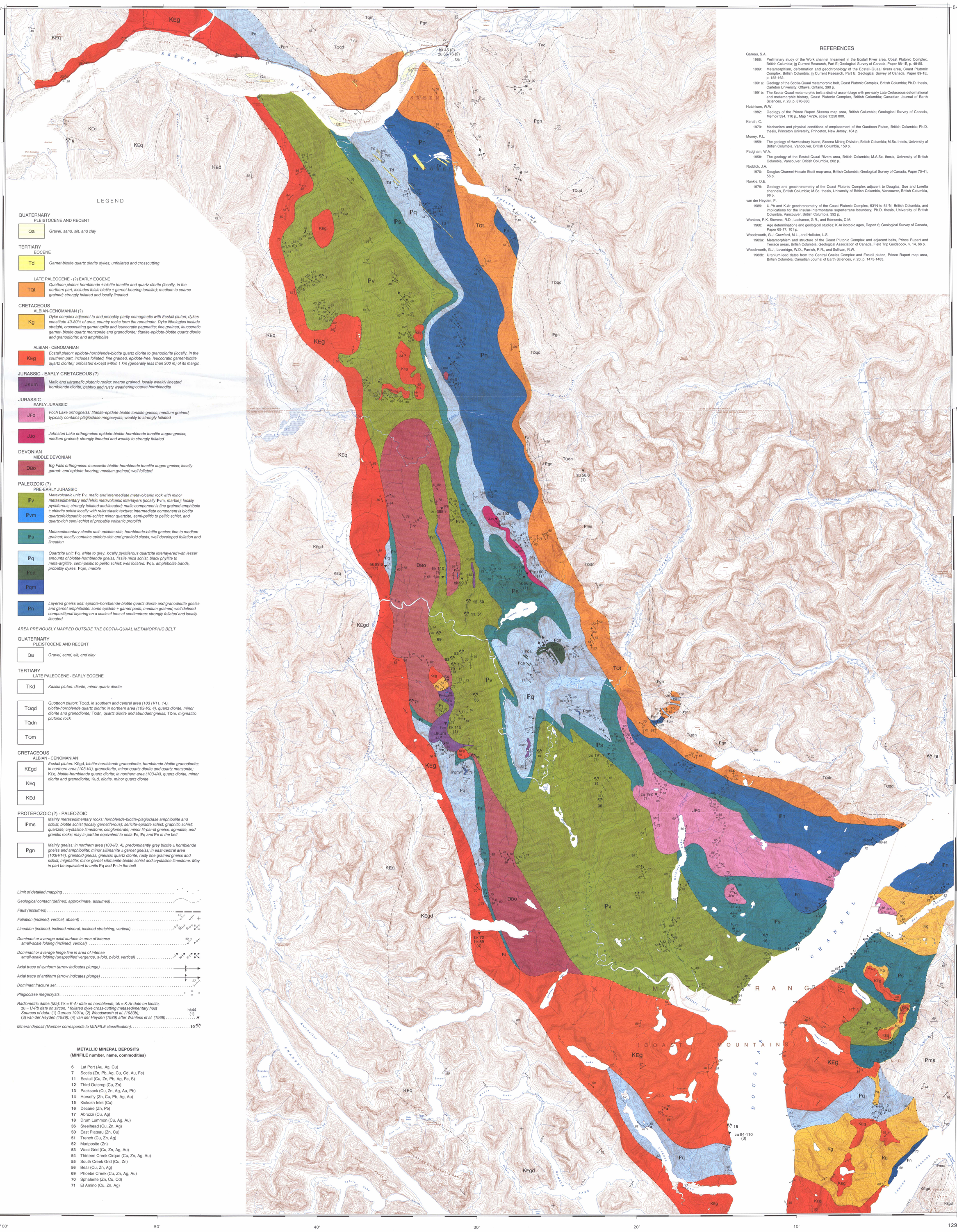

LEGEND

QUATERNARY
PLEISTOCENE AND RECENT

Qa — *Gravel, sand, silt, and clay*

TERTIARY
EOCENE

Td — *Garnet-biotite quartz diorite dykes; unfoliated and crosscutting*

LATE PALEOCENE - (?) EARLY EOCENE

Tot — *Quottoon pluton: hornblende ± biotite tonalite and quartz diorite (locally, in the northern part, includes felsic biotite ± garnet-bearing tonalite); medium to coarse grained; strongly foliated and locally lineated*

CRETACEOUS
ALBIAN-CENOMANIAN (?)

Kg — *Dyke complex adjacent to and probably partly comagmatic with Ecstall pluton; dykes constitute 40-80% of area, country rocks form the remainder. Dyke lithologies include straight, crosscutting garnet aplite and leucocratic pegmatite; fine grained, leucocratic garnet- biotite quartz monzonite and granodiorite; titanite-epidote-biotite quartz diorite and granodiorite; and amphibolite*

ALBIAN - CENOMANIAN

KEg — *Ecstall pluton: epidote-hornblende-biotite quartz diorite to granodiorite (locally, in the southern part, includes foliated, fine grained, epidote-free, leucocratic garnet-biotite quartz diorite); unfoliated except within 1 km (generally less than 300 m) of its margin*

JURASSIC - EARLY CRETACEOUS (?)

Jkum — *Mafic and ultramafic plutonic rocks: coarse grained, locally weakly lineated hornblende diorite, gabbro and rusty weathering coarse hornblendite*

JURASSIC
EARLY JURASSIC

JFo — *Foch Lake orthogneiss: titanite-epidote-biotite tonalite gneiss; medium grained, typically contains plagioclase megacrysts; weakly to strongly foliated*

JJo — *Johnston Lake orthogneiss: epidote-biotite-hornblende tonalite augen gneiss; medium grained; strongly lineated and weakly to strongly foliated*

DEVONIAN
MIDDLE DEVONIAN

DBo — *Big Falls orthogneiss: muscovite-biotite-hornblende tonalite augen gneiss; locally garnet- and epidote-bearing; medium grained; well foliated*

PALEOZOIC (?)
PRE-EARLY JURASSIC

Pv, **Pvm** — *Metavolcanic unit: Pv, mafic and intermediate metavolcanic rock with minor metasedimentary and felsic metavolcanic interlayers (locally Pvm, marble); locally pyritiferous; strongly foliated and lineated; mafic component is fine grained amphibole ± chlorite schist locally with relict clastic texture; intermediate component is biotite quartzofeldspathic semi-schist; minor quartzite, semi-pelitic to pelitic schist, and quartz-rich semi-schist of probable volcanic protolith*

Ps — *Metasedimentary clastic unit: epidote-rich, hornblende-biotite gneiss; fine to medium grained; locally contains epidote-rich and granitoid clasts; well developed foliation and lineation*

Pq, **Pqa**, **Pqm** — *Quartzite unit: Pq, white to grey, locally pyritiferous quartzite interlayered with lesser amounts of biotite-hornblende gneiss, fissile mica schist, black phyllite to meta-argillite, semi-pelitic to pelitic schist; well foliated. Pqa, amphibolite bands, probably dykes. Pqm, marble*

Pn — *Layered gneiss unit: epidote-hornblende-biotite quartz diorite and granodiorite gneiss and garnet amphibolite: some epidote + garnet pods; medium grained; well defined compositional layering on a scale of tens of centimetres; strongly foliated and locally lineated*

AREA PREVIOUSLY MAPPED OUTSIDE THE SCOTIA-QUAAL METAMORPHIC BELT

QUATERNARY
PLEISTOCENE AND RECENT

Qa — *Gravel, sand, silt, and clay*

TERTIARY
LATE PALEOCENE - EARLY EOCENE

TKd — *Kasiks pluton: diorite, minor quartz diorite*

TQqd, **TQdn**, **TQm** — *Quottoon pluton: TQqd, in southern and central area (103 H/11, 14), biotite-hornblende quartz diorite; in northern area (103-I/3, 4), quartz diorite, minor diorite and granodiorite; TQdn, quartz diorite and abundant gneiss; TQm, migmatitic plutonic rock*

CRETACEOUS
ALBIAN - CENOMANIAN

KEgd, **KEq**, **KEd** — *Ecstall pluton: KEgd, biotite-hornblende granodiorite, hornblende-biotite granodiorite; in northern area (103-I/4), granodiorite, minor quartz diorite and quartz monzonite; KEq, biotite-hornblende quartz diorite; in northern area (103-I/4), quartz diorite, minor diorite and granodiorite; KEd, diorite, minor quartz diorite*

PROTEROZOIC (?) - PALEOZOIC

Pms — *Mainly metasedimentary rocks: hornblende-biotite-plagioclase amphibolite and schist, biotite schist (locally garnetiferous); sericite-epidote schist; graphitic schist; quartzite; crystalline limestone; conglomerate; minor lit-par-lit gneiss, agmatite, and granitic rocks; may in part be equivalent to units Ps, Pq and Pn in the belt*

Pgn — *Mainly gneiss: in northern area (103-I/3, 4), predominantly grey biotite ± hornblende gneiss and amphibolite; minor sillimanite ± garnet gneiss; in east-central area (103H/14), granitoid gneiss, gneissic quartz diorite, rusty fine grained gneiss and schist, migmatite; minor garnet sillimanite-biotite schist and crystalline limestone. May in part be equivalent to units Pq and Pn in the belt*

Limit of detailed mapping

Geological contact (defined, approximate, assumed)

Fault (assumed)

Foliation (inclined, vertical, absent)

Lineation (inclined, inclined mineral, inclined stretching, vertical)

Dominant or average axial surface in area of intense small-scale folding (inclined, vertical)

Dominant or average hinge line in area of intense small-scale folding (unspecified vergence, s-fold, z-fold, vertical)

Axial trace of synform (arrow indicates plunge)

Axial trace of antiform (arrow indicates plunge)

Dominant fracture set

Plagioclase megacrysts

*Radiometric dates (Ma): hk = K-Ar date on hornblende, bk = K-Ar date on biotite, zu = U-Pb date on zircon, * foliated dyke cross-cutting metasedimentary host*
Sources of data: (1) Gareau 1991a; (2) Woodsworth et al. (1983b); (3) van der Heyden (1989); (4) van der Heyden (1989) after Wanless et al. (1968)

Mineral deposit (Number corresponds to MINFILE classification).

METALLIC MINERAL DEPOSITS
(MINFILE number, name, commodities)

6 Lat Port (Au, Ag, Cu)
7 Scotia (Zn, Pb, Ag, Cu, Cd, Au, Fe)
11 Ecstall (Cu, Zn, Pb, Ag, Fe, S)
12 Third Outcrop (Cu, Zn)
13 Packsack (Cu, Zn, Ag, Au, Pb)
14 Horsefly (Zn, Cu, Pb, Ag, Au)
15 Kiskosh Inlet (Cu)
16 Decaire (Zn, Pb)
17 Abruzzi (Cu, Ag)
18 Drum Lummon (Cu, Ag, Au)
36 Steelhead (Cu, Zn, Ag)
50 East Plateau (Zn, Cu)
51 Trench (Cu, Zn, Ag)
52 Mariposite (Zn)
53 West Grid (Cu, Zn, Ag, Au)
54 Thirteen Creek Cirque (Cu, Zn, Ag, Au)
55 South Creek Grid (Cu, Zn)
56 Bear (Cu, Zn, Ag)
69 Phoebe Creek (Cu, Zn, Ag, Au)
70 Sphalerite (Zn, Cu, Cd)
71 El Amino (Cu, Zn, Ag)

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LOCATION MAP

Geological compilation by S.A. Gareau in 1990 based on field work from 1987-1989 and on previously published studies which are listed by National Topographic System (NTS) map area: 103H/11, Padgham (1958), Money (1959), Roddick (1970), Runkle (1979); 103H/12, Roddick (1970), 103H/13,14, Padgham (1958), Roddick (1970); 103-I/3,4, Kenah (1979), Hutchison (1982), Woodsworth et al.(1983a)

Digital cartography by J.A.Y. Pratt, Geoscience Information Division

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

MAP 1868A

GEOLOGY

SCOTIA-QUAAL METAMORPHIC BELT, COAST PLUTONIC COMPLEX

BRITISH COLUMBIA

Scale 1:100 000 - Échelle 1/100 000

Kilometres 2 0 2 4 6 8 Kilomètres

Universal Transverse Mercator Projection — Projection transverse universelle de mercator

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Earth Sciences Sector / Secteur des sciences de la Terre

Base map assembled by the Geoscience Information Division from maps 103H/11,12,13,14 (1981), 103-I/3 (1981), 103-I/4 (1980) published at 1:50 000 scale by the Surveys and Mapping Branch

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Natural Resources Canada, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1997, 23°26′ E, decreasing 8.4′ annually
Readings vary from 23°10′ E in the SE corner to 23°40′ E in the NW corner of the map

Elevations in feet above mean sea level

Published 1997

103J/8	103-I/5	103-I/6	103-I/7
103J/1	103-I/4	103-I/3	103-I/2
103G/16	103H/13	103H/14 1868A	103H/15
103G/9	103H/12	103H/11	103H/10
103G/8	103H/5	103H/6	103H/7

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

Recommended citation:
Gareau, S.A. (comp.)
1997: Geology, Scotia-Quaal metamorphic belt, Coast Plutonic Complex, British Columbia, Geological Survey of Canada, Map 1868A, scale 1:100 000

Canada

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