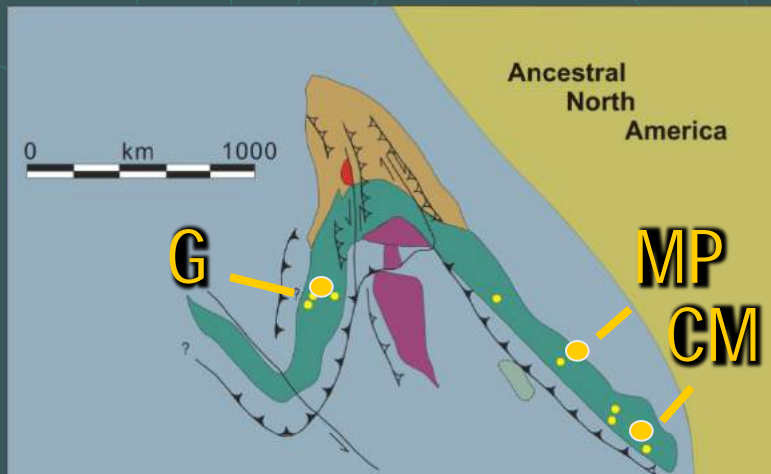


Stikine Terrane Cu, Cu-Au & Mo Porphyry Deposits

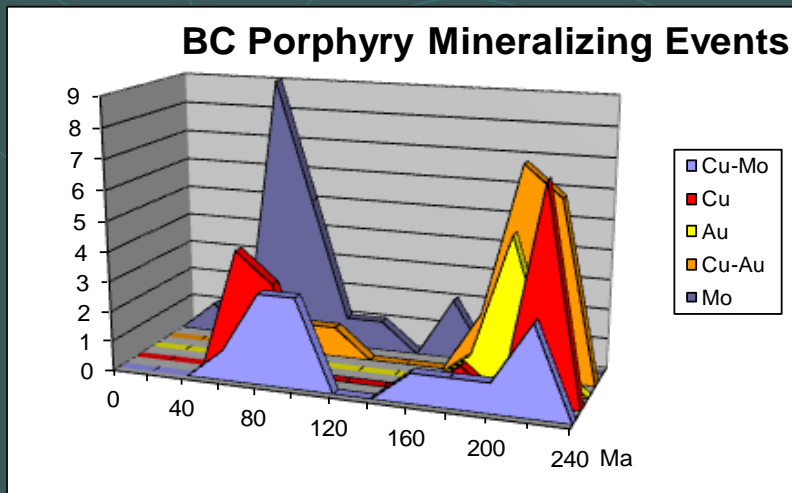
Exploration Undercover Workshop
Oct 12, 2011

Tectonic Setting of Stikinia

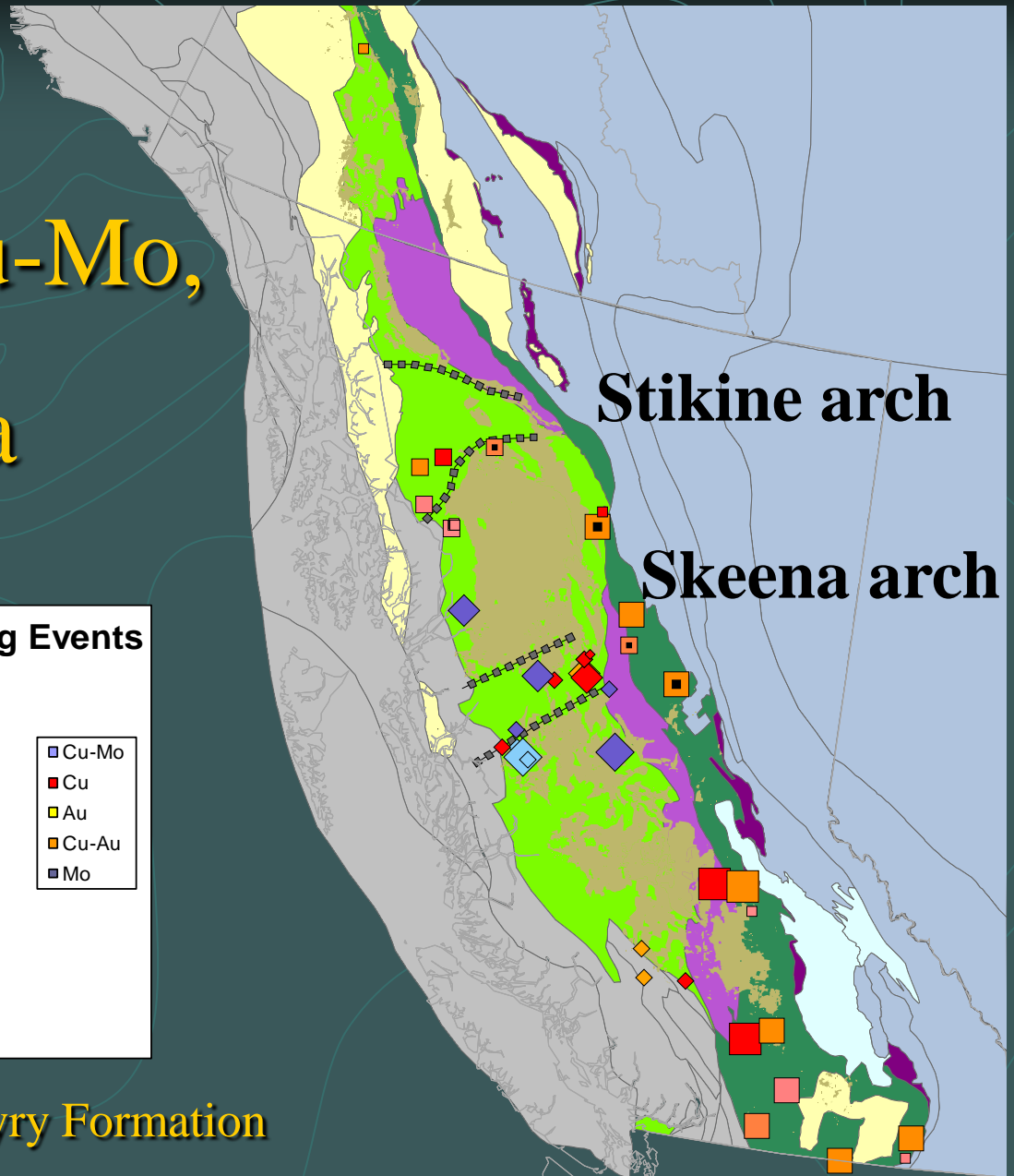


Late Triassic Early Jurassic

Porphyry Cu, Cu-Mo, Cu-Au, and Mo Deposits Stikinia

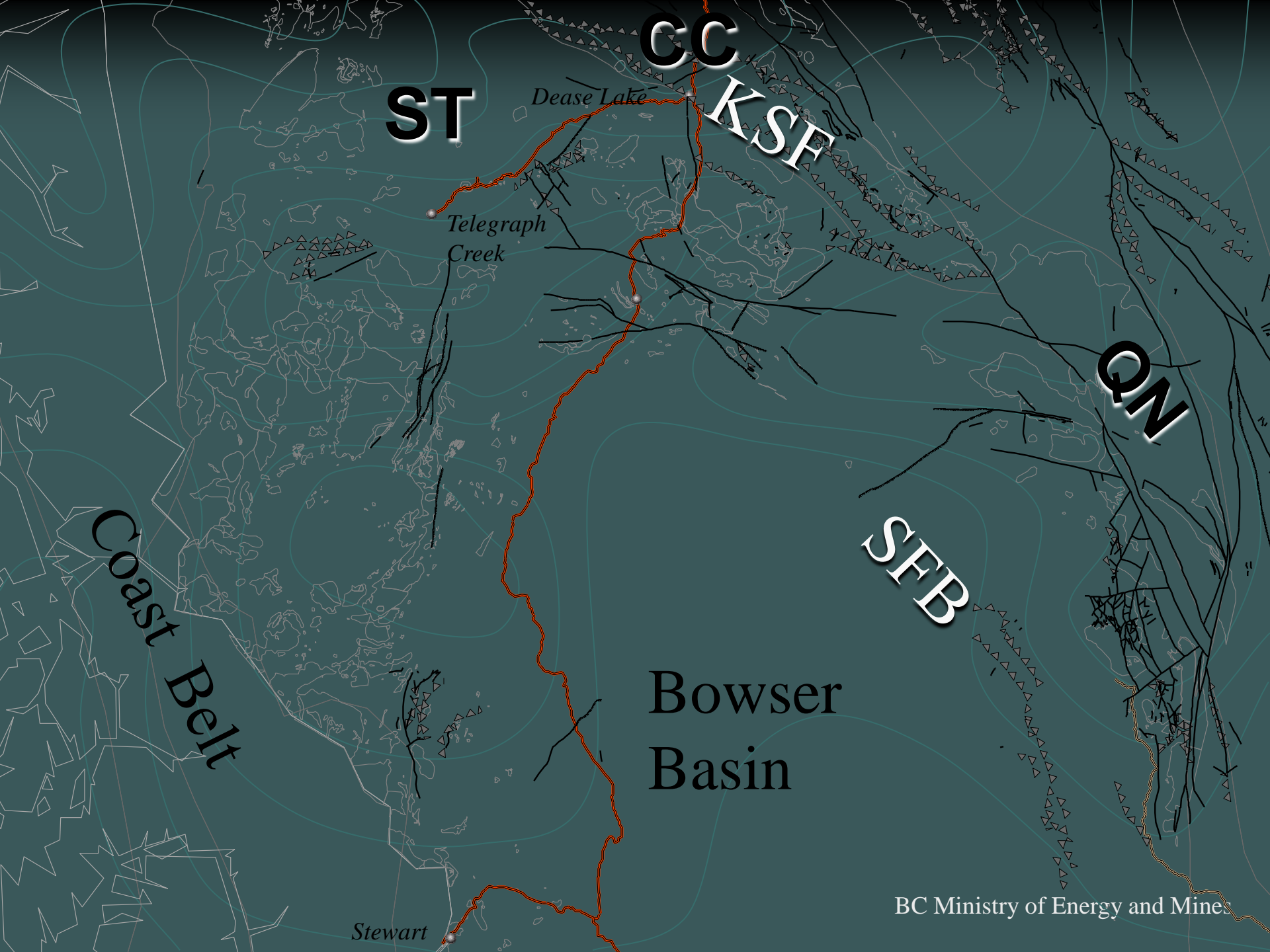


2 main Episodes of BC Porphyry Formation



Stikinia

- Comprises 3 overlapping Island arc assemblages spanning 200 m.y.
 - Late Paleozoic Stikine, Middle to Late Triassic Stuhini or Takla, and Early to Middle Jurassic Hazelton groups
- These rocks are cut by coeval plutons;
Late Triassic Stikine and Copper Mountain intrusive suites,
Early Jurassic Texas Creek intrusive suite and
Middle Jurassic Three Sisters intrusive suite
- The plutonic roots of this magmatic arc are exposed along the trend of the Stikine arch in NW Stikinia and the Skeena Arch in central Stikinia
- World class gold-rich deposits are associated with the Late Triassic, and Early Jurassic intrusive suites in NW Stikinia



ST

CC

KSF

ON

SEB

Coast Belt

Bowser
Basin

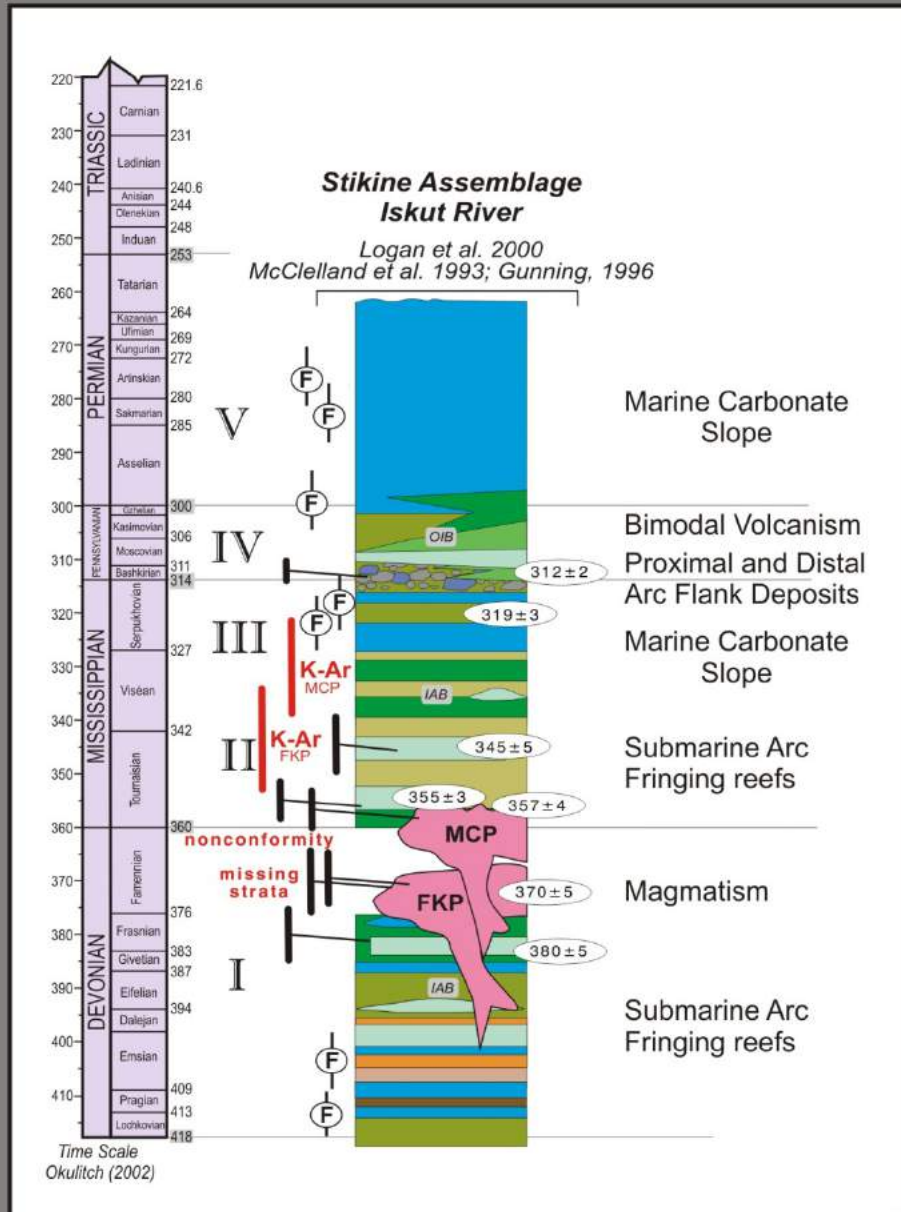
Dease Lake

Telegraph
Creek

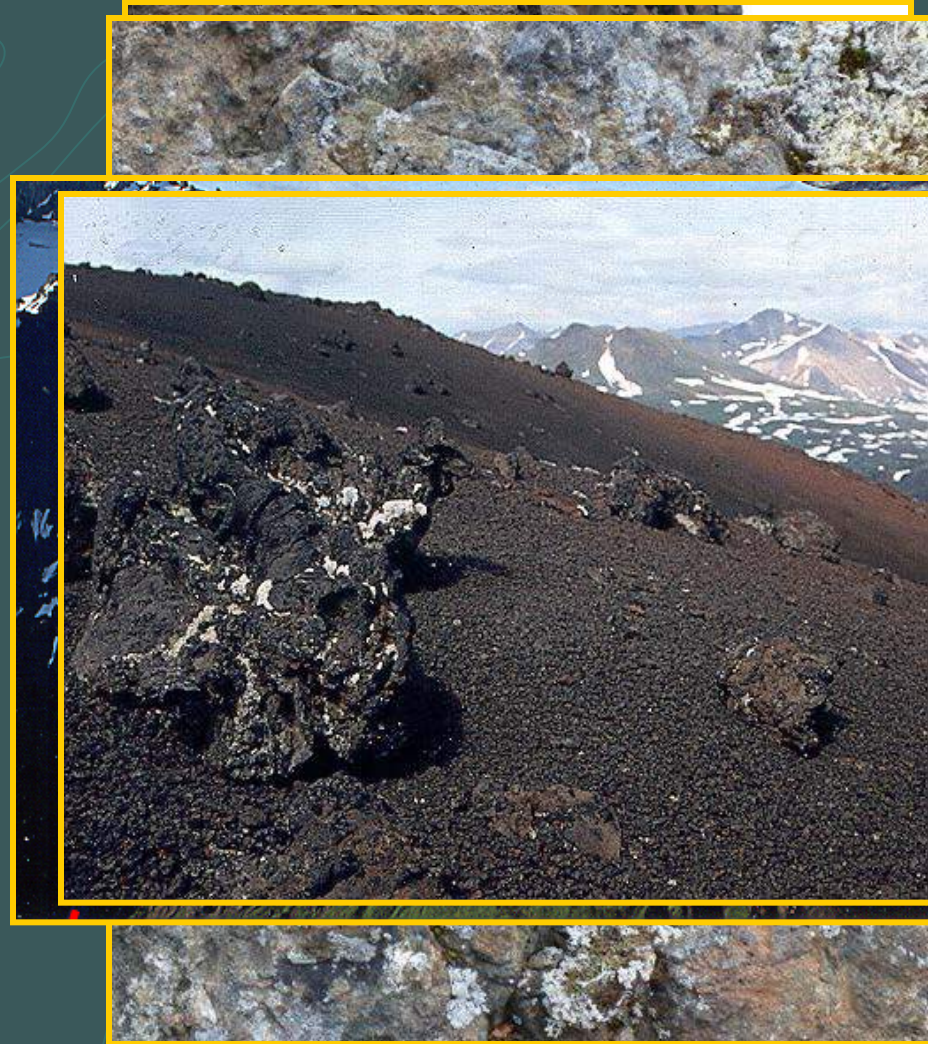
Stewart

Northwestern Stikinia

Paleozoic Stratigraphy



Mesozoic Stratigraphy

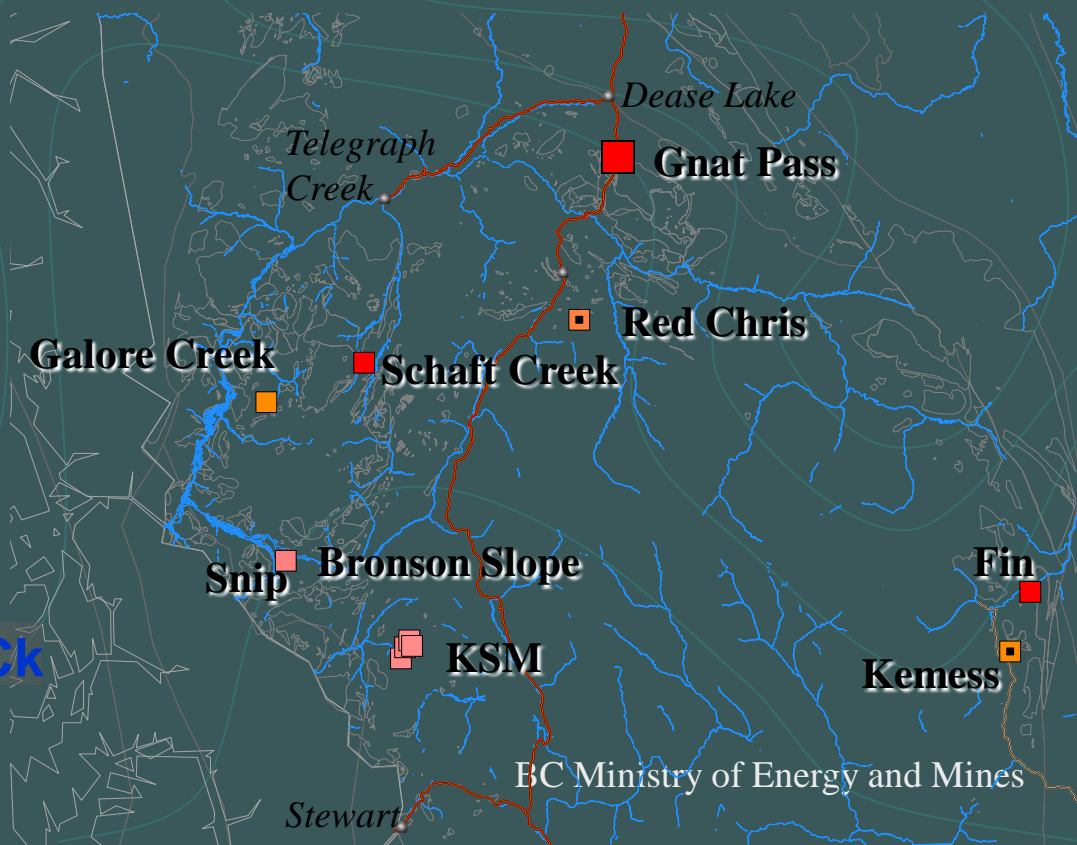
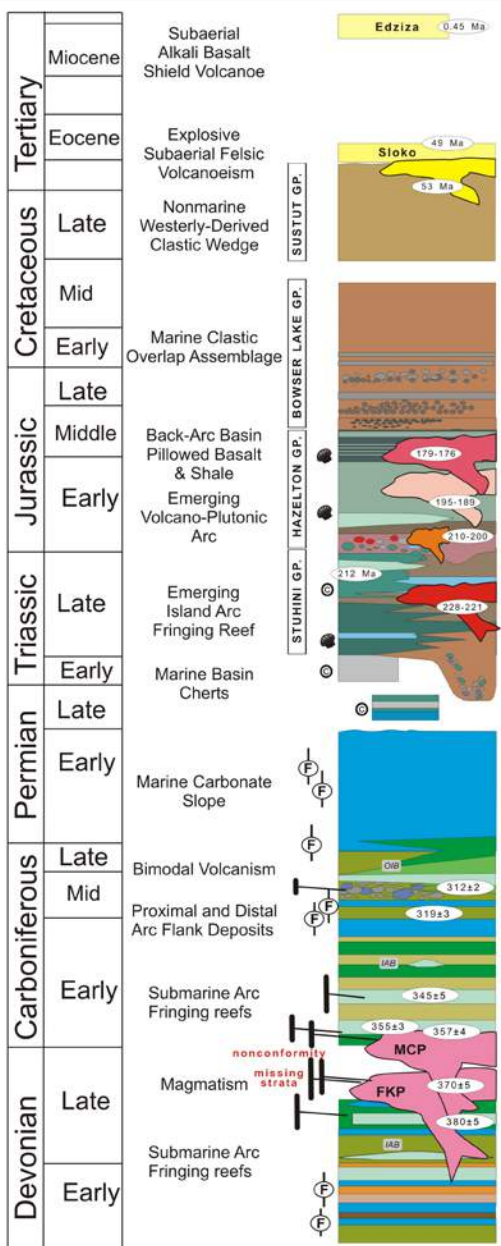


Plutonic Suites - NW Stikinia

Hyder

Three Sisters
Texas Ck
Cu Mtn
Stikine

Forrest
Kerr/More Ck



BC Ministry of Energy and Mines

Triassic-Jurassic Cu-Au-Ag \pm Mo Porphyries - NW Stikine Terrane

Deposit	Reserves/Resources (Mt)	Cu (%)	Au (g/t)	Contained Au (M oz)
Schaft Creek	1393	0.25	0.18	8.0
Galore Creek	785.7	0.50	0.29	7.3
Copper Canyon	152.6	0.30	0.52	2.5
Red Chris	619	0.38	0.36	7.1
Kemess*	232.7	0.15	0.39	2.9
Brucejack	297	-	0.86	8.1
Snowfield	1370	0.10	0.59	25.9
Kerr-Sulphurets- Mitchell (KSM)	2549	0.21	0.55	45.0

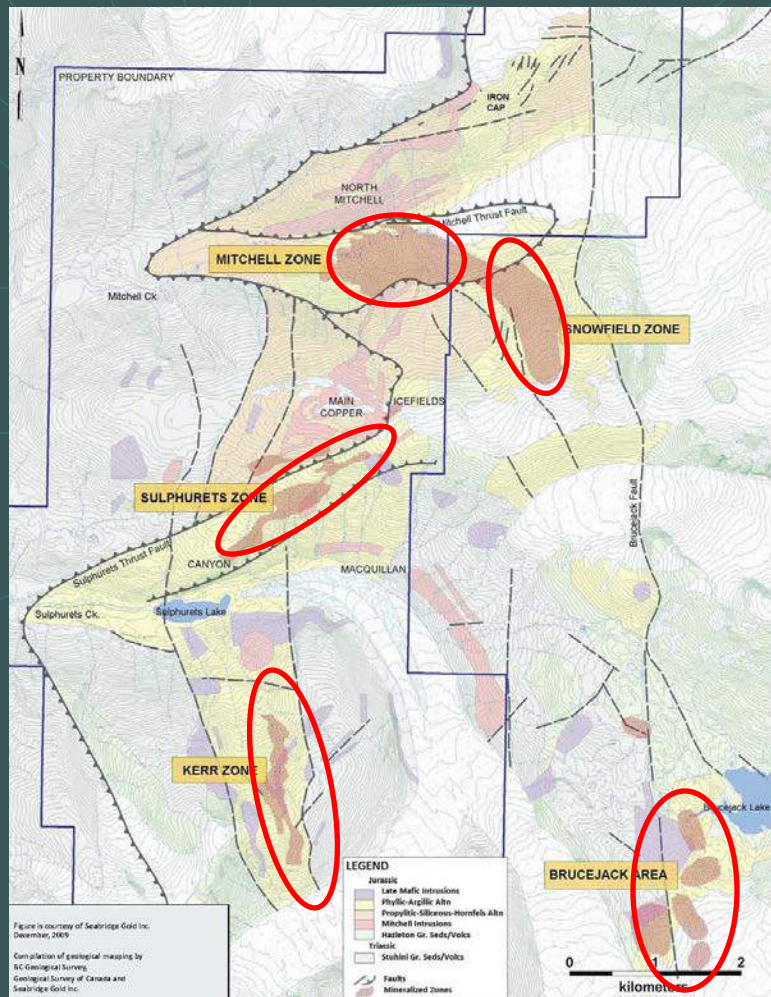
*past production grades calculated from metal produced (BCMINFILE)

West Fork Zone, Galore Creek, 2005

Early Jurassic Cu-Au Porphyries - NW Stikine Terrane

KSM-Snowfield-Brucejack

- Early Jurassic high level bulk tonnage Cu-Au-Ag porphyries (K, S, M, Snowfield) & bonanza-grade Au-Ag epithermal veins (BJ)
- Associated w/ Early Jurassic (195 Ma) Hazelton volcanism, intrusions and characterized by large schistose pyritic gossans
- Post-mineral E-directed thrust faulting has dismembered the deposit



Looking north from Snowfields towards Iron Cap

M+I Res
4216 Mt

Contained Cu
1,488,143 M lb

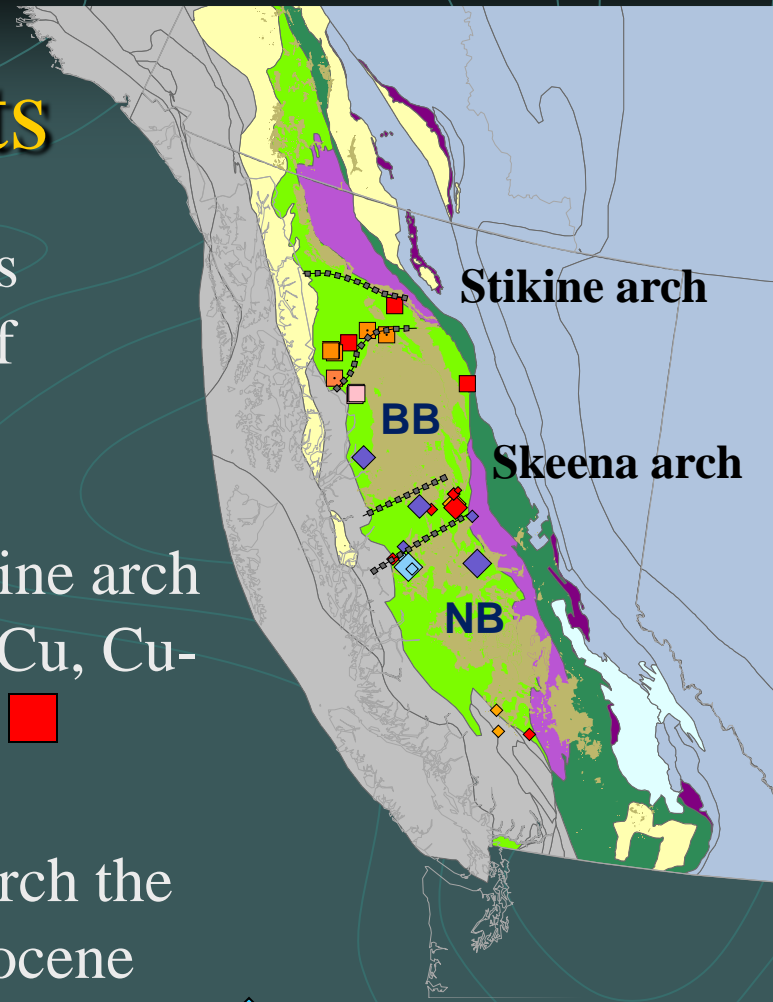
Contained Au
79.0 M oz

<http://www.seabridgegold.net/resources.php>

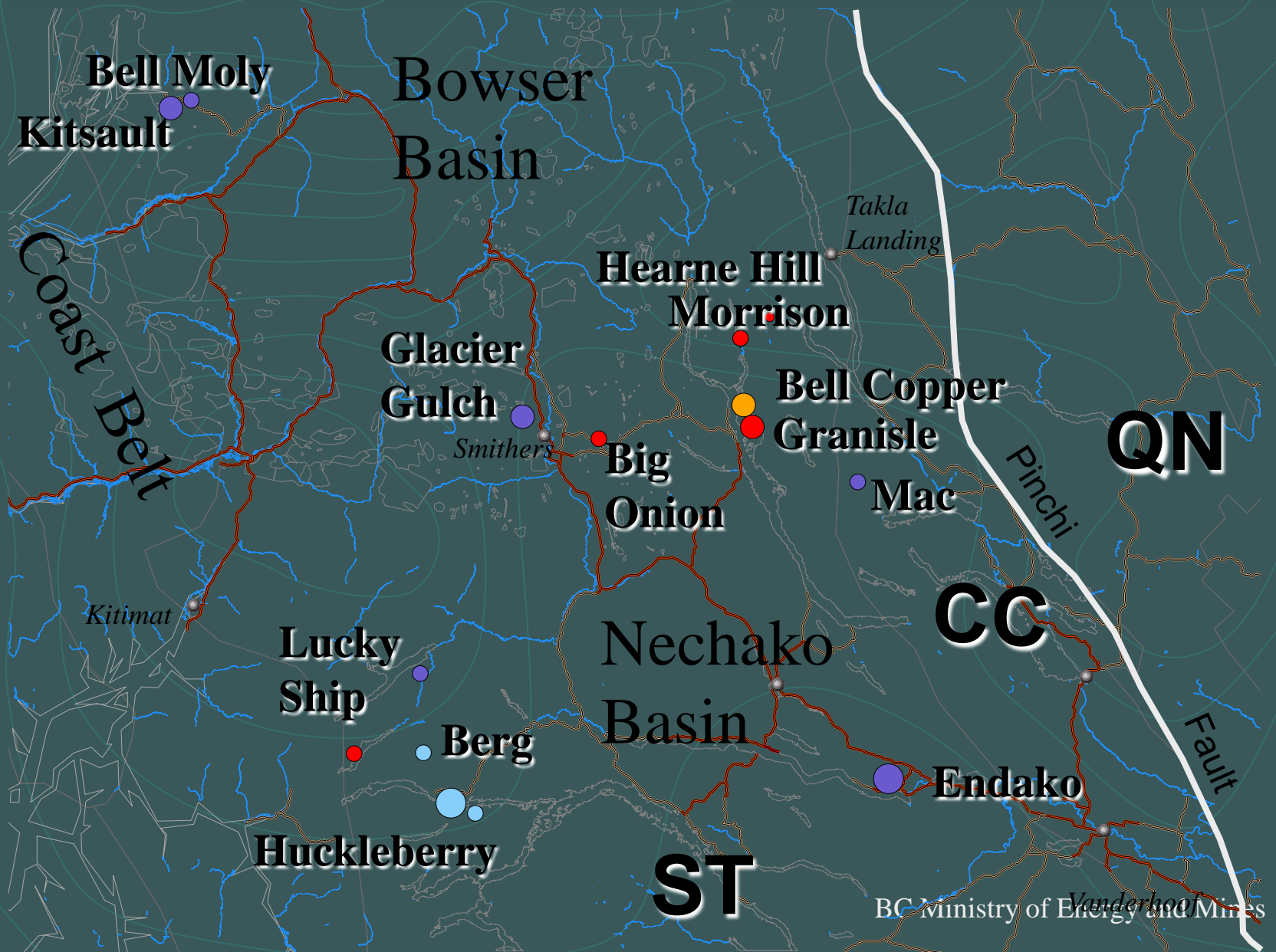
Stikine Porphyry Deposits

Distribution of porphyry deposits across Stikinia is directly related to the level of bedrock exposure and preservation

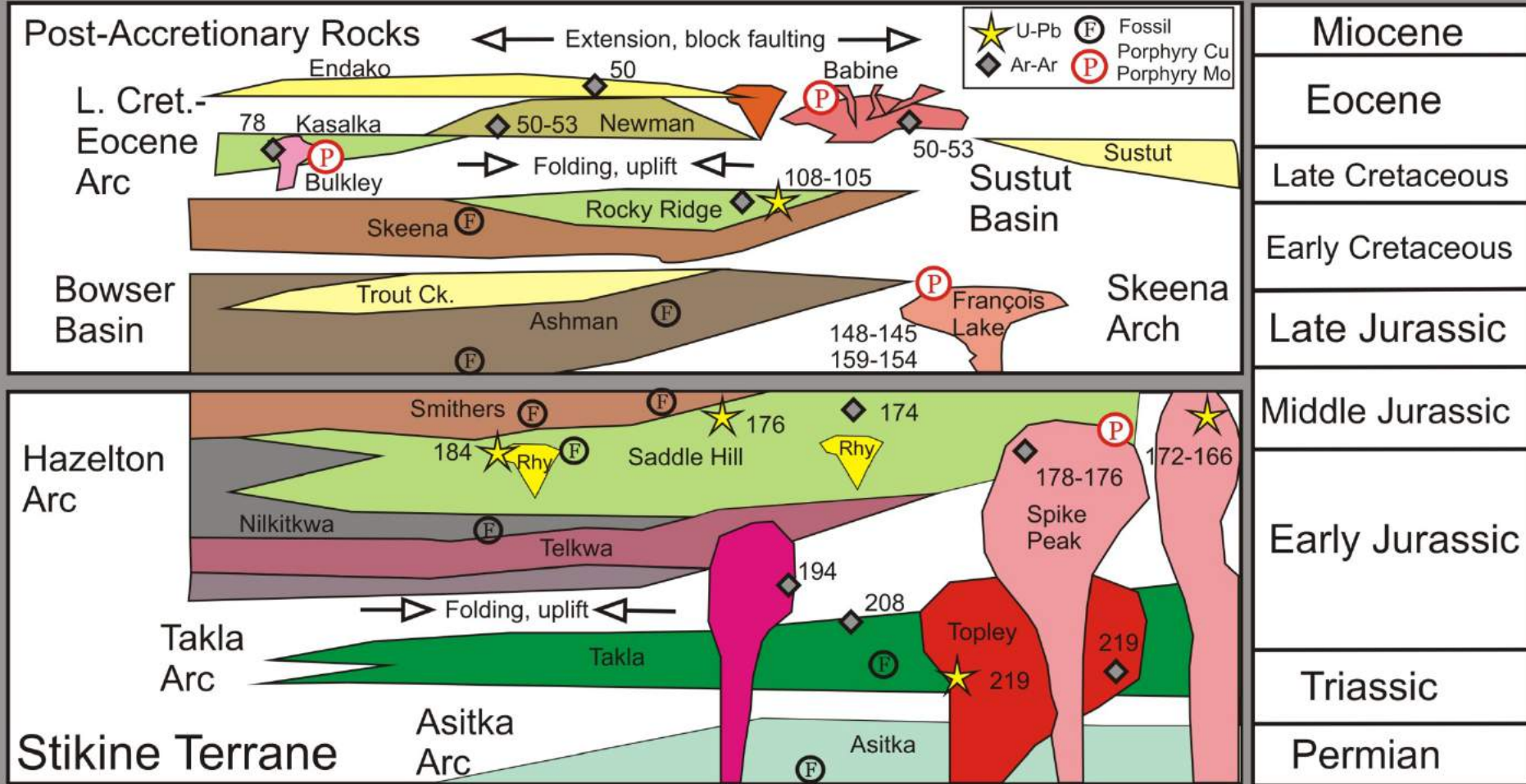
- N of the Bowser Basin along the Stikine arch are L> to EJ calc-alkaline and alkaline Cu, Cu-Mo and Cu-Au-Ag porphyry deposits ■
- In central Stikinia along the Skeena arch the deposits are Late Cretaceous to early Eocene calcalkaline Cu-Mo and Mo porphyry deposits and ◆
- the latest Late Jurassic Mo deposit at Endako



Skeena Arch – Central Stikinia



Central Stikine Terrane - Stratigraphy



MacIntyre, Villeneuve and Schiarizza, 2001

Late Jurassic Mo Porphyries - Central Stikine Terrane



Endako

- at 145 Ma is oldest porphyry Mo deposit in Cordillera and largest low-fluorine granodiorite-type
- hosted in Endako subsuite of Late Jurassic Francois Lake Plutonic Suite
- 2 ages of Mo mineralization spatially and genetically related to terminal stages of highly fractionated felsic magma
 - Endako 145 Ma
 - Nithi ~154 Ma

Reserves (Mt)	Mo (%)	Au (g/t)
340.3	0.046	-

Cretaceous Cu-Mo-Au Porphyries - Central & Southern Stikine Terrane

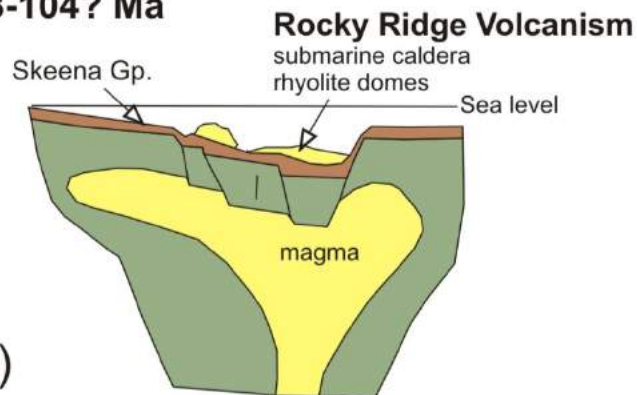
Deposit	Reserves/Resources (Mt)	Cu (%)	Mo (%)	Au (g/t)	Contained Au (M oz)
Glacier Gulch	77.2	-	0.16	-	-
Huckleberry*	88.9	0.46	0.004	0.02	-
Ox Lake	16.1	0.3	0.04	-	-
Prosperity	831	0.23	-	0.41	10.9
Poison Mountain	280	0.26	0.007	0.14	1.2
Taseko	6.7	0.73	-	0.83	-

Huckleberry* past production Milled tonnes and grades
calculated from metal produced 1997-2011 (BCMINFILE)

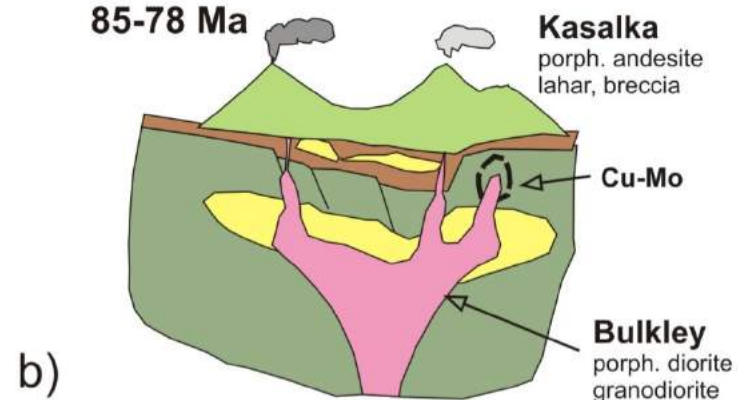
Huckleberry, 2000

Mid-Cret.- Eocene volcanic/magmatic evolution - central Stikinia

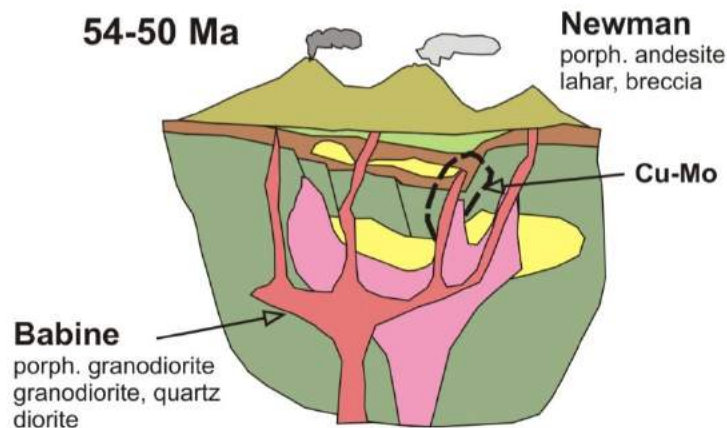
a 108-104? Ma



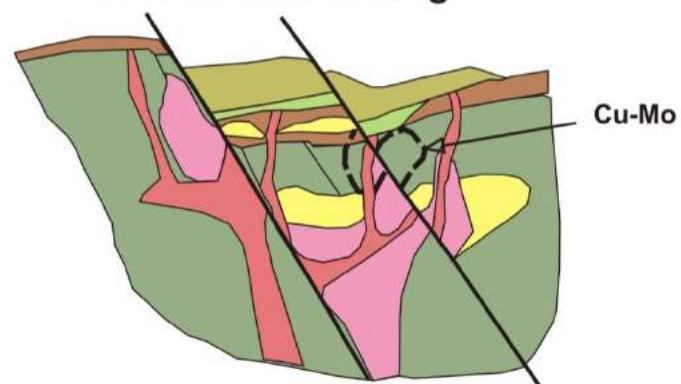
85-78 Ma



54-50 Ma

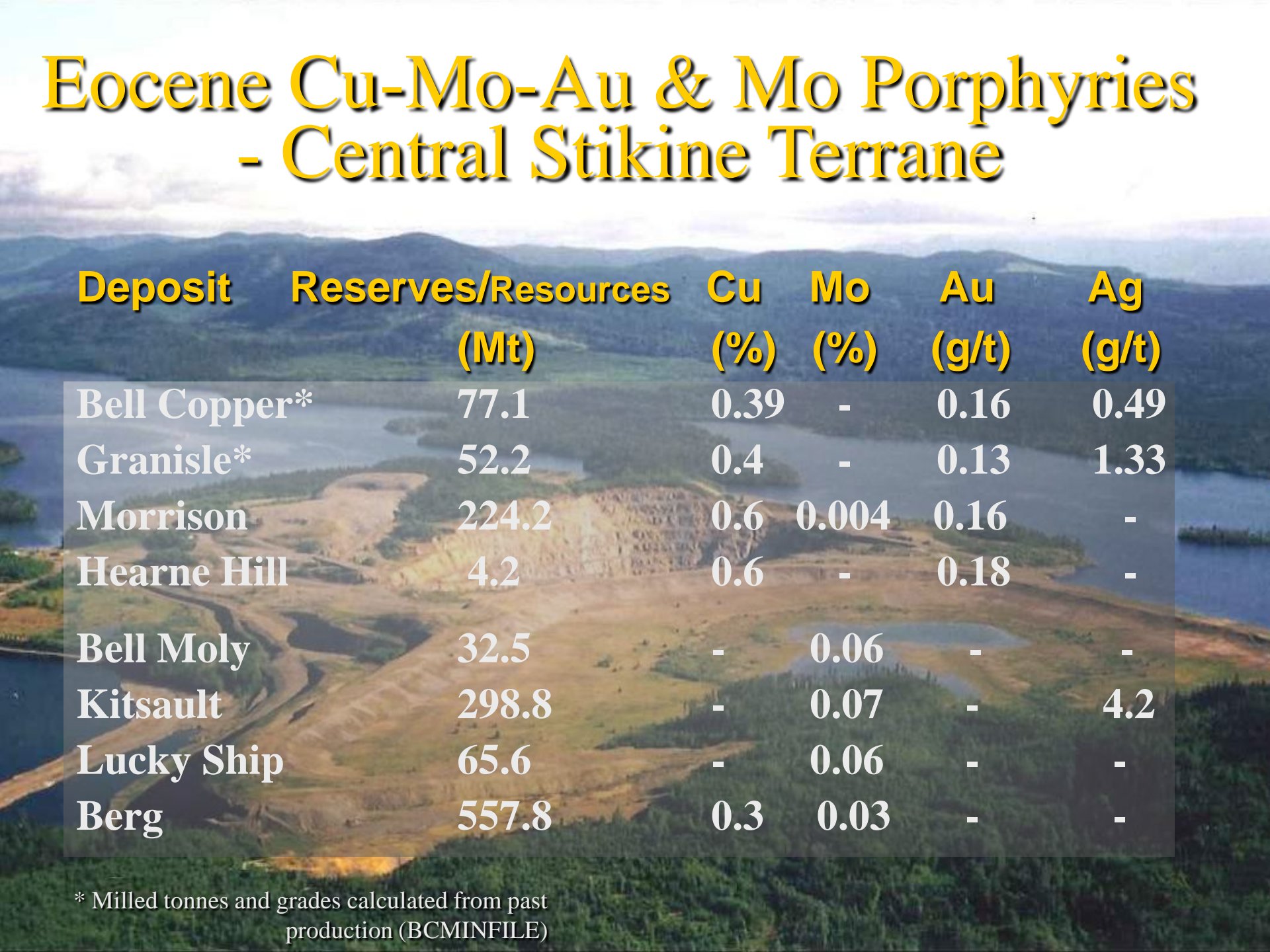


<50 Ma block faulting



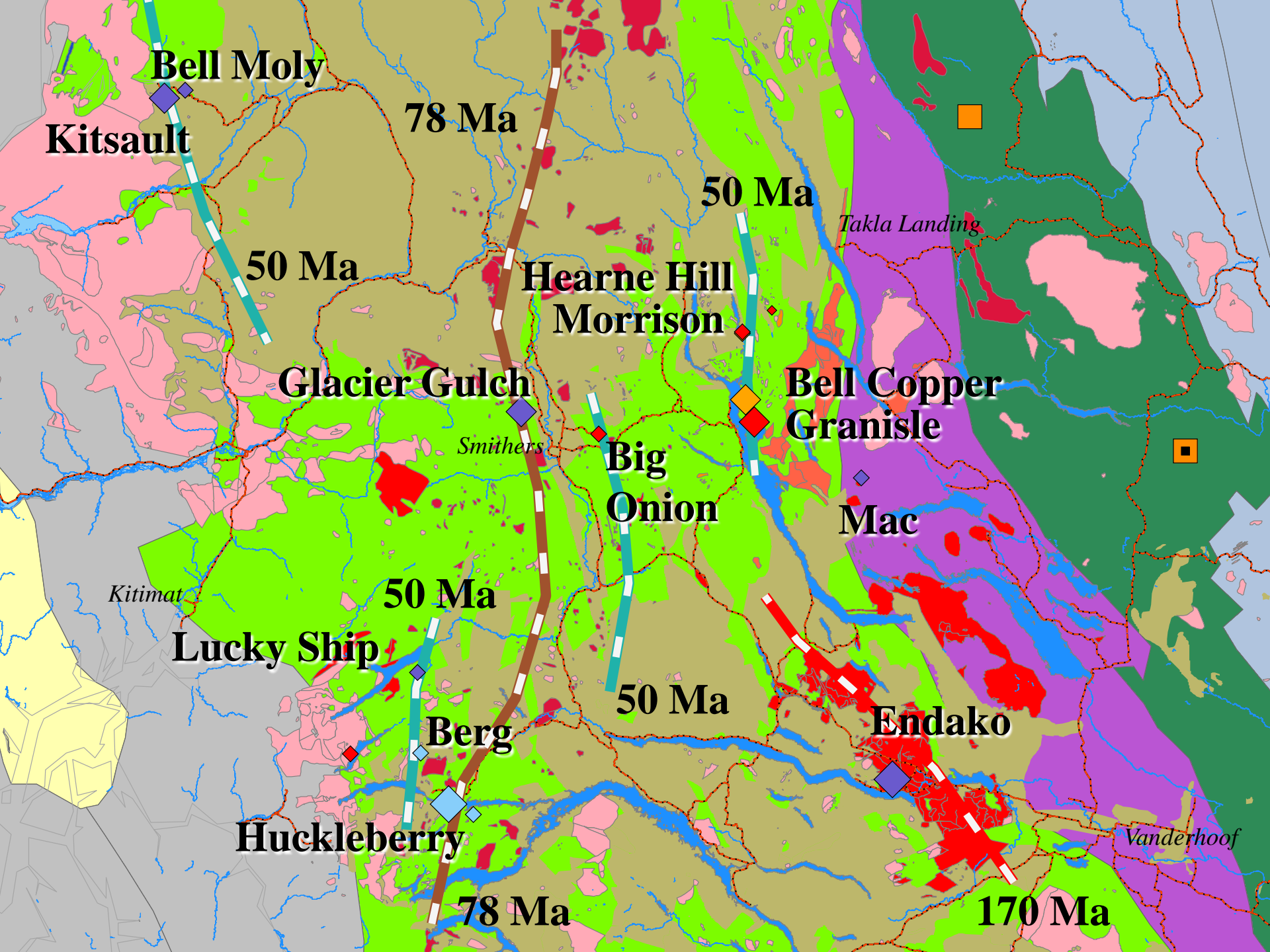
MacIntyre and Villeneuve, 2001

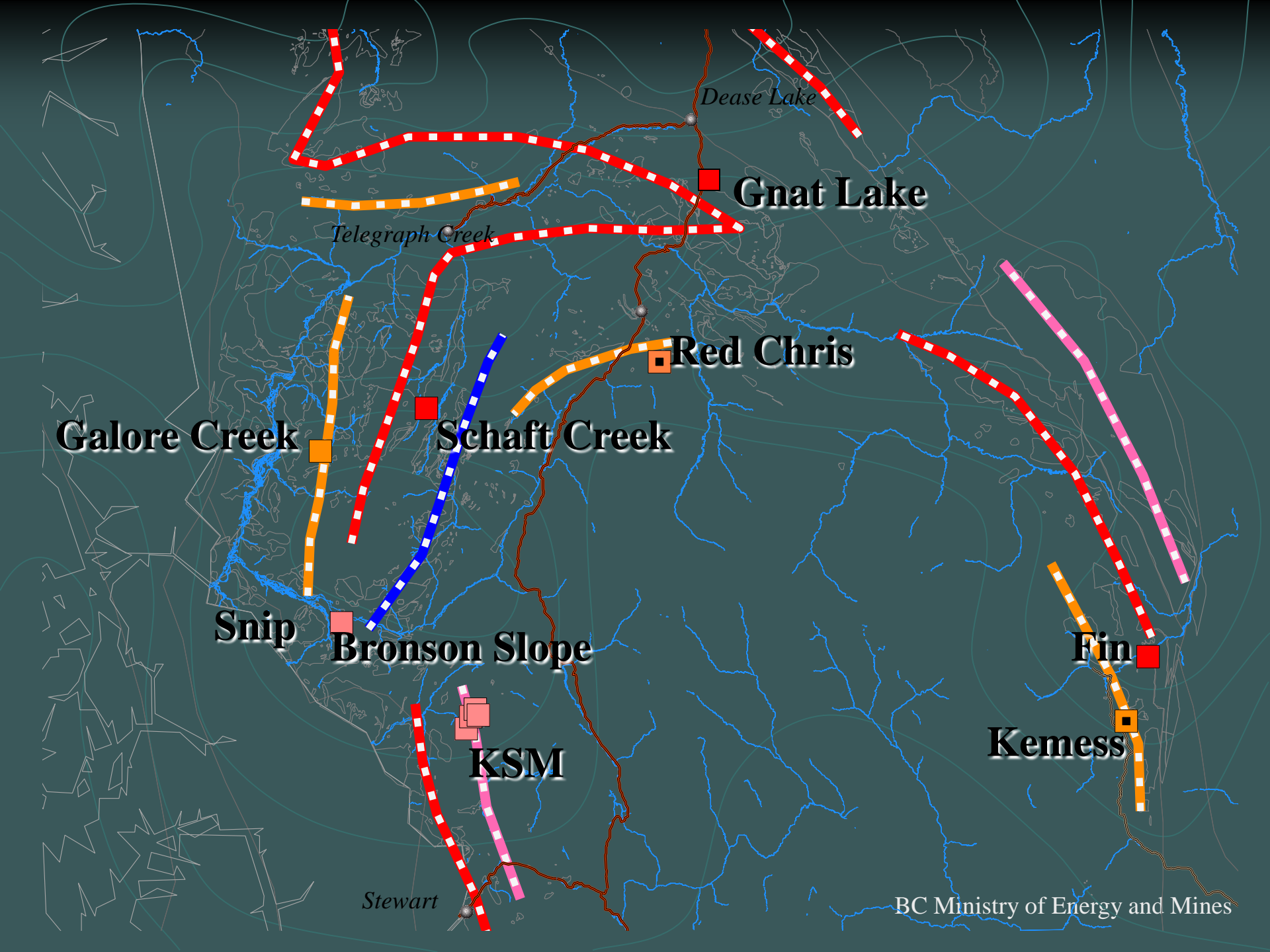
Eocene Cu-Mo-Au & Mo Porphyries - Central Stikine Terrane



Deposit	Reserves/Resources (Mt)	Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)
Bell Copper*	77.1	0.39	-	0.16	0.49
Granisle*	52.2	0.4	-	0.13	1.33
Morrison	224.2	0.6	0.004	0.16	-
Hearne Hill	4.2	0.6	-	0.18	-
Bell Moly	32.5	-	0.06	-	-
Kitsault	298.8	-	0.07	-	4.2
Lucky Ship	65.6	-	0.06	-	-
Berg	557.8	0.3	0.03	-	-

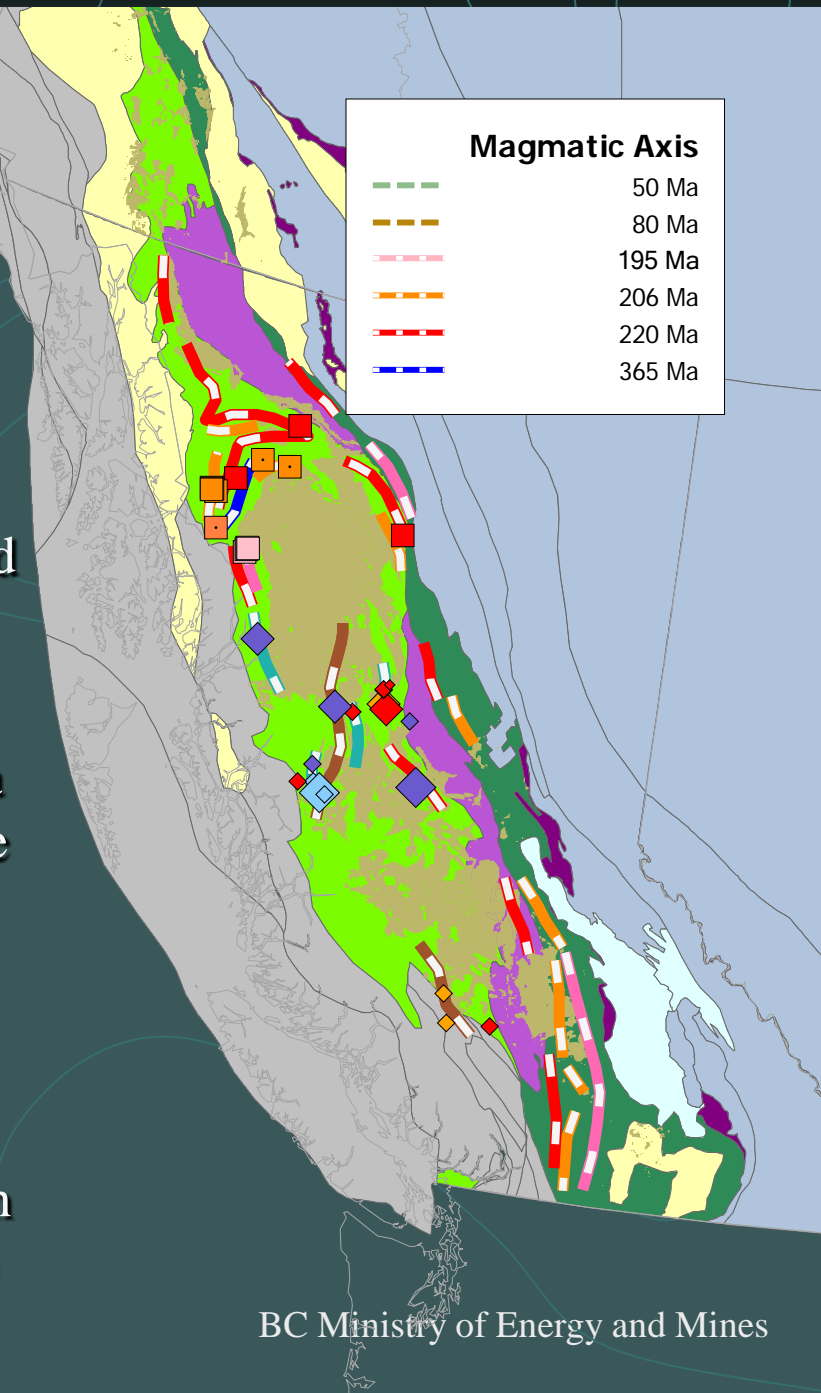
* Milled tonnes and grades calculated from past production (BCMINFILE)



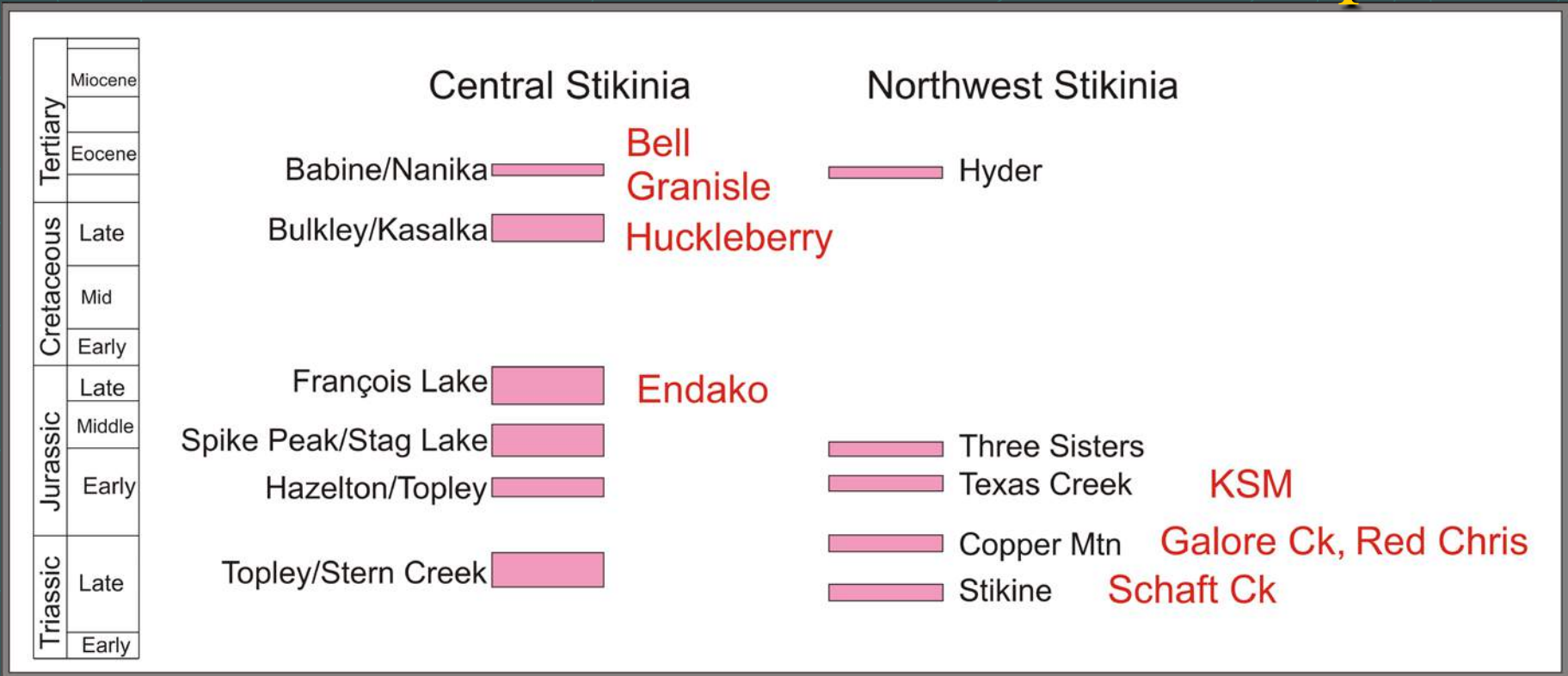


Magmatic Axis Quesnel-Takla-Stuhini Arc

- The linear distribution of similar aged plutons marks the magmatic axis of the arc.
- In southern Quesnel the pattern is straightforward - belts extend parallel to continental margin and young eastward suggesting a westerly-facing arc.
- Triassic and Jurassic plutons in the NW display a more complicated pattern suggestive of large-scale folding and duplication of the highly prospective alkalic Copper Mtn intrusive belt.
- Bulkley intrusives define a probable south trending Late Cretaceous magmatic axis linking central Stikine Cu-Mo deposits (Huckleberry) with southern Stikine deposits (Prosperity, Poison Mtn)



Stikine - Plutonic Suites & Mineral Deposits



The similar ages and episodic nature of magmatic activity in the northwest and central parts of Stikinia suggest an equal potential for mineral deposit formation elsewhere in Stikinia but to date this not been proven.

Are the older deposits preserved? and can we trace the highly prospective Triassic-Jurassic magmatic axis undercover? Hopefully the next couple of days will help answer these questions.