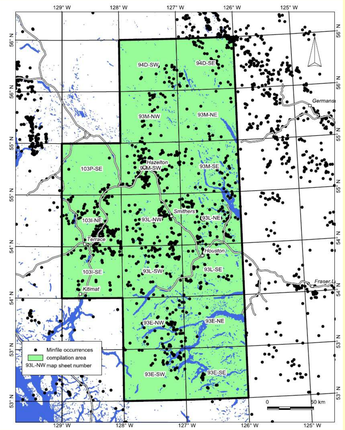
Geology and Mineral Deposits of the Skeena Arch, West Central BC - A Geoscience BC Digital Data Compilation Project

Don MacIntyre, Ph.D., P.Eng.

D.G. MacIntyre & Associates Ltd.

Project Overview

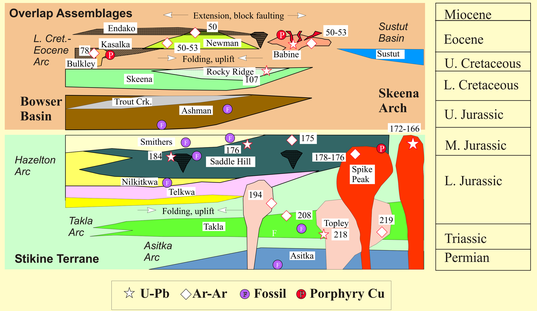
The Skeena Arch represents a long lived magmatic arc that has produced a diverse range of mineral deposits in West Central BC. This area represents some of the most richly endowed terrain in British Columbia and has been the site of mineral exploration for the past 125 years. Since 1985 the BC Geological Survey Branch and the Geological Survey of Canada have been involved in regional mapping projects along the Skeena Arch. This work has resulted in a much better understanding of the geologic evolution of the arch, particularly during the metallogenically important Jurassic through Eocene time period.. This data was originally compiled at 1:100,000 scale as part of the BCGS Mineral Potential Project and revised and updated as part of the Digital Geology of BC project. The Skeena Arch project will provide a means of bringing these and other digital datasets together as a standardized, seamless GIS compatible digital database that can be used to produce new geological and metallogenic maps for the area.



The area covered by the Skeena Arch project is shown in green and includes all of the Hazelton (93M), Smithers (93L) and Whitesail (93E), the south half of the McConnell Creek (94D), east half of the Terrace (103I) and southeast corner of the Nass River (103P) map sheets.

- The aim and scope of the Skeena Arch project is to promote new exploration along the Skeena Arch by:
- *Compiling all existing data relevant to mineral exploration along the arch and building a GIS database in various data formats that can be used to generate new 1:100,000 geological maps.*
- *Build a Mapguide web site that will assist explorationists to analyze the data and define new exploration targets based on correlation of positive indicators such as geochemical and geophysical anomalies, stratigraphic setting etc.*
- *Making all data available for free download from the BC Ministry of Energy, Mines & Petroleum Resources MapPlace*

Geological Setting of Mineral Deposits

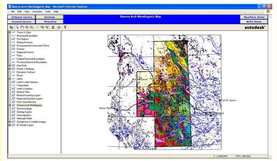


Profile Code	Name	Count
I05	Polymetallic veins Ag-Pb-Zn±Au	268
L01	Subvolcanic Cu-Ag-Au (As-Sb)	153
L04	Porphyry Cu ± Mo ± Au	140
D03	Volcanic redbed Cu	86
L05	Porphyry Mo (Low F- type)	66
I02	Intrusion-related Au pyrrhotite veins	38
K01	Cu skarns	20
G06	Noranda / Kuroko massive sulphide Cu-Pb-Zn	7
E04	Sediment-hosted Cu	6
H05	Epithermal Au-Ag; low sulphidation	6
I01	Au-quartz veins	6
M01	Flood Basalt-Associated Ni-Cu	4
H04	Epithermal Au-Ag-Cu; high sulphidation	3
I06	Cu±Ag quartz veins	3
I12	W veins	3
K03	Fe skarns	3
K04	Au skarns	3
E14	Sedimentary exhalative Zn-Pb-Ag	2
G04	Besshi massive sulphide Cu-Zn	2
J01	Polymetallic manto Ag-Pb-Zn	2
K02	Pb-Zn skarns	2
L02	Porphyry Related Au	2
L03	Alkalic porphyry Cu-Au	2
		827

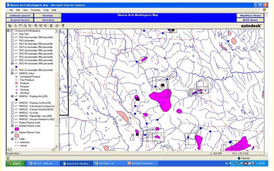
Now Available on MapPlace

Data for the Skeena Arch project is now available on the B.C. Ministry of Energy, Mines and Petroleum Resources MapPlace website (http://www.mapplace.ca) under the Thematic Maps - Detailed Geology section. The opening page includes a brief overview of the project and provides links to downloadable data in ESRI shape file, Manifold Map and Google Earth kml file formats. Shape files are provided in both Geographic (Longitude-Latitude) and UTM projections. The Skeena Arch Mapguide map in UTM projection. It was felt that this projection would be more useful to users who wish to print maps from the website and plot their own data using UTM coordinates

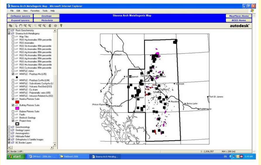
Examples from the Skeena-Arch map on MapPlace



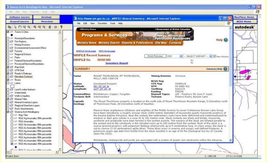
Geology of the project area



Mo anomalies and intrusions

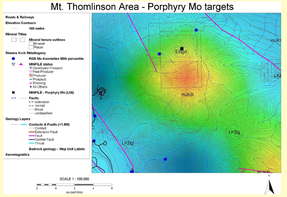


Porphyry Mo occurrences



Link to Minfile data

Map Output



Users can make there own custom maps at any scale for an area of interest. This example shows Mo occurrences, RGS Mo anomalies and mineral tenures superimposed on an aeromag base for the Mt. Thomlinson area north of Hazelton.