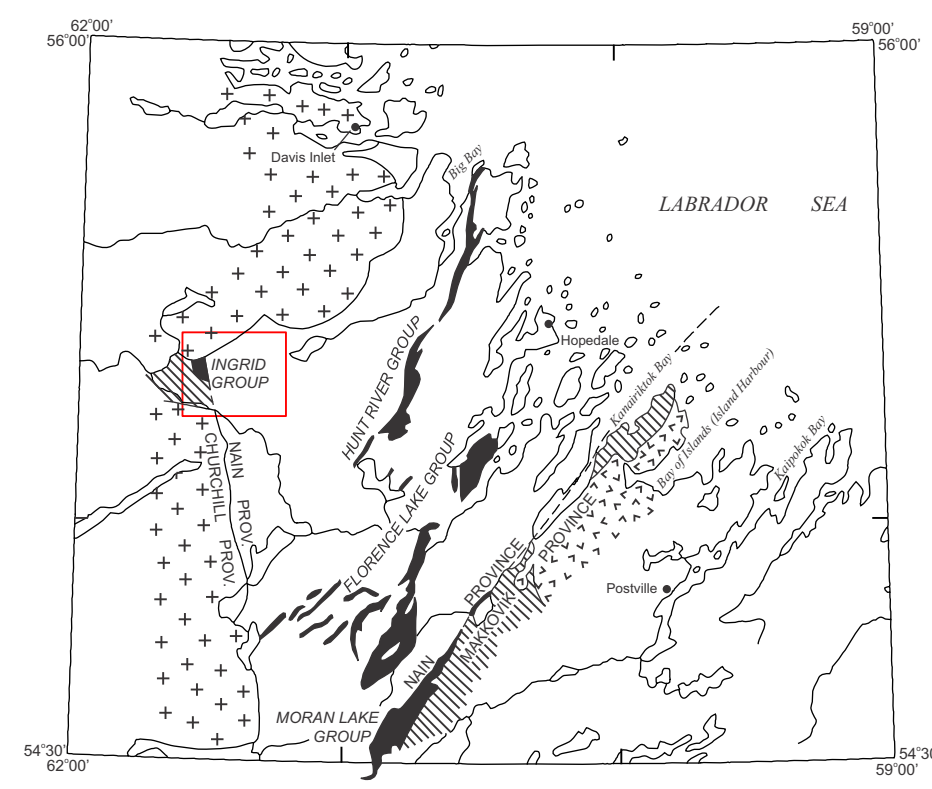


GEM-II EXPLORING THE HOPEDALE BLOCK - A GSNL-GSC-NUNATSIAVUT COLLABORATIVE PROJECT. ALANA HINCHEY¹ AND DAVID CORRIGAN²

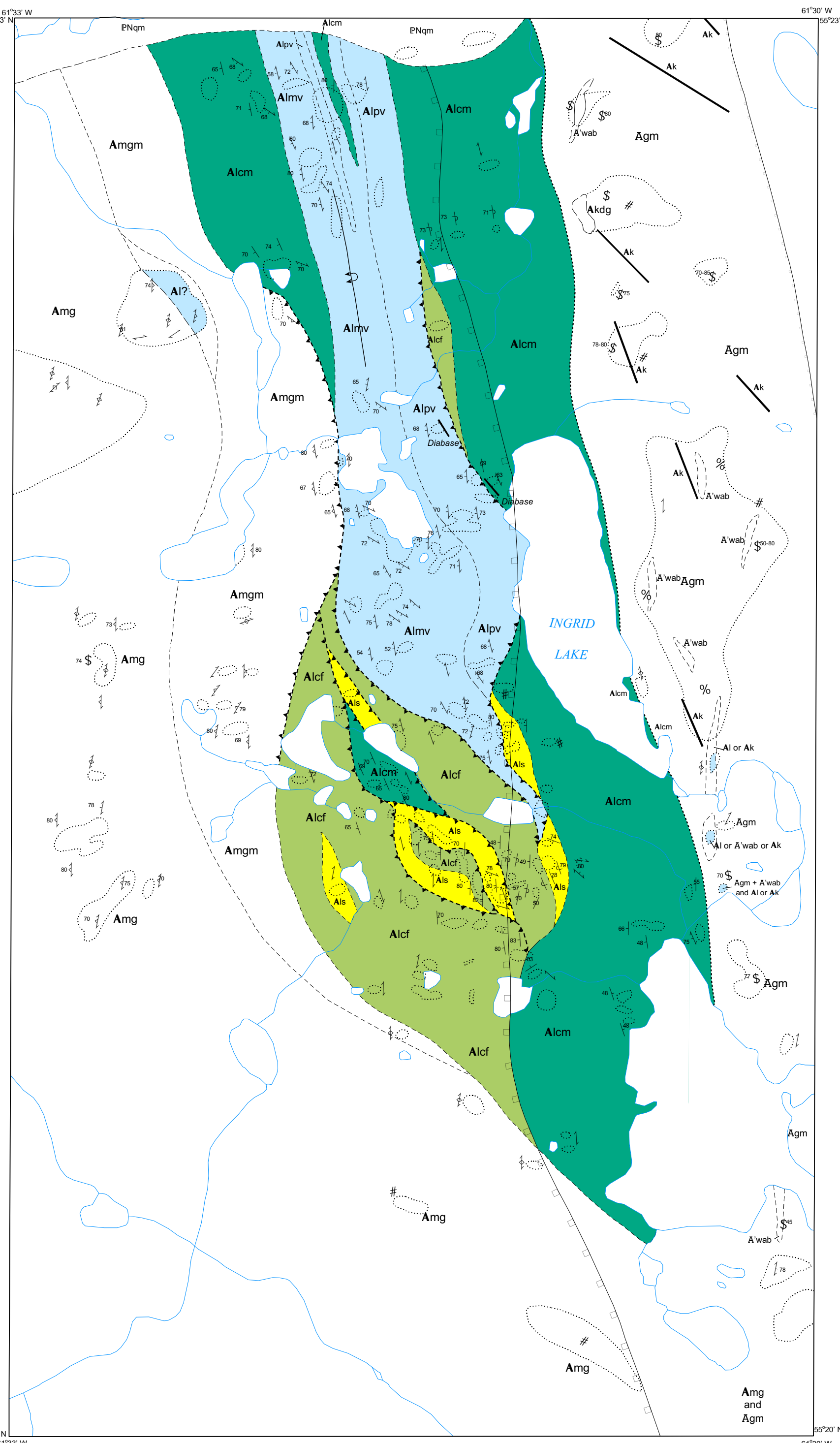


Regional geological map.

Research this past summer represented the completion of the field work of the Geological Survey of Canada – Geological Survey of Newfoundland and Labrador – Nunatsiavut collaborative project aimed at upgrading the geoscientific knowledge of, and stimulating mineral exploration in, the Hopedale region of Labrador. This project is supported by the Geomapping for Energy and Minerals (GEM II) program at Natural Resources Canada. The principal aim of GEM II is to assist in completing coverage of regional-scale geological maps across Canada's north, and to enhance knowledge in regions that will build towards gaining a better understanding of the geological evolution of key parts of the Canadian Shield. The project in the Hopedale Block addresses the latter objective by targeting specific areas of the Nain Province that will improve knowledge of the Saglek and Hopedale crustal blocks, their mutual boundary, and potential correlations with SW Greenland.

The Ingrid Group is an isolated package of supracrustal rocks including volcanic and coarse-grained detrital rocks of presumed Paleoproterozoic age. The group is exposed as a faulted block preserved between the Churchill Province to the west and the Archean Nain Province to the east. The rocks are composed of subaerial lavas and upward-coarsening polymictic conglomerate metamorphosed to the lower greenschist facies. The eastern part of the group is composed of coarse sandstone and mafic polymictic conglomerate in fault contact with Archean gneiss. The western and southwestern parts are composed of mafic volcanic rocks, felsic sandstone and conglomerate that are sheared and intercalated with protomylonite derived from metaplutonic gneisses of Churchill Province. The northern part is truncated by granitic intrusive rocks of the Nain Plutonic Suite, although the contact is not exposed.

The age of the Ingrid Group is not well known. It is younger than the Kikkertavak dykes (2200 Ma) but older than the Nain Plutonic Suite or Harp Lake complex (ca. 1450 Ma). The group predates the metamorphism that probably accompanied the main deformation of the Churchill orogeny; however the age of metamorphism is not directly known. This project aims to resolve many outstanding questions as to the nature, timing and tectonic history of this group by studying the geochronology, metamorphic history, geochemistry of volcanic rocks, as well as the mineral potential (Au?) of the group.



Detailed geological map of the Ingrid Group (modified after I. Ermanovics, GSC)

LEGEND	
CHURCHILL PROVINCE	
MESOPROTEROZOIC	
NAIN PLUTONIC SUITE	
PNqm	Quartz monzonite
PALEOPROTEROZOIC	
CHURCHILL PROVINCE GNEISSES	
Amg	Felsic plutonic gneisses and amphibolites (? Archean rocks); minor late synkinematic granitoids
Amgm	Mylonitized and tectonically intercalated felsic plutonic gneisses (Amg) and rocks of Ingrid Group
INGRID GROUP	
Al	Metabasalt; mafic lavas, and polymictic conglomerate
Alcf	Conglomerate, felsic and polymictic; minor mafic volcanic conglomerate, sandstone and purple siltstone; thickness 100-400 m
Alcm	Conglomerate, mafic volcanic; minor felsic polymictic conglomerate, grit, sandstone, purple siltstone; thickness 200-800 m
Als	Grit, sandstone and minor purple siltstone and silty mudstone; minor polymictic conglomerate; rare dacitic rocks; maximum thickness 100 m
Alpv	Basalt; porphyritic; minor mafic to intermediate lavas and mafic volcanic conglomerate; maximum thickness 200 m
Almv	Lavas, mafic to intermediate; minor porphyritic basalt and mafic volcanic conglomerate; rare pillowed lavas; maximum thickness 500 m
NAIN PROVINCE	
ARCHEAN/PROTEROZOIC	
KIKKERTAVAK METADIABASE - METAGABBRO	
Ak	Metadiabase
Akdg	Metadiorite and metagabbro
Agm	Middle and late Archean, felsic plutonic gneisses, layered gneiss and amphibolite (A'wab)
Area of outcrop (observed)	
Geological boundary (defined, approximate, assumed)	
Bedding (top known, overturned, top unknown)	
Gneissosity (vertical, inclined, dip unknown)	
Foliation (vertical, inclined, dip unknown)	
Mylonitic foliation (vertical, inclined)	
Fault (inferred)	
Thrust fault (assumed)	
Anticline overturned (inferred)	
Mineral isograd (Apehbian); position approximate: hornblende in mafic rocks	
actinolite accompanied by schistosity in dykes Ak and Akdg	
300 0 300 600 900 Metres	



Poorly sorted, metaconglomerate with subrounded to angular clasts of felsic and mafic volcanic and minor amount of foliated granodiorite; this was sampled for geochronological study.



Foliated, fine-grained, greenschist facies metabasalt. Foliation in the metabasalt is north-south and steeply dipping.



Polymictic conglomerate to the east with abundant felsic and mafic volcanic clasts. The angular nature of the clasts indicates a proximal source. Younging is interpreted to be to the present west based on preserved foreset beds are climbing to the north, proximal source, as very fragmented.



Cherty, metasandstone pink to mauve; bedding is 2 to 10 cm thick.

Collaborators: Hamish Sandman¹, Heather Campbell¹, Deanne Van Rooyen³, and Etienne Girard²
¹Geological Survey of Newfoundland and Labrador; ²Geological Survey of Canada; ³Cape Breton University

MINERAL RESOURCES REVIEW
Common Ground
 Newfoundland and Labrador's Premier Mineral Exploration
 and Mining Conference and Trade Show

