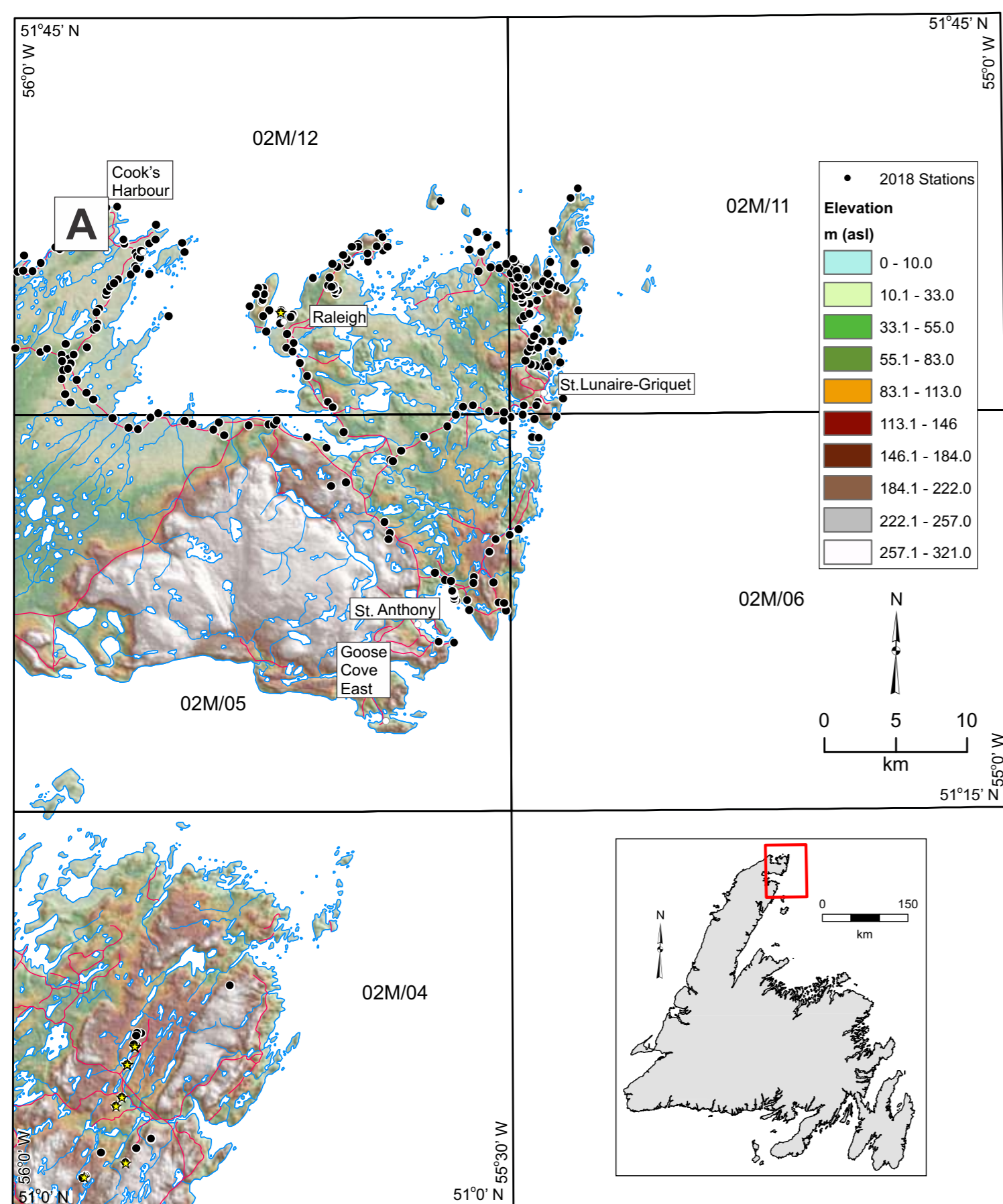


SURFICIAL GEOLOGICAL INVESTIGATIONS ON THE GREAT NORTHERN PENINSULA

SARAH HASHMI

The Great Northern Peninsula is one of the last parts of the island of Newfoundland whose surficial geology is yet to be mapped in detail; therefore, a surficial mapping and till sampling program was initiated in 2018 with the objective of: 1) mapping the surficial geology, 2) mapping the ice-flow, 3) reconstructing the deglacial history, and 4) sampling the till to characterize the regional geochemical signature and identify geochemical anomalies possibly associated with known or unknown mineral occurrences. Deposit-scale till sampling was also completed at the Sail Pond property of Altius Minerals Corporation and Newfound Gold Corporation, which hosts a unique sediment-hosted Ag-Cu-Pb-Zn-Sb deposit containing up to 2030 g/t Ag and 7.08% Cu, to characterize the geochemistry and mineralogy of the till in its vicinity.

Geomorphology and periglacial



(A) The 2018 field season encompassed the Quirpon, Raleigh and Big Brook NTS map areas at the tip of the Great Northern Peninsula. Black circles indicate the 2018 field stations.



(B) Panoramic view of the study area in the Quirpon map area. Sparsely vegetated and weathered bedrock is the dominant surficial feature. Areas of higher elevation are dominated by bare outcrop with a local thin, poorly developed soil. Lower-elevation regions are dominated by organics. Raised (and present-day) beaches populate the shorelines and are indicative of isostatic uplift since the last deglaciation.



(C) Frost polygons, which form as a result of water freezing and thawing in cracks and pores in the rock, were identified in bedrock in the Raleigh map area, as shown in the photograph.

Till geochemical and mineralogical investigations at Sail Pond Ag-Cu-Pb-Zn-Sb deposit



(D) Profile sampling has been completed in till overlying and immediately down ice of mineralization in the North Zone trench at the Sail Pond deposit. Copper and lead mineralization, including azurite and galena, were documented on the outcrop shown in the photograph. The till samples taken in the vicinity of Sail Pond will be analyzed in order to characterize their surficial geochemistry and mineralogy. (E) Striations and grooves measured on mineralized outcrop in the South Zone. The documented ice-flow is to the southwest-northeast. (F) Ice-flow measurements taken in the St. Julien's map area. Striations and grooves suggest an ice-flow movement to the southeast-northwest.



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