Preliminary geomatics analysis of the St. Mary's basin, Nova Scotia

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A GIS and Image database is currently being established for the St. Mary’s basin, central Nova Scotia. The database will include satellite optical and radar imagery, geophysics, including magnetics, gravity, and radiometrics, geochemistry, and lithological and structural data from parallel field mapping. The goal of the project will be to use this technology in two modes: (1) to examine the strengths of correlations between known geology and the geomatics datasets, and (2) to assist in the delineation of lithologies and interpretation of the tectonic setting of the basin and surrounding terranes.

The St. Mary’s basin is comprised of the Horton Group which appears to be locally derived from the Meguma Terrane to the south. The rocks were deposited in a tectonically active strike slip basin as is evident by the conglomerates at the southern flank and alluvial deposits in the central basin. The northern portion of the basin has been tectonically removed by dextral motion along the Cobequid/Chedabucto fault system. The southern boundary is defined by fault contact in the east with the West St. Mary’s fault and in the west by an unconformity with the Meguma Group. Both the northern and southern boundaries are visible on the image data.

Deformation in the basin is minor with the exception of