

# Highlights of the Multi-Year (2013-2018) Bonavista Peninsula Bedrock Mapping Project

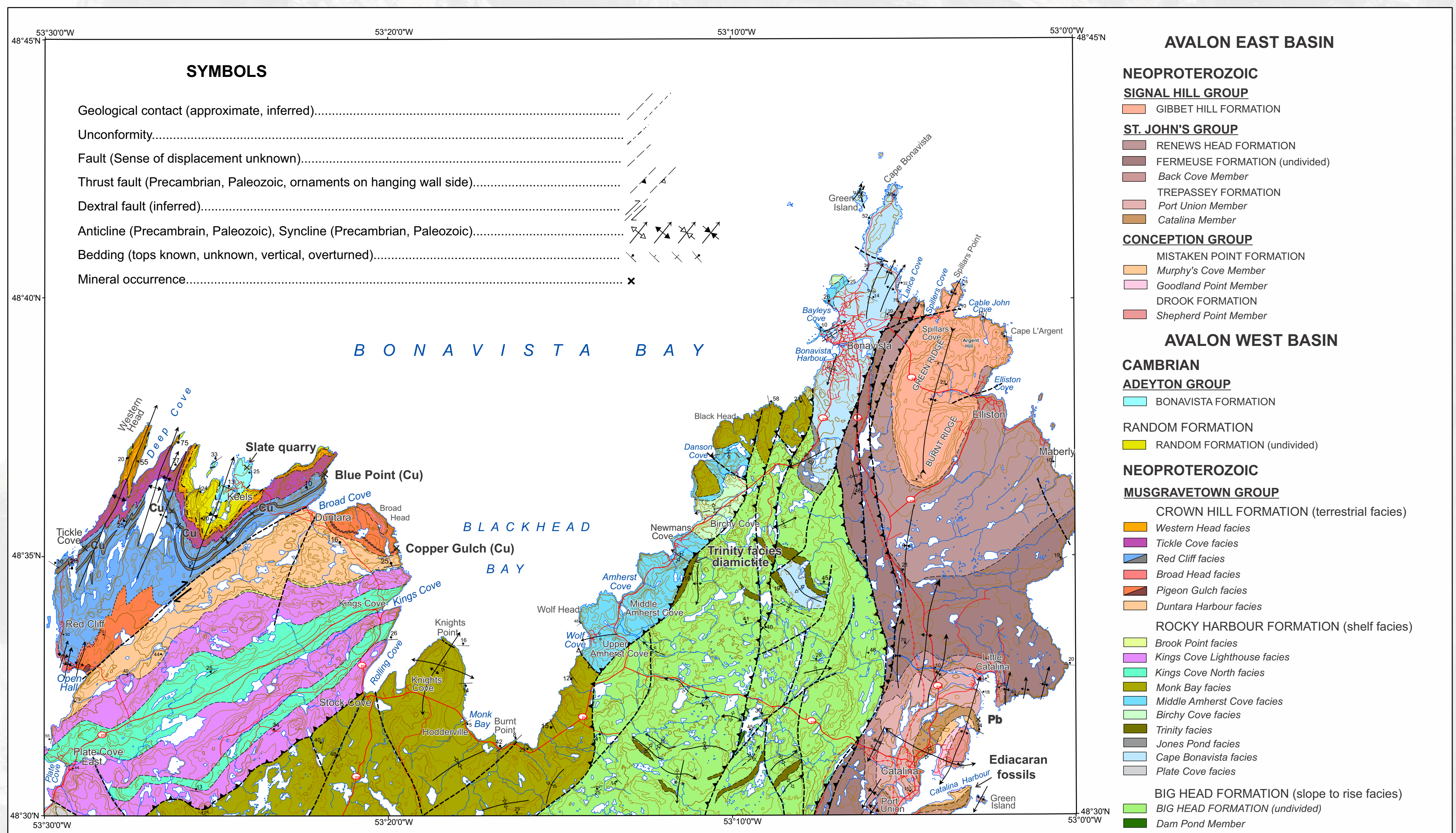
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The Geological Survey resumed bedrock mapping of the Bonavista Peninsula in 2013, building upon previous work conducted in the early 2000s. The project, now nearing completion, involved compilation of all previous work, as well as new structural, geochemical and geochronological studies to gain a better understanding of the geology of the peninsula. Rocks of particular interest on the Bonavista Peninsula include ash-covered marine turbidites that host Ediacaran biota, ancient glacial deposits, diverse volcanic assemblages as well as slates and cupriferous rocks having potential economic significance.

*Discovery Aspiring Geopark Incorporated*, in collaboration with Government of Newfoundland Labrador and the Atlantic Canada Opportunities Agency (ACOA), continues its efforts to have parts of the Bonavista Peninsula recognized as an UNESCO Global Geopark to highlight its geological and paleontological importance. Significant aspects of the Geopark include Ediacaran biota similar to those at the Mistaken Point Ecological Reserve.

Other notable rocks include glacial diamictite, called the Trinity facies, which has been correlated with the Gaskiers Formation (Conception Group of the Avalon Peninsula) through U-Pb (TIMS) geochronology. Correlation of these two map units has major implications for stratigraphic interpretations of the Avalon Terrane, highlighting the need for revision of existing compilation maps. Volcanic rocks, while mainly spatially restricted to the western part of the peninsula, also include (in the Robinhood Bay area) spectacular exposures of peperite – a rock formed by the intrusion and mingling of volcanic rock into unconsolidated, wet sediment.

Economically significant rocks on the peninsula include the Blue Point, Copper Gulch and Tickle Cove (among other) copper prospects. These showings are hosted by reduced horizons within the terrestrial redbeds of the Crown Hill Formation, and were discovered in the early 2000s during exploration for sedimentary-hosted stratiform copper deposits. Of further economic significance is the Cambrian slate of the Bonavista Formation (Adeyton Group) in the Keels area, which was quarried in the 1990s.



Bedrock geology map of the Bonavista area (NTS 2C/11)



Plate 1. Charniodiscus specimen from Little Catalina area.



Plate 2. Laminated dropstone diamictite of the Trinity facies, New Bonaventure.



Plate 3. Peperite from the Robinhood Bay area.



Plate 4. Blue Point copper prospect; note gossanous unit within reduced beds (Blue Point horizon) of the Crown Hill Formation.