

## **GEM-2 Hudson-Ungava: modern constraints from the Core Zone to decipher terrane architecture**

MARY SANBORN-BARRIE, NICOLE RAYNER, NATASHA WODICKA, AND DAVID CORRIGAN

*Geological Survey of Canada, Natural Resources Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, Canada*

The Core Zone is a composite Precambrian lithotectonic terrane that forms the easternmost part of the Canadian Shield in western Labrador and eastern Quebec. Long considered the south-eastern extension of the Archean Rae Province, the Core Zone comprises Archean rocks, Paleoproterozoic supracrustal rocks and variable age plutons extensively reworked during ca. 1.9–1.8 Ga collision of Superior and North Atlantic (or Nain) cratons.

Bedrock mapping of this relatively poorly known lithotectonic terrane is a component of the second phase of the Geomapping for Energy and Minerals (GEM-2) Program, to strengthen the geological foundation for sustainable economic development in this region. Building on previous work, with an aim to bridge understanding across provincial boundaries, our focus is directed at several outstanding problems, including: (1) The character, age, and affinity of the Laporte Domain, west of the De Pas Batholith, where fine-grained clastic metasedimentary rocks, amphibolite and plutonic rocks have variably been interpreted as allochthonous Archean basement, or part of the ca. 1.88–1.87 Ga Cycle II rocks of the Kaniapiskau Supergroup; (2) The depositional age, provenance and tectonic significance of conglomerate and associated coarse clastic rocks, known to occur east (Hutte Sauvage) of the De Pas Batholith and to its west; (3) The age, provenance and tectonic affinity of a collage of volcano-sedimentary rocks east of the De Pas Batholith (Zeni, Atshakash and Ntshuku assemblages).

Early results indicate significant involvement of ca. 2.5–2.0 Ga crust in the evolution of the Core Zone. Plutonic rocks of this age include ca. 2.37 Ga feldspar porphyry (Pallatin suite), ca. 2.32 Ga monzogranite, and 2.35 or 2.05 Ga granophyre related to a gabbroic complex. Meta-sedimentary rocks both east and west of the De Pas Batholith yield detrital zircon modes at 2.5 Ga, 2.3 Ga, and ca. 2.0 Ga, with deposition after ca. 2.0 Ga for clastic rocks east of De Pas (Hutte Sauvage-Atshakash), and after ca. 1.85 Ga for fine-grained clastic rocks west of De Pas (Deborah Lake formation, Laporte Domain). These ages highlight crustal source(s) distinct from the Archean Superior and North Atlantic cratons, and even from the Rae craton which is dominated by ca. 2.99–2.58 Ga rocks. Our age data point to the presence and involvement of Meta Incognita terrane, a cryptic terrane believed to have played a role in an early (ca. 1.87 Ga) stage of collision in the Baffin segment of the Trans-Hudson Orogen. Given its distance from the Ungava promontory, the Core Zone may better preserve some common lithotectonic elements (i.e., Meta Incognita basement, cover units, and ca. 1.83 Ga Narsajuaq suite) compared to its more strongly shortened counterpart on Baffin Island, thereby allowing broader stages of evolution of the Baffin segment of the Trans-Hudson Orogen to be deciphered.

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