

dates, then cooling and a gap in radiocarbon data during the YD (13.0–11 ka). Pollen associated with hearths at the DB site suggests open woodland, but recent studies show that the area during the YD was either under ice or periglacial shrub tundra. A solution to this paradox may be that artifacts and charcoal/hearths are late Allerød in age, reworked by debris flows during the YD and Holocene pedogenic processes.

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### The geography of first human habitation in Nova Scotia

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RUDOLF STEA<sup>1</sup>, LEAH ROSENMEIER<sup>2</sup>,  
GORDON BREWSTER<sup>3</sup>, AND SCOTT BUCHANAN<sup>2</sup>

1. *Stea Surficial Geology Services, 851 Herring Cove Road, Halifax, NS, Canada B3R 1Z1 <Ralphstea@eastlink.ca>* 2. *Confederacy of Mainland Mi'kmaq P.O. Box 1590, Truro, NS, Canada B2N 5V3*

3. *Nova Scotia Agricultural College P.O. Box 550, Truro, NS, Canada B2N 5E3*

The Debert/Belmont archaeological site (DB) is the oldest site of human habitation in eastern Canada. The key problems of the site from a geological perspective can be summarized as follows. (1) what is the origin of the surface (surficial) materials, landforms, and soils at Debert? The interpretation of the sediment hosting the artifacts has profound implications for the reconstruction of paleoenvironments. (2) What are the stratigraphic relationships between the surface materials, soil units, and the artifacts at the Debert site? (3) What is the timing of first occupation in relation to the Younger Dryas (YD); a catastrophic cooling event at the end of the last glaciation? (4) How do geological units that span the Allerød/YD found in sections throughout Nova Scotia correlate to strata associated with artifacts at the Debert site? (5) What is the nature and timing of natural and manmade disturbances of the postglacial soil sequences that would affect the zone of artifacts at Debert?

Artifacts and spruce charcoal at the DB site are found within a massive sand unit and are YD in age based on stratigraphy and radiocarbon dates done in the early 1960s. Recent data obtained on buried soils and lakes near Debert and elsewhere in Nova Scotia show a pronounced warming during the Allerød (15–13.0 ka), with soil formation and abundant radiocarbon