

Wisconsin-Interstadial(?), Terminal-Pleistocene, and Early-Holocene Radiocarbon Dates from the Little John Site, Southwest Yukon Territory, Canada

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The Little John site (Borden # KdVo-6) is located at the extreme southeastern edge of Pleistocene Beringia in Yukon Territory, Canada, 2 km due east of the international boundary with Alaska. The site contains evidence of human occupation from the most recent past to the terminal Pleistocene (Crossen et al. 2009; Easton 2007, 2008; Easton and MacKay 2008; Easton et al. 2007, 2008, 2009). In 2008 a well-developed paleosol representing a probable Wisconsin interstadial was discovered on the site. Here we report on the Pleistocene and early-Holocene AMS ^{14}C dates from throughout the site accumulated between 2002 and 2008 (Figure 1).

AMS ^{14}C dates on five bones from the East Lobe paleosol complex indicate an age range of 8890–10,000 RCYBP (2 σ calibrated results range from 9780 to 11,760 CALYBP) for this stratigraphic unit. (For an image of the stratigraphic profile, see Crossen et al. in press.) Most of the bones from which these ^{14}C samples were drawn displayed cultural modification in the form of spiral fractures or cutmarks, and all were found in association with lithic artifacts, including formed foliate bifaces argued to be diagnostic of West's (1967) Denali complex, as well as flake cores, hammerstones, debitage, and a single microblade.¹ Based on the emergent evidence from the Little John site we are uncertain whether the cultural historical sequence of the site is coeval with the separation of human occupations in the terminal Pleistocene in the region into Denali and Nenana complexes, or their conflation, or something entirely different (Easton et al. 2009). Nonetheless, the dates from the East Lobe paleosol complex lie in the same range as those of occupations at Gerstle

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¹We make reference here to materials recovered from the East Lobe paleosol deposits. Previously (Easton and MacKay 2008) we have tentatively tied these deposits to materials from the West Lobe, including irregular flake core fragments with microblade removal scars, scrapers, and burins; here we restrict our associations to materials from the East Lobe deposits.

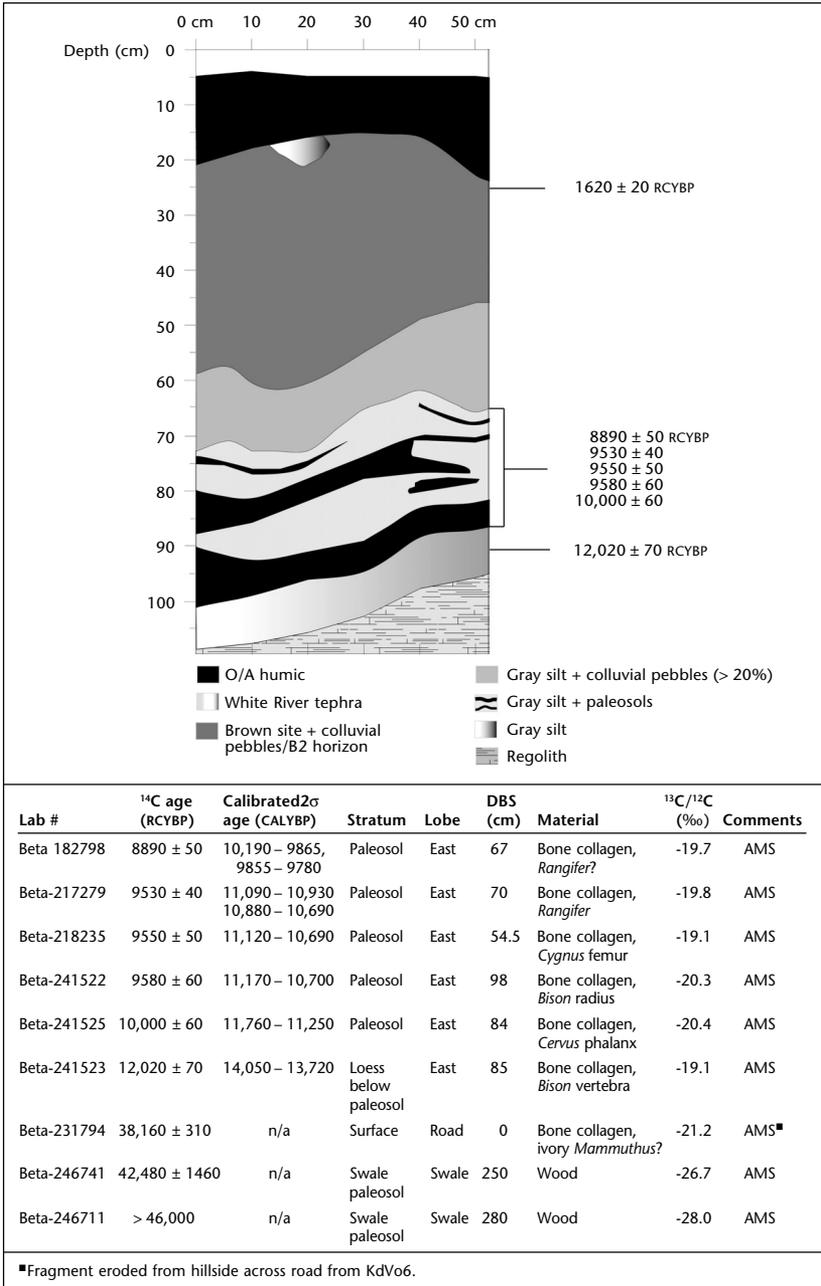


Figure 1. Stratigraphic profile of the Little John site (Borden # KdVo-6), and Pleistocene and late-Holocene AMS ¹⁴C dates.

Quarry, 8760–9080 RCYBP (Potter 2005), and Cultural Zone 3 at the Broken Mammoth site, 9300–10,500 RCYBP (Holmes 1996), as well as others within West's Denali complex designation.

Two additional ^{14}C samples were also processed from the East lobe loess located below the paleosol complex (Figure 1). A *Canis* sp. humerus was found to be lacking any collagen suitable for dating, suggesting greater antiquity and a post-depositional taphonomy different from the overlying paleosol complex fauna. Dated portions of a *Bison* sp. vertebra from the East Lobe loess below the paleosol complex confirmed this suspicion, generating a date of $12,020 \pm 70$ RCYBP (2σ calibrated results range from 13,720 to 14,050 CALYBP). A small assemblage of lithic artifacts (a flake core, hammerstones, and debitage) has been recovered from this stratum. A new discontinuous paleosol stratum within this lower loess in the East Lobe was identified in 2008 and will be explored further in 2009. Unfortunately, no material suitable for ^{14}C dating has been recovered from the West Lobe loess stratum that holds the Chindadn/Nenana complex assemblage in the West Lobe loess.

Finally, a series of Pleistocene dates have been obtained on paleosol strata and fauna predating human occupation at the site. A fragment of ivory (presumably *Mammuthus* sp.) from a scatter of this material found eroding from a hillside across the highway from the Little John site produced a date of $38,160 \pm 310$ RCYBP. Additional Pleistocene fauna has been recovered in this area (recovered ca. 2 km from the site) representing specimens of *Bison* sp., *Mammuthus* sp., *Rangifer* sp., *Saiga* sp., and *Equus* sp. (Hare 1994), including an *Equus lambei* specimen, which has been ^{14}C dated to $20,660 \pm 100$ RCYBP (Beta-70102) (MacIntosh 1997:84). In combination, these non-cultural fauna suggest that the area about the Little John site supported a range of megafauna during the mid- to late-Wisconsin glacial period from at least 38,000 years ago.

In 2008 we excavated a trench through the northern extent of the site in which previous testing had identified a deep swale in the underlying geography. At depths of 2.5 to 3 m below surface we encountered a well-defined paleosol containing macroflora material. Subsequent AMS ^{14}C dates on wood material from this stratum produced two dates of $42,480 \pm 1460$ and $> 46,000$ RCYBP. Thus, the Little John site contains a well-preserved stratum related to either a Wisconsin Interstadial or, based on the second infinite radiocarbon date, perhaps even a Last Interglacial (ca. 130–120 Kya) ecological record; in either case, it is clear that the Little John site is offering us the opportunity to investigate a record of stratified history unparalleled to our knowledge within a single site in the interior western Subarctic that may eventually lead to a clearer perspective of the paleoecology and human occupation of the late Pleistocene in eastern Beringia. Palynological and additional studies of this stratum are ongoing. Additional excavation of the Little John site and regional survey to expand our understanding of the technological and ecological contexts of these Pleistocene and early-Holocene deposits are planned for 2009–11.

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