

Linda's Point: Results from a New Terminal-Pleistocene Human Occupation at Healy Lake, Alaska

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The Tanana Valley contains the largest concentration of late-Pleistocene archaeological sites in eastern Beringia (Potter 2008). Among these is the

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Healy Lake Village site, the first in Alaska to produce artifacts associated with dates greater than 13,000 CALYBP, and the type-site for the Chindadn Complex (Cook 1969, 1996). Cook regards Chindadn as a single component, loosely constrained between 9200 and 13,300 CALYBP. Discordant dates and uncertain relationships between excavation levels cloud this interpretation (Erlandson et al. 1991). Recent research at Linda's Point, an adjacent site of similar age, is now providing an opportunity to reexamine Healy Lake Chindadn.

Linda's Point lies 1.7 km southeast of the Village site. Whereas the Village site occupies a low peninsula projecting into the lake, Linda's Point rests on three narrow terracettes ascending a hill rising directly from the shoreline. Sediments consist of 65–80 cm of sandy loess, underlain by 10–15 cm of sand above frost-shattered bedrock. Ventifacts on bedrock indicate an erosional unconformity created by katabatic winds during the Delta and Donnelly glacial intervals (Reger et al. 2008). The modern soil is a cryocrypt, and thin paleosols occur at depths of 35–60 cm.

In 2010, we excavated 51 systematic tests (50 by 50 cm) spaced at 10-m intervals, of which 18 produced buried cultural material. Vertical distribution of lithics provided evidence of three components, consistent with the Village sequence. The upper component (0–25 cm) is similar to Cook's late-Holocene Athabascan assemblage; the middle component (25–40 cm) resembles his mid-Holocene Transitional assemblage; and the lower component (≥ 40 cm) appears stratigraphically equivalent to the Chindadn complex.

Four tests produced artifacts at ≥ 40 cm, including three 1-by-1-m units. Unit 17 yielded a hearth at 40–48 cm below surface, characterized by fire-reddened loess and a lens of wood charcoal with soot-blackened pebbles. Associated with the hearth are a red jasper flake and a calcined bone fragment. The hearth is isolated from the overlying components by 15 cm of sterile loess, and extends laterally beyond our one-meter sampling unit. A split sample of wood charcoal from the hearth gave radiocarbon dates of $11,050 \pm 60$ (Beta-293543) and $11,150 \pm 60$ RCYBP (Beta-293544). One-sigma calibrated ages are 13,110–12,980 and 13,090–12,880 CALYBP, respectively (Reimer et al. 2004). We believe most cultural materials recovered from ≥ 40 cm below surface are correlative to these dates, based upon presence of green chert artifacts found in three units. A biface of this chert found in Test 46 at 40–50 cm below surface is a Chindadn-like preform. Tools made of a similar material occur in the Chindadn levels of the Village site.

The Chindadn-age component at Linda's Point may be contemporary with major shifts in human population and tool kits in eastern Beringia. Potter (2008) hypothesizes that human population may have peaked at 13,000–14,000 CALYBP, an interval of technological diversity, followed by a precipitous population decline at 12,000–13,000 CALYBP, a period when microblade technology predominated. The age range of the Linda's Point hearth spans this 13,000 CALYBP threshold. It also corresponds to a period of Northern Hemisphere temperature instability marking the transition from the warmer Allerød to the cooler Younger Dryas, dated 12,800–13,200 CALYBP (Steffensen et al. 2008). Several other terminal-Pleistocene occupations in the Tanana drainage radiocarbon date to within 2σ of this critical era, including Upward

Sun River (C1), Walker Road (C1), and Dry Creek (C1) (Potter 2008; Potter et al. 2011).

A recent pollen proxy record from Lost Lake, in the upper Tanana lowlands, gives evidence of biome fluctuation at the 13,000 CALYBP threshold (Tinner et al. 2006). There, *Salix* abundance rose sharply at 13,500–14,500 CALYBP, declined concurrent with a *Betula* increase, and then stabilized c. 13,000–13,200 CALYBP. Dated *Salix* charcoal from hearths at Swan Point (14,000 CALYBP; Holmes 2011) and Upward Sun River (13,200 CALYBP; Potter 2008) bracket the decline. Temporal concordance among these events may reflect causal linkages.

Opposing such linkage is a proxy study that concludes no Younger Dryas event occurred in central Alaska (Kokorowski et al. 2008). This implies no climatic fluctuation occurred at the 13,000 CALYBP boundary sufficient to drive human population and technological events. We find this result questionable since the eastern Beringian records, ranked as chronologically reliable by the study's authors, split evenly between those records that show a Younger Dryas signal and those that do not. Additionally, the central Alaskan proxies used have only a multi-century scale temporal resolution, too coarse to model a climate oscillation that lasted c. 800 years (Steffensen et al. 2008: Figure 2). Set against this background, ongoing research at Linda's Point promises to expand to our understanding of the Chindadn complex and its paleoenvironmental context.

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