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Pleistocene Archaeology of the Tanana Flats, Eastern Beringia

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The Tanana Flats (Figure 1), central Alaska, marks a geographic crossroads and natural corridor between Pleistocene archaeological sites in the Nenana and Tanana valleys (Goebel and Bigelow 1996; Goebel et al. 1996; Hoffecker et al. 1996; Holmes 1996, 2006; Pearson 1999; Powers and Hoffecker 1989; Potter 2009; Potter et al. 2008, 2010). Through a combination of AMS ^{14}C dating and inter-site stratigraphic correlations, 10 sites recently identified in the flats have been dated to the terminal Pleistocene (Gaines et al. 2010; 2011). Ongoing investigations underscore the importance of this region in understanding the early peopling of eastern Beringia and the New World.

Six sites are situated on an alluvial terrace (Péwé et al. 1966) that exhibits a general stratigraphic sequence of basal gravels, overlain by up to 4 m of Pleistocene aeolian sand, which is capped by 1–1.5 m of loess. Testing at FAI-02043 identified at least two components, the earliest of which occurs in the upper portion of the sands at 95–110 cm below the surface (bs). The recovered assemblage consists of lithics and fauna including hare (*Lepus* sp.), goose (Subfamily Anserinae) and bison (*Bison* sp.) associated with a charcoal age of $11,600 \pm 50$ RCYBP (Beta-283430). The later component consists of lithic debitage in the lowest portions of the loess at 80–90 cm bs and produced a charcoal date of $10,730 \pm 50$ RCYBP (Beta-281235). FAI-02019 yielded flakestone from the basal portion of the loess at 60–70 cm bs with a charcoal date of $11,050 \pm 70$ RCYBP (Beta-277776). FAI-02077 produced debitage, microblades, and a biface from the lower loess near the sand contact at 35 cm bs with a charcoal date of $10,130 \pm 50$ RCYBP (Beta-283435).

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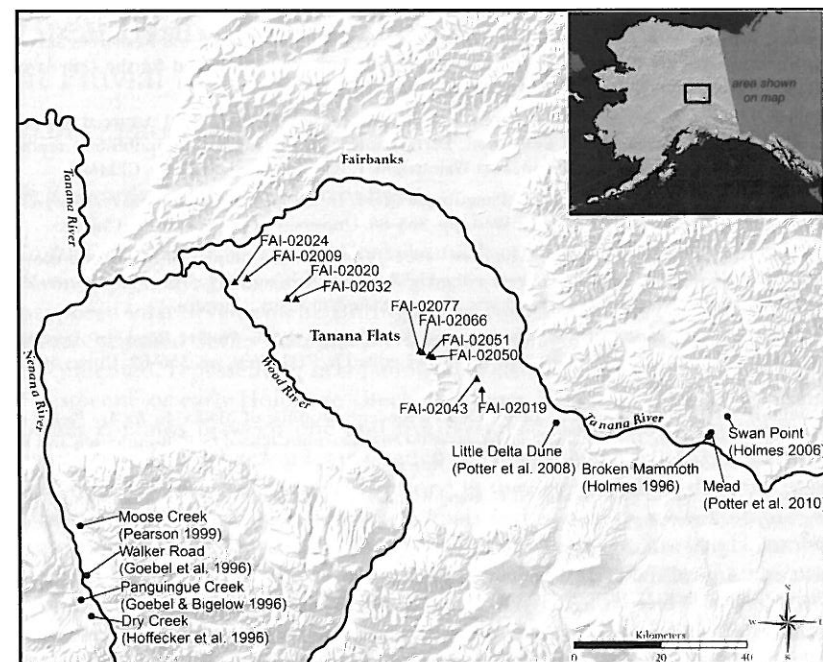


Figure 1. Pleistocene archaeological sites in the Tanana Flats, and Nenana and Tanana valleys.

Other sites on the landform—FAI-02050, FAI-02051, and FAI-02066—remain undated; however, artifacts deeply buried in the lower sands suggest terminal Pleistocene ages.

Four sites—FAI-02009, FAI-02020, FAI-02024, and FAI-02032—occur in a vegetated dune field east of the Wood River (Péwé et al. 1966). Dune stratigraphy consists of 7+ m of Pleistocene sand capped by 1–2 m of Holocene loess. These sites contain buried artifacts at or below the sand/loess contact at depths of 70–130 cm bs. Comparisons with nearby well-dated dune and aeolian sand sequences in the Tanana Valley (Potter et al. 2008; 2010) provide reasonable terminal-Pleistocene/early-Holocene age estimates. Pending luminescence (OSL & IRSL) age analyses are expected to support these approximations.

Early sites in the Nenana and Tanana valleys have been used as the basis for hypotheses concerning the early habitation of eastern Beringia and colonizing of the New World (Goebel et al. 1991; Hamilton and Goebel 1999; Potter 2009; Yesner 2001). Research presented herein is the result of reconnaissance survey and limited testing. Further investigations in the Tanana Flats will undoubtedly provide a crucial link between the two river valleys and produce important new information regarding the Pleistocene occupation of Beringia and the New World.

This research was made possible only by the determined efforts of the 2009 and 2010 field crew members, who braved difficult conditions and remained ever diligent in their search for elusive early archaeological remains. Funding was provided by Army Environmental Command (AECOM) as part of Section 106 compliance surveys.

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Great Basin Stemmed Series Surface Assemblages at Pluvial Mud Lake, Nevada

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In 2007, Kautz Environmental Consultants, Inc., conducted an archaeological inventory on the floor of Ralston Valley in central Nevada in support of a proposed solar development. During the inventory, five sites containing Great Basin Stemmed Series flaked stone tool assemblages were encountered and documented, representing occupations of Ralston Valley dating to the latest Pleistocene or early Holocene (Beck and Jones 1997). Each of these assemblages contains between one and five Stemmed Series point fragments in association with other implements such as bifaces, modified flakes, scrapers and small scatters of debitage. Toolstone in the assemblages is dominated by obsidian and basalt, and the Stemmed Series points are identified as unshouldered base fragments. Four of the five assemblages are single component, containing only Stemmed Series point fragments, while one site also contained a Middle Archaic Elko Series projectile point. In addition to the five assemblages identified, two isolated artifacts were also documented, including one Parman-like base fragment and one concave sidescraper nearly identical to those identified at the Sadmat Locality in western Nevada (Graf 2001:76, Fig. 4.22; Warren and Ranere 1968:10, Fig. 2).

The surveyed block straddles several ancient lake shorelines associated with extinct pluvial Mud Lake, and the assemblages were identified in direct association with these shorelines (Figure 1). These ancient lake features were identified by Nellis Air Force Base as part of a series of studies of Ralston Valley. While their elevations are documented, these beach strands have not yet been dated. Mud Lake had a maximum surface area of 427 km² and a maximum depth of 26 m (Mifflin and Wheat 1979). The lake was likely a semipermanent pluvial lake containing no fishes (Hubbs and Miller 1948:49), and is assigned an age equivalent to that of Lake Lahontan. The assemblage discussed here is merely the latest in a series of both stemmed and fluted point assemblages identified from Mud Lake, the most famous of which is the Noyes Collection (Coffman and Noyes 2008).

All the documented isolated artifacts and sites containing Stemmed Series points cluster within a tight range of elevations at the northernmost margin of the lake. All are situated between 1,604.5 m and 1,607.3 m, constituting a range in elevation of only 2.8 m. These locations fall directly between the identified highstand of Mud Lake at 1,609 m, and the next-lowest identified ancient beach strand at 1,603 m. Occupations at all these sites are undoubtedly directly related to the existence of pluvial Mud Lake. These sites may date