

Pre-Clovis in the Willamette Valley

At least four pre-Clovis site areas have been identified in the Willamette Valley of Western Oregon. Three are within the boundaries of the City of Woodburn, in the north-central part of the Valley. The fourth borders the City of McMinnville, at the western edge of the Valley, just east of the foothills of the Coast Range. While none of the sites are habitation areas, the lithic and faunal materials demonstrate a human presence and indicate probable site area use.

For the purpose of this paper, the definition of Clovis is of a late Pleistocene people having a fluted point technology. A single culture is not suggested. The date range employed here for Clovis is 11,050-10,800 14C yr BP, as defined by Waters and Stafford (2007:1122-1126).

The youngest site area discussed in this paper has a terminus date of 11,340 +/- 70 BP, in conventional radiocarbon years, and the oldest dates to 12,890 +/- 70 BP. The calibrated calendar BP dates are 13,780 to 13,030 for the most recent deposits, and 15,520 to 14,960 for the oldest area (Table 1). At Woodburn, evidence of ancient hominins and now-extinct megafauna disappear from the stratigraphic record shortly before the local emergence of Clovis (Stenger 2002:12-16).

All of the Woodburn materials were observed in previously undisturbed deposits, with a depth below surface of 3.5m to 6m, depending upon the area and stratum. Importantly, all of the cultural materials defined as pre-Clovis have stratigraphic associations (Table 2). Above the cultural and megafaunal deposits are two sterile strata, which are covered by a dense clay stratum. The clay has a maximum thickness of approximately 1.5 meters, and its presence is used to aid in assessing the integrity of the deeper deposits. To date, when the clay is undisturbed, so are the strata below it.¹

The modified faunal remains at Woodburn evidence cut marks, polishing, and/or intentional flaking. Further, the fragmented bison digits are heavily charred, while the intact specimens are not. Large terrestrial mammals, but primarily *Bison antiquus*, are represented. At the Woodburn sites, over bank deposition is most often indicated. The frequency of faunal material is very low in any locality, with a single bone from one species documented near a single specimen from another species, but with substantial distance between these and other deposits. Animal remains are clearly not articulated, and the distance between deposits can range from 20 meters to 2.5 kilometers. Scars from transportation are lacking, however, and the material lacks visible indications of predation. Thus, with hills partially surrounding the low elevation region from which the material was excavated, and the rapid inundation indicated by the condition of the fauna, it is probable that the remains are secondary deposits from near-by sources.

Lithics are observed at all of the sites, primarily as isolated flakes. These are predominately of CCS, although a limited number are CS. Red jasper and basalt are the dominant materials. However, one deposit dating to 12,760±110 BP contained two small flakes, one of chert and the other of quartz. The chert flake retained well-defined flake

¹ This stratum dates to 6800 BP, and is sourced to Mt. Mazama (Baitis and James 2005:14-19).

scars, while the other flake did not. A flaked quartzite cobble is document from a separate area. The distance between the cobble and the two flakes, however, is approximately .75 miles, or 1.25 kilometers.

The cultural material from McMinnville is currently without a stratigraphic association. Although a clear stratigraphic sequence is documented for the older megafaunal deposits, ca. 32,000 BP, the cultural material has only been observed in more recent, mixed strata (Stenger and Fitzsimons 2007).² While an AMS date for faunal material from the same level as a flake dates to 12,890 +/- 70 BP, the associated sediments are clearly disturbed.

Faunal remains at McMinnville are quite different from those at Woodburn in condition and probable depositional history. Much of McMinnville's faunal material is clearly transported. Bones generally evidence multiple fractures, cracking from exposure, and often rounding from transportation. While a few of the specimens are in excellent condition, they are rare. Like Woodburn, the McMinnville area contains a significant mixing of megafaunal species, with individual skeletal elements of one species deposited immediately adjacent to the single bones of another species.³

Possible cut marks are severely abraded, and the deposits would not be considered cultural, were it not for the obvious presence of lithics. The lithics, however, are often in a matrix that includes both modern bottle glass and now extinct megafauna. The faunal remains that have a clear and undisturbed depositional history reflect very few indicators of a human presence. Only the occasional cut mark, or bone that is modified in a way not typical of paleontological specimens, argues for an archaeological context.⁴ Thus, like Woodburn, the paleoarchaeological deposits at McMinnville are extremely sparse and with primary geographic sources that are difficult to determine.

The total lithic assemblage includes flakes, several bifaces, and a single preform. This material was documented over an area of approximately 3 miles, or 5 kilometers, and includes an active river system. The flakes are primarily of CCS, although CS does occur. Materials include red and yellow jaspers, dacite, and chert. The bifaces are also of CCS and CS, with the two stylistically oldest tools made of dacite.⁵ The bifaces have only been observed on the streambed of one creek and on the bottom of the South Yamhill River.⁶ None have been documented through test excavations. Significantly, however, these materials are unmodified by transportation (figure 1). It is apparent that they have

² Unpublished dates of 46,400 BP (CAMS 77878; no +/- available) and 32,710 +/- 270 BP (Beta 231043) have been obtained from McMinnville mammoth material, but the animals were recovered from areas having no indication of a human presence, prior to modern times.

³ However, at the older McMinnville site that was tested, which lacked cultural indicators, partially articulated specimens are found (Stenger and Fitzsimons 2007).

⁴ Personal communication from William Orr, in 2002 and 2008, discuss the identification of atypical fractures of faunal material. Both Mammoth Park in Woodburn and the Gilpin site in McMinnville contain specimens evidencing breakage patterns that are indicative of human causality.

⁵ David Rice has examined the two early dacite bifaces, and expects to report on them later this year.

⁶ Personal communication from Mike Full has verified the submerged environment of the bifaces. He is currently identifying and mapping each isolate location, as well as faunal deposits, for Dr. William Orr.

been redeposited very recently, probably from the action of the water eroding the material out of a nearby bank.

Naturally shed human hair, identified in both the Woodburn and McMinnville site areas, further confirms the presence of Pleistocene hominins in the Valley (figure 2). While many of the Woodburn hairs came from horizontally excavated trench deposits, one hair dating to 12,000 BP was hand excavated at Woodburn.⁷ Additional hairs have been documented from dated strata at two other area localities. The hair observed at McMinnville during excavations is still without firm provenience, as the test areas lack stratigraphic integrity.

The paleontological record clearly includes a human component, although areas of occupation have not been identified. Vast distances occur between many of the individual observations, and the artifact frequencies are exceedingly low. These factors make it difficult to classify these geographic areas as formal sites. What can be identified, however, are areas of intermittent travel and very sporadic resource collection. It is probable that people utilized these areas when access was easiest, and when desired flora or fauna were present. Further, it is possible that once collected, the specimens were taken to nearby areas of higher elevation for processing and consumption. The low artifact density in any single lowland area, combined with the mix of faunal species, suggest that any unused portions were cast over the bank, and left to accumulate with other remains over time. It is expected that future testing of up-slope areas will define areas of food processing, and possibly of habitation.

⁷ The actual date is 12,000 +/- 50 (Beta 146470). Calibrations are listed in Table 1.

Beta Number	Measured C14 Age	Calendar Calibration of Radiocarbon Age to Calendar Years @ 2-sigma (95% Probability)
Beta-146468	10480 +/- 70 BP Not Cultural	Cal BC 10920 to 10110 (Cal BP 12870 to 12060) Cal BC 10080 to 10010 (Cal BP 12030 to 11960)
Beta-171430	10920 +/- 70 BP Not Cultural	Cal BC 11200 to 10870 (Cal BP 13150 to 12820) Cal BC 10780 to 10710 (Cal BP 12730 to 12660)
Beta-171431	11340 +/- 70 BP	Cal BC 11830 to 11740 (Cal BP 13780 to 13690) Cal BC 11530 to 11180 (Cal BP 13480 to 13140) Cal BC 11140 to 11080 (Cal BP 13090 to 13030)
Beta-208244	11370 +/- 80 BP	Cal BC 11840 to 11720 (Cal BP 13790 to 13670) Cal BC 11550 to 11190 (Cal BP 13500 to 13140) Cal BC 11130 to 11090 (Cal BP 13080 to 13040)
Beta-182585	11410 +/- 60 BP	Cal BC 11855 to 11700 (Cal BP 13805 to 13650) Cal BC 11570 to 11215 (Cal BP 13520 to 13165)
Beta-171432	11480 +/- 80 BP	Cal BC 11860 to 11680 (Cal BP 13810 to 13630) Cal BC 11590 to 11210 (Cal BP 13540 to 13160)
Beta-159710	11720 +/- 80 BP	Cal BC 12090 to 11490 (Cal BP 14040 to 13440)
Beta-146469	11910 +/- 110 BP	Cal BC 13180 to 12830 (Cal BP 15130 to 14780) Cal BC 12340 to 12220 (Cal BP 14290 to 14170) Cal BC 12210 to 11540 (Cal BP 14160 to 13490)
Beta-159709	11930 +/- 70 BP	Cal BC 13080 to 12910 (Cal BP 15040 to 14860) Cal BC 12300 to 12280 (Cal BP 14250 to 14230) Cal BC 12170 to 11840 (Cal BP 14120 to 13790) Cal BC 11820 to 11680 (Cal BP 13770 to 13630)
Beta-146470	12000 +/- 50 BP	Cal BC 13140 to 12860 (Cal BP 15090 to 14820) Cal BC 12330 to 12250 (Cal BP 14280 to 14200) Cal BC 12190 to 11870 (Cal BP 14140 to 13820)
Beta-96400	12310 +/- 80	Cal BC 12810 to 12020 (Cal BP 14760 to 13970) Cal BC 12470 to 12090 (Cal BP 14420 to 14040)
Beta-133022	12760±110	Cal BC 13500 to 12700 (Cal BP 15450 to 14650) Cal BC 13320 to 12930 (Cal BP 15270 to 14880)
Beta-243493	12890 +/- 70 BP (McMinnville)	Cal BC 13570 to 13010 (Cal BP 15520 to 14960) Cal BC 13470 to 13080 (Cal BP 15420 to 15030)

Table 1. Radiocarbon age for selected Willamette Valley locations. Megafaunal remains and cultural materials are observed only in the Pleistocene strata. Calendar calibrations are shown at 1-sigma and 2-sigma, as provided by Beta Analytic.

DEPTH (M) & APPX. AGE	HORIZON	STRATUM	DESCRIPTION
0-0.5 (0-6,850 BP)	Fill or Topsoil (site dependent)	1	Topsoil is brown silty clay loam
0.5-1.5 (6,850 BP)	Mill Creek Clay	2	Dense clay, gray brown to dark gray (10YR5/2m), firm angular structure
1.2-2.8 (10,480-10,330 BP)	Woodburn Bog-Late Stage, Woodland Developing	3A	Loose, woody, dark brown (5YR3/2m). Contains wood, peat, seeds, cones and insects.
(10,920-10,480 BP)	Woodburn Bog-Classic Stage	3B	Peat, platy sphagnum moss with leaves and seeds, red-brown to dark brown (5YR4/6); silt rythmites and insects.
(11,840-11,300 BP)	Woodburn Bog-Early Stage	3C	Dessicated bog and loam with slight clay and silt. Firm, organic, with peat residuum (5YR3/3m). Micro- and avifauna present. Modified mammal bone, hair.
2.8-3.4 (12,200 – 12,050 BP)	Post-Flood Horizon	4	Firm, micaceous silt with slight clay, medium dark brown (5YR5/4m-5YR3/3m) with sparse organics. Avifauna, megafauna, artifacts, animal & naturally shed human hair.
3.4-5.5+ (12,760 - 12,310 BP)	Willamette Silts-Late Event	5 Upper	Firm, micaceous clayey silt, medium olive-gray (2.5YR6/4m) to gray. Particles cemented to sand size with strong subangular blocky structure. Sparse organics. Sub-angular pebble erratics. Egg shell, and lithic artifacts.
(14,790-12,630 BP)	Drying Event		Contrasting white band, a horizon of calcium carbonate, appears.
(12,890-12,760 BP)	Flood deposit	5 Lower	Firm, micaceous clayey silt, light to dark gray (5Y 4/1 to 2.5Y 7/2). Lithic artifacts.

Table 2. Dated stratigraphic deposits at Woodburn for areas of 145'-155' elevation. The sequence and context of these deposits confirm a Paleoamerican presence. Table adapted from Hibbs (2000).

(photo of two bifaces inserted here, please)

Figure 1. The lithics observed at McMinnville sites are not abraded or weathered. Thus, neither transport by water nor long term exposure is indicated. Photo courtesy of Mike Full.

(Photomicrograph of human hair inserted here, please)

Figure 2. Naturally shed human hair, identified at both Woodburn and McMinnville, further confirm the presence of humans in the Valley during the late Pleistocene.

References

Baitis, Karin and Michael James

2005 Willamette Valley Clay Linked to Thick Blankets of Mount Mazama Airfall. *CAHO* (v.30, n.1).

Hibbs, Charles H.

2000 *Project Overview and Stratigraphy of Late Pleistocene Sediments at Mill Creek, Lower Willamette River Basin of Oregon*. Northwest Anthropological Conference paper.

Stenger, Alison T.

2002 Temporal Association of Paleontological and Archaeological Resources in Woodburn, ca. 12,000 BP: A Preliminary Report. *CAHO* (v. 27, n.3/4).

Stenger, Alison T. and Mark Fitzsimons

2007 McMinnville Mammoth Site, Site #3076. Institute for Archaeological Studies, Portland, Oregon.

Waters, Michael R. and Thomas W. Stafford

2007 Redefining the Age of Clovis: Implications for the Peopling of the Americas. *Science* (23, v.315, n. 5815).