A Protohistoric House in the Argus Range, Naval Air Weapons Station, China Lake

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Abstract

Recent investigations at the New House Spring Site indicate a Native American occupation after contact with Euro-Americans. This site is located at the edge of the pinyon pine in the Argus Range which may have served as a refuge for Native Americans in the latter half of the nineteenth century.

Introduction

The New House Spring Site (CA-INY-6789/H) is associated with a high volume spring on the western slopes of the Argus Range at the lowest edge of the pinyon pine (Pinus monophylla) zone in eastern California. Cattle ranchers developed the natural spring during the middle of the 20th century, complete with a stone-walled cabin and substantial pipelines designed to distribute the spring’s water to lower elevations. The paucity of historical debris, however, does not indicate any kind of long-term occupation of the site during the modern or even early historic era. Previous archaeological investigations have shown that New House Spring also was used by Native Americans, but the deposition of cultural material from that period is fairly shallow. The most recent investigation of the site (Allen 2007a) provides evidence of at least one Native American house established at the spring sometime after substantial contact with Euro-Americans.

While other protohistoric archaeological sites have been located in the western and southwestern Great Basin (Arkush 1990), they are rare for remote areas which may have served as crucial refuges for Native Americans. New House Spring provides an opportunity to see how Native Americans of the western Great Basin blended traditional economic and cultural patterns with new technologies and resources in an ever shrinking region during the last half of the nineteenth century.

Previous Work at New House Spring

The archaeological site at New House Spring (Fig. 1) was first recorded by Far Western Anthropological Research Group, Inc. (Far Western) in March of 2006 (Ruby with Johnson 2006). A survey crew produced an accurate paced sketch map of the site and noted both historical and prehistoric components, with the latter limited to a fairly distinct area of a few groundstone tools, a few bifacially worked tools, and chert and obsidian debitage. The prehistoric component also includes a concentration of higher artifact density on the fairly flat ground some 40 meters southwest of the spring proper. Far Western considered the historical components to be mostly post-1940 spring improvements (including metal pipe segments, fences, bladed roads, a small dry-laid stone structure, and
a spring box), but little historical habitation debris. This historical component was spread over a much larger area around the spring. Researchers identified the spring box as Feature 1 within a barbed wire fence surrounding the dense vegetation of the spring itself and a recent construction. Feature 2 is a three-sided dry-laid rock structure of granite cobbles and boulders.

Far Western collected surface artifacts and conducted limited subsurface testing within the prehistoric component. They identified a number of formal artifacts in this area: two milling slabs, two handstones, two bifaces, a Rose Spring projectile point, and a biface tip. They set up a 10 by 10 meter surface collection unit in the area of high artifact density and recovered 143 flakes (116 obsidian, 27 chert). A small 25 by 25 centimeter test unit was placed at their site datum and excavated to about 20 centimeters, where is was necessarily terminated by decayed bedrock. A few flakes were recovered. They also placed a shovel probe of 0–20 centimeters somewhere in the prehistoric concentration (not depicted on the site map) which yielded evidence of a shallow subsurface midden deposit.

New Data, New Questions

Russell Kaldenberg, the Command Archaeologist of the Naval Air Weapons Station, China Lake, requested an investigation at New House Spring in order to obtain comparable subsurface data for test excavations conducted by Far Western at sites located nearby but at significantly higher elevations in the Argus Range. Proposed improvements at the Parrot Point radio facility required investigations of two sites at elevations around 8,000 feet: CA-INY-5209 and CA-INY-5210 (Hildebrandt and Darcangelo 2004). Surface collections and test excavations at these sites revealed house structures, hearths, and midden dating to the Newberry (3500–1500 BP), Haiwee (1350–600 BP), and Marana (600–200 BP) periods.

There were two findings of particular interest. First, they recovered evidence of pinyon processing dated by a radiocarbon sample to around 880 BP. As Hildebrandt and Darcangelo (2004:6) note, “a great deal of debate has focused on the role of the pinyon zone in shaping prehistoric adaptations, with particular emphasis given to the antiquity of the inten-
sive harvest of pine nuts.” Bettinger and Baumhoff (1983) and others have staked out a position that intensive green-cone harvesting was a late introduction, and that less intensive brown-cone pinyon harvesting was around earlier, but likely was not very productive given competition with animals.

Recent work by Reynolds (1997) in the Inyo and White Mountains, however, has challenged this dominant view. The most recent take on this issue is that of Hildebrandt and Ruby (2006) who argue that brown-cone processing probably dates back several millennia, but that rock ring foundations for caches indicative of intensive green-cone harvesting do not appear until the Marana/Late Prehistoric period. Without question, this important issue requires further analysis, particularly excavations to better date these processes. A second important aspect of the Parrot Point investigations is that a relatively large percentage of artiodactyl faunal remains dating to the Marana component was recovered.

The goals of big game hunting, the possible effects of overexploitation of game, and drastic changes in hunting yields have become extremely hot topics in western North American archaeology in recent years (See recent discussions on this topic such as Hildebrandt and McGuire 2002, McGuire and Hildebrandt 2005, McGuire, Hildebrandt, and Carpenter 2007). The faunal remains from Parrot Point do not match well with the oft-repeated conclusion that big game hunting declined precipitously by the time of the Marana/Late Prehistoric Period. Hildebrandt and Darcangelo (2004:42) acknowledge this disparity since the sites, show a surprisingly high relative frequency of large mammal remains in the Marana component (35.4%) …this frequency differs significantly from Hildebrandt and McGuire’s (2002) inter-regional sample (4.8%), but is quite similar to Hildebrandt and Ruby’s (2003) findings from the Coso Range (34.2%). These findings, although intriguing, cannot be fully appreciated (or understood) until a large sample of Newberry faunal remains from a pinyon woodland context is discovered.

One could argue too that further consideration of Marana/Late Prehistoric faunal assemblages and hunting blinds and other sites is warranted (Allen 2007b; 2009). Rumors of the western Great Basin-wide demise of big game hunting after the Haiwee/Rose Spring period may be somewhat exaggerated.

New House Spring is located only a few kilometers down slope from Parrot Point at 5,585 feet elevation. Nevertheless, it is located just on the edge of the current pinyon zone. It also offers one of the most dependable sources of fresh water in the Argus Range. It appeared to be an ideal site location which could help shed light on the two critical research issues described above. Collection of further data in that regard was the goal of the investigation reported here, but the archaeological record differed from our expectations.

Archaeological Investigations at New House Spring, June 2006

The author and crew conducted fieldwork at New House Spring on June 23 and 24, 2006. As described above, the goal was to understand Native American occupation or use of the spring with an aim to collect evidence for pinyon processing or big game hunting. To conduct a more thorough site inspection than is typically allowed during a large-scale survey was one task. To produce a more detailed map of the site (Fig. 2) through the use of sub-meter GPS data and GIS software was the second task. The site also was mapped with a Trimble Geoexplorer III data logger. Data were subjected to differential correction in the lab to achieve sub-meter accuracy.
Our surface inspection mostly confirmed the findings of Far Western, with the addition of one previously unrecorded feature: a shallow but distinctly oval-shaped depression (Feature 3). It was not readily apparent from surface evidence whether the depression was produced by natural or cultural processes. Limited test excavations were then implemented to further address site depth, preservation, chronology, and the possible exploitation of pinyon or large mammals at this elevation. Two, 1 by 1 meter test units were placed in the high artifact density area noted by Far Western. Both units were excavated with hand pick, shovel, and trowel in arbitrary ten centimeter levels and screened with 1/8-inch mesh.

Unit 1 was located nearly adjacent to Far Western’s datum, about three meters from the main bladed road running to the spring. Level 0–10 centimeters contained an obsidian unifacial tool, four jasper flakes, two pieces of chert shatter, and 57 pieces of obsidian debitage. It also contained several historic era artifacts including a nail, a shell casing, and pieces of clear plastic. Level 10–20 centimeters contained an oval-shaped shell bead (Fig. 3), an obsidian uniface, two pieces of jasper debitage, 41 pieces of obsidian, and an unidentified piece of metal. As discussed below in greater detail, the vast majority (75 of 106 or 71%) of the debitage consisted of late-stage pressure flakes. A few secondary flakes and biface thinning flakes and shatter also were recovered, but no primary debitage was encountered. No faunal remains were present.

Small pieces of charcoal occurred throughout both levels, and a light and diffuse charcoal lens about one centimeter thick was observed in the northwest corner of the unit at a depth of about ten centimeters. Excavation stopped at 20 centimeters as decayed bedrock was encountered. No soil layers were observed; the entire profile consisted of 10YR 4/3 (brown) fine soil with about 5% of the matrix comprised of fist-sized granite cobbles.

Unit 2 was located immediately adjacent to the main bladed road. Excavation at this unit also terminated at 20 centimeters depth when decayed bedrock was reached. The soil was identical to Unit 1, except that no charcoal concentration was noted. The amount of debitage was considerably lower, with a total of only 40 pieces (38 obsidian
and two jasper). This unit had a higher frequency (15 of 40 or 38%) of biface thinning flakes than the assemblage from Unit 1. The remainder was tertiary pressure flakes, shatter, and a few secondary flakes. The medial section of an obsidian Stage II biface (broken into two pieces) was recovered in the 10–20 centimeters level. No historical artifacts were observed in either level.

Unit 4, a single 25 by 25 centimeter shovel test pit was placed a few meters from the dense vegetation of the spring (this vegetation is impassable and alive with rattlesnakes, so the spring area itself cannot yet be considered adequately surveyed). This unit appeared to be sterile at a depth of 30 centimeters. Three levels were excavated by shovel and trowel and screened with 1/8 inch mesh. Seven pieces of obsidian debitage were present in level 0–10 centimeters, and two more were recovered from level 10–20 centimeters. The third level had no artifacts. No stratigraphy was observed, the soil was fairly dark (~10YR 4/2) and contained a large number of granite cobbles. This unit suggests that there is indeed a low density prehistoric midden or at least lithic scatter associated directly with New House Spring. Further survey of the spring is desirable, but would require significant vegetation clearance.

In sum, the test excavations conducted by both Far Western and this project indicate that the New House Spring site has a low density scatter of prehistoric artifacts, probably over the entire site, with a distinctly heavier concentration of prehistoric or protohistoric activity downhill and some 40 meters south of the spring proper. Our work also indicates the likely presence of a shallow midden around the spring proper.

Most of our two-day effort, however, was expended on the newly identified Feature 3. This feature is an oval-shaped, nearly circular, basin with a low but discernible berm around the entire perimeter (Fig. 4). The external measurements are 4.30 meters north-south and 4.20 meters east-west, and the internal measurements across the inner edge of the berms are 3.30 by 2.50 meters. The maximum depth of the depression’s surface is about 20 centimeters below the top of the western side of the berm. Five artifacts were observed on the surface inside the
feature: two metates, a hammerstone fragment, an obsidian Cottonwood Triangular projectile point (Fig. 3), and an obsidian uniface. The high density of artifacts and the regular outline of the feature suggested that it might be a house pit or some other type of shallow pit. To be sure, excavation was required.

Initially, Unit 3 was begun as a 1 by 2 meter unit placed along the north inner edge of the berm towards the center of the depression. A datum was placed on the top of the western edge of the berm, and the first arbitrary level was taken to 20 centimeters below the datum. Given the slope of the feature, little soil was removed from the center of the feature in this first level—most of the material removed came from the northwest and northeast corners of the test unit. This first level yielded a single ceramic sherd (Fig. 3), a jasper core, 123 pieces of debitage (110 obsidian, seven chert, and six jasper), 53 pieces of bone (most of which were burnt), a piece of frosted green glass, a small metal valve cap, and a possible corner-notched projectile point made of metal (Fig. 3). The top of a large metate was exposed in this level (it extended into the next level), as were other pieces of groundstone. This level also revealed a concentration of fairly large unmodified stones along the north edge of the feature, suggesting a partially collapsed wall.

Level 20–30 centimeters yielded 161 pieces of debitage (154 obsidian, seven chert), five unifaces (four obsidian and one andesite), a steatite core, a basalt core, a fragment of incised green slate (probable pendant fragment, Fig. 3), and a rusted piece of metal which is perhaps a saw blade (Fig. 3). Approximately 35 bone fragments were recovered, many of which were burnt. A considerable amount of charcoal and ash was observed—particularly in the northern part of the unit near the berm. Large rocks continued to be encountered in the northern half of the unit, and they also began to appear in the southern half as well—though less dense.

At this point, it was necessary to determine if the southern half of the feature had a similar apparent collapsed wall or foundation running along the berm. Thus, Unit 3 was extended another meter to form a total unit size of 3 by 1 meters. In the interests of time, this extension was excavated in one
level to 30 centimeters below datum—though the amount of soil removed was only 10–20 centimeters at the maximum depth given the depth of the depression. The extension recovered 143 pieces of debitage (138 obsidian, five chert), an andesite uniface, a purple glass trade bead (Fig. 3), and only a single piece of bone. There was no evidence of a collapsed rock wall or foundation on the south side of the feature.

Next, a final level of Unit 3 was excavated from 30 to 40 centimeters. Given time constraints, only the northernmost meter of the unit was excavated. Sterile soil was encountered at a depth below datum of about 39 centimeters. Recovered material included 54 pieces of debitage (all but one were obsidian) and two pieces of bone, mostly from just below the rocks encountered in the previous level. No obvious floor was present in the test unit and only a single layer was noted: Zone A was brown in color (10YR 4/3), soft, fine textured, but with many small cobbles and some gravel. Charcoal was densest in the north edge of the unit, especially underneath the collapsed wall or foundation. There was also a small concentration (Zone B) of a soft reddish-brown (5YR 5/3.5) soil directly above sterile. This is perhaps a result of natural disturbance rather than cultural.

To summarize, Feature 3 appears to be a house pit dating to post-contact times as indicated by the metal artifacts, the frosted glass, and the glass bead. Faunal analyses also support this interpretation, as discussed below. The north wall of the pit appears to have had a rough wall or foundation circling the edge of the basin, and this appears to have collapsed. Surrounding and below this fall is a fairly dense accumulation of faunal remains (many of which are clearly burnt large mammal—described below), debitage representing tool maintenance and finishing, groundstone, and a number of informal tools. Also of interest was the recovery of a sherd and a green slate fragment.

**Chronology of New House Spring**

Chronological data for this project comes from a single radiocarbon date, obsidian hydration, and time sensitive artifacts. Units 1 and 2 were placed in the densest area of surface artifacts noted by Far Western and close to their earlier test unit and shovel test. A single shell bead was recovered in Unit 1 at 10–20 centimeters, but cannot be typed with certainty as the edges are irregular and possibly chipped. Far Western recovered a Rose Spring/ Haiwee Period point in this area on the surface. Five obsidian hydration values were derived from four pieces of debitage: 1.6, 4.4, 6.1, 8.5, and 10.2 microns. The highest and lowest values were from the same artifact which may reflect the proximity of the site to the Coso obsidian sources—material was abundant in the region and flakes and cores from a range of time periods are readily at hand. This interpretation is supported by the diversity of Coso sources in this small sample: Sugarloaf Mountain, Cactus Peak, and Joshua Ridge.

Seven obsidian hydration values from Unit 3 are also highly variable (4.2, 4.9, 5.2, 5.3, 6.1, 7.7, 9.2) with yet another different source present (West Sugarloaf). A single radiometric sample (Beta 219903) was processed from a lump of charcoal found amongst the rock fall along the north edge of the unit in the first excavation level. It yielded a measured radiocarbon age of 140 ± 40 BP and a conventional radiocarbon age of 190 ± 40 BP. A date from the last half of the nineteenth century is supported by several historic era artifacts found in Unit 3: two pieces of metal (one perhaps worked into a small corner-notched projectile point), frosted glass, and a glass trade bead. The presence of other diagnostic Late Prehistoric Native American artifacts such as a Cottonwood Triangular point and
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A ceramic sherd together with substantial obsidian debitage, informal unifacially worked tools, and several pieces of groundstone strongly suggest a protohistoric date for the possible house pit. This interpretation is further supported by the faunal data, discussed below.

In sum, there is excellent evidence for a protohistoric component at New House Spring. The scatter of much older obsidian hydration values may reflect use during other periods, perhaps as far back as the Newberry/Gypsum period. The presence of at least one surface Rose Spring/Haiwee point would suggest this, but it also could be a curated artifact brought to the site in the past few hundred years. It is possible also that the range of obsidian hydration values reflects collection of core fragments and large flakes from the vast deposits of such artifacts at the nearby Coso quarries on an “as-needed basis.” It is conceivable that protohistoric inhabitants of the site simply brought such older pieces to the spring to serve their modest obsidian requirements. Further investigations would be required to fully establish the extent of the use of the spring during prehistoric periods.

Lithic Assemblage

In addition to the tools on the surface noted and collected by Far Western in the area of the densest artifact concentration, Units 1 and 2 yielded two obsidian unifaces and one medial fragment of a Stage II obsidian biface. In addition, the newly identified Feature 3 possible house pit also contained several surface artifacts including metates with low levels of wear, a granite hammerstone, an obsidian uniface, and an obsidian Cottonwood projectile point. The excavation of Unit 3 and its extension recovered a large number of expedient tools (obsidian unifaces and one of andesite). A single steatite core/uniface also was present in the unit, but a number of groundstone artifacts were recovered. With the exception of the projectile point, the tools from Feature 3 are informal, probably quickly made, and discarded after use. This suggests a short-term occupation or possibly that site occupants were not concerned about access to raw materials such as obsidian or suitable stone for grinding purposes.

The debitage assemblage from all three units consists of 627 total pieces: 94.3% obsidian, 3.8% chert, and 1.9% jasper. As noted above, the Coso obsidian sources are located a short distance to the west, so the preponderance of that material is understandable. It is interesting that not a single piece of chalcedony was recovered, but silicate artifacts of any kind are relatively rare at the site compared to obsidian. Analysis of the debitage was conducted following the methodology established by Allen (1986). Debitage was allocated to one of the following categories: primary, secondary, biface thinning, tertiary, or shatter. These data indicate no evidence for formal tool production at this location since there are no primary flakes and very few secondary flakes. There were also no cores of obsidian, chert, or jasper and no cortex present in the entire assemblage. The large percentage of biface thinning and tertiary flakes suggests tool maintenance and sharpening. Some of the tertiary flakes probably resulted from production of quick expedient tools like the numerous obsidian unifaces recovered.

Faunal Analysis

Faunal material was only recovered from Unit 3. This material was sent to Mr. Richard Reynolds of the George C. Page Museum in Los Angeles for identification. Of greatest interest is the presence of horse (*Equus*) bones (vertebrae, a phalange, and a complete scaphoid), several of which were burnt. Also present were two likely calf (*Bovus*) ribs. Of particular interest, the horse vertebrae show what Reynolds believes are indications of impact butchering done without a saw, but without direct
axc cuts to the bone. He thinks the horse(s) were butchered with a metal axe, but no sure cut marks exist. However, the cow ribs do have blade marks, showing definite use of a metal tool for butchering. The sample also contained a small number of both cottontail and jackrabbit bones. The following descriptive quote was part of an e-mail sent by Mr. Reynolds on December 2, 2006:

There is a very slight indication of a possible aboriginal component in unit 3 (i.e. four rabbit-size mammal bone fragments which have been heat affected (1), burned (2), and calcined (1). The butchering style at the New House Spring site is limited to what I call impact butchering—all axe work (i.e. heavy bladed steel edges—axe, hatchet, cleaver, etc.). The use of the saw in butchering does not show up locally until about 1850 (Goldrush). The lack of actual axe blade cuts on the horse thoracic vertebra is common as impact (axe) butchering often doesn’t leave them. There are blade traces on both of the cow (small size suggests a calf) ribs. Butchered horse bones in historical sites in the western U. S. are quite common.

As noted above, a small rusted metal piece was recovered in Unit 3 which may be a saw fragment. If so, this metal piece might anchor the occupation for the site to after 1850.

**Conclusion**

Site CA-INY-6789/H was selected by the Command Archaeologist of Naval Air Weapons Station, China Lake for subsurface investigation to help address the issues of big game hunting and pinyon exploitation. The investigation though found valuable information about a protohistoric occupation at New House Spring.

Our surface examination revealed a subtle but distinct oval-shaped depression in proximity to a previously investigated lithic concentration thought to be prehistoric. Excavation of a small trench through this feature recovered sufficient structural and artifactual evidence to conclude that this depression was a short-term structure, likely a house pit. It had a fairly substantial rock concentration along the north edge which may have been a foundation or lower wall for a structure of perishable materials. This wall or foundation topped over inwards into the pit at some point, perhaps at abandonment. Artifacts above and beneath this event include a substantial amount of lithic debitage (94% obsidian), several groundstone artifacts, a number of informal tools, a ceramic sherd, a greenstone slate fragment, and a single obsidian Cottonwood point. Most importantly, the feature also contains several historical artifacts, including a possible metal point, a possible saw blade fragment, broken glass, and a glass bead. The faunal assemblage indicates the traditional consumption of rabbits, hares, as well as the butchering and cooking of domesticated horse and cow. Taken together, these data strongly suggest that Feature 3 was a protohistoric short-term house occupied by a lone individual or a small group of Native Americans sometime in the second half of the nineteenth century.

It is possible also that the small but fairly dense concentration of lithics and stone tools located a few meters to the west was produced by this protohistoric occupation, or it may reflect an earlier prehistoric use of the spring. To address this question, further subsurface investigations would be required.

The protohistoric use of the pinyon zone was well discussed in the research design of Hildebrandt and Darcangelo (2004:12–13) for their work at Parrot Point. They also noted that while protohistoric diagnostics such as glass beads were not present, the Marana component at CA-INY-5209 appeared
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Based on this model, the New House Spring house would date after 1860. The metal, glass, butchering marks made by metal tools, and of course the meals of horse and cow all point to significant changes. Traditional culture also is well represented in the form of obsidian tools for the vast majority of chores, diagnostic artifacts, and the consumption of lagomorphs. No plant remains were recovered or observed, but it is likely that the abundant groundstone present at this site indicates processing plants from around the spring, quite possibly including pinyon. On current evidence, it seems the occupation could date to either the second or third phase of the chronology of Delacorte and McGuire (1993). Regardless, the New House Spring protohistoric house contains information that is critical for better documenting how Native Americans in this region adapted to the influx of ranchers, miners, settlers, and soldiers into the Eastern Sierra and western Great Basin in the last half of the nineteenth century. As noted by Arkush (1990:33),

it is imperative that we gain additional knowledge concerning this era, for it is a time when native Great Basin cultures may have changed more in 150 years than they had in the previous nine or ten millennia…this era also set into motion the environmental and cultural changes that produced a biased and inaccurate ethnographic record as it relates to pre contact Great Basin lifeways.”

The protohistory of the western and southwestern Great Basin is yet one more substantial research problem that can be studied with the well-protected cultural resources of the Naval Air Weapons Station, China Lake.

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