

UC Merced

Journal of California and Great Basin Anthropology

Title

Archaeology of the Humboldt Lakebed Site

Permalink

<https://escholarship.org/uc/item/3cp5h5nw>

Journal

Journal of California and Great Basin Anthropology, 8(1)

ISSN

0191-3557

Author

Livingston, Stephanie D

Publication Date

1986-07-01

Peer reviewed

Archaeology of the Humboldt Lakebed Site

STEPHANIE D. LIVINGSTON, Dept. of Anthropology, Univ. of Washington, Seattle, WA 98195.

THE Humboldt Lakebed site, designated as 26-CH-15 by the University of California Archaeological Survey in its work in the Humboldt Sink in the 1950s and 1960s, includes three sites first investigated by L. L. Loud in 1912 and designated sites 13, 14, and 15 (Loud and Harrington 1929:132). This large site, the object of several subsequent field investigations, is the type site for Humboldt series projectile points (Heizer and Clewlow 1968; Bettinger 1978), and, in conjunction with Lovelock Cave, plays a major role in the controversy regarding prehistoric lacustrine adaptations in the western Great Basin. However, until now there has been no published report describing the salient features of the site. Here I review the work conducted at the Humboldt Lakebed site and describe the results of those investigations.

THE SETTING

The Humboldt Lakebed site lies on the southeast shore of Humboldt Lake at an elevation of approximately 3,940 ft. (ca. 1,200 m.) (Fig. 1). The sediments of the dry lakebed support only salt-tolerant grasses, and the lakebed is frequently flooded, forming a large shallow lake. Napton (1970) summarized many early historic accounts of the lake and its surroundings. These accounts all describe an extensive, shallow, brackish, and somewhat foul body of water surrounded by a large marsh. When the lake is present it supports an array of aquatic vegetation and a broad marsh zone in which tules (*Scirpus*) and cattails (*Typha*) are abundant and a variety of other plants are available. The lake margin setting of the

site afforded an array of resources unequaled in most Great Basin settings. Fish, migratory and resident waterbirds, a variety of mammals, and marsh vegetation were easily accessible from the site. In addition, the resources of the West Humboldt Range were available less than 5 miles (8 km.) to the east. Lovelock Cave lies 2 miles (3.5 km.) to the south.

When archaeological investigations were conducted at Lovelock Cave in 1924, the lakebed was a dry playa whose surface was undergoing deflation (Harrington 1927). It was also dry during the 1950s and 1960s. During the past few years increased discharge of the Humboldt River, resulting from high winter precipitation in the Ruby and Independence Mountains, has caused the re-emergence of Humboldt Lake as a major body of water and the site is once again under water.

The surface extent of the area defined here as 26-CH-15 measures approximately 2,800 ft. (855 m.) east-west and 1,200 ft. (365 m.) north-south. The site is located on one of the main channels, or sloughs, which brought fresh water from the Humboldt River into the brackish water of Humboldt Lake. Apparently the main part of the site was situated on a topographic feature that was either a low dune or a small delta formed by the Humboldt River as it emptied into the lake. This high area afforded sufficient elevation above the usual level of the lake waters to keep the surface dry, while the slough provided fresh water and offered access to the lake other than through the muddy marsh that elsewhere surrounds the lake. The western half of the site is ap-

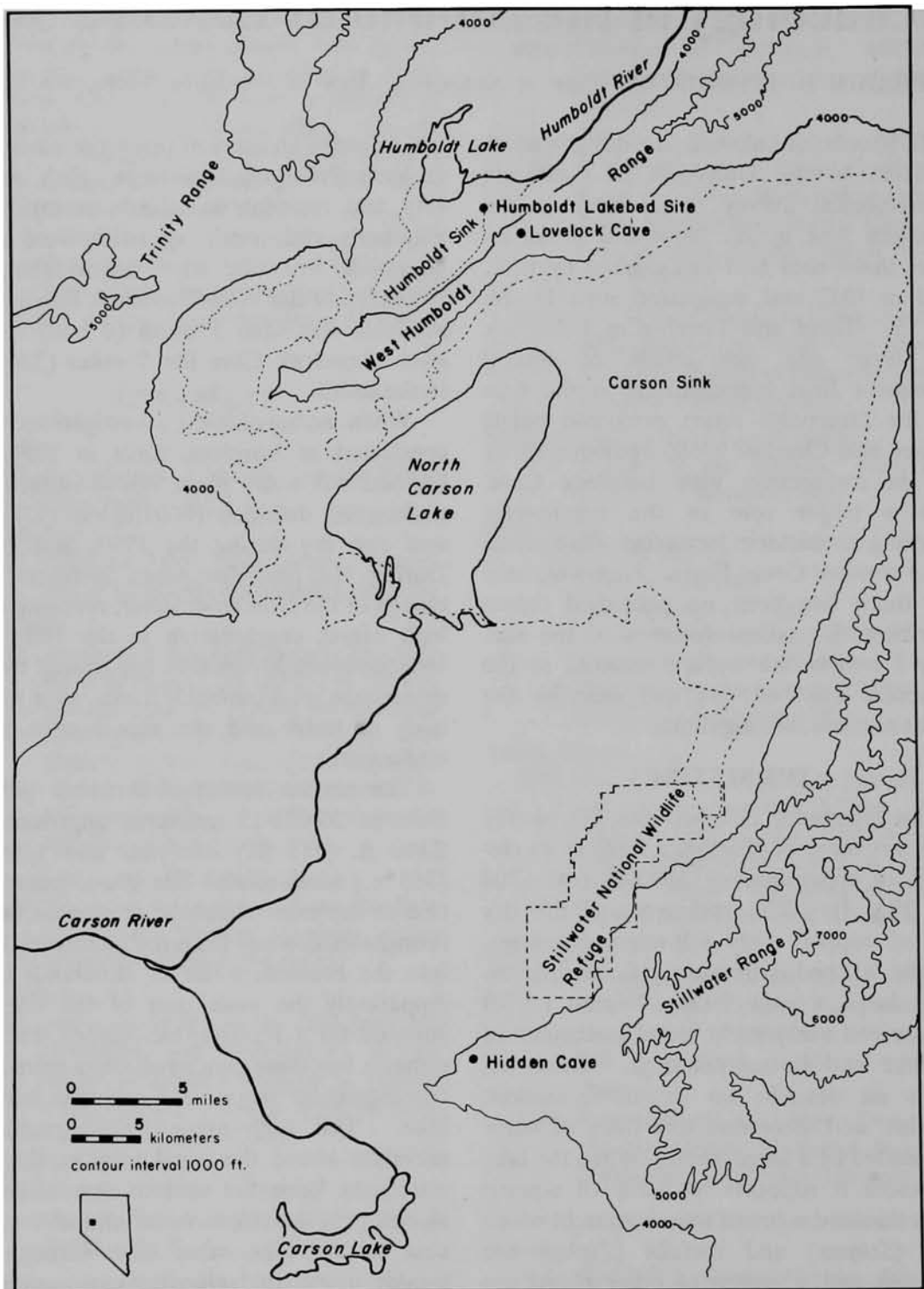


Fig. 1. Map of western Nevada showing the location of sites mentioned in the text.

proximately 12 ft. (3.5 m.) lower than the eastern half and apparently was more frequently flooded (Hallinan 1969).

HISTORY OF INVESTIGATIONS

In 1911, Lovelock Cave was discovered by guano miners to be an archaeological treasure trove. In the following year, L. L. Loud, a guard and curator at the Anthropology Museum, University of California, Berkeley, was sent by A. L. Kroeber to collect artifacts from the site for museum display. In the course of his work at Lovelock Cave, Loud recorded 17 open sites around the margins of nearby Humboldt Lake. Of the 1,464 artifacts and 16 burials he collected from these sites, 1,301 artifacts and seven burials were from the sites he called 13, 14, and 15 (Loud and Harrington 1929: Appendix 1).

In July 1950, a University of California summer field class in archaeology under the direction of R. F. Heizer investigated the archaeology of the lower Humboldt River Valley. The major effort of this group was devoted to the excavation of Leonard Rockshelter (Heizer 1951). In addition to the excavation of the shelter, an extensive survey of the area was conducted, several small cave deposits were excavated (e.g., Baumhoff 1958), site 26-PE-5 was surface collected (Elsasser 1958), and extensive surface collections were made from 26-CH-15.

Excavations at 26-CH-15 began in 1965. Again, work was peripheral to investigations conducted at Lovelock Cave by a summer field class under Heizer's direction. Excavations were continued in 1969 by another of Heizer's summer field classes. This time the efforts were split between Lovelock Cave, under the field direction of L. K. Napton (Napton 1969, 1970; Heizer and Napton 1970), and the Humboldt Lakebed site under the field direction of P. Hallinan.

Recovery techniques used in field investigations prior to 1965 are, for the most part, poorly documented. Loud's work in 1912 apparently consisted primarily of gathering artifacts from the surface of the site. He did, however, do some excavation, noting that:

in the case of human remains sometimes only a bit of bone showed on the surface, and the remainder of the skeleton was excavated. However, all work of excavation on these sites was limited to only an hour or two one afternoon [Loud and Harrington 1929:129].

A record of the techniques used in the 1950 fieldwork is not available.

In 1965 a series of individual pits was excavated. Then a 340-ft. by 100-ft. grid was laid out in 10-ft. by 10-ft. units. The pit features in 23 grid units were then excavated, and eight additional pits were excavated outside the grid. A total of 59 pit features were excavated during this season. I have been unable to find maps showing the location of these pits. The only record of the datum point for the grid is a note that it was placed on a dune on the north edge of the site 100 ft. from its eastern edge (Toney 1965). Because the datum point for the 1965 excavations cannot be relocated, it is not possible to tie the grid into later excavations or into the site map drawn in 1969.

By 1969 much of the surface of the site was heavily deflated, and it had been looted and disturbed by motor vehicles. Still, a large amount of lithic material was visible on the surface and numerous features were evident in the form of depressions, changes in sediment color, and changes in surface topography resulting from differential deflation. The western half of the site was more severely deflated; the eastern half was somewhat better preserved due to the accumula-

tion of a partial cover of drift sand (Hallinan 1969).

Excavation during the 1969 season was multi-stage. First, a series of individual pit features was excavated to ascertain if the nature of the pits could be recognized from surface characteristics. The results of these subsurface examinations were used to define pit types used in mapping all pits at the site (Figs. 2 and 3). Two trenches were then excavated in the eastern half of the site: a north-south trench 8 ft. by 80 ft. and an east-west trench 10 ft. by 70 ft. at the north end of the north-south trench (Fig. 3). All excavation was done in 6-in. levels and some of the excavated fill was screened through 1/4-in. screens.

The trenches were located in a low stabilized dune covered with drift sand. This dune was the highest point in the site and it was hoped that the original deposits had been preserved in and beneath it. The trench excavations demonstrated that drift sand overlay the stratum containing archaeological midden in those areas where deflation had the least effect. The housefloors and other features are in a coarse brown sand, 0 - 12 in. thick, that lies below the uppermost drift sand and may also be drift sand. A yellow, rather irregular, clay hardpan several inches thick underlay the brown artifact- and feature-bearing sand. It has been suggested that this hardpan may be the product of incipient soil formation resulting from exposure and weathering for a period of time (Roger Morrison, personal communication 1969 to P. Hallinan). Pits, burials, and house floors were noted to extend down to, and sometimes into, this hardpan. Under the hardpan were several feet of brown sands grading into siltier sediments. All the sediments underlying the hardpan had a high calcium carbonate content. In some parts of the site a dense, dark gray clay underlay the

lower brown sand. All strata observed appear to be late Quaternary sedimentary deposits associated with fluvial, lacustrine or eolian processes (Hallinan 1969).

Large areas of the western half of the site had deflated to the hardpan. In the heavily deflated areas many of the pit features appeared as columns of sediments raised above the surrounding ground level. Excavation of several of the raised features revealed that the sediment columns capped pit features partially filled with midden (Hallinan 1969). Heizer (MSa) suggested that the raised sediment columns represent pits in which the fill is more resistant to deflation than the surrounding sediments. These pits were left open or only partially filled when abandoned by site occupants. The pits subsequently were filled by lake sediments when the site was submerged by rising lake levels. Then, as the lake water receded, deflation differentially removed the coarser, less consolidated matrix from around the more compacted fine-grained lake sediment that filled the open pits, leaving the sediment caps standing as columns marking the location of pit features in a matrix no longer present (Heizer MSa).

THE FEATURES

Some of the primary objectives of the 1969 fieldwork were to map the numerous pit features visible on the surface, to identify their nature, and to determine their internal relationships. The maps presented here as Figures 2 and 3 are a result of these efforts. Mapped pit features of various kinds total 719, 337 on the east side of the site and 382 on the west side. An area 1,200 ft. (365 m.) wide in which few pit features and no topographic features were recorded separates the mapped areas. Many features eroded to no more than a surface stain and whose dimensions could not be determined

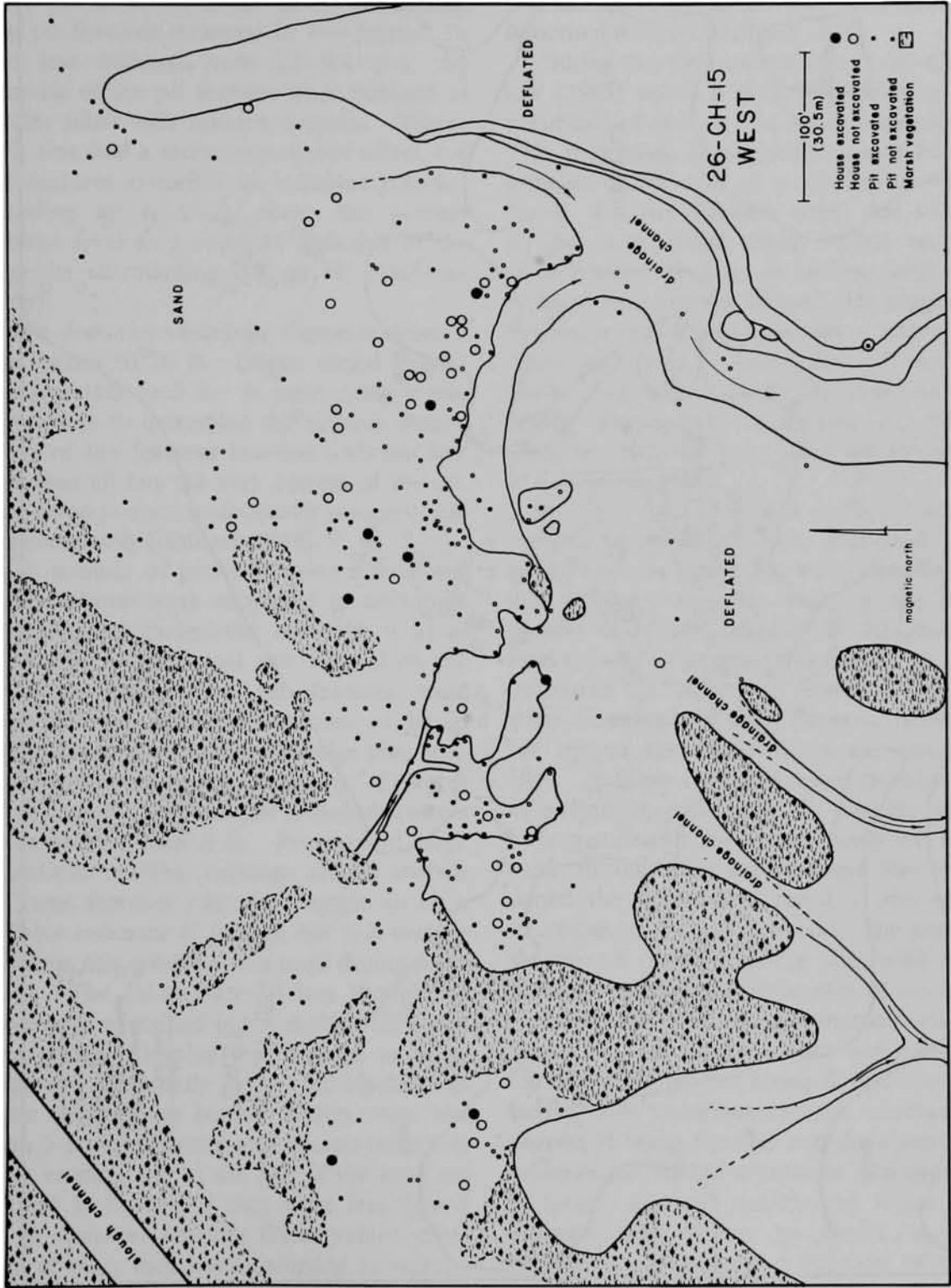


Fig. 2. Map of features on the east side of the Humboldt Lakebed site.

were not included in the map. Surficially, the pit features occurred in two forms. In the less deflated parts of the site, the remains of the pit features were outlined as circles filled with midden deposits. Where deflation had a more pronounced effect, the pit features occurred as sediment columns standing up to 3 ft. above the present ground level as a result of deflation of the deposits surrounding the pit fill (Hallinan 1969).

Pit features varied in diameter from a few inches to 20 ft. Depth varied from a surface stain to 5 ft. In most cases it was impossible to determine the original dimensions of the features because deflation had removed all but the very bottom of the pit. The same process undoubtedly removed others completely (Hallinan 1969).

A number of pits of varying dimensions and attributes were excavated to determine if surface characteristics could be used as indicators of aboriginal use. Based on the test excavations, the pit features were classified for mapping purposes as burial pits, storage pits, hearths, smudge pits, seep wells and house pits for mapping. Features were mapped as house pits if their diameters were greater than 5 ft. Presence of large quantities of lithic debitage on the surface of large features was also thought to be a reliable indicator of houses, but it is unclear whether this criterion was used during mapping. The lithic material was thought to have been contained in the midden fill which had deflated, leaving the debitage as a lag deposit. Apparently the remaining features were recorded as burials if they were less than 5 ft. in diameter and human bone was seen eroding out of the fill. They were recorded as hearths if they were less than 5 ft. in diameter and the fill contained charcoal chunks; they were recorded as storage pits if their diameter was less than 5 ft. and

the fill appeared to be lake sediments or unburned midden (Hallinan 1969).

During the 1965 excavations C. W. Clewlow (1965) noted a dark ring defining the perimeter of at least two house depressions. This dark ring, he suggested, could be the remains of the wall of a wickiup or windbreak. Further, Clewlow noted that several of the large house stains visible on the surface were irregular in outline, with one segment only vaguely defined. He suggested the vague area could represent a "stage" or "entrance" area. Excavation of one of these irregularly shaped pits revealed the profile shown here as Figure 4a, which Clewlow concluded supported the inference of a stage/entrance.

In 1969, 34 of the 173 surface features mapped as house pits were excavated. An additional nine house pits were identified in the excavated trenches, bringing the total number of houses identified to 182, and the total number of excavated houses to 43. No postmolds or structural features such as those described by Clewlow were recorded for any of the house floors excavated in 1969. Hallinan (MS) suggested the absence of postmolds could indicate that the poles were quite small and consequently left little trace, or that after the structure was abandoned the poles were recycled into other structures or used as firewood. The general absence of charcoal in the site could indicate poor preservation or scarcity of wood.

Hearth features were common outside the house pits, but little evidence was recorded for hearths from the house floors. Several factors may contribute to the absence of hearths in house features and the absence of evidence for burned structures. Recognition of hearth features outside the house pits suggests that failure to detect internal hearths is not entirely a function of preservation. Hallinan (MS) suggested that the

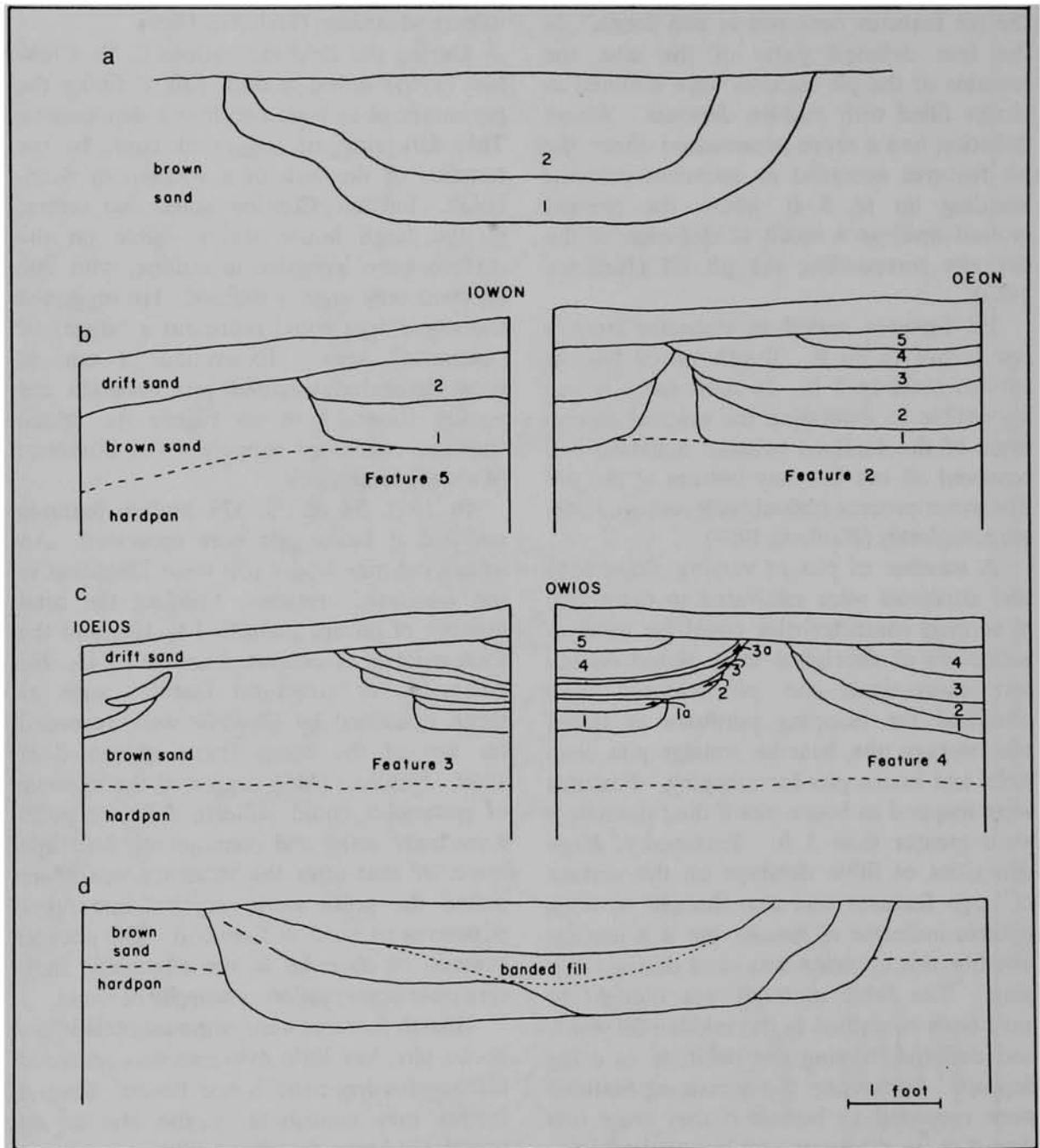


Fig. 4. Selected profiles from the Humboldt Lakebed site showing irregular-shaped profile (view a) and superimposed house floors (views b - d). Views b and c are in the north and south profiles respectively of the east-west trench. Grid locations are provided; 6 in. baulks were in place when profiles were drawn. View c is Hallinan's Pit #7; its map location is unknown.

generally small size of the houses with the concomitant risk of burning may have been the major reason for locating the hearths outside the houses.

Excavation of house features revealed that house floors tend to be stacked in pit features. Identification of floors was based on color changes showing variations in the contours of floor profiles. House floors could not be identified by differential compaction because of the sandy nature of the sediments, and no textural changes were observed.

Profiles B, C, and D in Figure 4 are a sample of profiles that illustrate sequences of superimposed house floors. Profile B illustrates Hallinan's Features 2 and 5 in the north profile of the east-west trench excavated in 1969. Grid designations are shown in the figure with 6-in. baulks in place. Profile C illustrates Hallinan's Features 3 and 4 in the south profile of the same trench. Profile D is Hallinan's Pit #7, and is included here as an example of house features excavated outside the trench. Although profiles were drawn for several of the house features outside the trench, I was unable to find records that relate these profiles to a feature on the site map.

Redundancy in the sequence of profile shapes and floor sizes, and the few artifacts recovered from the floors suggested to Hallinan that diameters and shapes of house pits are temporally sensitive. The sequence described in the following paragraphs summarizes the house data from the 1969 excavations presented in Hallinan's notes as I interpret them. I have labeled the floor profiles Early, Intermediate, and Late in order to avoid confusion with projectile point typology and phase sequences derived from elsewhere until such time as the correlations can be tested.

Early Style Houses

Fourteen floors in eight separate pits were identified as representing the earliest style of houses. Five projectile points identified in the field as Elko series dart points were recovered from house floors. The remainder of floors classified as Early were so designated because their profile shape and stratigraphic position were similar to those with Elko series projectile points. When found in a superimposed series with house floors of later periods, Early style floors were always stratigraphically inferior. The lowest floor in all but one such series rested upon or was excavated into the clay hardpan. The single exception was located at the highest point of the rise into which the trenches were dug. Beneath the lowest floor and above the hardpan were 14 inches of brown sand devoid of cultural material. This stratigraphic sequence indicated that the dune was already in the process of formation at the time the earliest house pits were dug, but it was still substantially lower than at later times.

Only a single example of floors of the Early style was found that was not superimposed by later ones. Feature 5 (Fig. 4b) contained two Early style floors, but this feature was lower on the dune than Features 2 and 3. If the surface topography of the rise has been shaped by post-occupation deflation, deflation of stratigraphically superior floors may account for the absence of later floors overlying these Early examples.

Early style floors ranged in diameter from 61 in. to 168 in. (average diameter = 81 in. [ca. 2 m.]). Depth from the rim ranged from 7 in. to 22 in. (average depth = 14 in. [ca. 35 cm.]), but depth figures may be misleading because of possible truncation by excavations for later structures or by deflation. Only a single floor of this style had what

apparently was an internal hearth, represented by a concentration of ash on the surface of the eastern half of the floor.

Intermediate Style Houses

Floors were designated Intermediate style based on stratigraphic position and on the presence of projectile points identified as Rose Spring series or Eastgate series. Intermediate floors were found in 13 of the large pit features. Many of these pits had multiple floors. Two house pit features contained only Intermediate style house floors; five had Early style floors below the Intermediate style floors; eleven had Late style floors above Intermediate ones. Sixteen floors were assigned to the Intermediate style because of their artifact content or because their profile conformed with that of floors yielding artifacts identified as Rose Spring series or Eastgate series projectile points.

Only six of the 13 pits containing Intermediate style floors extended down to the clay hardpan. Others had their deepest Intermediate floors within the sand that had been accumulating on the dune, thus suggesting to Hallinan that formation of the rise continued between the initial occupation and the excavation of these later structures.

Intermediate style house pits were larger than the underlying Early style. The diameter of 14 floors complete enough to provide meaningful data ranged from 74 in. to 162 in. (average diameter = 89 in. [2 m.]). Depth from lip to floor ranged from 9 in. to 24 in. (average depth = 17 in. [43 cm.]). As is the case with the Early style house pits, depth measures must be viewed with caution since the amount of truncation by later houses and erosion is unknown.

Aside from the change in size, Intermediate style house pits may be distinguished from those of the Early style by profile. The Intermediate style floors are slightly

saucer-shaped to level, the walls curve upward steeply like a bowl and they no longer have the right angle turn from the floor that characterizes Early style houses.

As in Early style houses, hearth type features were rarely encountered. Two concentrations of ash on separate floors were the only features encountered that suggested internal fires. Other types of pit features were excavated in house floors, but these were not numerous either. Four floors assigned to this period contained internal pits not recognized as hearths.

Intermediate style structures are more numerous and more widely distributed throughout the site than Early style structures. This change may be related to an increase in the area of the site amenable to house construction as a result of the continued accumulation of sediments increasing dune surface areas. Alternatively, it may represent a shift in location of houses to areas of the site that are better preserved. It may also represent increased visibility of the house pits since Intermediate style houses tended to be used into the next phase.

Late Style Houses

Forty-seven floors were assigned to this period. The excavated Late style floors range in diameter from 78 in. to 178 in. (average diameter = 123 in. [3.12 m.]). Because the Late style floors are uppermost in the stratigraphic sequence they were most subject to the effects of deflation. In many cases the excavated floors were truncated either by deflation or by excavation of subsequent house pits. Consequently it is possible that the diameters of excavated floors do not give an accurate impression of the original dimensions. Some unexcavated floors thought to be Late style exceed 240 in. (6 m.) in diameter. The depth of the excavated house floors ranged from 6 in. to 22 in.

(average depth = 10.5 in. [26 cm.]).

Because underestimation of diameter is probably most pronounced in the stratigraphically superior floors due to erosion, Hallinan (MS) concluded that later houses had more internal floor space. On the other hand, he acknowledged that caution must be exercised in drawing the conclusion that depth of house floors decreased through time because deflation undoubtedly caused the stratigraphically superior floors to be shallower than their original depth. However, profiles also indicate that later houses were shallower. Profiles of Early houses show walls that rise at right angles from a nearly level floor, while profiles of Intermediate houses show steeply curved walls which rise from a level or rounded floor. The Late house depressions appear in profile as gently rising walls whose point of contact with the floor is indistinguishable.

In spite of the great number of pits that have been reduced to unidentifiable surface stains by deflation, vehicular traffic, and other kinds of disturbance, there is an enormous increase in the number of pits containing Late style floors. Five projectile points identified in the field as Desert series were recovered from house floors exhibiting a shallow saucer shape and from a superior stratigraphic position. Aside from the increase in the number of pits containing Late floors, there also appears to be a greater number of floors of this period in individual pits. The entire area of the site in which houses occur contained floors assigned to this period. Further, none of the numerous Late style floors reaches to the hardpan. Because all occur in high stratigraphic positions in the profiles, Hallinan (MS) concluded that sediments continued to accumulate on the dune during this period.

Of the 20 excavated features containing Late house floors, seven contained only

floors of this style, compared to a single feature with exclusively Early floors and only two features with exclusively Intermediate floors. Seven Late floors contained internal pits, more than any of the preceding periods. The largest excavated house floors of this period had several internal pits. The apparent increase in number of internal pits clearly may be attributed to the larger size of the sample of floors from this period rather than to structural change. As in earlier periods, the majority of floors did not show evidence of internal storage. Three Late floors had concentrations of ash and charcoal on the floor surface that are thought to represent hearths, and one floor had a pit feature that may have been a hearth. The greater number of internal hearths may also be attributed to the increased size of the sample. It is interesting to note, however, that the largest house excavated contained three hearths, all in pits. The possibility remains that the size of the house had a direct bearing on whether the hearth was internal or external.

MATERIAL CULTURE

Human bones, lithic tools, and debitage comprise the bulk of the assemblage recovered from the site by Loud. The most numerous class of artifacts reported by Loud is chipped stone implements. In addition, he reported handstones ("shellers," "grinders," "rubbing stones"), metates, pestles, and mortars ("large," "paint," and "medicine"), ice picks, sinkers, hammerstones, and pipes, as well as a few bone and shell objects (Loud and Harrington 1929:130-150). These objects are described in Appendix I of the Lovelock Cave report (Loud and Harrington 1929) and are summarized here in Table 1. There is no comparable account of the collections made by the later field parties. However, two categories of artifacts, the

Table 1
ARTIFACTS RECOVERED BY L. L. LOUD
FROM THE HUMBOLDT LAKEBED SITE

Artifact	Number of Specimens
Grinding stones	162
Metates	11
Mortars	13
Pestles	61
Hammerstones	13
Ice pick	1
Grooved sinker	1
Perforated sinkers	13
Pipes	2
Problematical	3
Chipped implements	998
Bone	16
Shell	12
TOTAL	1306

Source: Loud and Harrington (1929:Appendix I)

Table 2
PROJECTILE POINTS
FROM THE HUMBOLDT LAKEBED SITE¹

Series	Number of Specimens	Time Range
Desert	427	600-100 B.P.
Rosegate	695	1200-600 B.P.
Elko	113	3200-1200 B.P.
Gatecliff	62	5000-3200 B.P.
Humboldt	159	
Untyped ²	345	
TOTAL	1801	

1. Described in Heizer and Clewlow (1968); placed into series following Thomas (1981, 1985).

2. All points assigned to types in Heizer and Clewlow (1968) that cannot be assigned to one of the series for which there is a known time span have been placed into the untyped category here.

projectile points and the shell beads, have been treated in some detail in separate publications (Bennyhoff and Heizer 1958; Heizer and Clewlow 1968).

Heizer and Clewlow (1968) examined all of the projectile points collected from 26-CH-15 by archaeological field parties through 1965 and those in two private collections. They recognized 21 named, and an additional 12 possible, types of projectile points in the 1,801 specimens they examined. To facilitate comparison and discussion, I have grouped the numerous types recognized by Heizer and

Clewlow into series as defined by Thomas (1981); the results are presented in Table 2. Three named types were defined on the basis of this assemblage: Humboldt Concave Base A, Humboldt Concave Base B, and Humboldt Basal-notched. Bettinger (1978) and Thomas (1981, 1985) discussed the temporal significance of the Humboldt series projectile point types.

A total of 150 complete or fragmentary shell beads and ornaments were recovered from 26-CH-15 prior to 1969. Of these, all but four were discussed by Bennyhoff and Heizer (1958) in their classification of shell artifacts in the western Great Basin. The remaining four were recovered from the surface of the site in 1965 and described by Heizer as: an incised *Dentalium* shell bead, a "scoop" *Olivella* bead with a punched perforation, a fragment of a type 3a2 *Olivella* bead, and a fragment of a type 3b1 *Olivella* bead (Heizer MSb:17a).

The paucity of artifacts recovered during the 1969 excavations was disappointing, especially in terms of the prospect of using the temporally significant objects to date pit features. Although the number of artifacts recovered during the final fieldwork is not large, analysis of these materials is not yet complete. The crucial projectile points and the shell beads from the 1969 excavations have been lost.

THE BURIALS

In 1912 Loud recovered the remains of seven individuals from 26-CH-15. Measurements of this collection are published in Gifford (1926:382) and Kennedy (1959). Little else is known of these burials.

Between the work of Loud and the 1965 excavations, numerous additional burials were exposed, either by natural deflation of the site or by the activities of relic collectors. Scattered human bones and the pits dug by

collectors were noted both in 1950 and 1965. In spite of destruction of burials by natural processes and amateur collecting activities, eight were recovered prior to 1969 by field teams associated with the University of California, Berkeley. The information obtained from those eight burials is summarized in Table 3 (abstracted from Heizer [MSb]). Organic materials associated with the cremation burial excavated in 1956 yielded a date of $2,690 \pm 250$ B.P. (Bennyhoff and Heizer 1958:66; Grosscup 1958:19). No other dates are available for these burials.

Excavations of pits in 1969 revealed the remains of at least nine additional individuals in five separate pits. Data from these burials are presented in Table 4. In overall size, and in profile, the pits in which many of these burials were found resembled the pits that were identified as storage or cache pits. Further, the pit deposits underlying the skeletal remains often consisted of organic midden containing numerous fish and bird bones. The size, shape, and other contents of the burial pits indicate that burials may have been placed in storage pits that no longer were being used for their original purpose (Heizer MSb).

DATING THE SITE

Determining the occupational chronology of the Humboldt Lakebed site is difficult because deflation left most of the temporally diagnostic artifacts on the surface and because so few radiocarbon dates are available. The large number of projectile points collected from the surface of the site are the primary source of typological dates (see Table 2). Since the points were initially analyzed and published (Heizer and Clewlow 1968), considerable research has been done on the Great Basin projectile point chronology and many additional radiocarbon dates are available for the types recognized (Thomas

1981, 1985). The 60 points Heizer and Clewlow (1968) identified as Pinto and the two points they identified as Gypsum are here placed in the Gatecliff series (Thomas 1981), which is dated to between 5,000 and 3,200 B. P. in the western Great Basin (but see Flenniken and Wilke 1986). The presence of Gatecliff series points indicates the site may have been used as early as 5,000 B.P., but was surely used by at least 3,000 B.P. The 695 Rosegate series (1,200 to 600 B.P.) and 427 Desert series (post-650 B.P.) points indicate that use of the site continued at least into the protohistoric period.

If the correlation of house floor types with the projectile point sequence is valid, it should be noted that point frequencies do not increase in concert with house structures; Desert series points are less abundant than Rosegate points, while Late style floors are more abundant than Intermediate floors. The lack of correspondence between abundance of floors and abundance of points may indicate that floor profile is not a good temporal indicator. Or it may indicate that errors have been made assigning points or floors to styles, or that functional change exists in site-artifact usage and that people who lived in Late style houses made and discarded fewer projectile points than people in the preceding period. Sampling error could also account for the differences.

Bennyhoff and Heizer's (1958) analysis of the shell beads from 26-CH-15 supports the 3,000 B.P. date for the first occupation of the site. They found that the oldest shell beads from 26-CH-15 are assignable to the Middle Horizon (3,500 to 2,500 B.P.), and they identified shell bead types that cross-date to the lower Phase 1 of the Late Horizon (2,500 to 1,300 B.P.). However, they found no beads of the upper Phase 1 period of the Late Horizon (1,300 to 500 B.P.). They assumed that the absence of beads

Table 3
 BURIALS EXCAVATED BETWEEN 1935 AND 1965 AT THE HUMBOLDT LAKEBED SITE

Age and Sex	Elements	Pit Description	Position	Associated Materials
Adult; sex unknown	femur; tibia; humerus; ribs	size unknown; flat bottomed, pan-shaped	tightly flexed on left side	scapula saw; decorated skull disc; micaceous schist; charred wood; matting
Adult; female	femur; tibia; pelvis vertebrae; ribs; ulna; humerus; radius	20 x 30"	tightly flexed on left side; head to north	None, possibly looted
Adult; male	skull; mandible; pelvis; several longbones	31" diameter	disturbed	charcoal bits
Adult; male	complete	38 x 35"; bell-shaped with flat bottom	tightly flexed on right side; head to north	organic traces; possible shroud
Adolescent; male	almost complete	30" diameter	loosely flexed on right side; shoulders and face down; head to northeast	none recorded
Adult female	complete	32 x 29"	loosely flexed on left side; head to southeast	organic traces; possible shroud
Adult; sex unknown	almost complete	30" diameter; round bottom	flexed; cremation; head to north	net of 2-ply, S-twist cord; twined basketry; tule matting
Adult; sex unknown	tibia; fibula; ulna; tarsals; carpals; metapodials	28 x 56"	loosely flexed on right side; head to east	red ochre

Table 4
 BURIALS EXCAVATED IN 1969 AT THE HUMBOLDT LAKEBED SITE

Age and Sex	Elements	Pit Description	Position	Associated Materials
Infant; sex unknown	complete except right foot	26 x 31"; bottom slopes	on left side; arms extended hips prone; head to north	many bird bones in fill; heron/crane skull; several polished spatulate bones
Adult; male	complete	43 x 30"	loosely flexed; head to east	none recorded
Adult; sex unknown	skull; cervical vertebrae; scapula; longbone fragments	15" diameter	disarticulated or disturbed; head to northwest	none recorded
Adult; sex unknown	almost complete; no skull	48 x 51"	loosely flexed on right side; head to west	none recorded
Juvenile or infant; sex unknown	not recorded			none recorded
Age unknown; sex unknown;	3 partial skulls and mandibles	18 x 18"		none recorded

representing the upper Phase 1 indicated the site was abandoned until Phase 2 of the Late Horizon, or protohistoric times, for which they recognized representative beads in the 26-CH-15 assemblage. No hiatus in deposition of sediments or any other indication of a hiatus in occupation was recorded.

Discrepancy between independent chronologies derived using projectile points and shell beads has been noted in other western Great Basin settings (Thomas 1985). In view of the span of time involved in the recovery of these collections, the disturbed nature of the site, and the fact that not all of the artifacts have been fully analyzed, or can be accounted for, the discrepancy in chronological indicators is not surprising.

Eight radiocarbon dates are now available for the site. The dates of $2,690 \pm 250$ B.P. (Bennyhoff and Heizer 1958:66, Grosscup 1958:19) for the cremation burial excavated in 1956, and 550 ± 60 B.P. (Heizer and Napton 1970:46) for a storage pit have been supplemented by six additional dates that I obtained for organic material recovered from house floors during the 1969 excavations (Table 5). I could find no datable materials for the steep-sided floors thought to be associated with Elko series projectile points or from the shallow floors associated with Desert series points. Further, I could not locate measured profiles or photos for the house floors from which organic materials were collected. The six dates shown in Table 6 are from floors described above as Intermediate style, and indicate that these houses were used from at least 1,370 B.P. until at least 960 B.P.

FUTURE WORK

The Humboldt Lakebed site has long been unique in our knowledge of western Great Basin prehistory. It was one of the first sites in Nevada to be investigated for

Table 5
RADIOCARBON DATES
FROM THE HUMBOLDT LAKEBED SITE

Date B.P.	Laboratory Number	Material	Association
960 ± 80	B-14923	charcoal	bowl-shaped house floor
1,040 ± 80	B-14928	soil	bowl-shaped house floor
1,140 ± 60	B-14925	soil	bowl-shaped house floor
1,160 ± 80	B-14926	soil	bowl-shaped house floor
1,270 ± 80	B-14924	soil	bowl-shaped house floor
1,370 ± 110	B-14927	soil	bowl-shaped house floor
2,690 ± 250	M-649	organic	burial ^a
550 ± 60	UCLA-1071A	organic	storage pit ^b

^aGrosscup (1958:19).

^bHeizer and Napton (1970:46).

archaeological purposes. It is the only excavated low-elevation site with a large artifact inventory and numerous structural features suggestive of sedentary settlement. Although most of the excavated materials and many of the surface collections from 26-CH-15 remain to be analyzed, this site and Lovelock Cave have played important roles in the development of the concept of a limnosedentary lifestyle.

As described by Heizer and his students, the limnosedentary lifestyle is characterized by almost exclusive use of lake and marsh resources which permitted sedentary, or near sedentary, occupation of the lakeshore environment (Heizer 1967; Cowan 1967; Napton 1969, 1970). Intriguing and controversial, the limnosedentary hypothesis remains to be supported by further research, either from the Humboldt Lakebed site or from other western Great Basin lakeside locations. In fact, recent excavations at Hidden Cave (Thomas 1985) and survey in the area surrounding Hidden Cave in the Carson Sink (Kelly 1985), an environment apparently very similar and immediately to the south of the

Humboldt Sink, have yielded significantly different interpretations of contemporary prehistoric adaptive strategies. Analysis of the faunal remains from the Humboldt Lakebed site that I am now conducting and investigation of structural and burial features in the Stillwater Wildlife Refuge, apparently similar in appearance to those of the Humboldt Lakebed site (Dansie 1986), will certainly shed light on the nature of prehistoric adaptive strategies in the western Great Basin lacustrine settings.

ACKNOWLEDGEMENTS

I am indebted to Patrick S. Hallinan and the many individuals who participated in the fieldwork at the Humboldt Lakebed site and to those responsible for the curation of the collections and notes. Frank Norick and the staff at the Lowie Museum of Anthropology, University of California, Berkeley, were extremely helpful and cooperative in obtaining and providing the materials and records that made this report possible. Donald K. Grayson, David Rhode, and anonymous reviewers offered valuable suggestions on the manuscript. Financial assistance was provided by National Science Foundation Dissertation Improvement Grant BNS83-15233.

REFERENCES

- Baumhoff, M. A.
1958 Excavation of a Cache Cave in Pershing County, Nevada. Berkeley: University of California Archaeological Survey Report No. 44(2):14-25.
- Bennyhoff, J. A., and R. F. Heizer
1958 Cross-Dating Great Basin Sites by Californian Shell Beads. Berkeley: University of California Archaeological Survey Report No. 42:60-92.
- Bettinger, R. L.
1978 Humboldt Basal-notched Bifaces as Time Marker[s] in the Western Great Basin. Tebiwa: Miscellaneous Papers of the Idaho State University Museum of Natural History 10.
- Clellow, C. W., Jr.
1965 Unpublished fieldnotes on the excavations at the Humboldt Lakebed site, 1965. MS on file at the Lowie Museum of Anthropology, University of California, Berkeley.
- Cowan, R. A.
1967 Lake Margin Ecologic Exploitation in the Great Basin as Demonstrated by an Analysis of Coprolites from Lovelock Cave, Nevada. Berkeley: University of California Archaeological Survey Report No. 70:21-35.
- Dansie, A. J.
1986 Lahontan Basin Silt and Bone Taphonomy over the Last 12,000 years: Climatic Implications of Stillwater and Pyramid Lake Skeletons. Paper presented at the 20th Great Basin Anthropological Conference, Las Vegas.
- Elsasser, A. B.
1958 The Surface Archaeology of Site 26-Pe-5, Pershing County, Nevada. Berkeley: University of California Archaeological Survey Report No. 44(2):26-56.
- Flenniken, J. J., and P. J. Wilke
1986 The Flaked Stone Assemblage from Hogup Cave, Utah: Implications for Prehistoric Lithic Technology and Culture History in the Great Basin. Paper presented at the 20th Great Basin Anthropological Conference, Las Vegas.
- Gifford, W. W.
1926 California Anthropometry. University of California Publications in American Archaeology and Ethnology 22(2).
- Grosscup, G. L.
1958 Radiocarbon Dates from Nevada of Archaeological Interest. Berkeley: University of California Archaeological Survey Report No. 44(1):17-31.
1960 The Culture History of Lovelock Cave, Nevada. Berkeley: University of California Archaeological Survey Report No. 52.

- Hallinan, P. S.
 1969 Unpublished fieldnotes on the excavations at the Humboldt Lakebed site. MS on file at the Lowie Museum of Anthropology, University of California, Berkeley.
- MS Unpublished analysis notes on the house features at the Humboldt Lakebed site. MS on file at the Lowie Museum of Anthropology, University of California, Berkeley.
- Harrington, M. R.
 1927 Some Lake-Bed Camp-Sites in Nevada. Museum of the American Indian, Heye Foundation, *Indian Notes* 4(1):40-47.
- Heizer, R. F.
 MSa Unpublished notes on pit features in the Lower Humboldt Valley. MS on file at the Bancroft Library, University of California, Berkeley.
- MSb Archaeology of the Lower Humboldt Valley, Nevada. MS on file at the Bancroft Library, University of California, Berkeley.
- 1951 Preliminary Report on the Leonard Rockshelter Site, Pershing County, Nevada. *American Antiquity* 17(2):89-98.
- 1967 Analysis of Human Coprolites from a Dry Nevada Cave. Berkeley: University of California Archaeological Survey Report No. 70:1-20.
- Heizer, R. F., and C. W. Clewlow, Jr.
 1968 Projectile Points from Site NV-Ch-15, Churchill County, Nevada. Berkeley: University of California Archaeological Survey Report No. 71:59-101.
- Heizer, R. F., and L. K. Napton
 1970 Archaeology and the Prehistoric Great Basin Lacustrine Subsistence Regime as Seen from Lovelock Cave, Nevada. Berkeley: University of California Archaeological Research Facility Contribution No. 10.
- Kelly, R. L.
 1985 Hunter-gatherer Mobility and Sedentism: a Great Basin study. Ph.D. dissertation, University of Michigan.
- Kennedy, K. A. R.
 1959 The Aboriginal Population of the Great Basin. Berkeley: University of California Archaeological Survey Report No. 45.
- Loud, L. L., and M. R. Harrington
 1929 Lovelock Cave. University of California Publications in American Archaeology and Ethnology 25(1).
- Napton, L. K.
 1969 The Lacustrine Subsistence Pattern in the Desert West. Kroeber Anthropological Society Special Publication No. 2:28-69.
- 1970 Archaeological Investigations in Lovelock Cave, Nevada. Ph.D. dissertation, University of California, Berkeley.
- Thomas, D. H.
 1981 How to Classify the Projectile Points from Monitor Valley, Nevada. *Journal of California and Great Basin Anthropology* 3(1):7-43.
- 1985 The Archaeology of Hidden Cave, Nevada. *Anthropological Papers of the American Museum of Natural History* 61(1).
- Toney, J.
 1965 Unpublished fieldnotes on the excavations at the Humboldt Lakebed site. MS on file at the Lowie Museum of Anthropology, University of California, Berkeley.

