Journal of California and Great Basin Anthropology
Vol. 17, No. 2, pp. 244-266 (1995).

The Dry Susie Creek Site: Site Structure of Middle Archaic Habitation Features from the Upper Humboldt River Area, Nevada

CRAIG S. SMITH and THOMAS P. REUST, Mariah Associates, Inc., 605 Skyline Dr., Laramie, WY 82070.

The 103 m.^{2} main excavation block at the Dry Susie Creek site contained the well-preserved remains of a probable single occupation with at least four habitation structures dating to the Middle Archaic Period (James Creek Phase). The presence of remains centered around habitation features provides a rare opportunity to explore site structure of a cluster of household activity areas within a site. The habitation features consisted of slightly basin-shaped areas of charcoal-stained sediment measuring 2 to 3 m. in diameter and 10 to 25 cm. thick. Cultural remains recovered from the excavation block include a variety of chipped stone and groundstone tools, bone tools, and debitage, with most artifacts associated directly with the structures. A wide range of domestic activities occurred primarily within the structures. The site appears to represent a short-term residential camp that was occupied in the spring to early summer by a group employing a residential mobility strategy.

THE Upper Humboldt River area in northeastern Nevada was one of the more productive regions of the north-central Great Basin. Although sketchy and incomplete (Fowler 1982), much of the information concerning the settlement organization of ethnographic Western Shoshone groups of the Upper Humboldt River area comes from the work of Steward (1938, 1941). The ethnographic Shoshone of the Upper Humboldt River area probably employed a logistically based collecting strategy from sites along the Humboldt River during the fall and winter, and a more residentially mobile foraging strategy during the rest of the year. Because of the unusual productivity and diversity of the resources of the area, the villages were larger, with smaller foraging areas, than many other Great Basin groups. Roots, such as yampa, and seeds, including goosefoot and Indian ricegrass, formed an important portion of the group's diet. When stored foods were insufficient to last the winter, cacti were collected along the hills north of the Humboldt River near the mouth of North Fork Creek. Hunting was also important, but smaller animals such as ground squirrels, gophers, and rats were economically more important than larger game. Fish were also obtained from the rivers, often by using weirs and dams. The important pinyon nut was not available locally, but was gathered from the western slopes of the Ruby Mountains.

Two major sites that have provided much of the information on the prehistoric inhabitants of the Upper Humboldt River area are James Creek Shelter (Elston and Budy 1990) and South Fork Shelter (Heizer et al. 1968; Spencer et al. 1987). These sites have yielded evidence of occupations over the past 5,000 to 7,000 years and have indicated, as have other studies (e.g., Armentrout and Hanes 1987), that the intensity of occupation increased after approximately 3,000 years B.P., and again after about 1,600 years B.P. Though these sites have contributed considerable information to our understanding of the prehistoric inhabitants of the area, they are both shelters where the remains of numerous occupations have

probably become mixed. They also represent only a limited range of occupation types in the settlement system where, for much of their occupational history, small, highly mobile groups made relatively short-term visits. Limited excavations at the Carlin sites (26Ek1670 and 26Ek1671) (Rusco et al. 1979) and at 26Ek3343 (Burke and Hemphill 1989) have provided some information on open sites with hearth and midden features along the Upper Humboldt River. These excavations focused primarily on features partly exposed on the surface that appear to be the result of many occupations dating over the past 4,000 years.

In contrast, the main excavation block at the Dry Susie Creek site (26Ek5373) contained the well-preserved remains of a probable single occupation dating to the Middle Archaic Period (James Creek Phase) at about 2,800 years B.P. (Reust et al. 1994). The presence of remains centered around habitation features provides a rare opportunity to explore site structure of a cluster of household activity areas within a site. Ethnoarchaeological studies indicate that household activity areas are often the center of many of the domestic activities occurring at a site (Yellen 1977; O'Connell 1987; Bartram et al. 1991; O'Connell et al. 1991). The examination of the structure of household activity areas at the Bustos Wickiup site in eastern Nevada demonstrated that such studies can facilitate a better understanding of duration of occupation, site function, seasonality, and reoccupation (Simms 1989). O'Connell (1993) noted that site structure research is most informative when the archaeological record is intact and chronologically fine-grained, where household activity areas can be identified, and when large areas can be exposed. The presence of household activity areas and the fine-grained nature of the Dry Susie Creek site makes it ideal for site structure studies.

Large block excavations are often required for site structure studies (Simms 1988; O'Connell 1993); however, as Tipps (1993) noted, minimum block size for site structure studies is dependent on site size, length of occupation, spacing between household activity areas, and other variables. According to ethnoarchaeological studies, short-term residential camps could be exposed in as little as 30 to 40 $m.^2$ (Yellen 1977; Jones 1993), while another site may require an exposure of up to 1,000 $m.^2$ to identify the spatial patterning of a single household activity area (O'Connell 1987). What is critical for site structure studies is not a mandated block size, but exposing enough of the site area so that patterns can be identified (Tipps 1993).

The main excavation block at the Dry Susie Creek site was large enough to incorporate four to five household activity areas, and a majority of the remains directly associated with these areas was most likely recovered. Other site activity areas, such as special use areas, may have been present outside the block area; however, extensive backhoe trenching in the vicinity of the excavation block failed to encounter additional remains. The exposure of several household activity areas and associated remains within the main excavation block provided a rare opportunity to examine the spatial relationships of the recovered remains within and between the household activity areas, and to explore the kinds and spatial segregation of activities that occurred within these household areas. This information will facilitate an understanding of site function and duration of occupation, which will assist in understanding the prehistoric settlement organization of the Upper Humboldt River area.

This article first summarizes some information concerning the site and the recovered remains, including the habitation features. The site structure of the household activity areas is then explored by examining the distribution of the recovered remains. The site structure discussion relies on comparisons with the results of ethnoarchaeological studies of the use of space by modern hunter-gatherers and analogies based

on ethnohistoric and ethnographic sources. The remaining sections explore the season of site occupation and the settlement organization, including mobility, predation, and technology of the prehistoric inhabitants of Dry Susie Creek.

SITE DESCRIPTION

The Dry Susie Creek site is in the foothills of the Adobe Range, approximately 3 km. north of the Humboldt River in northeast Nevada (Fig. 1). The site lies at an elevation of 1,554 m. on the eastern side of a drainage divide that separates perennial Susie Creek on the west from intermittent Dry Susie Creek to the east. The area is characterized by dissected uplands that are located north of the Humboldt River, and which form a divide separating the Humboldt and Snake River drainage basins (Coats 1987). The Adobe Range trends to the northeast of the site, the Independence Mountains are to the northwest, and the Tuscarora Mountains are some distance further to the west. North/south-trending streams flow through valleys between the ranges, with Maggie Creek between the Tuscarora and Independence ranges, Susie Creek between the Independence Mountains and Adobe Range, and Dry Susie Creek flowing off the southwestern edge of the Adobe Range. All of the drainages empty into the Humboldt River, which is the major drainage in the region.

The Dry Susie Creek site is located within an upland area characterized by low, rolling hills formed by the dissection of a late Tertiary/early Pleistocene alluvial fan, valley fill, and pediment deposits. It is situated on a slope approximately 21 m. above and 300 m. west of the entrenched channel of Dry Susie Creek. The site is near the bottom and at the head of a small eastward-flowing drainage of Dry Susie Creek, with ridges to the north, south, and west, providing a relatively protected setting.

Vegetation within this region has generally been classified into broad zones based mostly on elevation, with the site area located within the Sagebrush Zone (Cronquist et al. 1972). Woody plants observed in the vicinity of the site include big sagebrush (*Artemisia tridentata*), low rabbitbrush (*Chrysothamnus viscidiflorus*), low sagebrush (*Artemisia arbuscula*), and winterfat (*Eurotia* spp.). Grasses in undisturbed areas include western wheatgrass (*Elymus Smithii*), Indian ricegrass (*Oryzopsis hymenoides*), and needle-and-thread grass (*Stipa comata*), with wild rye (*Elymus cinerus*) noted within drainages. Russian thistle (*Salsola kali*) and cheatgrass (*Bromus tectorum*) occur along the corridor, which has been disturbed by past pipeline construction.

THE EXCAVATIONS

Two blocks were excavated at the Dry Susie Creek site (Reust et al. 1994), each containing a distinct and separated cultural component. The main block of 103 $m.^2$ yielded the habitation features. Radiocarbon assays (from bulk sediment samples) of 3,030 $\pm$ 70, 2,890 $\pm$ 60, and 2,640 $\pm$ 70 years RCYBP (Beta 63,261, 63,262, and 64,107) placed the component in the Middle Archaic Period (Elston 1986) or James Creek Phase of the Upper Humboldt River area cultural chronology (Elston and Katzer 1990). The other block of 13 $m.^2$ revealed a scatter of heat-altered rock, flaked and groundstone tools, worked bone artifacts, debitage, and faunal remains. Radiocarbon assays of 210 $\pm$ 70 and 100.1 $\pm$ 0.8 years RCYBP (Beta 65,522 and 63,607) indicated that this component belongs to the Late Archaic Period (Elston 1986) or Eagle Rock Phase (Elston and Katzer 1990). The main focus of this article is the habitation features encountered within the main excavation block dating to the James Creek Phase. More detailed information on the archaeology of the Dry Susie Creek site was provided by Reust et al. (1994).

RESULTS FROM THE MAIN EXCAVATION

The main excavation block contained the remains of a probable single occupation that was

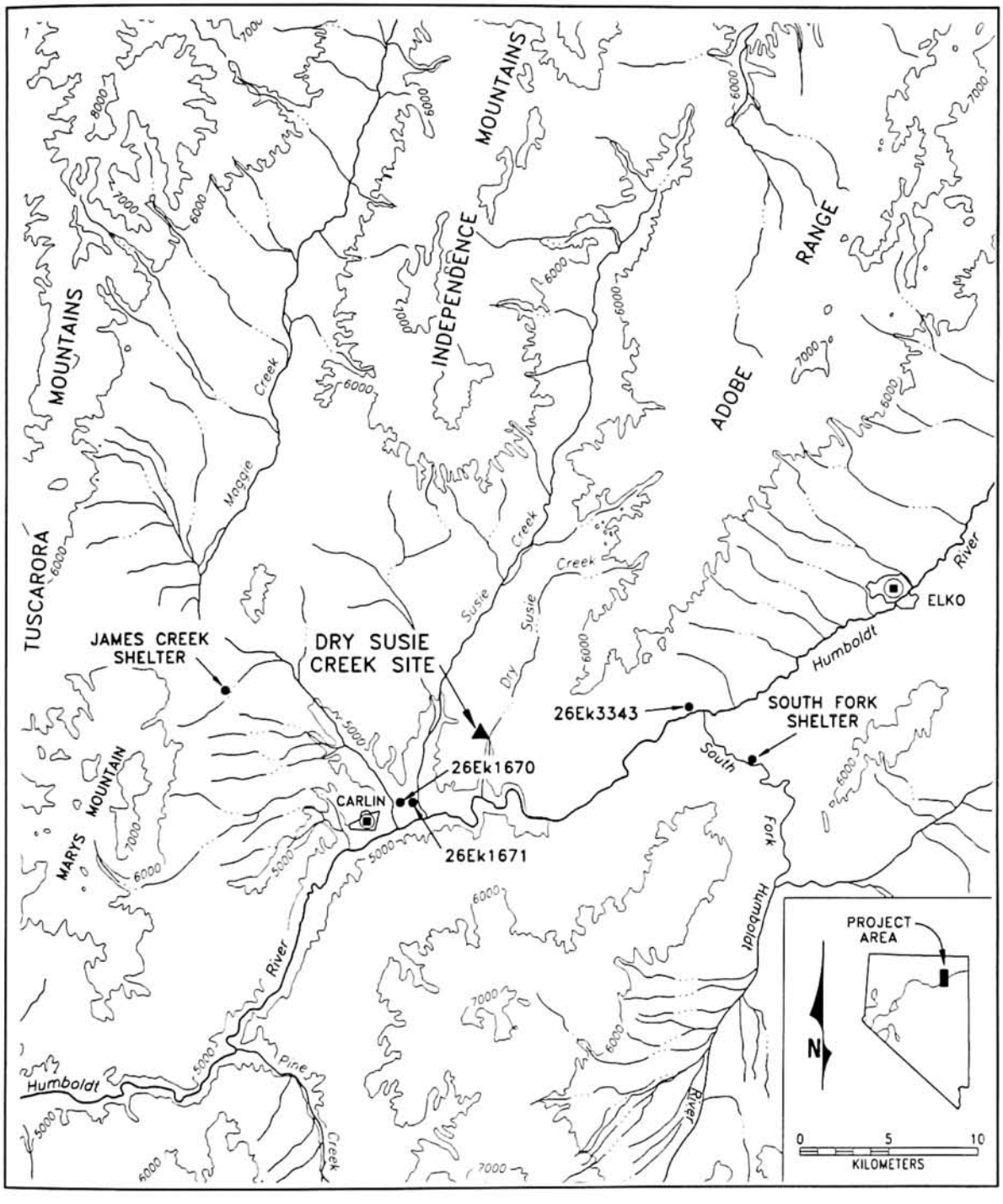

Fig. 1. Location of Dry Susie Creek site and previously investigated sites in the Upper Humboldt River area (after Elston and Budy 1990).

buried by colluvial deposition shortly after abandonment. The remains occurred between 10 cm. and 80 cm. below the surface within an aeolian/colluvial sandy loam strata that overlaid a Pleis-

Table 1
CHARACTERISTICS OF HABITATION FEATURES, DRY SUSIE CREEK SITE

Feature	Dimensions (cm.)[a]			Area ($m.^2$)[b]	Flaked Stone Tools	Ground-stone Tools	Bone Tools	Debitage	Faunal Remains	Heat-altered Rock	Density (artifacts/$m.^2$)	Radiocarbon Ages[c]
	L	W	D									
1	200	125*	20	2.17	3	4	2	34	16	5	30	–
2	325	295	30	7.97	32	17	–	1,796	428	1,903	525	3,030 ± 70 (Beta 63,261)
3	145*	180*	10	2.77	9	–	–	550	70	44	243	2,640 ± 70 (Beta 64,107)
4	300	290	25	6.20	11	4	3	759	108	231	180	2,890 ± 60 (Beta 63,262)
5	225	180	10	2.85	9	–	–	347	21	264	226	–

[a] L = length; W = width; D = depth; * = partial dimension.
[b] Estimated total area.
[c] Uncalibrated and uncorrected ages expressed as radiocarbon years B.P.

tocene paleosol marked by strong calcium carbonate accumulations (Fig. 2). Associated remains included: five cultural features; a human infant burial; 2,820 fragments of heat-altered rock; 78 flaked stone tools, including 52 bifaces and 26 flake tools; 4,688 pieces of debitage; two tested cobbles; a hammerstone; 33 groundstone tool fragments, including two manos and 31 very small metate fragments; five bone tools; 782 faunal remains; and 17 charred plant rhizome fragments, most of which were identified as *Scirpus* sp.

Dating the Site

Although a t test ($p = 0.05$) of the radiocarbon ages (see above) indicated that some of the dates are not contemporaneous, a single, short-term occupation is suggested by the overall archaeological context of the remains. It is possible that the youngest estimate obtained from a bulk sediment sample from Feature 3 (see Table 1) was contaminated by post-occupation processes, as suggested by an associated, prominent gravel lens (see Fig. 2). Though believed to be contemporaneous, Feature 3, which had the youngest estimate, actually occurred 20 to 30 cm. lower than nearby Feature 2. The two features were at slightly different depths due to the natural microtopography of the area. The spatial patterning of remains (with artifact refit between features), the concentration of all types of remains within the habitation features, the stratigraphic relationship of the features, and the lack of overlapping activity areas or features also suggest a single occupation (Fig. 3). Additionally, the hydration band measurements of 24 obsidian artifacts from the component tightly cluster, providing evidence that the obsidian was worked over a very short period (Origer 1994).

Features

The excavation block contained at least four features (Features 2 through 5) that appear to be the remains of habitation areas that may have included a temporary structure (Fig. 3). Feature 1 may also encompass the remains of a habitation feature that was mostly destroyed due to pipeline trenching and rodent activity. These features consisted of charcoal-stained sediment in a roughly circular plan view about 2 to 3 m. in

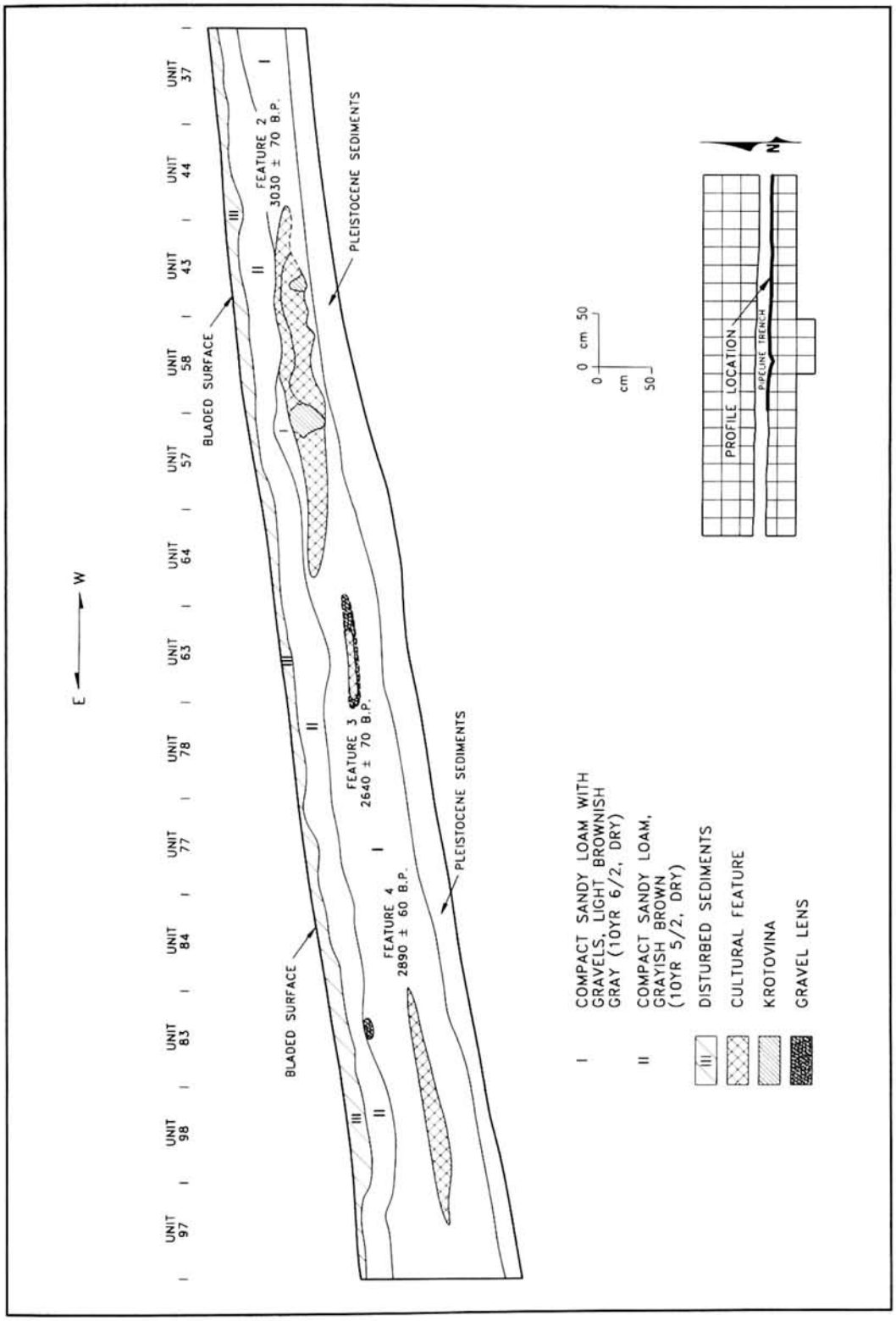

Fig. 2. South wall of pipeline trench, showing features, Dry Susie Creek site.

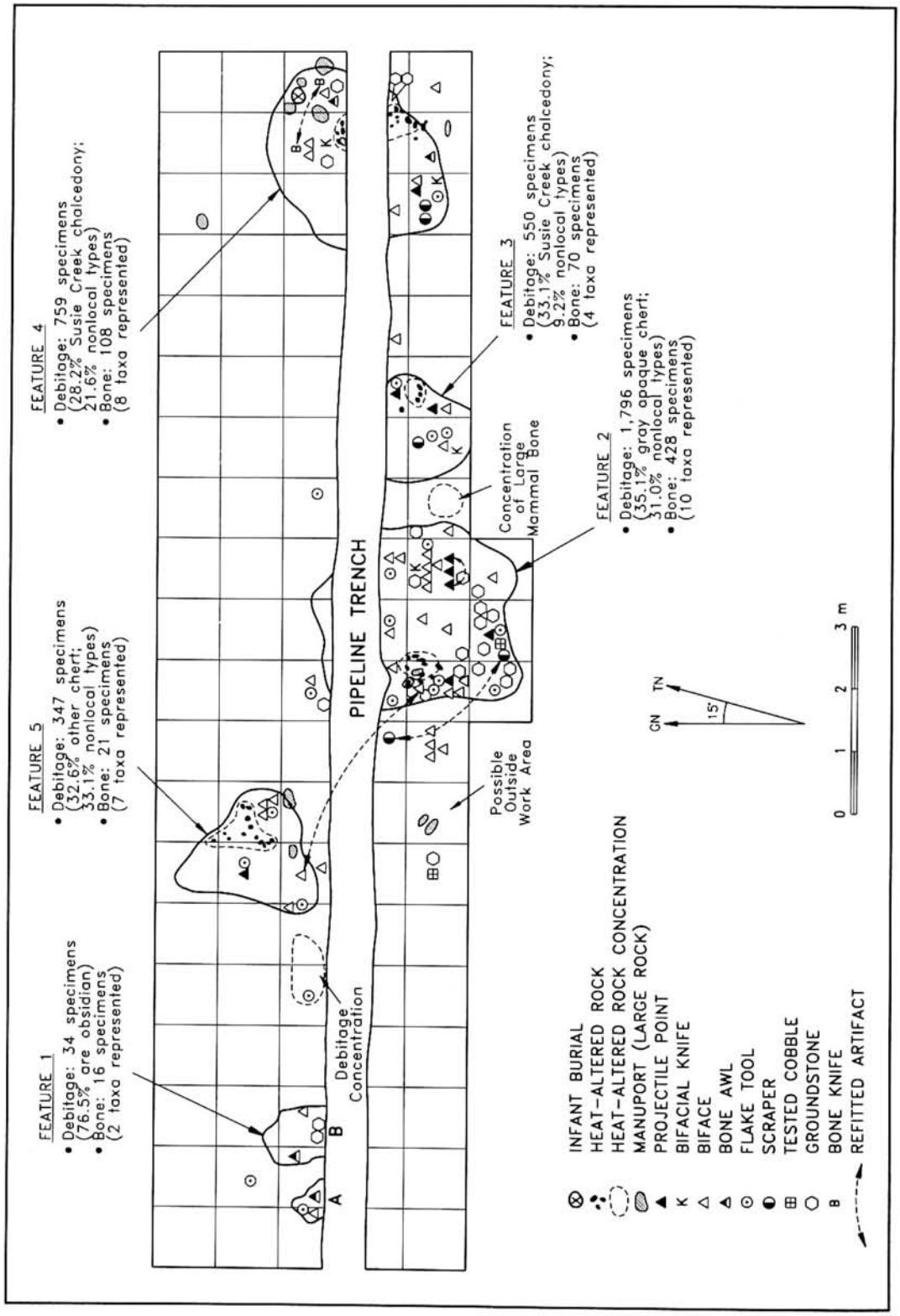

Fig. 3. Distribution of features, associated cultural remains, and possible exterior activity areas, Dry Susie Creek site.

diameter and a slightly basin-shaped cross section. Each of the features and associated remains is summarized in Table 1.

Flaked Stone Artifacts

The bifacially flaked stone artifacts were classified into stages within a biface reduction continuum consisting of early (least reduced) to late (most reduced) stage production, including preblanks, blanks, preforms, and final bifaces (projectile points and knives). The bifaces from the main excavation block consist of 20 final bifaces or fragments, 10 preform fragments, 13 blank fragments, and nine preblank fragments. The 20 final bifaces include nine projectile point fragments (Fig. 4a-e), four bifacial knife fragments (Fig. 4f-h), and seven unclassified final biface fragments. Two specimens refit to form a nearly complete point. Projectile points which are sufficiently complete for comparison with established types were classified as either Elko Corner-notched or Elko Eared types (Thomas 1981). The 26 flake tools consist of 19 exhibiting some degree of marginal retouch and seven containing macroscopic use-wear only. Five of the flake tools are scrapers, including one consisting of two refitted fragments (Fig. 4i-m).

Debitage was classified as core flakes, multiple secondary flakes, bifacial thinning flakes, pressure flakes, eraillure flakes, flake fragments, or angular debris. Pressure flakes are the most common type (54.2%), followed by flake fragments (30.6%). The next most common debitage type is bifacial thinning flakes (9.7%), core flakes (2.2%), and multiple secondary flakes (2.2%). Material types consist of local materials, including gray, opaque chert (22.2%), Susie Creek chalcedony (18.7%), other chert (14.6%), Dry Susie Creek chalcedony (8.1%), yellow-brown chert (2.9%), reddish-brown chert (1.9%), basalt (1.9%), and quartzite (0.5%). The nonlocal types are Tosawihi chert and Browns Bench obsidian. The source of Tosawihi chert is about 78 km. northwest of the site, and Browns Bench is approximately 115 km. northeast of the site. Tosawihi chert is represented by 16.7% of the debitage, and obsidian accounts for 12.5%.

A graphic representation of the cumulative percentages of the flake types for several of the material types is shown in Figure 5. The flake types—core flake, multiple secondary flake, bifacial thinning flake, and pressure flake—are arranged from types representing early stages of reduction to flakes resulting from later stages. Curves with small percentages of core, multiple secondary, and bifacial thinning flakes and high percentages of pressure flakes represent late stages of flaked stone tool manufacture or tool maintenance. If the curves contain a higher percentage of core, multiple secondary, and bifacial thinning flakes, then earlier stages of stone tool production are indicated. High percentages of core flakes and low percentages of pressure flakes would indicate initial reduction activities, possibly at a quarry area.

Figure 5 shows some variation in the curves among the material types. Though consisting of a small sample, basalt has the smallest percentage of pressure flakes of all material types shown, indicating that basalt cobbles, occurring near the site, were brought to the site and then reduced. The other extreme on the figure is the curve for Tosawihi chert, a nonlocal material type. Tosawihi chert is represented by no core flakes, 0.6% multiple secondary flakes, 4.0% bifacial thinning flakes, and 95.0% pressure flakes, indicating that curated tools of Tosawihi chert were only repaired and maintained at the site, which is what would be expected for the use of a nonlocal material type. In contrast, only partially reduced bifaces or tools of local material types were brought to the site for final thinning and production, as would be expected. However, obsidian, a nonlocal material type, appears to have been treated similarly to the local material types. Obsidian was probably trans-

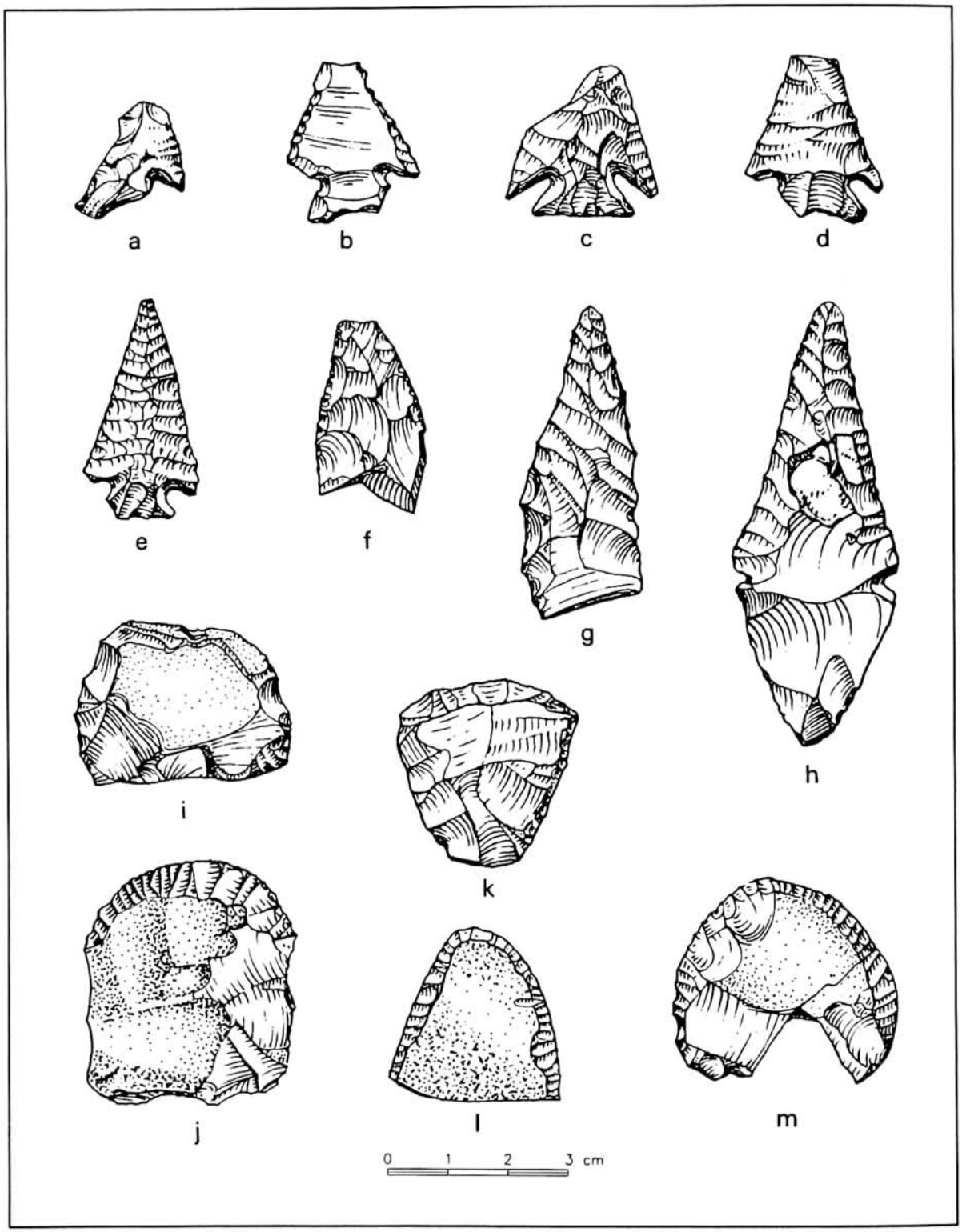

Fig. 4. Selected artifacts, Dry Susie Creek site: (a-e) projectile points; (f-h) bifacial knives; (i-m) scrapers.

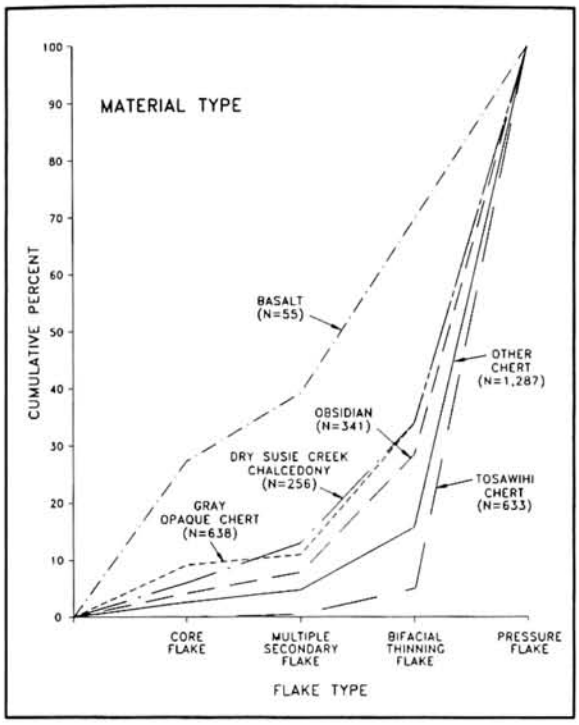

Fig. 5. Cumulative percentage curves of core, multiple secondary, bifacial thinning, and pressure flakes by material type, Dry Susie Creek.

ported to the site as blanks or bifaces to be further reduced when needed, suggesting that obsidian was traded as partially reduced blanks.

Bone Artifacts

Five bone tools, including four awls and one possible knife fragment, were recovered from the main excavation block. Two of the awls (Fig. 6a-b) were manufactured from scapula fragments of deer-sized animals. Both are very polished and rounded from shaping and use. Another awl (Fig. 6c) was manufactured from a deer-sized long bone fragment, and the fourth awl (Fig. 6d) was made from the lateral portion of a deer scapula. The knife fragment (Fig. 6e) was made from an elk-sized metapodial shaft fragment.

Faunal Remains

A wide range of taxa was identified from the 782 recovered bone and eggshell specimens, including lizard, snake, meadow vole, coyote/dog, chipmunk, gopher, ground squirrel, bird (eggshell), cottontail rabbit, pygmy rabbit, black-tailed jackrabbit, pronghorn, deer, and elk-sized artiodactyl. Some of the bone, especially the ground squirrel, may be intrusive. Excluding the possibly intrusive rodent bone, examination of the collection suggests that the prehistoric inhabitants focused on the procurement of high ranking taxa, such as rabbits and artiodactyls from the desert habitat zone, where the site is located. Little attention was paid to the culturally marginal animal foods, such as lizard and snakes (Dansie 1987). The bones from the artiodactyl-sized animals are quite fragmented, with no large joint fragments present in the collection. The fragmentary nature of the bone suggests that the prehistoric inhabitants extensively processed the bone for marrow, grease, and juice (Vehik 1977; Binford 1978). Dansie (1987) noted that the fragmentation of bone indicates maximization of processing, which probably occurs during times of subsistence stress.

Human Remains

A partially investigated human infant burial was encountered in the northeastern portion of Feature 4. The infant was approximately six to nine months old, as suggested by tooth eruption data from the mandible. It was probably buried face down in a flexed position below the floor of the feature. Large manuported rocks were located to the northwest, southwest, and southeast of the burial. No artifacts were directly associated with the burial.

SITE STRUCTURE

The habitation areas represented by the excavated features probably were not intentionally prepared, but were the result of use. The charcoal-stained basins most likely represent areas of intensive activities where charcoal, artifacts, and other trash were mixed in the sand within the constrained areas formed by the struc-

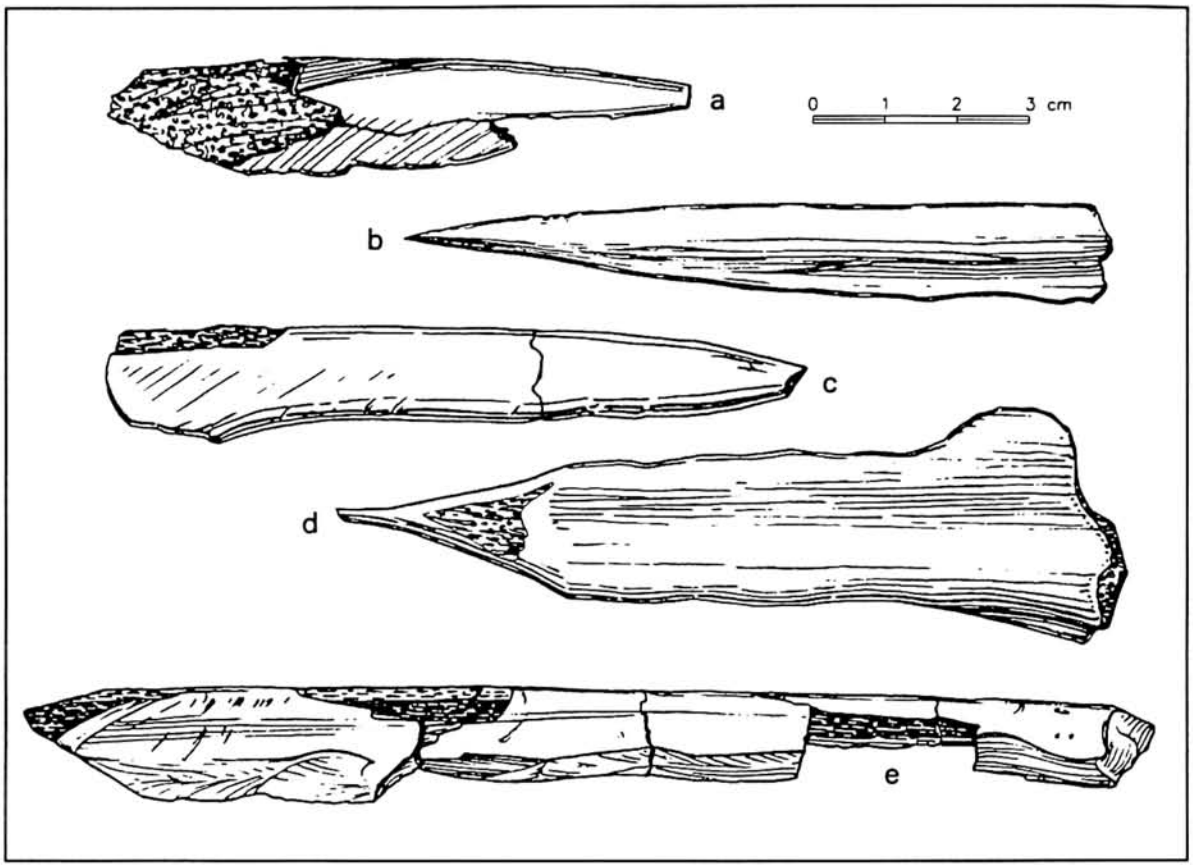

Fig. 6. Bone tools, Dry Susie Creek site: (a-d) awls; (e) possible knife.

tures. Because of the mixing of the remains in the sand, no definite, discrete, prepared floor surface was present, and artifacts were dispersed throughout the charcoal-stained sediment, which ranged between 10 and 25 cm. in thickness. The features probably were formed during activities similar to those described by Powell during his explorations near the Grand Canyon in the late 1860s and early 1870s. Powell (1875:126) noted of the Kaibab Paiute, "Clearing a small circular space of ground, they bank it around with brush and sand, and wallow in it during the day, and huddle together in a heap at night, men, women, and children, buckskin, rags, and sand."

The features probably were covered with some sort of temporary structure or windbreak, as no evidence of more substantial structures, such as postholes, was noted. The structures may have been similar to those described in some of the ethnohistoric accounts for the region. One account was given by Simpson during his explorations across Nevada in 1859 for a wagon road between Camp Floyd in Utah and the Carson Valley. His route approximately followed Highway 50. On May 9, Simpson (1876: 53) recorded the following:

> Just at sunset I walked out with Mr. Faust to see some of these Go-shoots at home. We found, about 1.5 miles from camp, one of their habitations, which consisted only of some cedar branches disposed around in the periphery of a circle, about 10 feet in diameter, and in such a manner as to break off, to the height of about 4 feet, wind from the prevailing direction. In this inclosure were a number of men, women, and children. . . . In the center was a camp-kettle suspended to a three-legged crotch or tripod. In it they were boiling the meat we had given them.

> An old woman superintended the cooking, and at the same time was engaged in dressing an antelope-skin.

A few days later, Simpson (1876:56) noted that "Near our camp I visited one of their dens or wick-e-ups. Like that already described, it was an inclosure, 3 feet high, of cedar-brush." Another description of structures was given by Simpson (1876:72) on May 21:

> This afternoon, just before sundown, Lieutenant Murry and myself took a stroll up the creek to view a wick-e-up of the Diggers that have visited our camp. It had been reported to be but about from one-eighth to one-fourth of a mile above our camp, but, with all the search we could give for about a mile up, we could see nothing of it. Returning on the other side of the creek, we at last got sight of it, it being only distinguished from the sage-brushes around it by the circular form given to its development, it being made of these bushes in their still growing state, and some few loose ones thrown in.

One final example of temporary structures is noted in the ethnohistoric sources concerning Captain Bonneville as he crossed Idaho in January of 1834. He noted that the Diggers "live without any further protection from the inclemency of the season, than a sort of break-weather, about three feet high, composed of sage, (or wormwood) and erected around them in a shape of a half moon" (Irving 1854:259).

The structures around the features at the Dry Susie Creek site could have been quite temporary and easily constructed as in the above examples. They may have consisted of only a few sagebrush bushes thrown in with live ones. These temporary structures would have required little labor, but would have provided a wind-free, shaded work and sleeping area.

Interestingly, most of the flaked stone tools, debitage, bone, and other remains recovered from the main excavation block were from inside the habitation features. Of the 78 flaked stone tools recovered from the excavation block, 65 (83.3%) were from within the features. Most of the remaining 13 flaked stone tools were found in units adjacent to the features. A total of 3,486 of the 4,688 pieces (74.4%) of debitage from the excavation block was recovered within the features. Most of the remaining debitage was from units adjacent to the features. Of the 782 faunal specimens from the excavation block, 643 (82.2%) were from the features. Another 119 specimens were recovered from units adjacent to the features. Most of the units located away from the habitation features lacked cultural remains.

Although no exterior hearths or storage features were discovered in the excavation block, examination of the spatial distribution of the recovered remains indicates the presence of three possible areas of activity outside, but near, the habitation features. These areas contained a fairly low density of remains compared to the areas within the habitation features, and probably represent only minor, low-intensity activities. One of these outside activity areas is located about one meter west of Feature 5 and consisted of a small concentration of debitage and a utilized flake. A total of 259 pieces of debitage was present in the two 1 x 1 m. units encompassing the activity area. Identifiable flake types include core flakes (10.3%), multiple secondary flakes (7.0%), bifacial thinning flakes (26.4%), and pressure flakes (56.1%), indicating that bifaces were reduced in the area.

Another possible outside activity area is located west and within two meters of Feature 2. Two final biface fragments, two blanks, a scraper, a tested cobble, and a mano were found at this location, along with two large, unmodified rocks that were brought into the area. The third activity area is located between Features 2 and 3, and contained a concentration of 34 large mammal bone fragments ranging from one to four cm. in size. Except for these three possible outside activity areas, it appears from the distribution of remains that most of the site activities within the excavation block were limited to the habitation features.

Similar remains were recovered from each of the five features (see Table 1). Except for Feature 1, which was mostly destroyed by post-occupation processes, each feature contained the remains of an internal hearth. All of the features had similar tools, though not all features contained all types (see Fig. 3). Each of the features had similar percentages of debitage types, with the highest percentage being pressure flakes (Fig. 7).

The major differences among the features were the size and the density of recovered remains (Table 1). As expected, the largest features also had the highest density and variety of recovered remains. Another difference was the percentages of the various debitage material types among the features (Fig. 8). Other minor differences include the kinds and density of the identified animal bone from each of the features. The number of identified animal taxa ranged from ten in Feature 2 to two in Feature 1, and the density of recovered bone ranged from 53.7 specimens/m.^{2} in Feature 2 to 7.4 specimens/m.^{2} in Feature 1. However, most features contained some bone from artiodactyls and lagomorphs. Possibly intrusive ground squirrel bone was also recovered from each of the five features.

The differences in the archaeological remains among the features may be partly the result of post-occupation processes, sample size, and intensity and duration of use of the habitation features. Additionally, it has been noted that some tools may be saved and reused several times before they become worn out and are discarded, and tools are often removed from use locations (e.g., Binford 1979; O'Connell 1987; Simms 1988). Overall, however, it appears that similar activities were conducted in each of the habitation features.

A wide range of domestic activity was probably conducted in the habitation areas, as indicated by the types and density of the remains. Activities probably included the processing and eating of small mammals, such as rodents and lagomorphs, the extraction of bone marrow and possibly bone grease from long bones of medium to large artiodactyls, the processing and eating of *Scirpus* rhizomes or roots, late stage manufacture and maintenance of flaked stone tools brought to the site, reduction of more expedient tools, and other craft production activities.

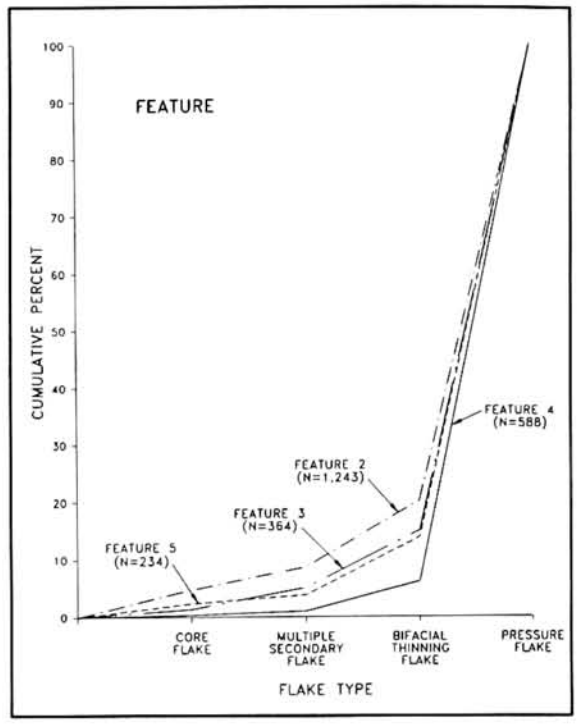

Fig. 7. Cumulative percentage curves of core, multiple secondary, bifacial thinning, and pressure flakes for Features 2 through 5, Dry Susie Creek site.

Examination of the distribution of recovered remains indicates that the domestic activities within the habitation shelters were not segregated, but the entire habitation area was used for all activities. No pattern is evident in the spatial distribution of the various kinds of remains within the habitation features, indicating that the various activities overlapped in space and that specific areas within the features were not used exclusively for any particular activity. The variety of overlapping domestic activities within the structures at the Dry Susie Creek site is consis-

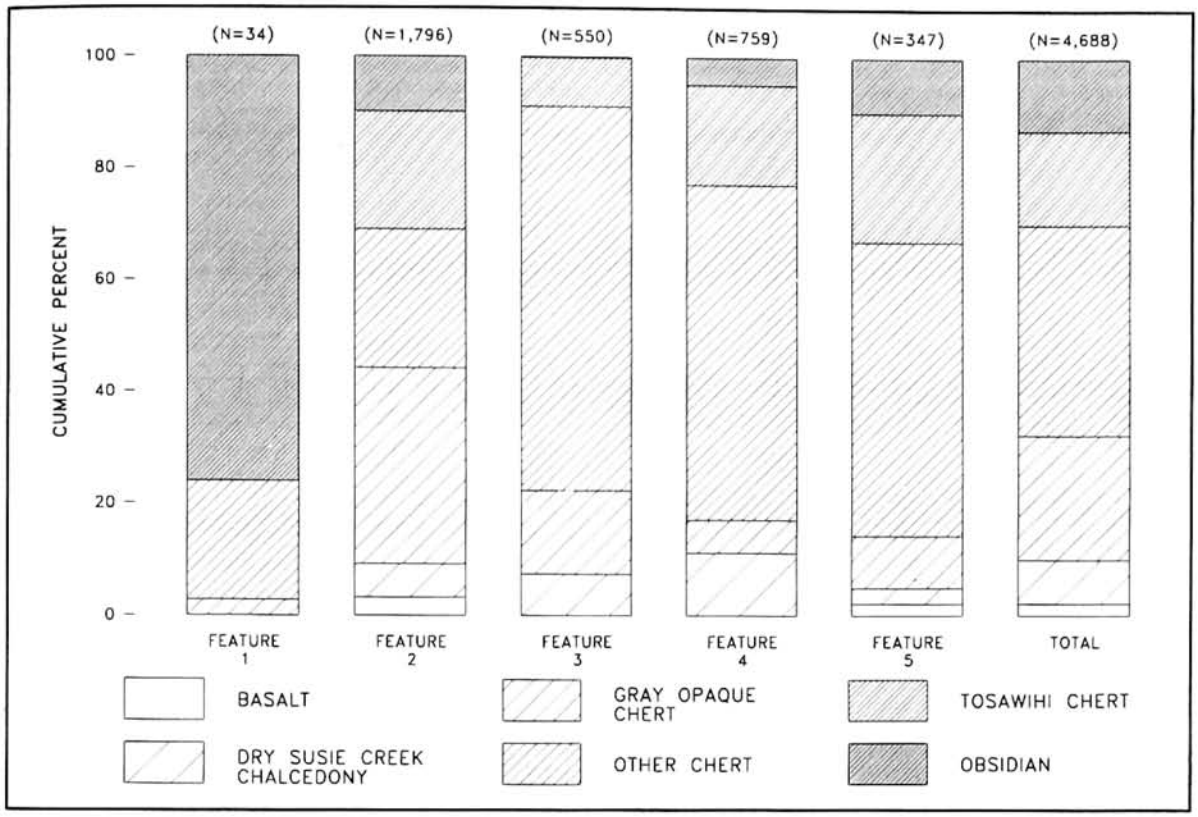

Fig. 8. Cumulative percentages of debitage material types by feature, Dry Susie Creek site.

tent with observations by Simpson (1876:53), as noted above. Though in a different environment, in his ethnoarchaeological studies of the use of space by the Nunamiut Eskimo, Binford (1983) also noted that domestic space in a structure is defined by a dense distribution of debris.

The distribution of remains associated with the habitation features at the Dry Susie Creek site is in contrast to the distribution of remains found during many ethnoarchaeological studies of modern hunters and gatherers and archaeological studies of site structure of sites with habitation features from adjacent regions. Ethnoarchaeological studies have indicated that many of the day-to-day endeavors take place in areas outside of structures, in central domestic work areas centered on a hearth (Yellen 1977; Binford 1983; O'Connell 1987). Archaeological research in areas adjacent to the Great Basin, such as Wyoming, have demonstrated that outside, central domestic work areas in front of habitation features are preserved in the archaeological record (Smith et al. 1995). Based on these studies, the area within the structure and the outside, central domestic work area are considered basic components of a household activity area.

The distribution of remains and the lack of outside hearths at the Dry Susie Creek site suggest that the day-to-day domestic activities took place mostly within the structure around an interior hearth, and that only limited activities occurred outside. In this case, the household activity area would be primarily within the habitation feature. The use of the interior, sheltered areas for most activities may have been the result of a requirement for protection from the elements. However, evidence from the site suggests that features were occupied most likely in

the late spring, when cold may not have been the most important factor. Protection from the wind, rain, or sun may have been more important. The concentration of debris around the hearths in the shelter may also be the result of the short-term nature of the site. In his ethnoarchaeological studies of short-term camps of the Aché hunter-gatherers of eastern Paraguay, Jones (1993) noted that most activities were conducted within one meter of a fire and most remains were limited to within sheltered areas.

The examination of the spatial distribution of remains of different sizes also suggests that refuse cleaning of the habitation features was probably not practiced by the prehistoric inhabitants of the site. Generally, when an area is cleaned, the larger pieces of refuse are removed, and the smaller pieces are left behind (O'Connell 1987; Simms 1988). During cleaning, refuse over 2 cm. would most likely be removed from the primary use area and dumped in secondary refuse areas (Metcalfe and Heath 1990; O'Connell 1993). Most of the remains at the Dry Susie Creek site, both large and small, were recovered in the features, and different sizes of debris were not segregated as would be expected if the features were not cleaned. As is clearly shown in Figure 9, the distribution of debitage less than 2 cm. within the excavation block is the same as for the debitage greater than 2 cm., indicating that all debitage is in primary context. Each of the features also contained bone fragments over 2 cm., and some recovered bone fragments are up to 10 cm. Additionally, no evidence of dumps with large pieces of refuse was noted in the excavation block. The absence of refuse cleaning indicates that the site was occupied only for a short time (Brooks and Yellen 1987; Jones 1993). According to ethnoarchaeological studies, if the inhabitants of a site planned to spend some time at a location, the area was maintained to some degree (Binford 1987).

Although the complete size of the site is unknown, the close proximity (approximately two to three meters) between the exposed household activity areas indicates that the site area was probably fairly small. Ethnoarchaeological studies have shown that site size is often related to length of occupation—or at least anticipated length of stay—and population size (Kent 1991, 1992). The apparently small size of the Dry Susie Creek site suggests a short-term camp.

The density of remains within the habitation features at the Dry Susie Creek site, though fairly low, is considerably higher than the density at the Bustos Wickiup site, another short-term site with household activity areas that were covered with light structures (Simms 1989). As noted by Simms (1989), a consideration of site function is also important, in addition to duration of occupation. The differences in the density of remains between the sites is probably the result of site function. The Bustos Wickiup site was interpreted as a pinyon harvest camp, where most activities focused on pinyon nut harvesting away from the camp and only limited activities occurred within the wickiups. In contrast, the Dry Susie Creek site appears to be a short-term late spring to early summer camp where most domestic activities, consisting of the processing of a wide variety of resources for immediate use, took place within the structures.

SEASON OF SITE OCCUPATION

Fortunately, several of the archaeological contextual problems noted by Grayson and Thomas (1983) for seasonality studies have been avoided at the Dry Susie Creek site. The remains from the main excavation block appear to be the result of a single, short-term occupation. Therefore, all the remains recovered from the main excavation block that can be reliably attributed to human activities should be related to this single occupation, especially those recovered from the habitation features. The larger problem for this site is determining which remains are attributable to humans and which remains are the result of post-occupation processes.

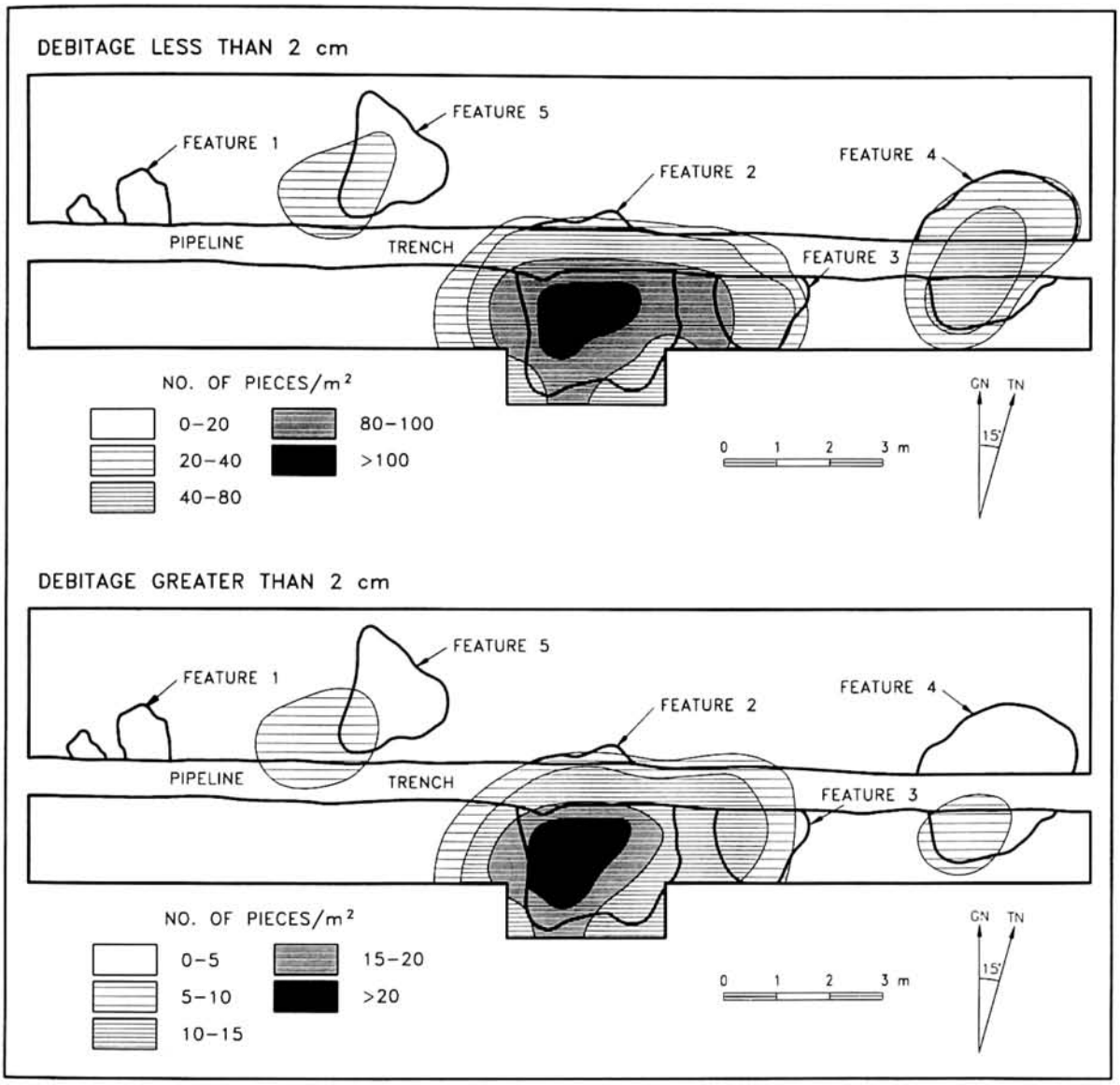

Fig. 9. Smoothed density distribution of debitage less than and greater than 2 cm., Dry Susie Creek site.

The presence of bones of a one- to two-month-old canid in Feature 2 provides the best clue as to season of occupation. A total of 74 elements, representing all body parts, was found scattered throughout the feature. The immature nature of the remains prevented positive identification of coyote or domestic dog. However, bones of an adult coyote were also recovered from Features 2 and 5. The bones are well-preserved and display no evidence of significant damage from trampling. All evidence indicates that the immature canid died during site occupation. The bones were probably scattered throughout the feature as a result of post-occupation disturbances by ground squirrels.

Coyotes breed between February and April and the young are born between April and May (Burt and Grossenheider 1952; Whitaker 1980). If the one- to two-month-old canid died when the site was occupied, then the site would have been

occupied between May and July. Based on this evidence, the site was probably occupied in the late spring and early summer.

Additional evidence for the season of occupation comes from the presence of avian (waterfowl) eggshell in or near Features 2, 4, and 5. These remains also were probably deposited in the features at the time of site occupation. Most waterfowl nest in spring or early summer, and the eggs would have been collected at this time.

Ground squirrel bones were found in each of the habitation features. Many of them appear to be intrusive, but some bones may have been introduced into the features as food for the inhabitants. Ethnographically, small rodents, such as ground squirrels, were an important source of food during the traditionally lean season of early spring through early summer (Janetski 1979). Interestingly, the ground squirrel bones were recovered only from within and near the features, suggesting that they may have been a food source; however, it is also possible that the ground squirrels may have preferred the rich organic areas for their burrows. These animals are generally active between February and September or October (Hall 1946) and are most abundant from early spring to middle summer (Janetski 1979). If any of the ground squirrel remains represent use as food by the inhabitants of the site, then it would have been occupied sometime between early spring to middle summer.

The only charred plant remains recovered from the features are *Scirpus* rhizome fragments. Roots of *Scirpus* could probably have been collected year-round from marshy areas, but may have been collected during times of the year when fewer resources were available. No charred seeds were recovered from the site, indicating occupation did not occur in the later part of the summer when seeds were available. If they were an important resource at the site, some seeds should have become charred and introduced into the features. Overall, the limited evidence for the season of occupation indicates a late spring to early summer occupation.

GENERAL SETTLEMENT AND SUBSISTENCE ORGANIZATION

An understanding of the site structure of the Dry Susie Creek site provides an opportunity to explore its place within the settlement organization of the Upper Humboldt River area. The settlement organization of hunters and gatherers is usually discussed in terms of Binford's (1980) forager-collector continuum model. He proposed that the settlement organization of hunter and gatherer groups can be viewed as occurring along a continuum between what he termed a "foraging strategy" and a "collecting strategy" (Binford 1980). In his model, three major components of the adaptive system structure the contrast between foraging and collecting strategies: (1) mobility, or the primary form of deploying the members of a group relative to resources; (2) predation, which in Binford's model is discussed in terms of mode of procuring resources; and (3) technology, or the artificial means by which resource acquisition and consumption are increased (Binford 1980; also see Chatters 1987; McNees et al. 1989). A foraging strategy involves moving the entire residential group to resource locations for procurement of resources on a generalized encounter basis and consuming most resources as procured. In contrast, a collecting strategy involves dispatching task groups to resource locations to procure specific resources in bulk for use by the entire group at the base camp and/or for storage.

Models of the settlement and subsistence organization of the prehistoric inhabitants of the Great Basin are generally developed from ethnographic studies, most notably from Steward (1938, 1941). Utilizing the work of Steward (1938), Thomas (1983) emphasized the variability in the settlement and subsistence organization of ethnographic groups in the Great Basin. He provided three examples of how Great Basin ethnographic groups relate to the forager-collector

continuum model (Binford 1980). The Kawich Mountain Shoshone, located about 80 km. east of Tonopah, Nevada, are used as an example of foragers, who employed frequent residential moves. An example of the other end of the forager-collector continuum is the Owens Valley Paiute, who used a logistic strategy to minimize residential mobility. The Reese River Shoshone is an example of a group using a mixture of foraging and collecting strategies. During the winter, they followed a collecting strategy where logistical groups were sent out from winter residential camps, and during the summer, they employed more of a residential mobility, or foraging, strategy. According to Steward (1938, 1941), the ethnographic Shoshone groups of the Upper Humboldt River area followed a pattern similar to the Reese River Shoshone.

Elston and Budy (1990) interpreted James Creek Shelter to be within the settlement and subsistence organization of the Upper Humboldt River area, in terms of the ethnographic model developed from Steward (1938). They believed that James Creek Shelter was outside the foraging radius of winter camps on the Humboldt and other rivers, but was within the logistical radius. According to their analysis, Elston and Budy (1990) suggested that the site was alternately utilized as a resource procurement location, a short-term logistical camp, and a residential base for foraging. The James Creek Phase horizons at James Creek Shelter appear to represent a short-term logistical base camp during the early part of the phase, and a longer term, foraging, residential camp during the later portion of the phase. Studies of the excavated open sites along the Humboldt River, including the Carlin sites and site 26Ek3343, suggest that the sites served as semipermanent camps (Rusco et al. 1979; Burke and Hemphill 1989). Generally, the function of excavated sites in the Upper Humboldt River area has been interpreted within Steward's (1938) ethnographic settlement and subsistence model. However, this model still needs to be tested to determine if it applies to the land use patterns of the prehistoric inhabitants of the area, which may be different than those of the ethnographic period.

Though Binford's (1980) forager-collector continuum model has been quite useful and is used extensively in hunter and gatherer studies, it also has produced much confusion. As noted above, the model incorporates three different components of hunter and gatherer settlement and land use patterns: mobility, predation, and technology. Generally, researchers use only one of these components, most often mobility, when classifying hunters and gatherers as either foragers or collectors. Often, hunter and gatherer groups with a residential mobility strategy are considered foragers and those with a logistical mobility strategy are classified as collectors. Madsen and Janetski (1990) recently argued that storage, rather than mobility, should be the component to distinguish foragers from collectors. They noted that most Great Basin groups depended on the collection and storage of plant foods, but probably also had a high residential mobility strategy (Madsen and Janetski 1990).

The tendency to classify hunter and gatherer adaptive systems as foragers or collectors based on one component, be it mobility or storage, tends to simplify and mask the complexity and variability of settlement and land use patterns. For example, a group with high residential mobility that collects food for storage could be considered foragers employing a mobility strategy, or as collectors if storage is used as the criterion. However, what is important for determining settlement patterns is understanding that the group has a high residential mobility strategy and also has storage; not that they are simply foragers or collectors.

Though the three components of the adaptive system—mobility, predation, and technology—are to some degree interdependent, it is essential to examine each component separately, as this approach allows for a clearer understanding of the complexity and variability of the settlement and subsistence organization. To obtain even

more information on the complexity of the settlement and subsistence organization, each of the three main components can be further divided into several dimensions, including type, frequency, stability, and range for mobility; prey spectrum, mode, and scheduling for predation; and storage for technology (Chatters 1987). The discussion of these various dimensions follows Chatters (1987).

Of the various dimensions of mobility, type is most often the variable used in studies of settlement and subsistence organization and classifying groups within the forager-collector continuum. The two mobility types are residential and logistical (Binford 1980; Kelly 1983). Hunter-gatherers often employ a mixture of the two types. Frequency refers to the combination of the number of residential moves within one annual cycle and the duration of each residency. Stability is the permanence of a mobility pattern from year to year and is reflected in the redundant use of the landscape. Range is the area the group uses over some specified period of time.

Within the predation component, prey spectrum refers to the taxonomic richness of the faunal and floral assemblages. Mode is the means by which prey is obtained and is discussed as pursuit and search or encounter. Groups using the pursuit mode hunt specific prey and ignore other species, while the search or encounter mode involves a generalized search for any acceptable prey, which is taken in an opportunistic manner. Scheduling is the season of prey acquisition. The technology component refers to the artificial means by which resource acquisition and consumption is increased or made more efficient (Chatters 1987). Storage is a means of shifting the use of resources from the season of availability to a season when such resources are limited in availability.

Settlement and Subsistence Organization at the Dry Susie Creek Site

The data from the main excavation block at Dry Susie Creek are discussed in terms of the above-summarized dimensions. The results of the examination of the site structure indicate that the site served as a residential camp because of the presence of domestic habitation features, a wide variety of domestic remains, and the infant burial. Residential camps generally contain remains that reflect domestic occupation (Binford 1987).

The prehistoric inhabitants of the site probably used a residential mobility strategy. The resources used at the site, as indicated by the recovered remains, could have been obtained within the daily foraging range. Most of the animals represented in the faunal assemblage were from the desert habitat zone in which the site is located. The remaining animals were probably from the riparian zone of Dry Susie Creek. The *Scirpus* rhizomes were also probably from marshy areas within the daily foraging range of the site. Other roots, such as yampa, could have been collected from within the Dry Susie Creek Valley as well. The Dry Susie Creek Valley also contains several sources for cherts and chalcedonies.

The lack of refuse cleaning, the relatively low density of remains, and the close spacing of household activity areas indicates that the site was a relatively short-term camp. The structures around the habitation features could have been temporary and easily constructed, and would not necessarily indicate a long-term winter occupation. The short-term nature of the camp indicates that the inhabitants were making frequent moves and that the occupations were of short duration, at least during the late spring to early summer—the proposed season of site occupation.

The stability of the mobility pattern represented at the Dry Susie Creek site is difficult to determine using information from just one site. The site was used briefly during the James Creek Phase, and again for another brief time several thousand years later during the Eagle Rock Phase. The exact location of the Dry Susie Creek site appears not to have been im-

portant from year to year; however, similar locations up and down Dry Susie Creek and other nearby creeks could have been used during other years for the same function. Survey data indicate that many sites belonging to the James Creek Phase may occur along the drainages in the area (Armentrout and Hanes 1987), suggesting that other sites similar in function and seasonality to the Dry Susie Creek site may be present.

The range of the hunter-gatherer group that used the Dry Susie Creek site is probably the area incorporating the sources of the lithic raw materials that form the stone artifact assemblage (Chatters 1987). This idea of range assumes that raw material acquisition is normally embedded in predation activities (Binford 1982) and that interregional exchange of raw materials is not important. The size of a hunter-gatherer group's range may be dependent on resource emphasis, with hunters having a larger range than gatherers (Kelly 1983). The nonlocal lithic raw materials common at the site include Tosawihi chert that occurs about 78 km. from the site and Browns Bench obsidian that occurs about 115 km. from the site. The area between the Tosawihi chert and Browns Bench obsidian sources may represent the range of the prehistoric group that occupied the Dry Susie Creek site during the late spring to early summer. However, the occupants of the Dry Susie Creek site may have exchanged for obsidian, so their range may not have extended to the Browns Bench source. The distribution of obsidian debitage types at the site indicates that blanks were brought to the site and reduced. In contrast, it appears that curated tools of Tosawihi chert were only repaired and maintained at the site, suggesting that the Tosawihi chert quarries were part of the prehistoric inhabitants' range and that the Tosawihi chert implements were manufactured at camps closer to the quarries.

Though the site inhabitants focused their efforts on artiodactyls and lagomorphs, a wide spectrum of animals was exploited at the site. Over 13 taxa were identified from the fairly small faunal collection, suggesting that most species present and obtainable within the daily foraging radius were used. The site inhabitants were probably employing a search or encounter hunting strategy, as indicated by the wide variety of animals represented in the faunal collection. No evidence at the site suggests that the prehistoric inhabitants emphasized specific prey. The prehistoric inhabitants probably saved and transported long bones of artiodactyls to the site for extensive processing of bone marrow and possibly grease, and the smaller animals were probably obtained near the site. The collecting and processing of food resources at the Dry Susie Creek site were probably only for immediate use. The site lacked large amounts of remains of any one resource that would suggest processing for storage or later use. The site also lacked storage features or any other indication of storage.

SUMMARY

The remains centered around the habitation features at the Dry Susie Creek site represent a single occupation, short-term, residential camp dating to the James Creek Phase that was occupied in the late spring to early summer by a group employing a residential mobility strategy. This group obtained a wide variety of resources on a search or encounter basis for immediate use. The information from the Dry Susie Creek site fits the ethnographic settlement and subsistence model as developed by Steward (1938). According to the model, Shoshone groups left the winter villages along the Humboldt River in the spring and employed a residential, mobile, foraging strategy. Block excavations at the Dry Susie Creek site have revealed clues to site function and the settlement and subsistence organization employed by the prehistoric inhabitants during the spring and summer. More information is needed from excavated sites along the Hum-

boldt River to more fully delineate the settlement and subsistence organization followed by prehistoric peoples during other seasons.

ACKNOWLEDGEMENTS

Mariah Associates, Inc., completed the excavations at the Dry Susie Creek site during the summer of 1993 for Southwest Gas Corporation's Paiute Pipeline Expansion Project. We thank Southwest Gas for funding the excavations and for their full cooperation and interest. The investigations were completed under Bureau of Land Management Cultural Resource Use Permit No. N-469255. Specialist studies included analysis of faunal remains by Amy Dansie and Cristi Hunter, flotation of feature fill and analysis of plant remains by David Rhode, immunological analysis of artifacts by Margaret Newman, x-ray fluorescence analysis of obsidian artifacts by Richard Hughes, and obsidian hydration analysis by Thomas Origer. We also thank the support staff at Mariah Associates, Inc., for drafting, word processing, and document production for the project report and for this article. Finally, we thank the anonymous reviewers and the editors of the *Journal* for their suggestions and assistance.

REFERENCES

Armentrout, Lynda, and Richard C. Hanes
1987 Archaeological Survey of the Susie Creek Area, Elko County, Nevada. Nevada Archaeologist 6(1):9-22.

Bartram, Laurence E., Ellen M. Kroll, and Henry T. Bunn
1991 Variability in Camp Structure and Bone Food Refuse Patterning at Kua San Hunter-Gatherer Camps. In: The Interpretation of Archaeological Spatial Patterning, Ellen M. Kroll and T. Douglas Price, eds., pp. 77-148. New York: Plenum Press.

Binford, Lewis R.
1978 Nunamiut Ethnoarchaeology. New York: Academic Press.

1979 Organization and Formation Processes: Looking at Curated Technologies. Journal of Anthropological Research 35(3):255-273.

1980 Willow Smoke and Dogs' Tails: Hunter Gatherer Settlement Systems and Archaeological Site Formation. American Antiquity 45(1):4-20.

1982 The Archaeology of Place. Journal of Anthropological Archaeology 1(1):5-31.

1983 In Pursuit of the Past: Decoding the Archaeological Record. London: Thames and Hudson.

1987 Researching Ambiguity: Frames of Reference and Site Structure. In: Method and Theory for Activity Area Research: An Ethnoarchaeological Approach, Susan Kent, ed., pp. 449-512. New York: Columbia University Press.

Brooks, Allison S., and John E. Yellen
1987 The Preservation of Activity Areas in the Archaeological Record: Ethnoarchaeological and Archaeological Work in Northwest Ngamiland, Botswana. In: Method and Theory for Activity Area Research: An Ethnoarchaeological Approach, Susan Kent, ed., pp. 63-106. New York: Columbia University Press.

Burke, Thomas D., and Martha L. Hemphill
1989 Archaeological Investigations at 26EK-3343/CrNV-12-6887, Elko County, Nevada. Report on file at Nevada State Museum, Carson City.

Burt, William H., and Richard P. Grossenheider
1952 A Field Guide to the Mammals of America North of Mexico. The Peterson Field Guide Series. Boston: Houghton Mifflin Company.

Chatters, James C.
1987 Hunter-Gatherer Adaptations and Assemblage Structure. Journal of Anthropological Archaeology 6(4):336-375.

Coats, Robert R.
1987 Geology of Elko County, Nevada. Nevada Bureau of Mines and Geology Bulletin 101.

Cronquist, A., A. H. Holmgren, N. H. Holmgren, and J. L. Reviel
1972 Intermountain Flora, Vol. 1. New York: Hafner.

Dansie, Amy J.
1987 The Rye Patch Archaeofaunas: Change Through Time. In: Studies in Archaeology, Geology, and Paleontology at Rye Patch Reservoir, Pershing County, Nevada, Mary K. Rusco and Jonathan O. Davis, eds., pp. 156-182. Nevada State Museum Anthropological Papers No. 20.

Elston, Robert G.
1986 Prehistory of the Western Area. In:

Handbook of North American Indians, Vol. 11, Great Basin, Warren L. d'Azevedo, ed., pp. 135-148. Washington: Smithsonian Institution.

Elston, Robert G., and Elizabeth E. Budy
1990 The Archaeology of James Creek Shelter. University of Utah Anthropological Papers No. 115.

Elston, Robert G., and Keith L. Katzer
1990 Conclusions. In: The Archaeology of James Creek Shelter, Robert G. Elston and Elizabeth E. Budy, eds., pp. 257-274. University of Utah Anthropological Papers No. 115.

Fowler, Catherine S.
1982 Settlement Patterns and Subsistence Systems in the Great Basin: The Ethnographic Record. In: Man and Environment in the Great Basin, David B. Madsen and James F. O'Connell, eds., pp. 121-139. Society for American Archaeology Papers No. 2.

Grayson, Donald K., and David Hurst Thomas
1983 Seasonality at Gatecliff Shelter. In: The Archaeology of Monitor Valley 2, Gatecliff Shelter, by David Hurst Thomas, pp. 434-438. American Museum of Natural History Anthropological Papers 59(1).

Hall, E. R.
1946 Mammals of Nevada. Berkeley: University of California Press.

Heizer, Robert F., M. A. Baumhoff, and C. W. Clewlow, Jr.
1968 Archaeology of South Fork Shelter (NV-EL-11), Elko County Nevada. Berkeley: University of California Archaeological Survey Reports No. 71:1-58.

Irving, Washington
1854 The Adventures of Captain Bonneville, USA. New York: G.P. Putnam and Company.

Janetski, Joel C.
1979 Implications of Snare Bundles in the Great Basin and Southwest. Journal of California and Great Basin Anthropology 1(2): 306-321.

Jones, Kevin T.
1993 The Archaeological Structure of a Short-term Camp. In: From Bones to Behavior: Ethnoarchaeological and Experimental Contributions to the Interpretation of Faunal Remains, Jean Hudson, ed., pp. 101-114. Southern Illinois University, Carbondale, Center for Archaeological Investigations, Occasional Paper No. 21.

Kelly, Robert L.
1983 Hunter-Gatherer Mobility Strategies. Journal of Anthropological Research 39(3): 277-306.

Kent, Susan
1991 The Relationship Between Mobility Strategies and Site Structure. In: The Interpretation of Archaeological Spatial Patterning, Ellen M. Kroll and T. Douglas Price, eds., pp. 33-59. New York: Plenum Press.

1992 Study Variability in the Archaeological Record: An Ethnoarchaeological Model for Distinguishing Mobility Patterns. American Antiquity 57(4):635-660.

Madsen, David B., and Joel C. Janetski
1990 Introduction. In: Wetland Adaptations in the Great Basin, Joel C. Janetski and David B. Madsen, eds., pp. 1-4. Brigham Young University, Museum of Peoples and Cultures Occasional Paper No. 1.

McNees, Lance M., Thomas P. Reust, and Craig S. Smith
1989 Prehistoric Foragers of Southwest Wyoming: Phase II Archaeological Investigations for the Black Butte Coal Mine Pit 10 Project. Report on file at the Bureau of Land Management, Green River Resource Area, Rock Springs, Wyoming.

Metcalfe, Duncan, and Kathleen M. Heath
1990 Micro-refuse and Site Structures: The Hearths and Floors of the Heartbreak Hotel. American Antiquity 55(4):781-796.

O'Connell, James F.
1987 Alyawara Site Structure and its Archaeological Implications. American Antiquity 52(1):74-108.

1993 What Can Great Basin Archaeologists Learn from the Study of Site Structure? An Ethnoarchaeological Perspective. Utah Archaeology 1993:7-26.

O'Connell, James F., Kristen Hawkes, and Nicholas Blurton Jones
1991 Distribution of Refuse-Producing Activities at the Hadza Residential Base Camps: Implications for Analyses of Archaeological Site Structure. In: The Interpretation of Archaeological Spatial Patterning, Ellen M. Kroll and T. Douglas Price, eds., pp. 61-76. New York: Plenum Press.

Origer, Thomas M.
1994 Obsidian Hydration Band Measurements from Site 26Ek5373. In: The Archaeology of the Dry Susie Creek Site, Elko County, Nevada, by Thomas P. Reust, Craig S. Smith, and Heather R. Wright, Appendix E. Report on file at the Bureau of Land Management, Elko District Office, Elko, Nevada.

Powell, J. W.
1875 Exploration of the Colorado River of the West and its Tributaries Explored in 1869, 1971, and 1872. Washington, D.C.: United States Government Printing Office.

Reust, Thomas P., Craig S. Smith, and Heather R. Wright
1994 The Archaeology of the Dry Susie Creek Site, Elko County, Nevada. Report on file at the Bureau of Land Management, Elko District Office, Elko, Nevada.

Rusco, Mary K., Jonathan O. Davis, and Andrew Jensen
1979 Archaeological Investigations Near Carlin, Elko County, Nevada. Report on file at Nevada State Museum Archaeological Services, Carson City.

Simms, Steven R.
1988 The Archaeological Structure of a Bedouin Camp. Journal of Archaeological Science 15(3):197-211.

1989 The Structure of the Bustos Wickiup Site, Eastern Nevada. Journal of California and Great Basin Anthropology 11(1):2-34.

Simpson, J. H.
1876 Report of Explorations Across the Great Basin of the Territory of Utah for a Direct Wagon-route from Camp Floyd to Genoa, in Carson Valley, in 1859. Washington: United States Government Printing Office.

Smith, Craig S., Lance M. McNees, and Thomas P. Reust
1995 Site Structure of Two Buried Stone Circle Sites, Southern Wyoming. Plains Anthropologist 40(151):5-21.

Spencer, Lee, Richard C. Hanes, Catherine S. Fowler, and Stanley Jaynes
1987 The South Fork Shelter Revisited: Excavation at Upper Shelter, Elko County, Nevada. Nevada Bureau of Land Management Cultural Resource Series No. 11.

Steward, Julian H.
1938 Basin-Plateau Aboriginal Sociopolitical Groups. Bureau of American Ethnology Bulletin 120.

1941 Cultural Element Distributions: XIII, Nevada Shoshone. University of California Anthropological Records 4(2).

Thomas, David H.
1981 How to Classify the Projectile Points from Monitor Valley, Nevada. Journal of California and Great Basin Anthropology 3(1): 7-43.

1983 The Archaeology of Monitor Valley: 1, Epistemology. American Museum of Natural History Anthropological Papers 58(1).

Tipps, Betsy L.
1993 Investigating the Spatial Structure of Lithic Scatter Sites from an Ethnoarchaeological Perspective: Examples from Utah and Nevada. Utah Archaeology 1993:57-71.

Vehik, Susan C.
1977 Bone Fragments and Bone Grease Manufacturing, A Review of Their Archaeological Use and Potential. Plains Anthropologist 22(77):169-182.

Whitaker, J. O.
1980 The Audubon Society Field Guide to North American Mammals. New York: Alfred E. Knopf.

Yellen, John E.
1977 Archaeological Approaches to the Present. New York: Academic Press.