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A REPORT ON JENNY LAKE II (48TE576):  
A POSTHORSE SHOSHONE SITE IN GRAND TETON NATIONAL PARK

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A windstorm of November 12, 1973, resulted in extensive tree falls in the south Jenny Lake area, Grand Teton National Park. In three separate strips, which saw winds of 75 mph or greater, up to 90% of the trees were dropped. About 20,000 trees were uprooted, primarily 115 to 180 year old lodgepole pine. During the summer of 1974, power equipment used by the Park Service to clear the down-timber caused extensive damage to an archeological site--Jenny Lake I, 48TE414--located at the south end of Jenny Lake campground. One phase of our 1976 field operations in Grand Teton was to evaluate the extent of the disturbance to this site. In early June of 1976, the wife of one of the Park Rangers reported to us that she had found obsidian flakes and a "metal knife" south of the Cottonwood Creek Bridge. This was a site of which we were unaware.

A brief surface reconnaissance showed that a small two-rut road had been cut by the power equipment across this site during the tree removal operations. Fire cracked rock from at least two hearths and obsidian flakes were found on the surface of an area from which the down-timber had been cleared. A small collection of cultural material was made. It included two complete small obsidian triangular side-notched, basal notched points plus a point tip (Plate 1 a-c). A third complete point was later recovered in the excavations (Plate 1d). Late Late Prehistoric Period in age, this type has been attributed to Shoshonean speakers elsewhere in Wyoming (e.g. Frison, 1971). It seemed worthwhile to test the site for two reasons: (1) in order to assess the amount of damage to the site, and (2) because there has been considerable controversy over the areal extent and time depth of Shoshonean speakers in northwestern Wyoming (Wright, 1978), it was hoped that the site could provide some data toward answering these questions.

#### EXCAVATIONS

Jenny Lake II (48TE576) is located in Grand Teton National Park in the NE $\frac{1}{4}$  of the SE $\frac{1}{4}$ , Section 26, T 43, R 116 W, Moose, Wyoming, USGS Quad (Fig. 1). Here, there is a narrow spit of land bounded on the west by the south end of Jenny Lake and on the east by Cottonwood Creek which drains the lake. The site is in a hollow which is constricted by two parallel north-south trending ridges of the Jenny Lake moraine; these ridges appear to date to a retreatal stage of the Pinedale. The prominent moraine--Timbered Island--to the south-



east of Jenny Lake is believed to mark the Pinedale maximum and to date at about 15,000 B.P. Locally, this phase of the Pinedale ice sheet derived from a coalescence of small valley glaciers flowing eastward out of the canyons of the Teton Range.

The elevation of Jenny Lake is 2057.5 m. The site lies at 2060.9 m. The hollow holding the site probably once formed the stream bed of Cottonwood Creek at the time of a high water stage during the retreat of the Pinedale and was only one of several outlet channels for melt water. A number of similar abandoned channels, whose outlets currently stand higher than the present day Cottonwood Creek, can be seen breaching the Jenny Lake moraine to the east of the lake. The bed of this channel is composed largely of sands with some gravel rather than the heavy gravels characteristic of the Jenny Lake moraine and the associated Pinedale outwash.

The site was tested with three one-meter squares: T.P. 1-3 (Fig. 2). Test Pit 2 proved to be sterile and appears to mark the southwestern terminus of the site. Hereafter, it will be ignored. Test Pits 1 and 3 were placed contiguously just north of a heavily disturbed area that exhibited an extensive scatter of fire cracked rock and obsidian chipping debris. Here, the power equipment had bulldozed away brush and logs, and additional logs had been brought in and piled up. The aforementioned road ran north-south just to the east of T.P. 1 and 3.

The overlying 3-5 cm was duff. Immediately below the duff fire cracked rocks appeared and then at about 5 cm deeper charcoal stains were visible. By 10 cm in depth we could discern the outlines of three hearths which had been cut into the underlying loamy gravel matrix: one in the SE $\frac{1}{4}$  of T.P. 1, a second in the NW $\frac{1}{4}$  of T.P. 1 and the SW $\frac{1}{4}$  of T.P. 3, and the final one in the NE $\frac{1}{4}$  of T.P. 3. Around each was fire cracked rock. In each case they were shallow--less than 20 cm in depth--basin shaped pits and averaged about 20 cm in diameter. There was no burned bone associated with them, and flotation samples produced no seeds or edible plant materials.

Structurally, these hearths are quite different from those excavated elsewhere in Grand Teton. Generally, fire pits on sites in the valley may be up to 1.0 m in depth and in diameter. They have been interpreted as roasting pits for vegetal foods such as blue camas (Camassia quamash) (see e.g. Wright and Reeve, 1981). The hearths from Jenny Lake II are virtually identical in detail to those from the Shoshonean site of Eden-Farson in the Green River Basin to the south of Jackson Hole (Frison, 1971).

A charcoal sample was submitted for a C-14 date from the hearth in the SE $\frac{1}{4}$  of T.P. 1. The resultant date (I-9533) was less than 220 years. A single obsidian hydration date of 133  $\pm$  7 B.P. was obtained. These dates place the occupation in posthorse times.

#### ARTIFACTUAL MATERIALS

The material recovered from the site was classified into several broad categories. These may be briefly explained where not self-evident (A) Notched flakes show one or more notches along the lateral edges (Plate 1e). Frequently, the notch itself exhibits secondary reworking or utilization. (B) Flakes with nibbled retouch show a fine serration to one or both lateral edges. In some cases the entire edge may be entirely blunted or "backed" like an Upper Paleolithic backed blade. Undoubtedly, this generally results from use rather than from deliberate retouch. (C) Perforators (Plate 2) are present and appear to have been manufactured in several ways. The most elaborate consists

of fashioning a sharp tip on a lateral edge or on the distal end of a flake through extensive fine retouch. In some instances the functionally identical tool was made on a broken flake by simply retouching the unbroken edge.

A small surface collection was taken (Table 1). Both points and the tip came from north of the excavation units in an area disturbed by the road which was not tested. Point measurements are given in Table 2. The remainder of the surface collection came from the cleared area just south of T.P. 1 and 3. One of the notched flakes has heavy steep end retouch and the core renewal flake was burned.

The raw material counts from the excavations of T.P. 1 and 3 are provided in Table 3 by quadrants. The total of 935 pieces is dominated by obsidian which accounts for 767 or 82%. Quartzite is the next largest class of 154 (16%). There are 11 chert flakes and 3 basalt flakes. A predominance of obsidian characterizes low elevation sites in southern Jackson Hole west of the Snake River.

The obsidian has not yet been fully tested by elemental analyses. Preliminary data suggest that the source was Obsidian Cliff in Yellowstone National Park to the north rather than Teton Pass which is only about 45 km to the south of the site. The quartzites and basalts are local but the chert source(s) are yet to be determined.

Two points and a tip were found on the surface. A third complete point was recovered from T.P. 3, SW $\frac{1}{4}$ . Their manufacturing technique (such as being finished by fine pressure flaking) and their size ranges are identical to the large sample from the Eden-Farson site (Frison, 1971). A date of 230 radiocarbon years from the latter site calibrates to A.D. 1630 (Wright, 1982) and places that occupation earlier than Jenny Lake II.

The other tools and their distributions are given in Table 4. Again obsidian dominates, accounting for 113 (92%) of the 123 tools. The remaining 10 are all on quartzite. The largest type category consists of nibbled flakes (77), several of which had retouch or utilization to the extent of having the working edge completely blunted. A similar phenomenon was noted on flakes excavated by Frison (1971: 269) at Eden-Farson.

The next most important tool type was the perforator with 28 examples. Along with the single drill, these two types make up 23% of the tools. These types are tools with a sharp point employed for boring and grooving. The same types account for only 5% at Eden-Farson, but at that site there was evidence of considerable antelope butchering and hence a greater quantity of butchering tools. For example, there were 40 (9%) bifaces at Eden-Farson and only 1 (Plate 1f) at Jenny Lake II. The scrapers (Plate 1g-k) and the biface generally exhibit steep, heavy scalar retouch so that the working edges were often dulled or blunted. Several retouch flakes from the site appear to be resharpening flakes removed from these scrapers.

Table 5 gives the numbers and distribution of cores, renewal flakes, and decortication flakes. All are obsidian and were recovered in T.P. 1. In addition, a battered quartzite hammerstone was found in T.P. 3, SE $\frac{1}{4}$ . In comparison with other sites in Jackson Hole, my impression is that little primary knapping was done at Jenny Lake II. For example, the earlier dating Hunt site (48TE605) is about 25 km south of Jenny Lake II and is located on the west terrace of Fish Creek near the base of Teton Pass. It produced about 500 pieces of obsidian from the surface. Though about only one-half of the total from Jenny Lake II, the Hunt site sample contains 17 cores, 19 core renewal flakes, and 23 decortication flakes.

Yet, large numbers of flakes, in particular those from pressure retouch, suggest that considerable tool finishing was being undertaken. The presence of large amounts of debitage and the near absence of cores, renewal flakes, and decortication flakes indicate that the primary working of the cores was done elsewhere, perhaps at the quarry site, and that only the flakes to be later modified were being transported. This appears to mark a technological change in the exploitation and use of raw materials in Jackson Hole. It is somewhat surprising in that Jenny Lake II is posthorse and the movement of raw materials would have been considerably easier.

No pecked and ground stone was present at Jenny Lake II. These items (manos, metates, etc.) are common on low elevation sites (less than 2125 m) elsewhere in Jackson Hole; for example, 28 grinding stones were recovered at Two Ocean Lake I (48TE357) but there were only nine tools, not counting those discovered only through magnification. Grinding stones are found on sites in subareas of high plant food availability in Jackson Hole and are associated with site features such as roasting pits like those employed for camas cooking (Wright and Reeve, 1981). Four of the 10 lodges at Eden-Farson contained manos and metates (Frison, 1971: Table 3).

Pottery was likewise absent at Jenny Lake II. In Jackson Hole it has been recovered only from the Lawrence collection taken from the series of sites on the drowned delta at the north end of Jackson Lake where 8000 acres is now underwater. The sample includes only four sherds of Intermountain Ware (Love, 1975) found together at one collecting locality, and derives from but 1 pot. It is also rare in Yellowstone Park to the north and was found only on the First Blood site (48YE449) which is located on a terrace on the north shore of West Thumb Bay (Taylor, 1964). Again there is only 1 vessel represented. In contrast, a minimum of 11 vessels were recovered at Eden-Farson (Frison, 1971: 276-279); 3 additional pots were found near the site.

#### SITE FUNCTION

Jenny Lake II appears to be a single component site, a single occupation for a short period of time, perhaps a few days at maximum. The time period of less than 220 years ago (the hydration dates suggests the 1840s), the geographic location of Jackson Hole at the historical northeastern periphery of Numic speakers in the early 19th century, and the point type all link the site to a Shoshonean occupation. The important tool classes--nibbled flakes, perforators, and points--along with the evidence of extensive tool manufacture may indicate that activities were directed toward the preparation of hunting tools, in particular points and arrowshafts. The absence of bone and the low quantity of butchering tools suggest either an unsuccessful hunt or one that was carried out elsewhere in the valley, i.e. after Jenny Lake II was abandoned.

Plant gathering, traditionally a female related activity, played little or no role at the site. There is no evidence of lodges, such as at Eden-Farson (Frison, 1971), or tipis. These two observations along with the absence of ceramics should suggest that Jenny Lake II was occupied by a group of male hunters who had entered the valley for a specific purpose, the exploitation of some large mammal or mammals. This type of male hunting encampment on the valley floor is a new settlement type for Jackson Hole and dates to the Shoshonean occupation in posthorse times (Wright, 1978).

There are no data from the site that would allow us to pinpoint the season. Winter, however, is generally a difficult time in Jackson Hole. The Jenny Lake area will receive annually +3 m of snow; this makes it unlikely

that Jenny Lake II was a winter occupation. Autumn usually saw the entire Shoshone group (males, females, and children) engaged in their annual bison hunt well outside the high mountain valleys (Wright, 1983). Jackson Hole was never capable of supporting bison in large enough numbers to furnish Native Americans oriented toward a bison economy with a predictable supply of that animal (Wright, 1983). Thus, we can probably eliminate these two seasons of the year from consideration.

I suspect that it was a late spring or summer occupation. Elk are common in the Jenny Lake area at all times of the year and could easily be exploited by mounted hunters. The Shoshone did hunt elk in the Jackson Hole area in the 19th century before and after white settlement (Roosevelt, 1892; Wilson, 1919). Moose do not seem to have entered Jackson Hole until the late 19th century (Wright, 1979) and could not have been the focus of this hunt. A few bison were found in the valley and might have been the reason for the Shoshone occupation, but the presence and numbers of elk would have been more predictable for the hunters. At any rate, we can conclude that the site was occupied by a small group of Shoshone males on a hunting expedition in post-horse times. Finally, the presence of obsidian from Obsidian Cliff suggests that the hunters were moving southward from Yellowstone National Park.

#### SHOSHONEAN SPEAKERS IN NORTHWESTERN WYOMING

Elsewhere I have discussed in detail the time depth of Shoshonean speakers in northwestern Wyoming, generally the area of Grand Teton and Yellowstone National Parks (Wright, 1978). This region constituted the northeastern periphery of the distribution of Numic speakers at the beginning of the 19th century. Using archeological and ethnohistoric data I tested two hypotheses: (1) an in situ hypothesis which suggests that Shoshonean speakers were present here for at least 5000 years; and (2) a migration hypothesis which sees the Numic languages evolving in the southern Sierra Nevadas of California, with a subsequent migration across the Great Basin beginning about A.D. 1000. The latter hypothesis argues that the Shoshonean speakers did not reach southwestern Wyoming--the Green River Basin--until the 15th century A.D. and did not enter northwestern Wyoming until around A.D. 1800. I concluded that the in situ hypothesis could be falsified by a series of tests involving the drawing of predictions from the hypothesis which were then tested by the archeological and ethnohistoric data. The migration hypothesis best explains the data. Here, I will briefly review that evidence.

There is little doubt that Intermountain Ware may be associated with Shoshonean speakers in this general area (Frison, 1971). Thus, it is a key artifact for tracing Shoshonean distributions and time depth. Table 6 (from Wright, 1982) gives the calibrated (Michael and Ralph, 1974) C-14 dates for five sites in Jackson Hole dating between A.D. 1430 and 1640. Table 7 provides obsidian hydration dates for the interval of A.D. 1421 to 1555 (Wright, 1982). Intermountain Ware, as well as side-notched, basal notched points, are absent for each site. Table 8 reports the calibrated C-14 dates for the earliest sites with Intermountain Ware in southern Idaho and elsewhere in Wyoming. By the early 15th century A.D. it is present in southern Idaho (Blackfoot Reservoir, A.D. 1420) to the southeast of Jackson Hole, and by A.D. 1460-1500 it is found to the east and northeast of Jackson Hole (Piney Creek and Mummy Cave, 38).

All of the sites in Tables 6 and 7 are within 150 km of Blackfoot Reservoir and all postdate that site. Yet, Intermountain Ware is absent. Seven



of the 13 dates derive from sites or occupations in Jackson Hole that post-date Piney Creek and Mummy Cave far to the east and northeast. It is argued elsewhere that on the basis of the ceramic data there is no evidence of Shoshonean speakers in northwestern Wyoming as late as A.D. 1640 (Wright, 1978). In addition, the geographical distribution pattern of Intermountain Ware corresponds to what would be expected if the Shoshone had migrated from the Great Basin into the Green River Basin, crossed South Pass, and moved on to the northwestern Plains (Wright, 1978).

A second Shoshonean trait is that shield bearing warrior motif found on rock art (Keyser, 1975). It is absent in northwestern Wyoming, but its distribution from northeastern Utah to the northwestern Plains correlated with the distribution of Intermountain Ware. Again, it follows the most logical migration route, across South Pass, which connects the Great Basin with the northwestern Plains.

We have no sites in Jackson Hole that can confidently be dated between A.D. 1640 and Jenny Lake II. Ethnohistoric evidence for Shoshonean speakers in Jackson Hole is meagre also (Wright, 1978). For the period of A.D. 1811 to 1868, i.e. between 1811 when the Astorians entered Jackson Hole and we have our initial documentary evidence and the establishment of the Wind River Reservation in 1868, we have only three references to Shoshonean speakers. (1) In late September of 1811, two Snake males followed the Astorians into Jackson Hole. The Snakes' main encampment was in the Green River Basin where they were engaged in their annual fall bison hunt. The two males were curious and had no other reason for entering Jackson Hole. (2) In July of 1835, fur trapper Osborne Russell met two Sheepeater males hunting bighorn sheep in the Washakie Range. Their families were camped near Yellowstone Lake. (3) In mid-June of 1860, Captain Reynolds, who was in charge of a government survey party, encountered a band of Snakes under the leadership of Cut-Nose fishing in Jackson Hole. By far the greatest number of reports concerning Native Americans in Jackson Hole and Yellowstone refer to Blackfoot and Gros Ventres on marauding parties far to the south of their home territories.

Thus, there is no evidence of the Shoshone in Jackson Hole prior to A.D. 1640 and the documentary sources suggest only a limited exploitation of the area during the period of 1811 to 1868, and perhaps no use of the region between ca. A.D. 1640 and 1840. I have suggested that the valley, itself, was abandoned by the mid-seventeenth century A.D. and was not re-occupied until after A.D. 1800 at which time the horse-using Shoshone were driven from the northwestern Plains (Wright, 1978). The reasoning behind this point follows.

Elsewhere we have described what I have termed a high country adaptive system (Wright et al., 1980). It is an adaptation to a territory that exhibits a marked periodicity in major resource availability. For Jackson Hole, several species of plant become available at less than 2125 m elevation by early summer; by late summer productivity is at its ebb at this lower elevation, but at about 2425 m many of the same species are only then becoming ripe.

Our settlement pattern data for site from the Altithermal to A.D. 1640 indicate (a) a correlation between site location and important plant species such as blue camas, sego lily (Calochortus nuttallii), tobacco root (Valeriana edulis), and several additional species; (b) the general absence of sites in plant poor areas; (c) a dichotomous arrangement of base camps, one set at less than 2125 m on the valley floor, the other in the high mountain meadows at +2425 m. By the Altithermal, according to dates on projectile point types, Native Americans were entering the valley, largely to harvest plants. Roasting pits are the most conspicuous feature on these sites (e.g. Wright and Reeve,

1981). Roasting ovens utilized for cooking plants date as early as 3245 B.C. (Wright, 1982). By late summer the base camp was shifted into the high country. Winter exploitative territories were outside of Jackson Hole: in eastern Idaho and in the Green River Basin. The important features of this adaptive system were the scheduling of group movements to coincide with plant availabilities during their growing seasons and the requirement for winter hunting territories outside of Jackson Hole proper.

As a result surface collections and excavations of base camps from both elevations produce several point types widely differing in time periods. These types begin with the late Paleo-Indian lanceolate parallel oblique flaked form and continue through McKean and into the late corner notched styles. This suggests continual revisiting of the sites and a stable adaptive pattern over many millennia. However, the small triangular side-notched, basal notched form attributable to the Shoshone were found on only 3 of the +300 sites so far recorded for Jackson Hole. None of these sites, including Jenny Lake II, has produced evidence of an earlier, prehorse occupation, and all 3 of these sites are found on the valley floor at less than 2125 m elevation. In addition, only 7 of these points are known from the +300 sites in Yellowstone Park and again they are from sites with only that occupation (Taylor, 1964).

The data from Jenny Lake II in conjunction with the above information suggest a marked change in settlement pattern and in resource exploitation in Jackson Hole postdating A.D. 1640. The Shoshone exhibited a Great Basin adaptation; this was still evidence even more than a century after the appearance of the horse and the subsequent overlay of Plains traits (see e.g. Hultkrantz, 1968). Eden-Farson reflects this prehorse adaptive system (Frison, 1971). In contrast, the high country adaptation required a very different scheduling of activities and group movements. It is suggested that conflict between the indigenous pre-A.D. 1640 inhabitants of Jackson Hole and the newly migrating Shoshone over winter exploitative territories, such as in the Green River Basin, began as early as A.D. 1500. These winter territories were necessary in order for the high country adaptive system to function. Eventually the winter territories were lost to the indigenous summer inhabitants of Jackson Hole, and they were forced to withdraw northward a generation or so prior to the arrival of the horse (Wright, 1978).

The Shoshonean reoccupation of Jackson Hole was weak for two reasons: (1) it required a different adaptive system than that of a Great Basin orientation, in particular as regard to scheduling, or than that of the Plains for reasons noted earlier; thus it was delayed until the Shoshone had been pushed from the northwestern Plains around A.D. 1800; (2) Jackson Hole after A.D. 1800 served as a buffer zone between the Shoshone and their enemies to the north, the Blackfoot and the Gros Ventres (Wright, 1978).

## CONCLUSIONS

Jenny Lake II represents a small encampment of Shoshone males probably on a hunting trip during the period of the year between late spring and early autumn. Tools suggest the manufacture of hunting equipment; the quarry was most likely elk. The site seems to date around A.D. 1840 and is certainly posthorse in age. In addition, it represents a new settlement pattern symptomatic of a different exploitative system in regards to the resources of Jackson Hole. Archeological and ethnohistoric evidence indicate that the Shoshone were not present in Jackson Hole until after A.D. 1640, and Jenny Lake II may date one of their earliest ventures into the valley.

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TABLE 1  
JENNY LAKE II  
SURFACE

Material	Points	Notched	Nibbled	Renewed Flakes	Flakes	Scraper	Total
Obsidian	3	2	5	1	3	0	14
Quartzite	0	3	0	0	1	0	4
Chert	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>2</u>
Totals	3	5	5	1	5	1	20

Notes: One of the points is a tip; one of the notched flakes has steep retouch on the distal end.

TABLE 2  
JENNY LAKE II  
PROJECTILE POINTS

Locus	Material	L.(cm.)	W.	T.
Surface	Obsidian	3.1	1.5	0.5
"	"	1.8	1.3	0.3
T.P. 3, SW $\frac{1}{4}$	"	2.1	1.3	0.3

TABLE 3

JENNY LAKE II  
RAW MATERIAL DISTRIBUTION

T.P.	1/4	Obsidian	Quartzite	Chert	Basalt	Total
1	SE	228	46	5	2	281
1	SW	246	45	0	0	291
1	NW	131	27	2	0	160
1	NE	91	20	2	0	113
3	SE	10	6	0	0	16
3	SW	34	7	0	0	41
3	NW	22	2	2	1	27
3	NE	<u>5</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>6</u>
Total		767	154	11	3	935

TABLE 4

JENNY LAKE II  
TOOL COUNTS

I.P.	1/4	Perforators		Nibbled		Notched		Scrapers		Biface		Drill		Totals	
		Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.
1	SE	6	0	14	0	3	0	3	0	0	0	1	27	0	(27)
1	SW	7	1	26	1	0	0	3	0	0	0	0	26	2	(38)
1	NW	0	1	16	0	2	1	1	0	1	0	0	20	2	(22)
1	NE	2	2	8	3	0	0	0	0	0	0	0	10	5	(15)
3	SE	1	0	1	0	1	0	1	0	0	0	0	4	0	(4)
3	SW	3	0	4	0	0	0	0	1	0	0	0	7	1	(8)
3	NW	4	0	3	0	0	0	0	0	0	0	0	7	0	(7)
3	NE	1	0	0	0	0	0	0	0	0	0	0	2	0	(2)
Total		24	4	73	4	6	1	8	1	1	1	1	113	10	(123)
			(28)		(77)		(7)		(9)						

Ob = Obsidian  
Qu = Quartz

TABLE 5  
 JENNY LAKE II  
 CORES, RENEWAL, DECORTICATION FLAKES

<u>T.P.</u>	<u>1/4</u>	<u>Cores</u>	<u>Renewal</u>	<u>Decortication</u>	<u>Total</u>
1	SE	2	0	0	2
1	SW	0	5	1	6
1	NW	<u>2</u>	<u>2</u>	<u>0</u>	<u>4</u>
Total		4	7	1	12

TABLE 6

Six of the seven most recent C-14 dates from archeological sites in Jackson Hole, each corrected after Michael and Ralph (1974). The seventh date is Jenny Lake II (see text). Each site lacks Intermountain Ware.

<u>Site</u>	<u>C-14 date, A.D.</u>	<u>Corrected, A.D.</u>
Gros Ventre 1	1640	1580
Goetz 1	1560	1460
Two Ocean Lake 1	1630	1520
Two Ocean Lake 1	1530	1430
String Lake	1740	1640
Corridor 5	1730	1635



TABLE 4

JENNY LAKE II  
TOOL COUNTS

T.P.	1/4	Perforators		Nibbled		Notched		Scrapers		Biface		Drill		Totals		
		Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	Ob.	Qu.	
1	SE	6	0	14	0	3	0	3	0	0	0	1	0	27	0	(27)
1	SW	7	1	26	1	0	0	3	0	0	0	0	0	26	2	(38)
1	NW	0	1	16	0	2	1	1	0	1	0	0	0	20	2	(22)
1	NE	2	2	8	3	0	0	0	0	0	0	0	0	10	5	(15)
3	SE	1	0	1	0	1	0	1	0	0	0	0	0	4	0	(4)
3	SW	3	0	4	0	0	0	0	1	0	0	0	0	7	1	(8)
3	NW	4	0	3	0	0	0	0	0	0	0	0	0	7	0	(7)
3	NE	1	0	0	0	0	0	0	0	0	0	0	0	2	0	(2)
Total		24	4	73	4	6	1	8	1	1	1	1	1	113	10	(123)
				(28)	(77)	(7)		(9)								

Ob = Obsidian  
Qu = Quartz

TABLE 5  
 JENNY LAKE II  
 CORES, RENEWAL, DECORTICATION FLAKES

<u>T.P.</u>	<u>1/4</u>	<u>Cores</u>	<u>Renewal</u>	<u>Decortication</u>	<u>Total</u>
1	SE	2	0	0	2
1	SW	0	5	1	6
1	NW	<u>2</u>	<u>2</u>	<u>0</u>	<u>4</u>
Total		4	7	1	12

TABLE 6

Six of the seven most recent C-14 dates from archeological sites in Jackson Hole, each corrected after Michael and Ralph (1974). The seventh date is Jenny Lake II (see text). Each site lacks Intermountain Ware.

<u>Site</u>	<u>C-14 date, A.D.</u>	<u>Corrected, A.D.</u>
Gros Ventre 1	1640	1580
Goetz 1	1560	1460
Two Ocean Lake 1	1630	1520
Two Ocean Lake 1	1530	1430
String Lake	1740	1640
Corridor 5	1730	1635

TABLE 7

Obsidian hydration dates postdating A.D. 1421 for sites in Jackson Hole.

<u>Site</u>	<u>Hydration Date, A.D.</u>
Corridor 5	1421
Two Ocean Lake 1	1424
Corridor 5	1454
Corridor 1	1465
Two Ocean Lake 1	1520
Lower Berry Canyon	1537
Two Ocean Lake 1	1555

TABLE 8

Corrected C-14 dates of earliest reported Intermountain Ware in Idaho and Wyoming

<u>Site</u>	<u>C-14 date, A.D.</u>	<u>Calibrated, A.D.</u>
Blackfoot Reservoir	1490	1420
Wilson Butte	1525	1450
Piney Creek	1600	1480
Piney Creek	1570	1475
Mummy Cave, 38	1570	1475

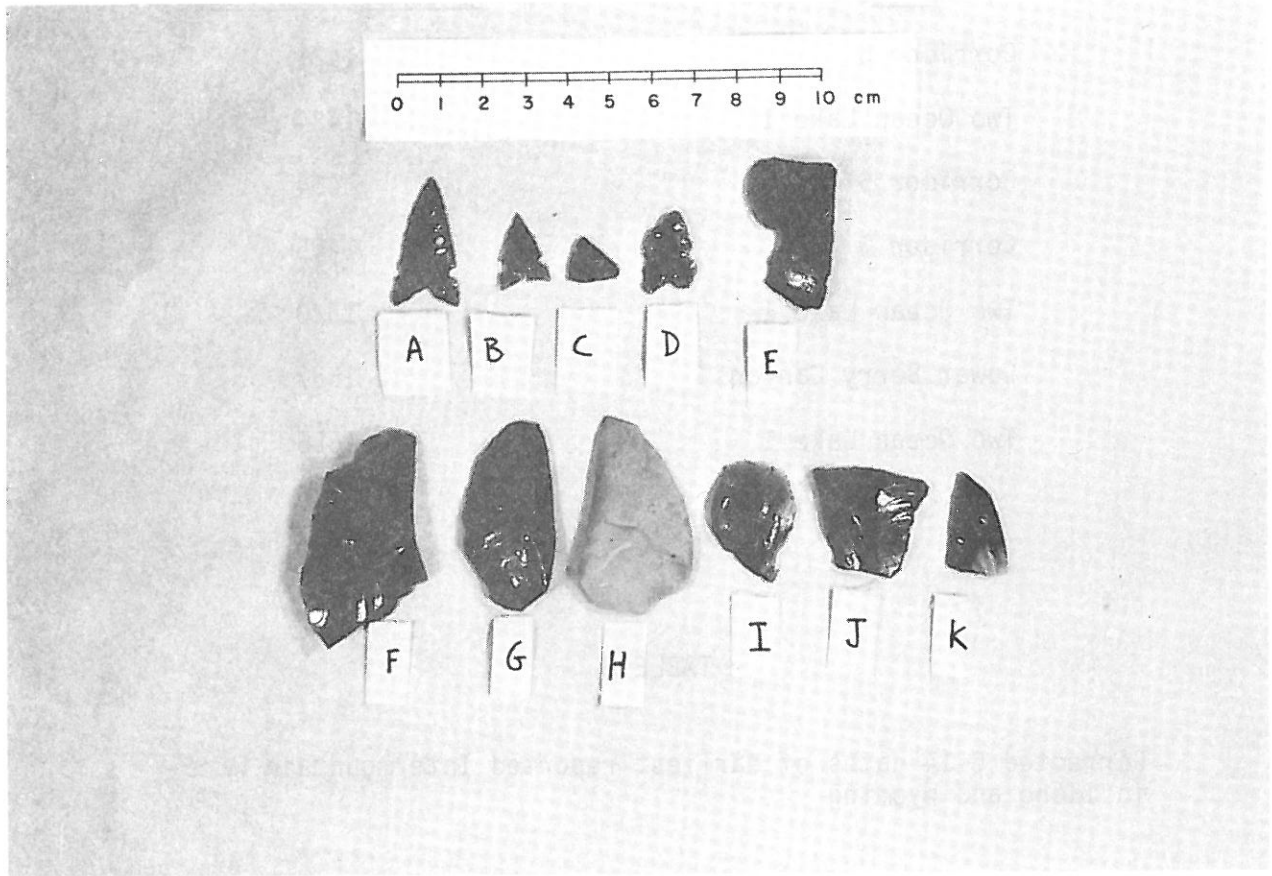


PLATE 1



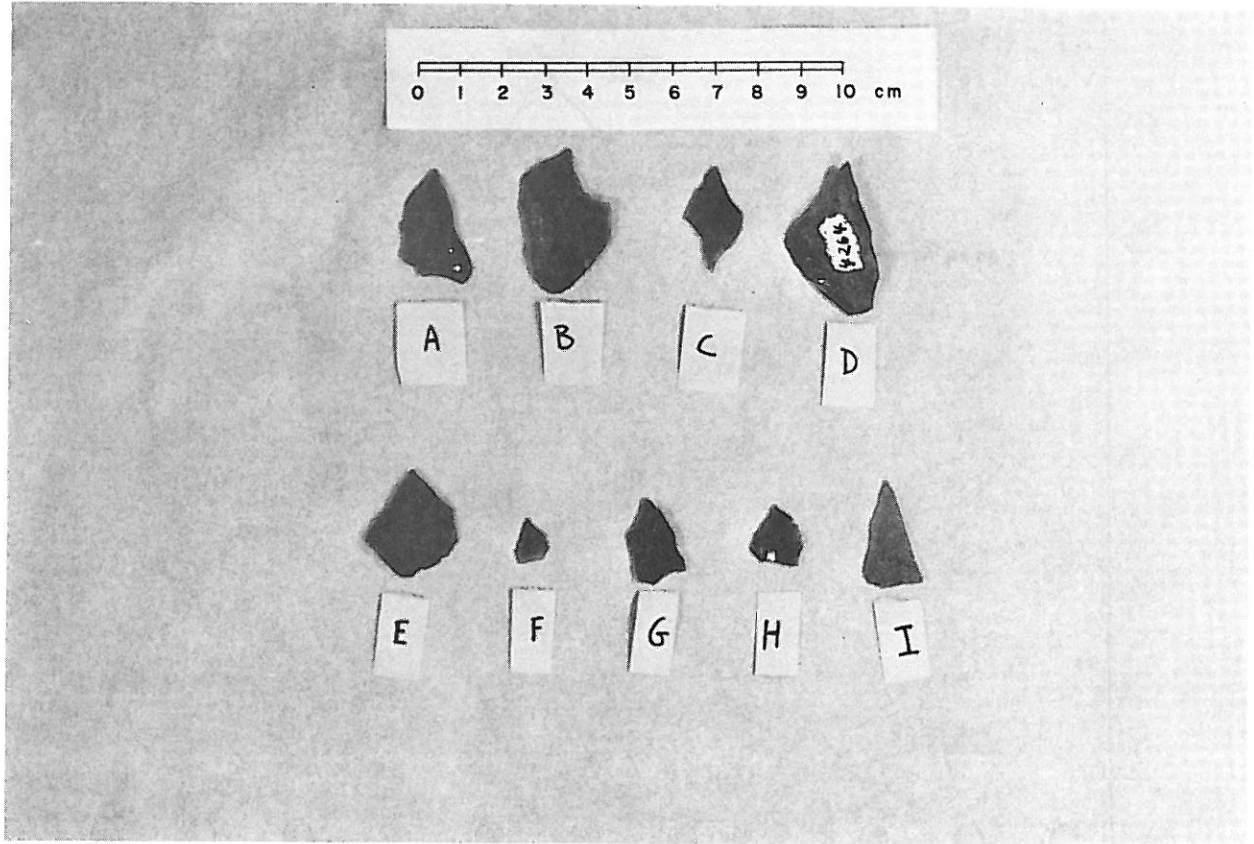


PLATE 2

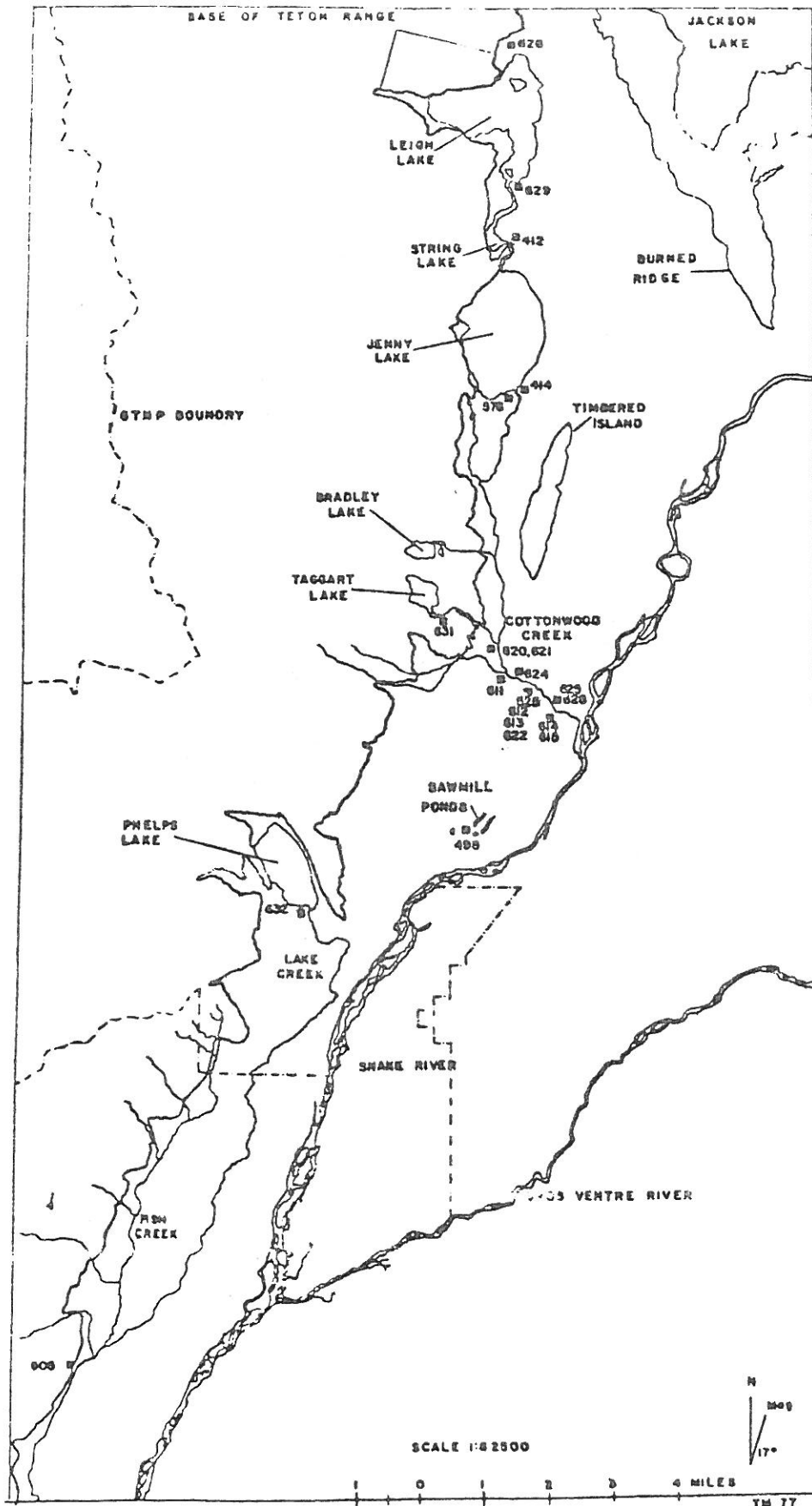


FIGURE 1

Location of archeological sites in western Jackson Hole.  
 Jenny Lake II is site #576.

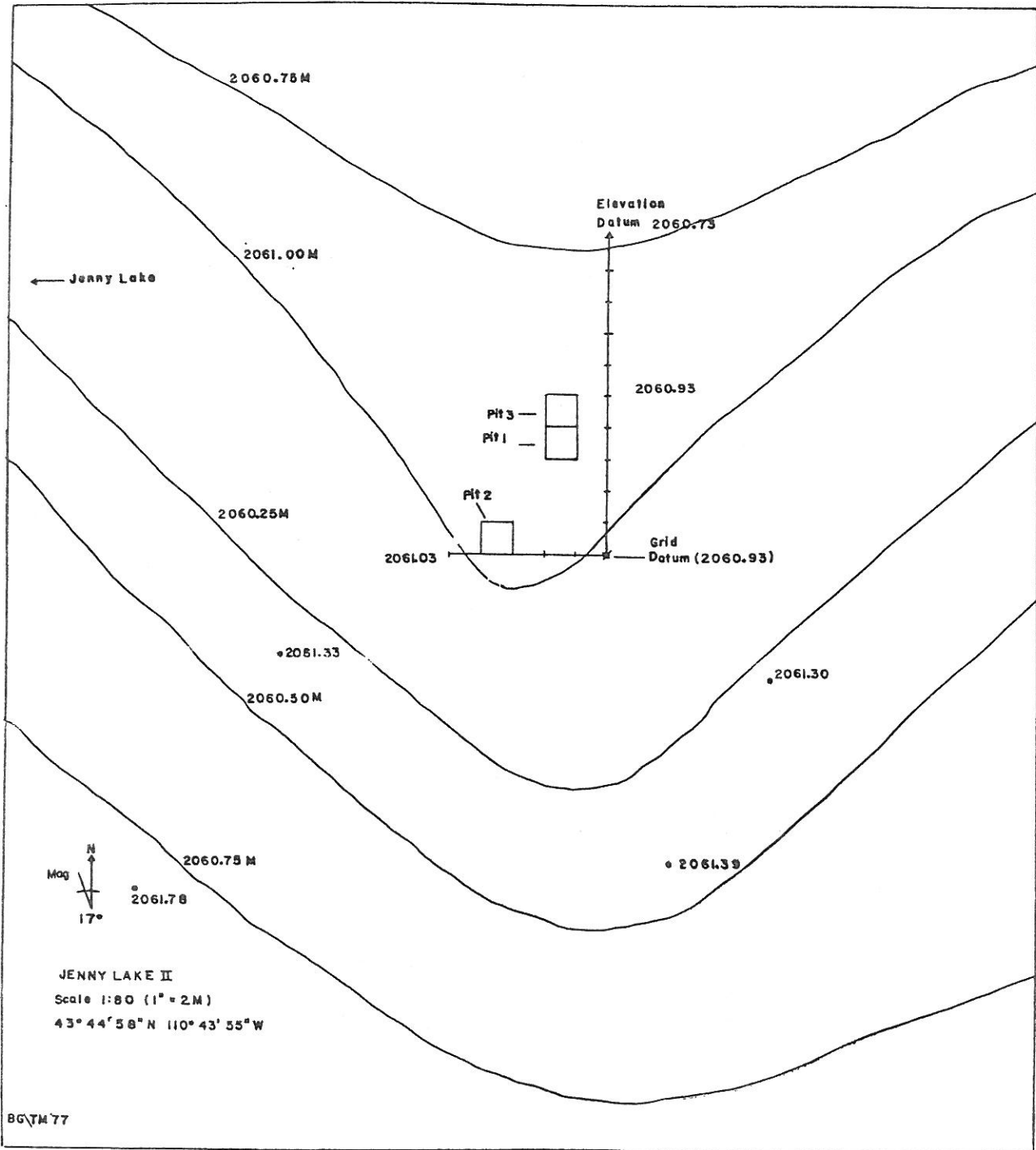


FIGURE 2

Gary A. Wright

Site map for Jenny Lake II.

48SW331: A Plant Processing Dune Site  
In Sweetwater County, Wyoming

J. Elizabeth Sall  
Western Prehistoric Research

J. Charles Mackey  
University of California

Douglas Heffington  
University of Oklahoma

Ines Pennella  
University of Oklahoma

48SW331 is a multi-component, plant processing site located in the NE $\frac{1}{4}$  of NE $\frac{1}{4}$  of NE $\frac{1}{4}$  of Section 34 Township 19 North Range 105 West in Rock Springs, Wyoming. Site elevation is 6430 feet (or 1960 meters).

The sand dune that the site is located in is on the eastern or leeward side of the top of a 200 foot high hill. The hill is composed of sandstone bedrock outcrop that has been eroded by Bitter Creek. Sagebrush, rabbitbrush, grasses and cactus are the dominant local plants in the immediate site vicinity. Figure 1 is an aerial photograph of the site during excavations and shows the sparse vegetation characteristic of the sandy soils.

#### EXCAVATION METHOD

Figure 2 shows the site excavations. A 6 by 10 meter block was excavated in the middle of the dune. Average depth was approximately 2.20 meters though portions extended down 2.50 meters. The basic excavation unit was a 1 by 1 meter square and 10 centimeters deep. All soil was screened through  $\frac{1}{4}$  inch mesh screens. Excavation techniques purposefully stressed extensive horizontal occupation floors; before proceeding deeper, the whole 60 square meter excavation block was taken down to the same level. This allowed excavators to expose large floor areas and map in artifact and feature distributions.

#### RESULTS OF EXCAVATIONS OF 48SW331

Six stratigraphically distinct, superimposed components exist at 48SW331. The most recent component consists of twentieth century A.D., historic materials including six .22 caliber shell casings, two .25 caliber shell casings, and three .22 caliber bullets. This component #6 at site 48SW331 is of no archeological interest, but included in Figure 3 along with prehistoric tools.

Table I lists the prehistoric cultural remains recovered from site excavations. There were very few artifacts recovered from the five prehistoric site occupations. This is not surprising; the site was known to be a wild plant processing locality (based on surface artifacts) prior to excavation. The type of artifacts recovered are consistent with an interpretation of

prehistoric wild plant collecting and processing at 48SW331. All five assemblages have very similar cultural remains: groundstone, flakes, crude preforms, fire-cracked and fire-burned sandstone rock and quartzite cobbles.

All of the prehistoric cultural remains are consistent with an interpretation of five distinct uses of site 48SW331 by prehistoric hunters and gatherers for wild plant collection and processing activities. The flaked lithic manufacturing remains (flakes, preforms) are limited and probably used for tool manufacturing that included utilized flakes and knives for wild plant collecting. The groundstone tools (grinding slabs and manos) were used for processing (grinding) wild plants. The one recovered potsherd could have been the remains of wild plant food preparation. The fire-cracked and fire-burned sandstone rock and quartzite cobbles are the remains of firepits probably used for wild plant food preparation and campfires. The lack of the full range of hunting and gathering tools normally found in prehistoric base camp sites indicates that 48SW331 was a specialized site type for plant collecting and processing.

#### DATING

No well preserved features were encountered in the site excavations despite the presence of a series of horizontal occupation floors. Alternate wind deposition and deflation characteristic of unstabilized sand dunes is not a good depositional environment to preserve features. The remains of features consisted of fire-cracked and burned rock and occasional humic charcoal stains. No charcoal or bone of sufficient size was recovered for radiocarbon dating.

Aside from the historic, twentieth century A.D. component, only one temporally diagnostic artifact was recovered from excavations. This is a potsherd from Component #5, the most recent prehistoric site occupation. Because pottery in the Northwestern Plains and Western North America was manufactured within the past 1000 to 1500 years, we assign this component to the Late Prehistoric Period.

The earliest site occupations (Components #1 through #4) are Archaic Period wild plant collecting and processing uses of site 48SW331. The lack of suitable radiocarbon dating material makes it difficult to date these Component #1 through #4 occupations. However, the similarity of recovered cultural remains from these Archaic Period components perhaps makes it somewhat unnecessary to have accurate dating information. All cultural remains indicate a similar wild plant collecting and processing use of site 48SW331. The fact that these prehistoric assemblages remained simple and essentially unchanged for thousands of years strongly indicates that a stable, long lived wild plant collecting and processing adaptation is responsible for the cultural remains recovered from the prehistoric 48SW331 site occupations.

#### CONCLUSIONS

Site 48SW331 is a prehistoric wild plant collecting and processing site. These sites are frequently found in the Northwestern Plains but are infrequently excavated because of the limited amount of information about prehistoric adaptation that can be recovered. Other site types (basecamps, kill sites and quarries) are more frequently investigated by archeologists because the recovered artifacts are much more spectacular. Nevertheless, wild plant processing and collecting sites were an important part of the whole prehistoric hunting and gathering settlement system and yearly round of subsistence

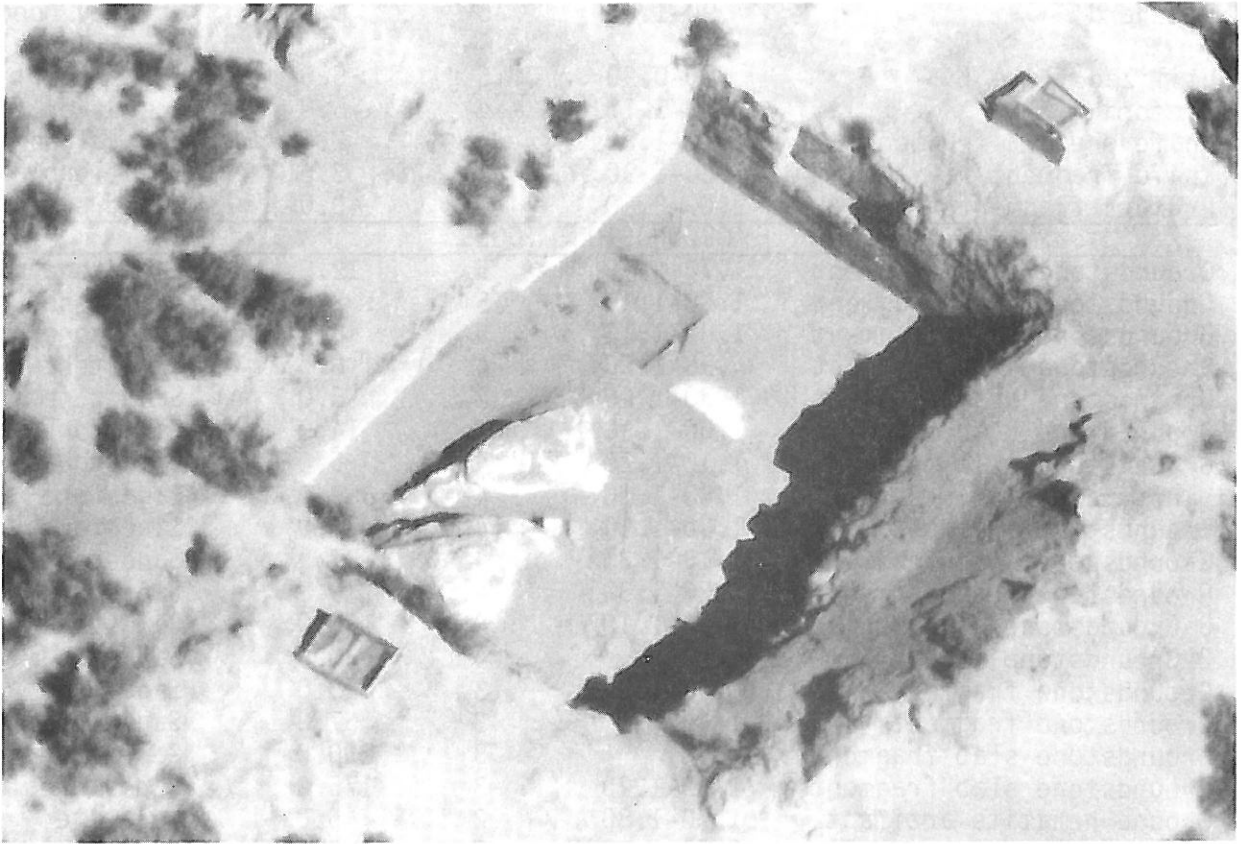
activities. This is demonstrated by the large number of such sites in Wyoming and the Northwestern Plains.

The cultural similarity of recovered artifacts from the five prehistoric occupations at 48SW331 and the considerable depth of these buried deposits (ranging from 0.70 to 2.10 meters below the current ground surface) indicate the persistence of this wild plant collecting and processing site type. Since the end of the Paleo-Indian Period approximately 7500 years ago, the Northwestern Plains of North America supported hunters and gatherers with a similar wild plant exploitation technology. This wild plant gathering and processing technology was very simple and remained essentially unchanged for thousands of years.

TABLE 1

## DESCRIPTIVE INFORMATION ON CULTURAL REMAINS RECOVERED FROM 48SW331

ARTIFACT	DEPTH (bsd)	COMPONENT	WEIGHT (g.)	COMMENTS
FLAKED LITHIC TOOLS AND POTTERY				
Potsherd	.90-1.00	5	0.5	Utility (cooking) vessel sherd
Utilized flake	.70-0.90	5	5.5	White chert
Preform	1.00-1.10	4	5.0	Grey chert
Knife preform fragment	1.70-1.80	2	2.5	Dark brown chert
Knife fragment	1.80-1.90	2	3.0	Light brown chert
Preform fragment	2.00-2.10	1	40.0	Light brown chert
GROUNDSTONE TOOLS				
Groundstone slab fragment	.70-0.90	5	12.0	Sandstone
Groundstone slab fragment	1.00-1.10	5	3.5	Sandstone
Groundstone slab fragment	1.00-1.10	5	8.5	Sandstone
Groundstone slab fragment	.90-1.00	4	8.5	Sandstone
Groundstone slab fragment	1.30-1.40	4	6.0	Sandstone
Groundstone slab fragment	1.00-1.10	4	14.0	Sandstone
Groundstone slab fragment	1.10-1.20	4	5.0	Sandstone
Mano fragment	1.00-1.10	4	350.0	Sandstone
Groundstone fragment	1.00-1.10	4	75.0	Sandstone
Groundstone slab fragment	1.10-1.20	4	37.5	Sandstone
Groundstone fragment	1.20-1.30	4	9.5	Sandstone
3 Groundstone slab fragments	1.00-1.10	4	175.0	Sandstone
2 Groundstone slab fragments	1.10	4	30.0	Sandstone
Groundstone fragment	1.40-1.50	3	25.0	Sandstone
Groundstone fragment	1.40	3	57.0	Sandstone
Groundstone slab fragment	1.40	3	250.0	Sandstone
Groundstone slab fragment	1.10-1.20	3	175.0	Sandstone
Ground hematite artifact	1.70-1.80	2	45.0	Hematite
Groundstone fragment	1.70-1.80	2	5.0	Sandstone
COMPONENT			NUMBER OF FLAKES	
	5		89	
	4		68	
	3		58	
	2		64	
	1		14	
	Total		293	
FIRE-CRACKED, FIRE-BURNED SANDSTONE				
COMPONENT		NUMBER		TOTAL WEIGHT (grams)
	5	127	295.6	
	4	224	1040.5	
	3	244	1318.8	
	2	258	1183.4	
	1	82	322.9	
	Total	935	4161.2	
FIRE-CRACKED, FIRE-BURNED QUARTZITE COBBLES				
	5	5	79.5	
	4	16	976.5	
	3	12	162.0	
	2	13	293.3	
	1	3	64.0	
	Total	49	1575.3	

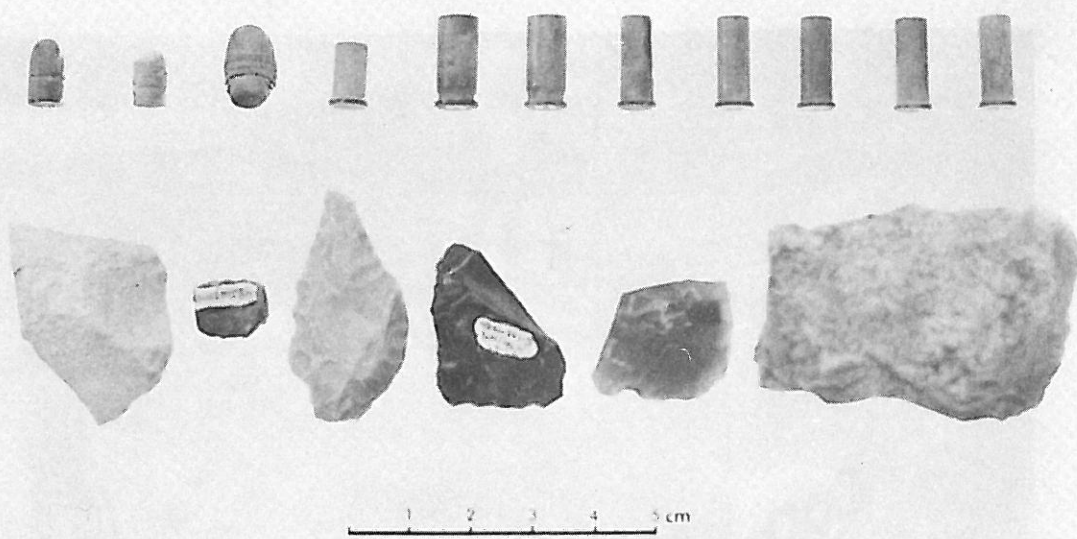


Aerial photograph of 48SW331 showing the 60 square meter excavation block and general topography and vegetation in the immediate vicinity.





Photograph of 48SW331 site during excavations; white tags on excavation block walls mark the location of components.



Photograph of artifacts recovered from 48SW331 excavations: bullets and shell casings from Component #6 on top row. On bottom row, left to right, are: utilized flake and potsherd from Component #5, preform from Component #4, two biface (knife) fragments from Component #2, and a biface in the early stage of lithic reduction from Component 1.

THE COW HOLLOW CREEK SITE PRELIMINARY REPORT OF THE 1982  
FIELD SEASON

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### INTRODUCTION

The Cow Hollow Creek Site (48LN127) was extensively excavated by Western Prehistoric Research in 1982. The site was known to be a potentially important archeological campsite with extensive evidence of flaked lithic manufacturing activities based on previous testing and mitigation work (Schock et al. 1982: 100-121). The excavated area of this prior fieldwork was restricted to a small portion of the site affected by energy related construction activities. Because of the limited nature of previous research and the indicated research potential, the Cow Hollow Creek Site was included in the 1982 Western Prehistoric Research field season excavations.

### SITE LOCATION

Figure 1 shows the location of the Cow Hollow Creek Site in southwestern Wyoming. Site elevation is 6650 feet (2027 meters) and is 250 feet (76 meters) above the Hams Fork River. The project area (southwestern Wyoming) is in the extreme southwestern portion of the Northwestern Plains and northeastern Great Basin region. Diagnostic cultural remains at the site reflect this contact between the Northwestern Plains and Great Basin. Paleo-Indian and Early Archaic Period components are culturally similar to the Northwestern Plains cultures. Middle Archaic Period components reflect influences of both Great Basin and Northwestern Plains cultures, and Late Archaic through Late Prehistoric Period Cow Hollow Creek Site components are a mixture of Northwestern Plains and Great Basin cultures.

The immediate project area topography is shown in Figure 2. The site is located in a linear sand dune that is currently deflating on the western or windward side. The dune is on a Pleistocene terrace bench overlooking the Hams Fork, a major perennial drainage. A mixed sagebrush, grass and cactus plant association dominates the site area. This plant association is more similar to the Great Basin vegetation than the Northwestern Plains grasslands.

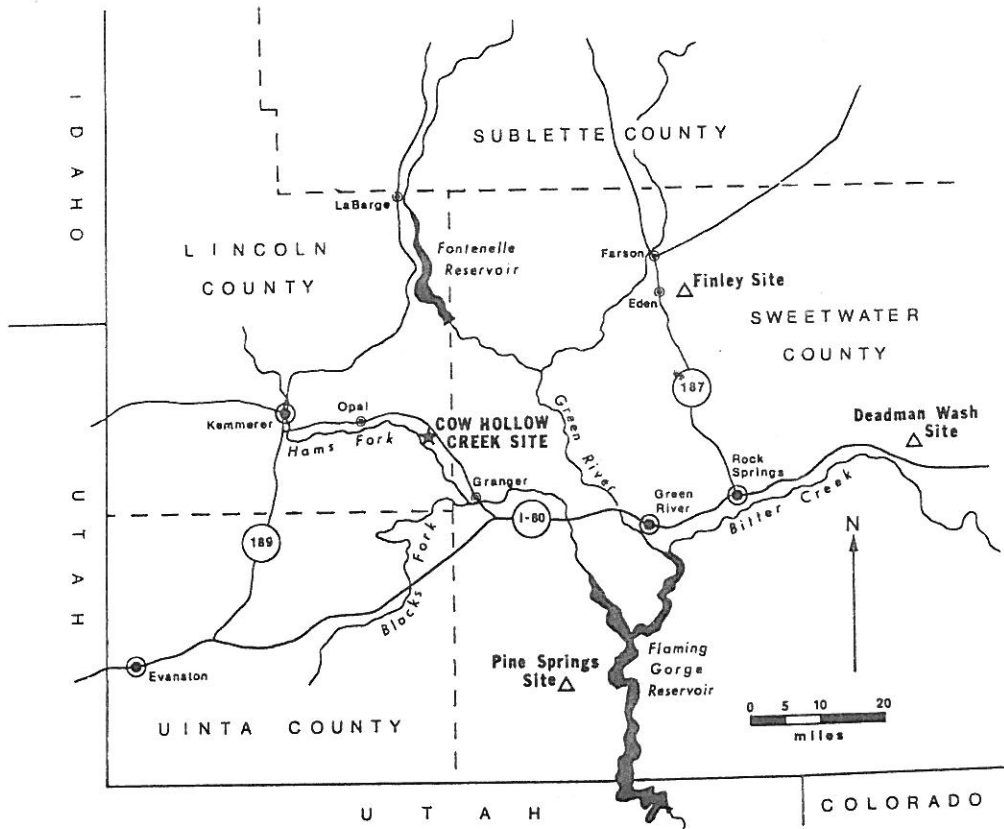


Fig. 1. The location of the Cow Hollow Creek Site in southwestern Wyoming is shown.

## FIELD METHODOLOGY

During 1982, 584 square meters were excavated in four excavation localities. Figure 3 shows Excavation Locality #1 during excavation. A total of 384 square meters were excavated in this locality. The basic excavation unit is one meter square and 10 centimeters deep. All excavated soil was screened through  $\frac{1}{4}$  inch mesh. Field excavation strategy stressed opening up large horizontal areas in order to expose extensive occupation floors. Five distinct, stratigraphically separated components were encountered at Excavation Locality #1: one Paleo-Indian (Cody Complex), one Early Archaic, one Middle Archaic, and two Late Archaic Period components.

Figure 4 shows Excavation Localities #2, #3, and #4. Excavation Locality #2 is a 10 meter by 10 meter (or 100 square meter) block purposefully situated to encounter the earlier mitigation work at the Cow Hollow Creek Site (Schock et al. 1982). This desire to relocate the previous testing and mitigation work units was successful; a one by two meter test pit from the 1979 to 1980 work was encountered in the middle of the 1982 10 meter by 10 meter block. This allowed us to correlate the three radiocarbon dates with our 1982 excavations (Schock et al. 1982: 103-105). Four prehistoric components were encountered by the previous testing and mitigation work and Western Prehistoric Research's more extensive excavations. The most recent component at Excavation Locality #2 is dated to the Late Prehistoric Period (UGa-3296 radio carbon date of  $1280 \pm 85$  years B.P.). Two Middle Archaic Period components and one Late Archaic Period component were also encountered. One of these two Middle Archaic Period components was previously radiocarbon dated at  $3355 \pm 70$  and  $3455 \pm 125$  years B.P.

Excavation Locality #3 was located in the center of a Late Prehistoric Period component. The excavation block is 8 by 8 (64 square) meters, and is located on the eastern side of the linear dune that contains only recently deposited sandy soils. Two components were encountered during excavations: a Late Prehistoric Period occupation with a large number of arrowpoints and a Late Archaic Period occupation with large, corner notched dart points similar to Northwestern Plains Pelican Lake points and Great Basin Elko series dart points.

Excavation Locality #4 is a 6 by 6 (36 square) meter block. This excavation block is situated on the western and currently deflating side of the dune Cow Hollow Creek Site is located in. Only early to middle Holocene sediments exist on this side of the sand dune. Three stratigraphically superimposed components were encountered: a transitional Paleo-Indian to Early Archaic, side notched dart point, and a Middle Archaic side notched occupation.

## FEATURES

Over a hundred prehistoric features were excavated at the Cow Hollow Creek site. Preservation was exceptionally good for archeological sites located in sand dunes. Figure 5 shows a Late Archaic Period occupation floor from Excavation Locality #1 at the Cow Hollow Creek Site. Two roughly circular structures are outlined by a series of postholes. Associated with these postholes are slab lined hearths, humic occupation floors, and a considerable amount of tools and artifacts. The dark, humic soil discoloration in the middle of one of the structures is probably the result of firepits (charcoal) and wild plant processing activities (based on the presence of groundstone tools). The cultural material recovered was associated with

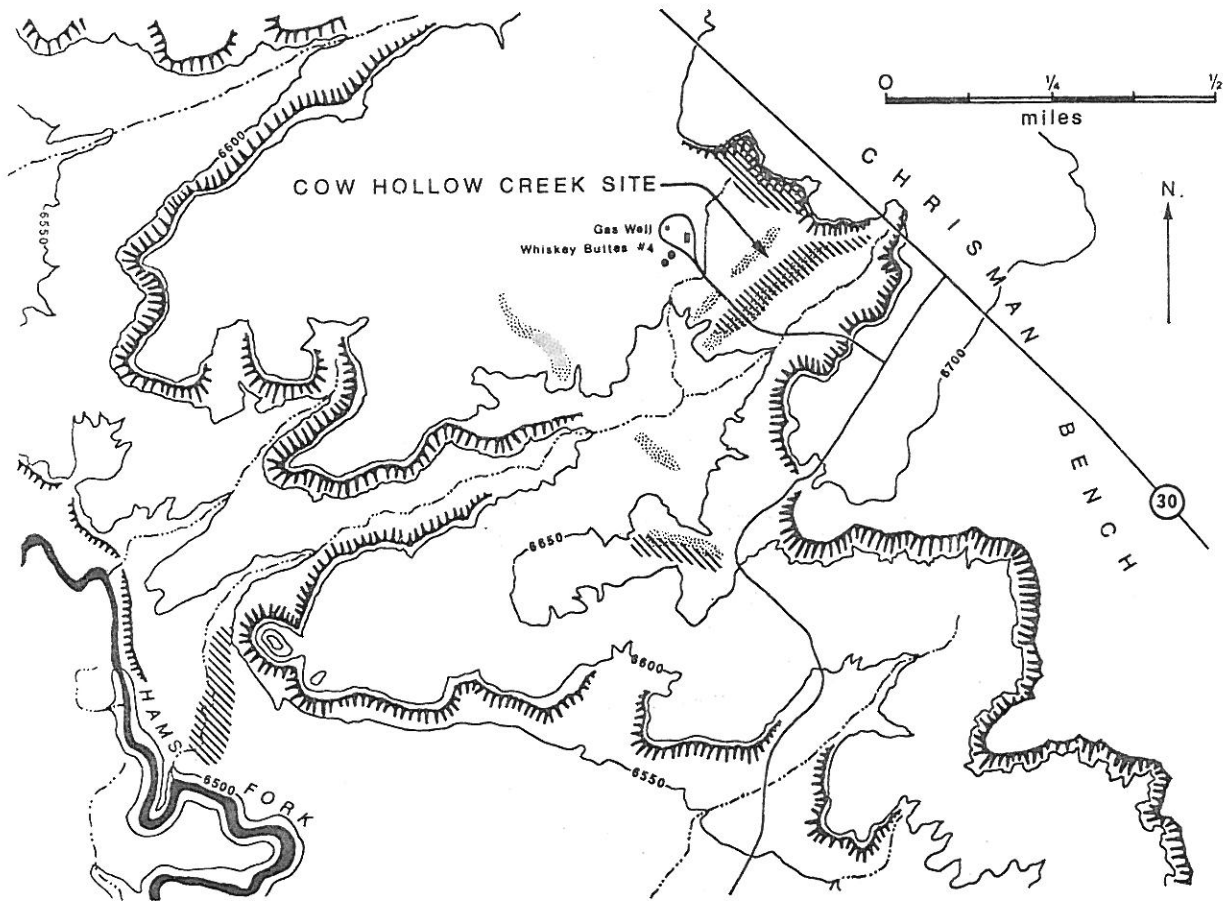


Fig. 2. The Cow Hollow Creek Site is shown on the map along with the general topography in the project area.



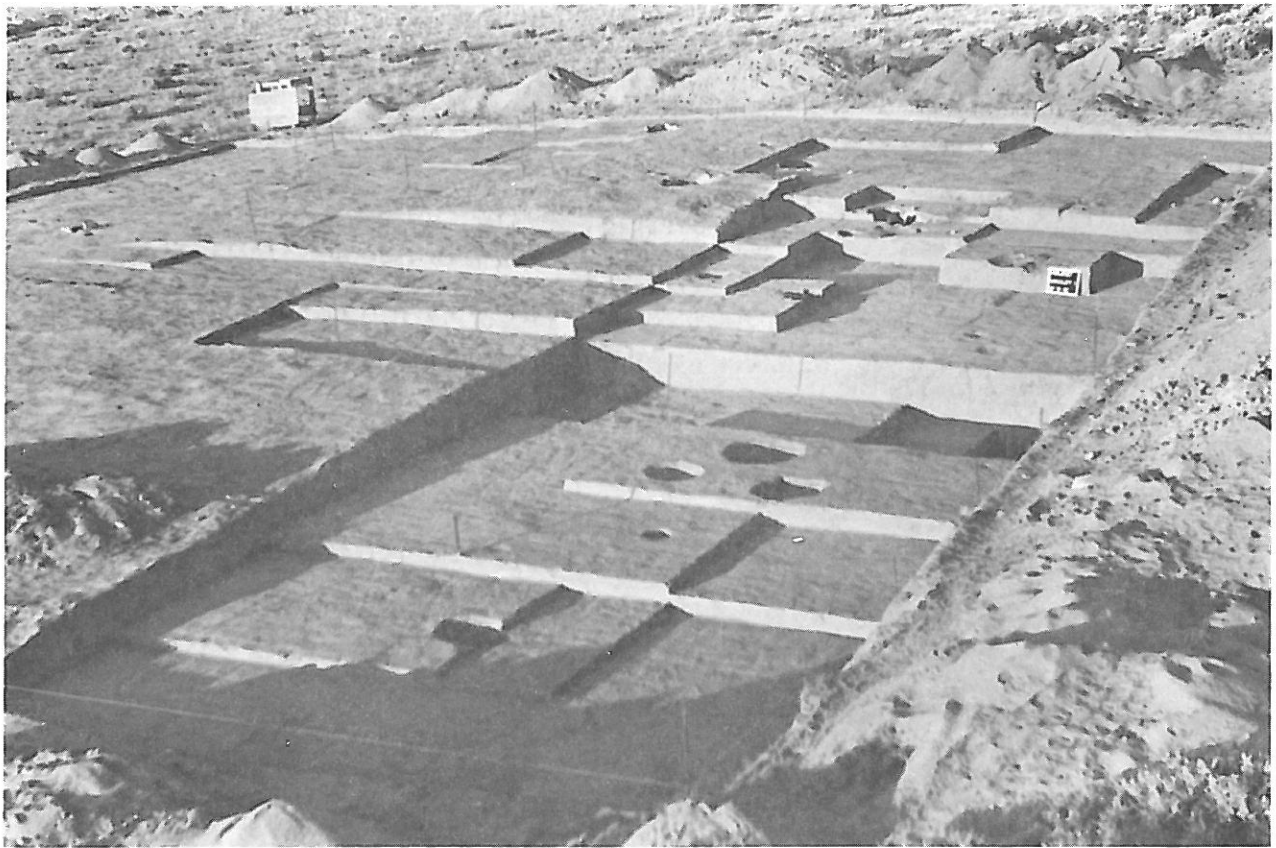


Fig. 3. The photograph shows Excavation Locality #1 at the Cow Hollow Creek Site.

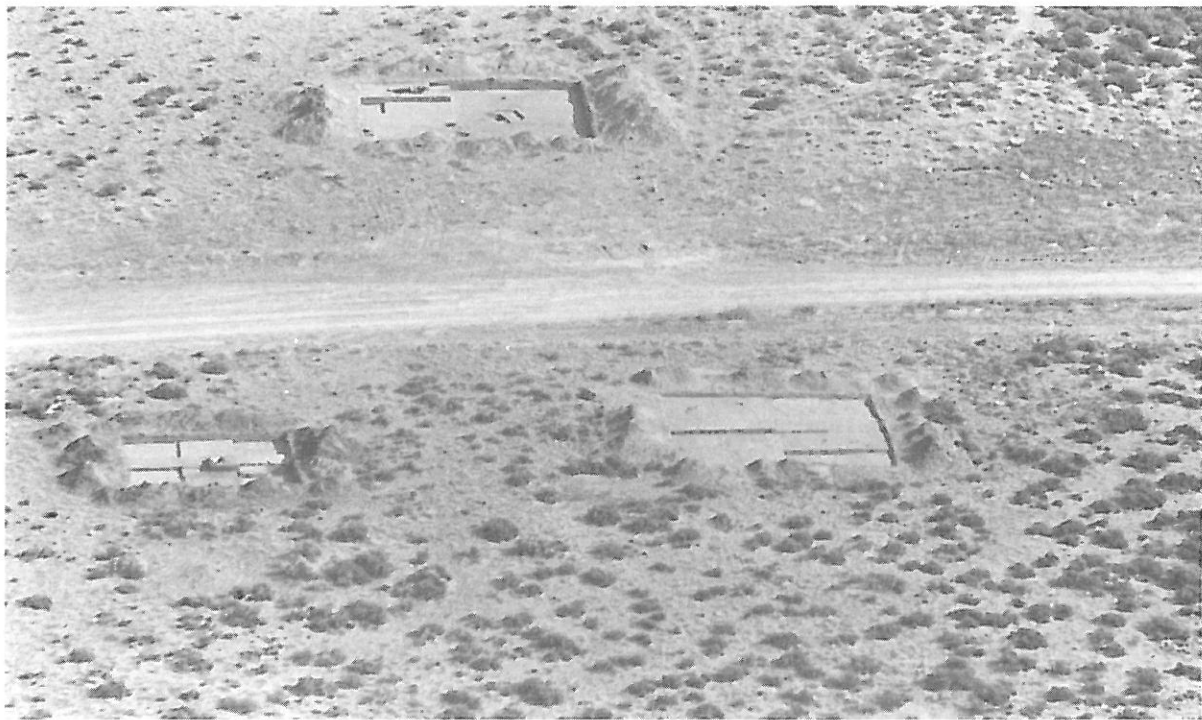


Fig. 4. The photograph shows Excavation Locality #2 in the background, Excavation Locality #3 in the bottom right, and Excavation Locality #4 in the bottom left.

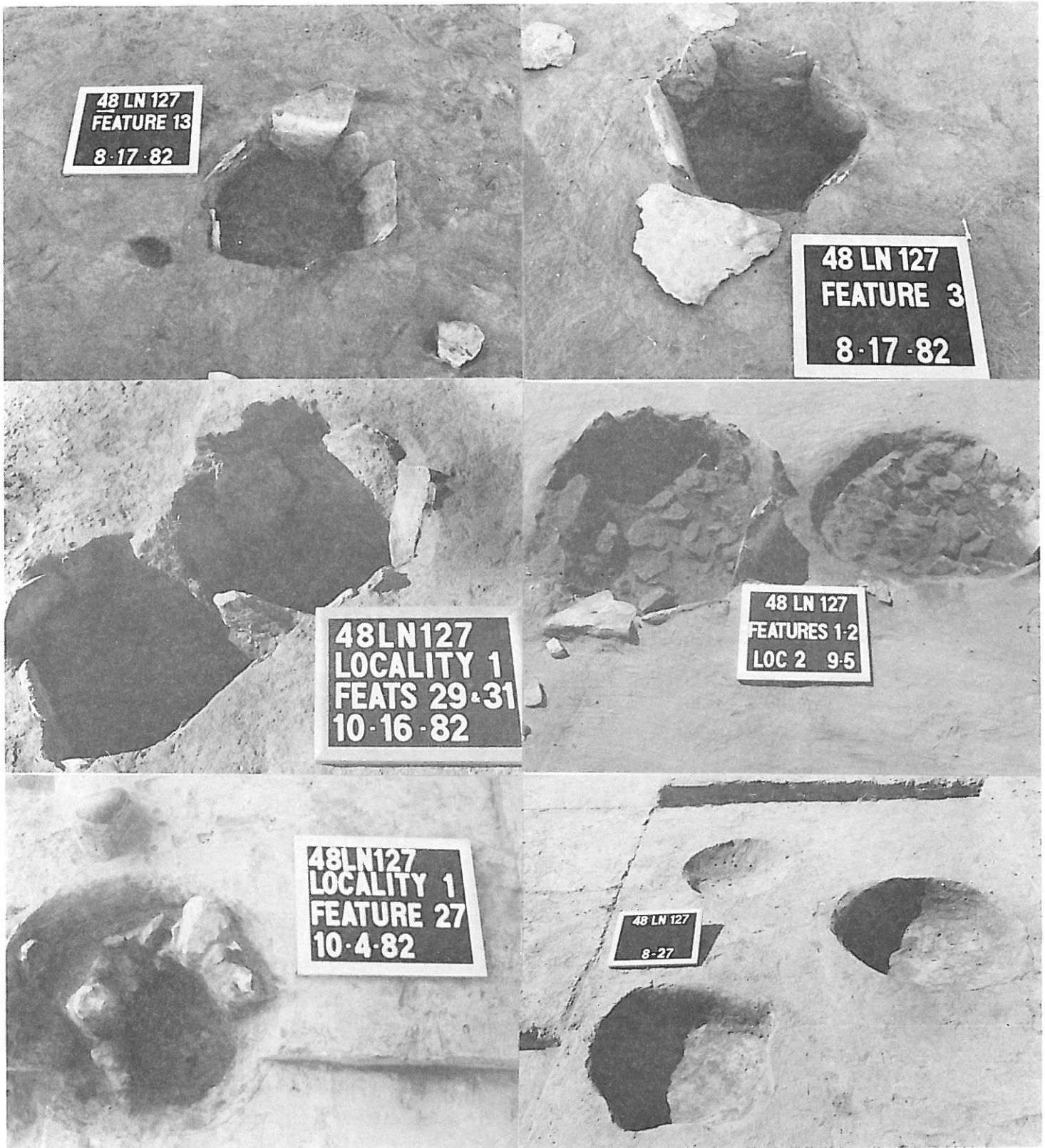


Fig. 6. Examples of Cow Hollow Creek Site features include slab lined hearths (top row), two contiguous slab lined hearths (middle row on left), two rock filled, slab lined hearths (middle row on right), a rock filled firepit (bottom row on left), and three plant processing pits (bottom row on right).



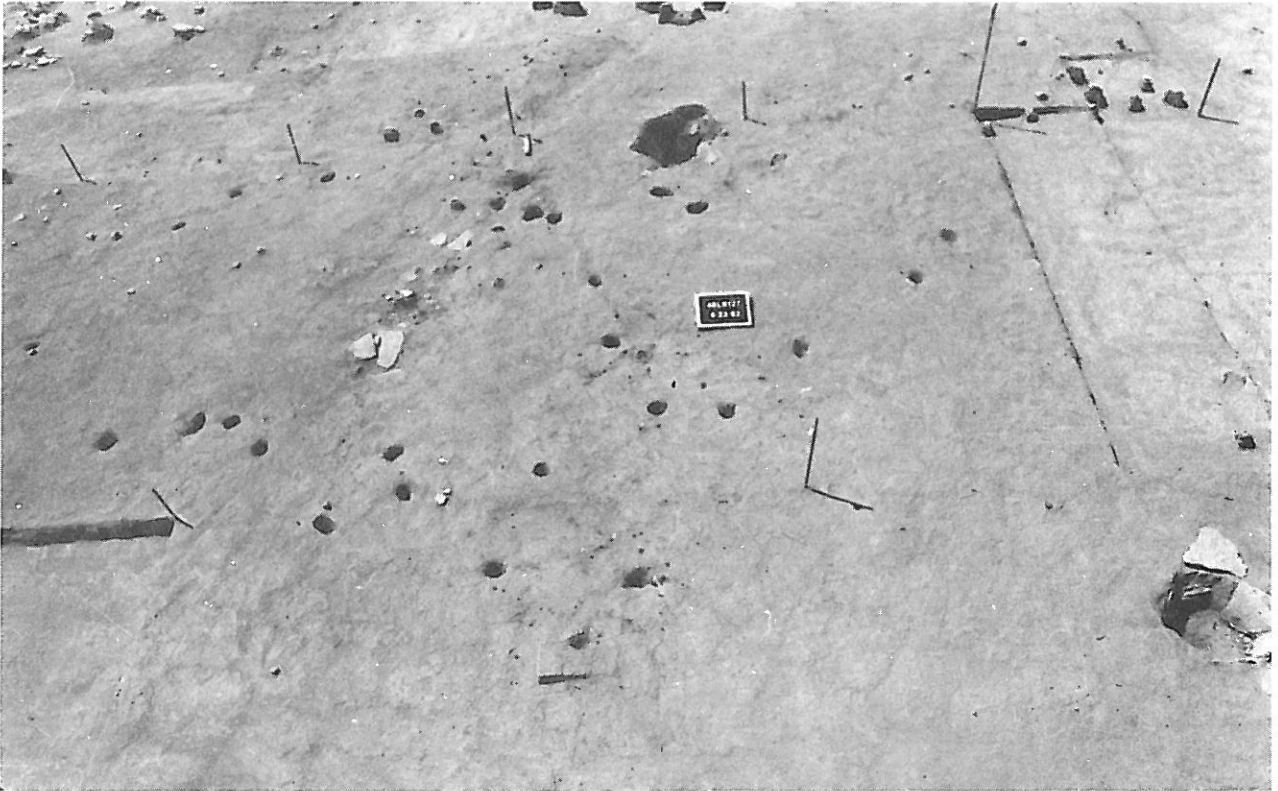


Fig. 5. A series of postholes with associated slab-lined firepits were excavated from a Late Archaic Period component at Excavation Locality #1 at the Cow Hollow Creek Site.

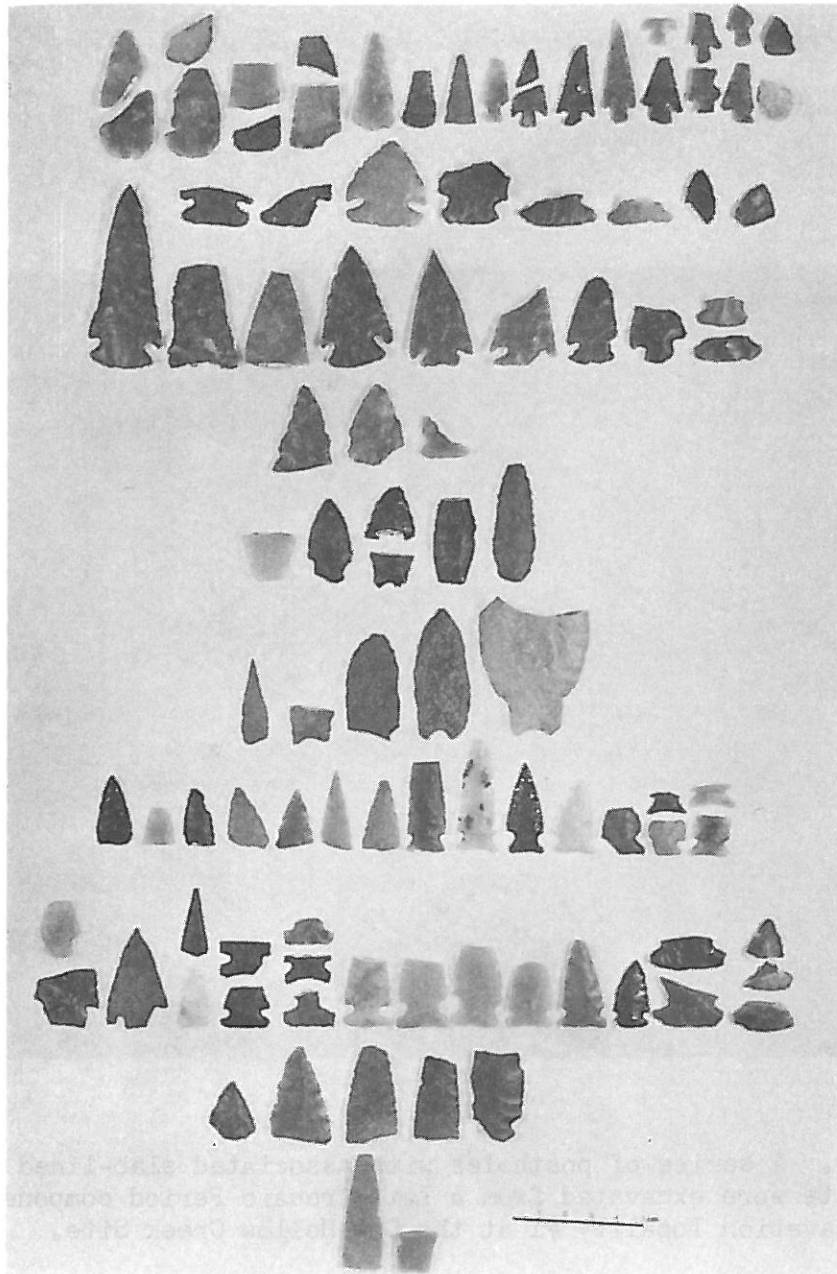


Fig. 7. The photograph shows a sample of diagnostic artifacts from the Cow Hollow Creek Site. The artifacts from fourteen excavated components have been grouped into ten temporal periods. The lowest row is Paleo-Indian (Cody Complex), the second row from the bottom is transitional Paleo-Indian to Early Archaic, the third row is Early Archaic, the fourth through seventh rows are Middle Archaic, the eighth and ninth rows from the bottom are Late Archaic, and the top row is Late Prehistoric.

diagnostic corner notched dart points and knives (referred to as Pelican Lake points in the Northwestern Plains and Elko points in the Great Basin).

Figure 6 shows examples of well preserved features from the site excavations. Slab lined hearths, firepits, postholes, and plant processing and storage pits were frequently encountered on the 14 occupation floors excavated at the Cow Hollow Creek Site. The temporal distribution of different feature types at the site helps to reconstruct changing prehistoric activities and uses of the site by hunters and gatherers. All postholes are from post-Altithermal (Late Archaic) Period components. This indicates that the duration and intensity of site occupation was greater during the Late Archaic Period than preceding and succeeding periods. Paleo-Indian, and the majority of Early Archaic Period Cow Hollow Creek Site occupations, stressed flaked lithic manufacturing and raw material procurement activities with campsites briefly occupied by these prehistoric hunters and gatherers. Middle Archaic Period occupations of the site were oriented towards flaked lithic manufacturing activities and large herbivore hunting. Late Archaic Period occupations at the Cow Hollow Creek Site are markedly more intense and extensive than previous temporal periods. A tremendous amount of evidence suggests relatively stable base camps with wild plant processing, flaked lithic manufacturing, lithic raw material procurement, hunting, and habitation activities during these Late Archaic Period occupations. Late Prehistoric Period components at the site seem to be exclusively hunting band campsites with flaked lithic manufacturing activities. Figure 7 shows a sample of diagnostic artifacts (projectile points and knives) from the Cow Hollow Creek Site excavations. Almost the full range of hunting and gathering cultures (including Paleo-Indian, and Archaic through Late Prehistoric Periods) are represented at the site. The Cow Hollow Creek Site is, obviously, a tremendously important research resource.

#### FUTURE AND ONGOING RESEARCH

Questions relating to changing flaked lithic material type selection are currently being investigated and are extensively based on the Cow Hollow Creek Site excavations. The majority of Paleo-Indian and Early Archaic Period artifacts and manufacturing debris are white quartzites that are locally available in the site area. Middle to Late Archaic Period components contain large amounts of a locally available brown banded chert that is exposed in the sandstone outcrops of the Opal Bench. Late Prehistoric Period flaked lithic manufacturing debris and tools frequently are made of a translucent chert found as small cobbles in the Pleistocene gravels in the project area. Future investigations will develop explanations for these changes in selection of lithic raw materials as well as documenting changing lithic procurement strategies in the prehistoric cultures of southwestern Wyoming.

Paleoenvironmental and paleo-climatic reconstruction will be based on laboratory sediment analyses, faunal and floral analyses, and changing subsistence strategies at the Cow Hollow Creek Site and in southwestern Wyoming. The large recovered faunal collection will allow an elaborate faunal succession reconstruction to be formulated for the site and prehistoric southwestern Wyoming.

Ongoing multivariate projectile point and knife analyses will help determine changing cultural similarities at the Cow Hollow Creek Site as well as in prehistoric southwestern Wyoming. As noted previously, Paleo-Indian components are stylistically similar to the Northwestern Plains and indicate a large herbivore herd hunting adaptation. A number of Middle Archaic Period compo-

nents have diagnostic lithic tools that are stylistically similar to the Great Basin Humboldt Series. These artifacts are found with a mixed hunting and gathering assemblage that indicates a Great Basin-like subsistence adaptation. Late Archaic Period components at the Cow Hollow Creek Site include diagnostic tools that are stylistically similar to Great Basin and North-western Plains cultures. The subsistence strategy associated with these Late Archaic Period tools is a mixture of hunting and gathering. Late Prehistoric Period components at the Cow Hollow Creek Site include a large number of arrowpoints and flaked lithic manufacturing debris associated with firepits. These components are interpreted as the remains of hunting bands that stressed a large herbivore hunting adaptation similar to historic North-western Plains tribes; the diagnostic tools are also similar to Northwest-ern Plains cultures. The continued analysis of the more than 100,000 lithic items recovered from the 1982 field season work at the Cow Hollow Creek Site are currently being analyzed to help determine cultural similarities of the site and prehistoric Southwestern Wyoming during Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic, and Late Prehistoric Periods. This is impor-tant archeologically because the project area and southwestern Wyoming are located at the contact of the Northwestern Plains and Great Basin culture areas.

#### SUMMARY

This is a preliminary report on the 1982 Western Prehistoric Research sponsored excavations at the Cow Hollow Creek Site. The site is an extremely rich, multi-component flaked lithic manufacturing, raw material procurement, habitation, hunting, and plant processing campsite. The demonstrated temporal range of occupation extends from Paleo-Indian through the Late Prehistoric Period with 14 components excavated. The final reports of the Cow Hollow Creek Site excavations will add considerably to the knowledge of the pre-history of southwestern Wyoming, the Northwestern Plains, and the north-eastern Great Basin.

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