

KIR-289: The Hungry Fox Site

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GAAR-00-01

September 20, 2000

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Physical Description

KIR-289 is located on the [*Killik River*].

The site is eroding out of the face of a steep sandy cutbank [*information withheld*].

The face of the cutbank is moderately vegetated [*information withheld*].

Cultural material is visible within the layer of rootmat and soil present along the top of the embankment (Figures 1-3). Blocks of soil and vegetation continually detach from the edges of the upper portion and subsequently slide down the steep slope. Within many of these detached
(continued on page 6)

Location Information
KIR – 289

[information withheld]



Devinney 1999



Figure 1

Devinney 1999

Intact stratigraphy within *artemesia* covered slabs which have been transported down slope by natural processes.



Devinney 1999

Figure 2

View to the Killik River from a point near the top edge of the site.



Devinney 1999

Figure 3

Artifact Rich Scatter in Locality 3: Note the large amounts of faunal material. Tabular FCR visible in upper third of photograph.

blocks it is possible to find concentrations of cultural materials, the stratigraphic relationships of which are retained by the network of *artemesia* root growth. As Vinson noted in his 1993 *Investigations at the Hungry Fox Site, KIR-289*, "erosion is destroying the integrity of this site, but at this time an important archaeological component remains." (Vinson, 3)

History of Discovery and Examination

The site and its approximate location had been previously reported to the National Park Service (NPS) by Dave Schmitz, a former commercial outfitter, who first noted its presence sometime in the 1980s.

Gates of the Arctic Ranger Jeff Karraker came upon the site in 1985 while on a float trip down the Killik River. Karraker reported the location to park archeologist Mike Kunz who made a brief helicopter visit to assess the site the following summer. In view of its exposed, highly visible and easily accessible location, Kunz subsequently recommended that additional testing be conducted to determine the site's research potential (Kunz, personal communication to Spearman, 1993).

District Ranger Jon Peterson and seasonal volunteer Ken Clarkson next visited the site in June 1992, while conducting a backcountry patrol along the Killik River.¹ The site's presence was betrayed by the large quantity of bones eroding out of the cutbank, just as described by Schmitz, Karraker, and Kunz. During this visit, Peterson found and made sketches of a

¹ An attempt was made to locate the site during a 1991 trip down the river. However, the site was missed due to the fact that water conditions that year dictated a need to keep near the opposite shore, with the site being hidden from view by an intervening island.

projectile point which was later determined to be diagnostic of the Kavik Complex (Figure 10A).

The projectile point was not collected.

Grant Spearman (Curator of the Simon Paneak Museum, Anaktuvuk Pass) and Jon Peterson returned to the site in July of 1992 to conduct a brief survey, obtain charcoal samples, search for and collect diagnostic artifacts, and video document the site. Having accessed the site by helicopter, the two spent approximately six hours on site. The Kavik point found only one month earlier was not relocated.

In 1993, a crew lead by NPS Archeologist Dale Vinson returned to the site while en route to conduct research at KIR-273, a site further down stream.² The main goals of this one day visit were to recover diagnostic artifacts, collect datable materials, examine the stratigraphy, and evaluate faunal remains exposed on the face of the cutbank (Vinson 1993:1).

A very brief visit to the site was made on July 22, 1999, by Gates of the Arctic Anthropologist Eileen Devinney and University of Alaska Fairbanks Anthropology graduate student Aron Robertson while en route to survey and document KIR-273. The schedule allowed only for cursory examination and photography. The site datum installed by Vinson was still in place, although erosion of the bluff edge continues. Upon visiting the site, it was apparent that the main channel of the Killik River had changed course so as to be running directly along the base of the cutbank, a significant change from the conditions reported in 1992 and 1993.

² Crew members included Jon Peterson (Gates of the Arctic Ranger), Patty Rost (Gates of the Arctic Resource Manager), and Eileen Devinney (Alaska Region Museum Technician).

Site Structure: Locality Descriptions

A reconnaissance along the cutbank face in 1992 revealed cultural material visible on surface for a distance of some 140 meters. The scatter of cultural material was divided into five separate clusters over the 140 meters; most of it limited to small, isolated and widely spaced arrays of fire-cracked rock and/or broken bone (Figures 4 and 5). The largest and main concentration was localized roughly one quarter of the way down the length of the site as it is described below.

Locality 1

The datum was established at this location for the 1992 fieldwork and is the southernmost section in which cultural materials are found. Artifacts noted at that time consisted of a light scattering of flat tabular pieces of fire-cracked rock (FCR) and a very small quantity of broken bone, stretching for eight meters along the bluff face.

Locality 2

Examination of this area was confined to the 1992 field season. Locality 2 is situated approximately 20 to 21 meters north of the 1992 datum and roughly 1.5 meters below the crest of the cutbank. Among the artifacts and materials found in this locality were: a small scatter of FCR, a jaw bone fragment (sheep), a scapula, and a small, compact deposit of crushed bone fragments. Crushed bone fragments such as those found here are characteristic of the traditional practice of rendering bone grease which was accomplished by crushing and boiling marrowbones.

[information withheld]

[information withheld]

Locality 3

This locality encompasses the main concentration of material and, thus, has been the primary focus of most research activity on site. Locality 3 stretches for nearly 10 meters between 26.5 and 36.0 meters north of the 1992 datum.

The heart of the site, Locality 3 consists of a ten meter long series of lenses of FCR, broken bone and lenses of charcoal, broken up by slumping ground some 2.5 to 3.0 meters below the top edge of the bank. From these lenses a large quantity of FCR, bone and a few formal artifacts have eroded out and lay scattered some 11.5 meters down slope to the waters edge, forming a thick deposit of cultural material in the form of an inverted triangle with the base at the top and the apex at the bottom (Figures 4 and 5). From these lenses two concentrations of charcoal - arbitrarily designated as hearths - were noted and charcoal samples were collected from each for radiocarbon processing. In addition, a sample of bone collected returned radiocarbon results of 460 $\pm$ 60 BP (sample number Beta - 85825, see Figure 7A).³

Vinson determined the site formation dynamics to be as follows:

"The top of the slope in Locality 3 is apparently the location of an *in situ* archaeological component. This landform is steep, but relatively stable due to thick willow growth at the top of the bluff. Observations on the top of the slope indicate that sand is transported directly up the cutbank to accumulate at the top of the bluff. The [rapidity of sand accumulation] is shown by the absence of grasses and other growth in the willow thicket. The sand accumulates faster than vegetation other than willows can grow. Because this formation is an accumulation of eolian sand transported from the eroding cutbank, it can be referred to as a bluff top dune. The importance of this formation in terms of archaeology is rapid deposition of sediments resulting in rapid, deep burial of archaeological sites. Archeological components inland from the eroding cutbank are likely to be buried much deeper than the component exposed in the cutbank" (1993:2 and edited comments 1999).

³ The provenience of this sample is somewhat in question, although records suggest that it came from Locality 3.

Locality 3: Features

Hearth 1

Located near south end of the southernmost lens (26.5 meters from datum), this "hearth" consisted of a thick, rich deposit of charcoal, FCR and bone, underlain by a gray ash layer (Figure 6). A sample was taken from the charcoal and burned bone stratum. Additional charcoal was present in the form of the charred end of a large piece of burned wood, which was left *in situ*. The collected sample was sent to Beta Analytic for processing (sample number Beta-59589) and returned a radiocarbon date of 360 to +/- 80 BP (see Figure 7B).

Other materials collected from this hearth and its close vicinity include a large, *in situ*, pottery fragment taken just above the hearth lens, a fish vertebra, a small bird long bone, and a bird or duck backbone fragment (collected nearby). See below under the Pottery subsection for a full description of the fragment found in Hearth 1.

Hearth 2

Hearth 2 was located 2 to 3 meters north of the previous feature, 29.5 meters from datum. This less well defined lens of charcoal, FCR and bone yielded a sample of charcoal which was sent to Beta Analytic (Beta - 59590) for processing. It returned a radio carbon date of 530 +/- 80 BP (see Figure 7).

Locality 4

Located between 100 and 102 meters from the 1992 datum, this deposit consists of a diffuse 2 by 3 meter scatter of some broken bone fragments, including rib and mandible pieces, one

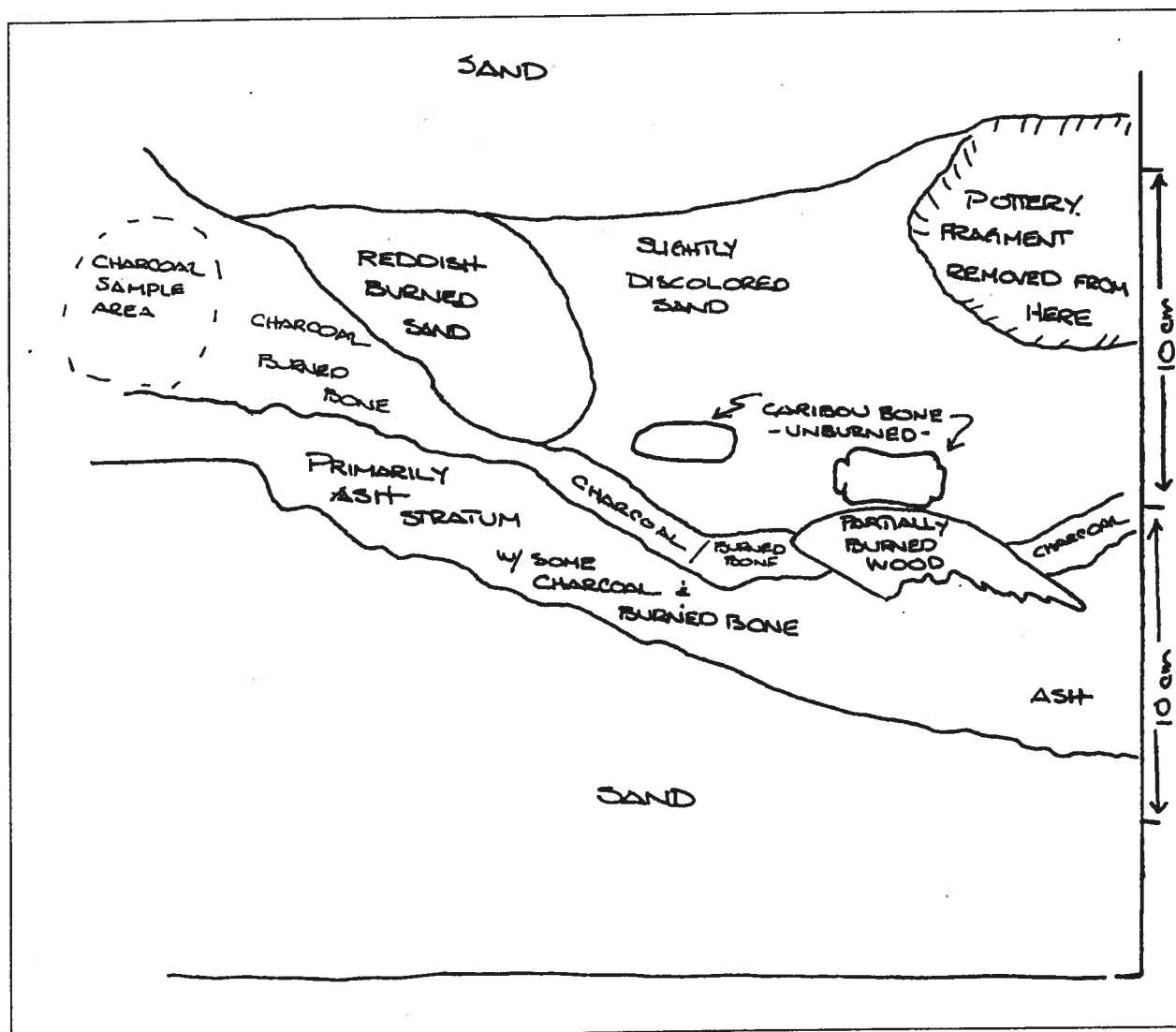


Figure 6
Generalized stratigraphy of Hearth 1 deposit in Locality 3. Note locations where charcoal sample and pottery fragment were removed.
(from Spearman)

**BETA ANALYTIC INC.**

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REPORT OF RADIOCARBON DATING ANALYSES

FOR: Dr. Ted Birkedal
National Park Service

DATE RECEIVED: September 22, 1995
DATE REPORTED: November 1, 1995

Sample Data	Measured C14 Age	C13/C12 Ratio	Conventional C14 Age (*)
Beta-85825	420 +/- 60 BP	-22.5 o/oo	460 +/- 60 BP

SAMPLE #: GAAR-00104-7545

ANALYSIS: AMS (Lawrence Livermore)

MATERIAL/PRETREATMENT:(bone collagen): collagen extraction with alkali

NOTE: It is important to read the calendar calibration information and to use the calendar calibrated results (reported separately) when interpreting these results in AD/BC terms.

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950 A.D.). By international convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

Figure 7A

Carbon 14 Results

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-22.5;lab. mult=1)

Laboratory Number: Beta-85825

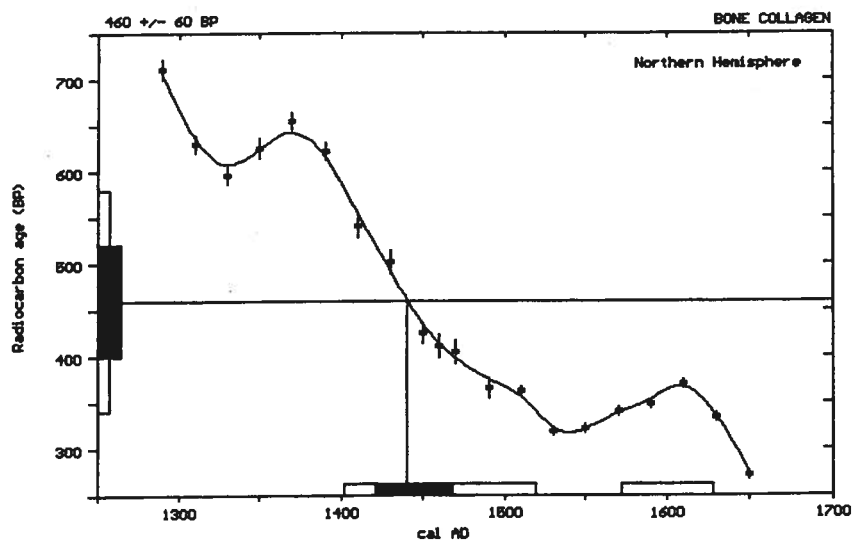
Conventional radiocarbon age: 460 +/- 60 BP

Calibrated results: cal AD 1400 to 1520 and
(2 sigma, 95% probability) cal AD 1570 to 1630

Intercept data:

Intercept of radiocarbon age
with calibration curve: cal AD 1440

1 sigma calibrated results: cal AD 1420 to 1470
(68% probability)



References:

- Pretoria Calibration Curve for Short Lived Samples*
Vogel, J. C., Fuls, A., Visser, E. and Becker, B., 1993, *Radiocarbon* 35(1), p73-86
- A Simplified Approach to Calibrating C14 Dates*
Talma, A. S. and Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322
- Calibration - 1993*
Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., 1993, *Radiocarbon* 35(1)

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 ■ Tel: (305)667-5167 ■ Fax: (305)663-0964 ■ E-mail: beta@analytic.win.net

CALIBRATED C-14 DATING RESULTS

Calibrations of radiocarbon age determinations are applied to convert results to calendar years. The short term difference between the two is caused by fluctuations in the heliomagnetic modulation of the galactic cosmic radiation and, recently, the advent of large scale burning of fossil fuels and nuclear devices testing. Geomagnetic variations are the probable cause of medium term differences and long term (greater than 8000 BP) differences are still unknown.

Radiocarbon dating laboratories have analyzed hundreds of samples obtained from known-age tree rings of oak, sequoia, and Douglas fir. Curves generated from the results depicting the atmospheric carbon content at specific time periods have been incorporated in computer programs. The result of the calibration analysis applicable to your research follows.

(Caveat: these calibrations assume that the material dated was short lived, i.e., living for 20 years like branches, some shells, small plants, a collection of individual tree rings, etc.. For other materials, the "Old Wood Effect" would produce uncertainties; both the maximum and minimum ranges of age possibilities could be overstated by that error source. Also, but less likely, in extreme cases they might even turn out to be understated.)

Calibration file: ATM20.14C

Beta-59589

Radiocarbon Age BP 360 $\pm$ 80

Calibrated age(s) cal AD 1486

cal BP 464

cal AD/BC (cal BP) age ranges obtained from intercepts (Method A):

one Sigma** cal AD 1442-1642(508- 308)

two Sigma** cal AD 1410-1670(540- 280) 1787-1791(163- 159)

Summary of above ---

minimum of cal age ranges (cal ages) maximum of cal age ranges:

one sigma cal AD 1442 (1486) 1642

cal BP 508 (464) 308

two sigma cal AD 1410 (1486) 1791

cal BP 540 (464) 159

Beta-59590

Radiocarbon Age BP 530 $\pm$ 80

Calibrated age(s) cal AD 1409

cal BP 541

cal AD/BC (cal BP) age ranges obtained from intercepts (Method A):

one Sigma** cal AD 1311-1353(639- 597) 1383-1440(567- 510)

two Sigma** cal AD 1280-1480(670- 470)

Summary of above ---

minimum of cal age ranges (cal ages) maximum of cal age ranges:

one sigma cal AD 1311 (1409) 1440

cal BP 639 (541) 510

two sigma cal AD 1280 (1409) 1480

cal BP 670 (541) 470

Figure 7B

Carbon 14 Results

Radiocarbon Age BP 3310 $\pm$ 100

Calibrated age(s) cal BC 1614

cal BP 3563

cal AD/BC (cal BP) age ranges obtained from intercepts (Method A):

one Sigma** cal BC 1737-1713(3686-3662) 1710-1510(3659-3459)

two Sigma** cal BC 1880-1410(3829-3359)

Summary of above ---

minimum of cal age ranges (cal ages) maximum of cal age ranges:

one sigma cal BC 1737 (1614) 1510

cal BP 3686 (3563) 3459

two sigma cal BC 1880 (1614) 1410

cal BP 3829 (3563) 3359

Reference for dataset used:

Stuiver, M and Pearson, GW, 1986, Radiocarbon, 28, 805-838.

Pearson, GW and Stuiver, M, 1986, Radiocarbon, 28, 839-862.

** 1 sigma = square root of (sample std. dev.² + curve std. dev.²)

2 sigma = 2 x square root of (sample std. dev.² + curve std. dev.²)

piece of FCR and a single, small flake of black chert. Some of the bone remained *in situ* some 50 cm below the crest of the cutbank.

Locality 5

Locality 5 is situated between 136 and 140 meters north of the 1992 datum. This northernmost deposit of cultural material consisted of a half dozen pieces of FCR and a single piece of broken bone.

Artifacts

All artifacts collected from KIR-289 were removed from within Locality 3. Several artifacts described below were observed and recorded but not collected – this is indicated in the text.

Stone Tools

Slate Cutting Implements

1. Semi-lunar or roughly "ulu"-shaped piece of dark gray slate. Appears to have been roughly chipped to form but shows no evidence of finishing or grinding along edges. Measures 11.1 x 7.9 cm (Figure 8A). Surface collection from vicinity of Hearth 2 (specimen number GAAR 6674).
2. Pieces of broken, though roughly lanceolate shaped, dark gray slate, likely to have been a knife blade. Both faces appear to have been smoothed to varying degrees. The specimen exhibits bifacial grinding along one margin, producing a curved cutting edge, while the other margin of the piece has been broken off. Measures 5.8 x 2.8 cm and is 3.0 mm in thickness (Figure 8B). Surface collection from vicinity of Hearth 2 (specimen number GAAR 6673).

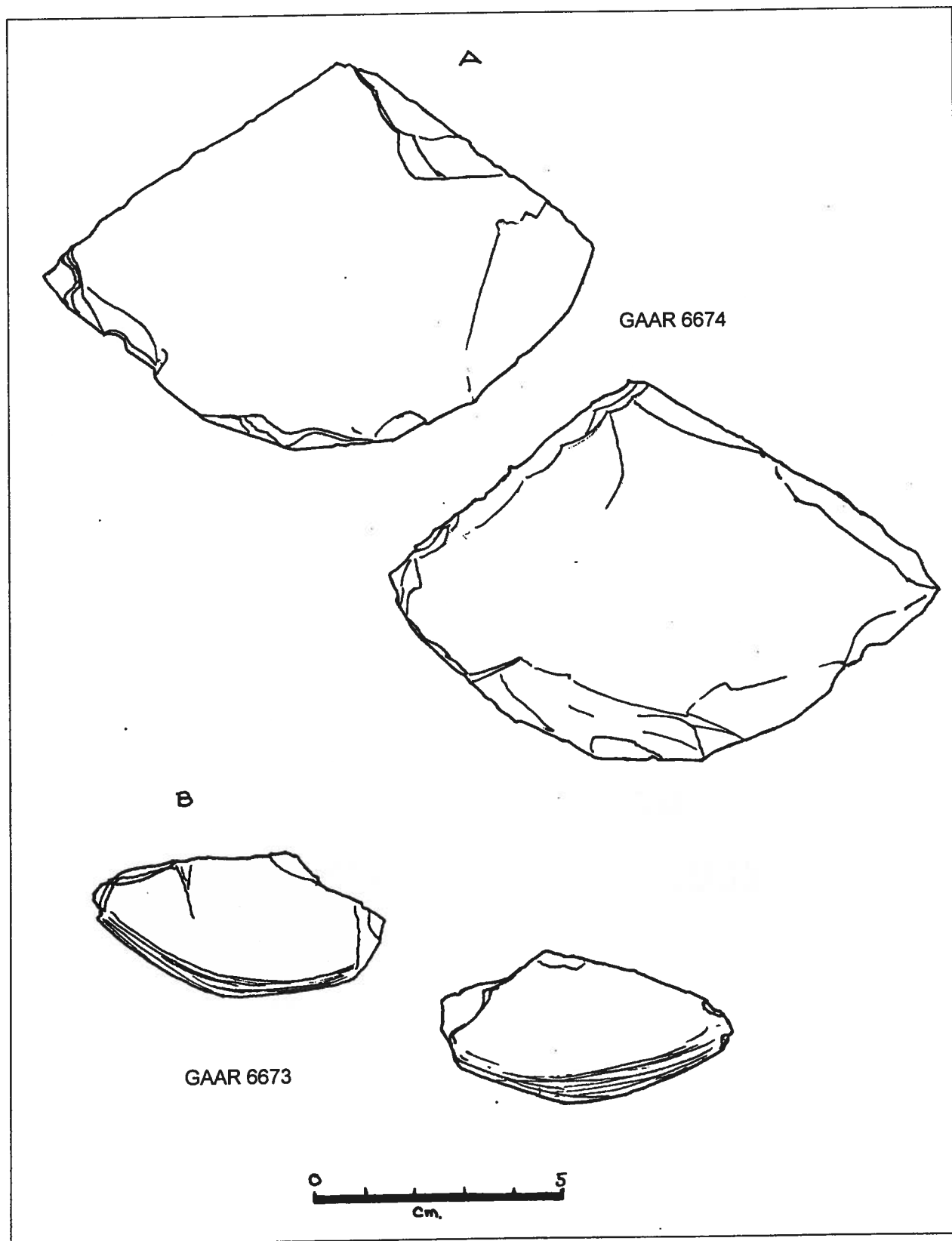


Figure 8
(from Spearman)

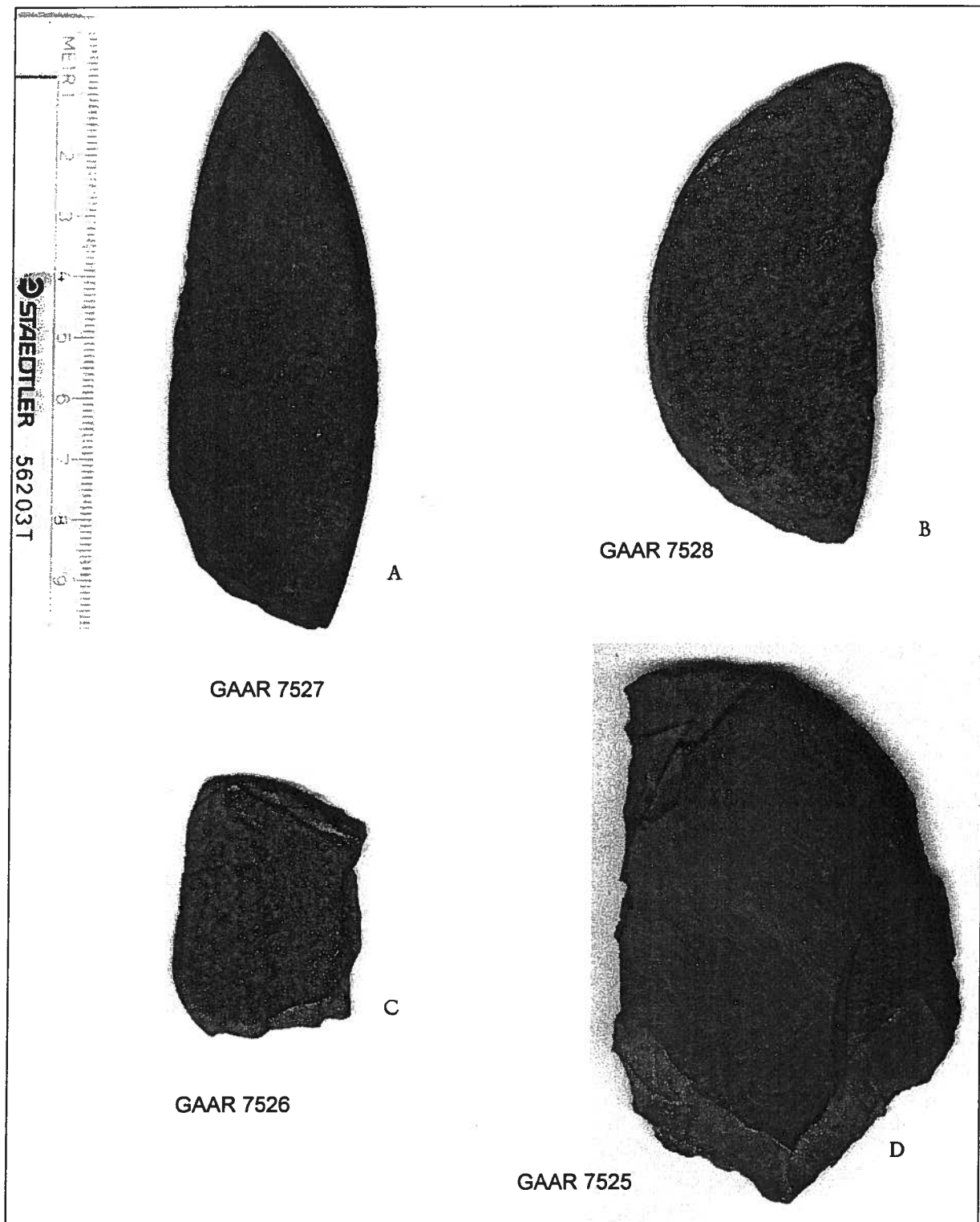


Figure 9

3. Knife fragment of dark gray slate. Most of the curved blade remains. One face of the object is smoothed with coarse, roughly parallel scratches remaining from manufacture while the opposite face exhibits finer scratching over an irregular surface. The edge is a wide curve with even bevelling from both faces. The edge remains sharp although some small nicks are present. The object has at least two tensile, transverse fractures. Measures 9.9 x 3.4 x 0.3 cm (Figure 9A). Collected in ¼ inch screen from Locality 3 slump (specimen number GAAR 7527).
4. Knife of light gray slate with faintly expressed laminations. Semi-lunar or "D"-shaped with double-bevelled curving edge. Light, discontinuous flaking shaped the opposite edge. Faces of this item exhibit little signs of working. Measures 7.9 x 3.8 x 0.4 cm (Figure 9B). Collected in ¼ inch screen from Locality 3 slump (specimen number GAAR 7528).
5. Cutting tool of light gray slate with faintly expressed laminations. Slightly irregular trapezoidal shape with discontinuous bevelling of a thin edge. A corner shows even bevelling from both faces. One face exhibits fine, near parallel striations perpendicular to the edge while the opposite face exhibits smoothed facets that are continuations of edge bevelling (Figure 9C). Collected in ¼ inch screen from Locality 3 slump (specimen number GAAR 7526).
6. Cutting tool of gray slate with faintly expressed laminations. Rough-edged tabular shape with rounded edge. Faces are striated and have smooth facets. However, not all natural contours are evened out. The edge is bevelled from both faces, although the bevel on one edge is much broader and forms a more acute angle than the steep bevel opposite (Figure 9D). Surface find in lower portion of Locality 3 (specimen number GAAR 7525).
7. Also noted in 1992, but *not collected*, was a small thin piece of dark gray slate with a thin groove worn down its center, presumed to have been an abrading stone for the making of bone needles.

Projectile Points

1. A non-diagnostic, black chert projectile point (Figure 1B). Lanceolate in form with a slightly contracting rounded and basally thinned base and a lenticular to vaguely diamond shaped cross section. Measure 5.3 x 1.3 x 0.6 cm (Figure 10B). Surface collection from down slope (specimen number GAAR 6669)
2. Projectile point base, *not collected*. Made of a glass-like material, this base featured shoulders and contracting stem generally considered diagnostic of Kavik (see Figures 10 and 11).

Bone and Antler Tools

1. A basal segment of caribou antler showing chop marks used to reduce the thickness of the antler before fracturing. Measures 8.5 x 4.2 x 3.6cm. Surface collection from down slope (specimen number GAAR 6670).
2. A worked piece of burned and calcined marrow bone (Figure 10C). This fragment had two small diameter holes drilled through it. One hole located along the left edge of the dorsal face is nearly intact and appears to have had a 0.5 cm diameter. Evidence of a second drill hole, located 0.9 cm to the right of the first, is limited to a small segment of the hole wall in the other, broken edge of the bone fragment. This segment is most obvious when viewed from the ventral surface. Measures 5.1 x 2.2 cm and is 6.6 mm in thickness. Surface collection from down slope (specimen number GAAR 6675).
3. Antler tool in elongated form, tapering asymmetrically to blunt or rounded ends. Over 75% of the object is flattened on one face while the remaining 25% angles up and is rounded on all sides. The angled end was exposed to weathering and is split by desiccation. The opposite end is unweathered and is ground to an even outline. The flattened side exhibits antler cortex while the rounded opposite side exhibits spongy material. This item resembles a punch, a marlin spike, or a side-mounted prong to a heavy leister or boat hook. Measures 12.4 x 1.2 x 1.0 cm and weighs 13.6 g (Figure

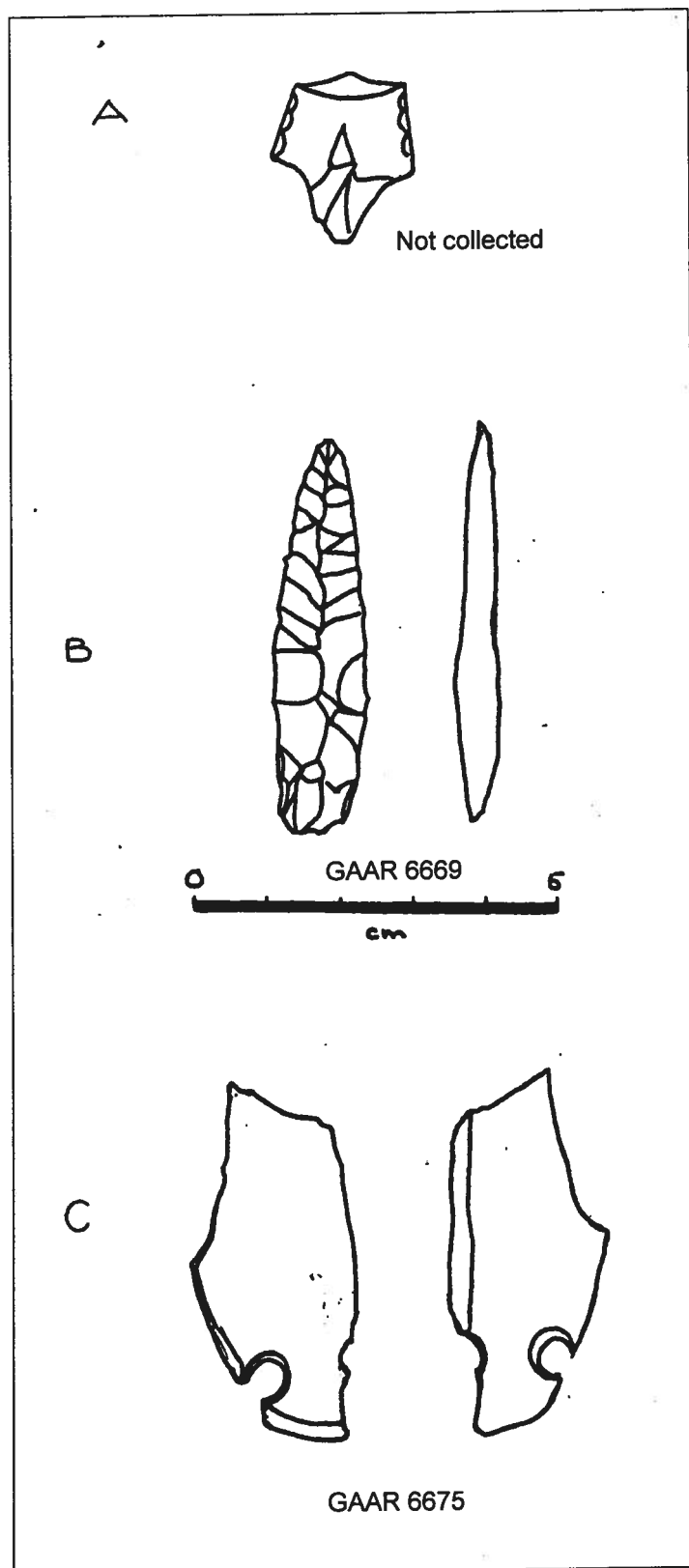


Figure 10
(from Spearman)

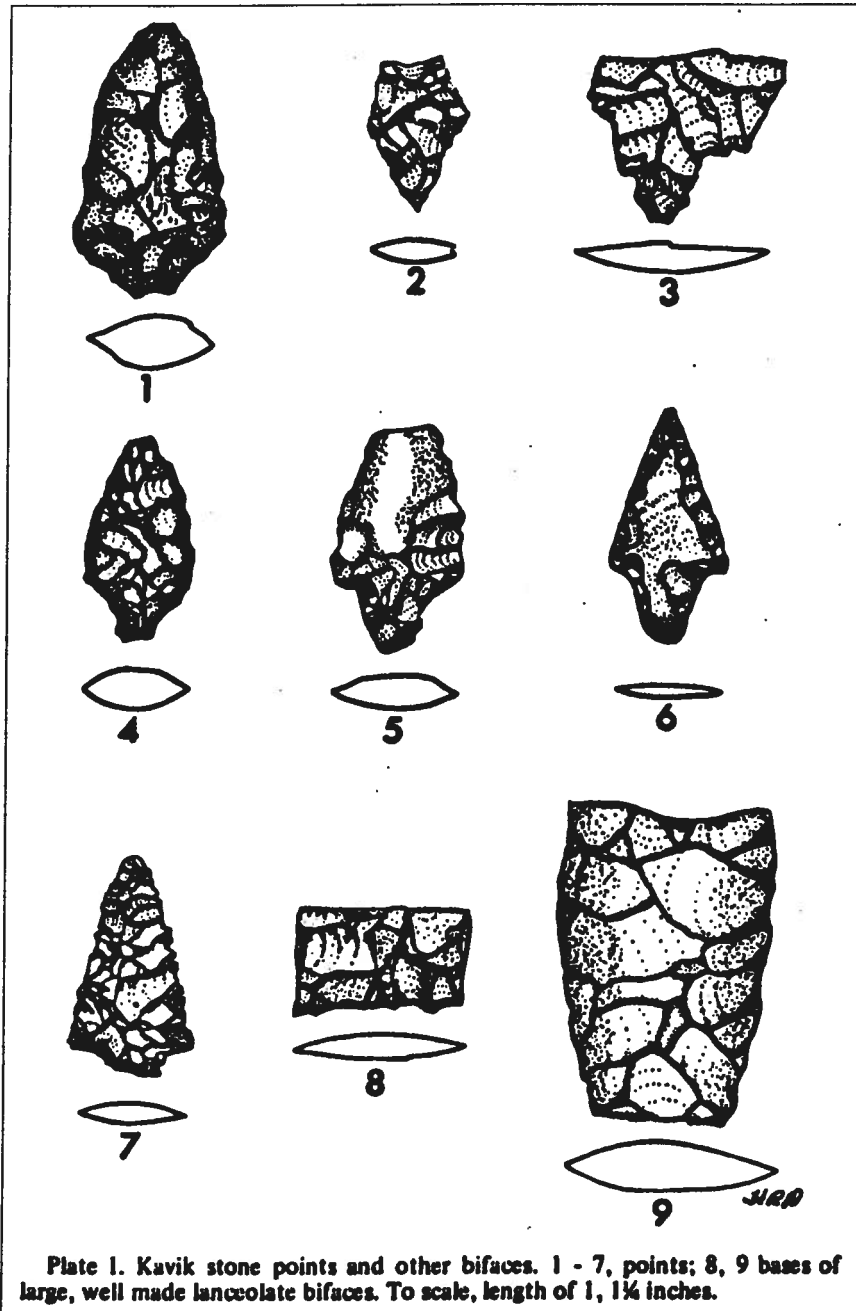


Figure 11

Biface Typology
(from Campbell 1968)

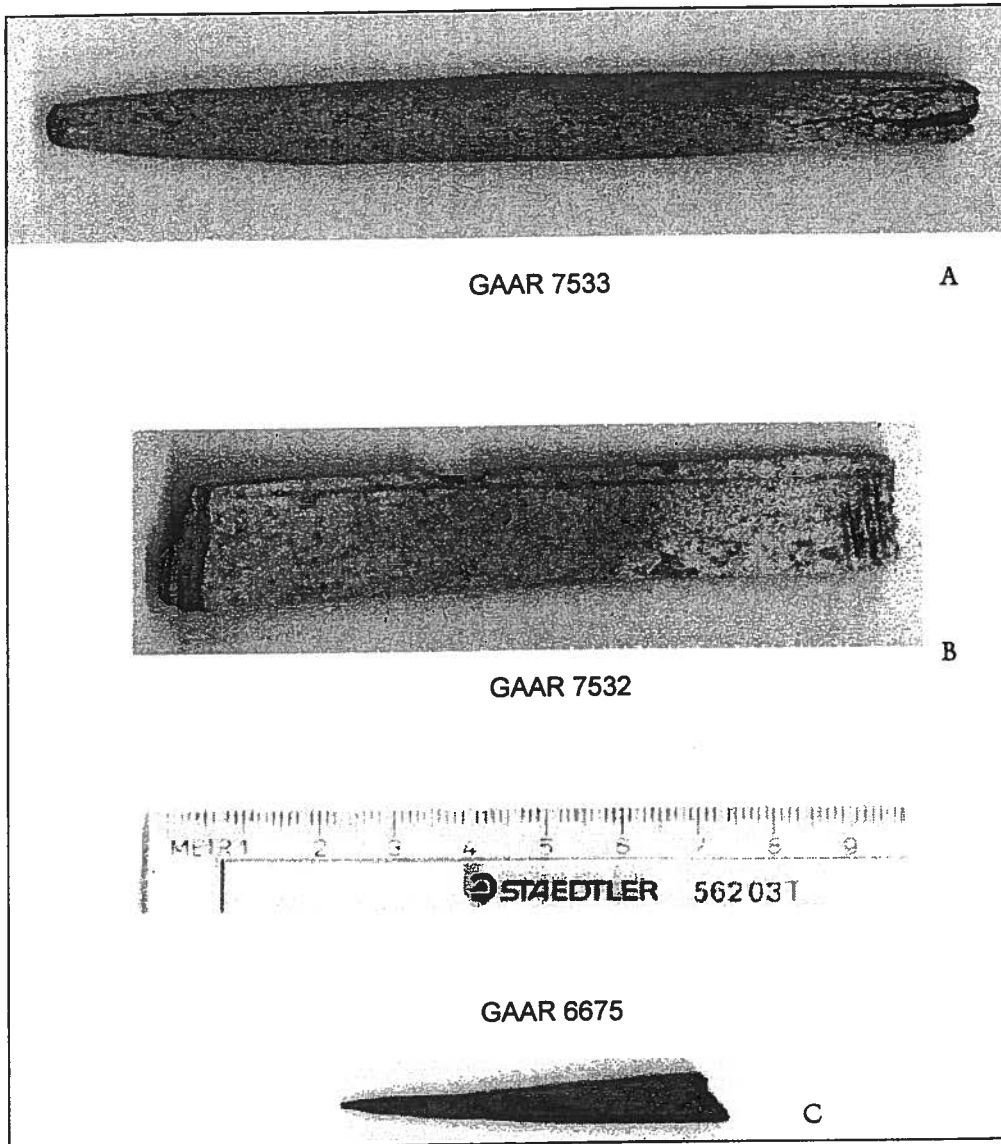


Figure 12

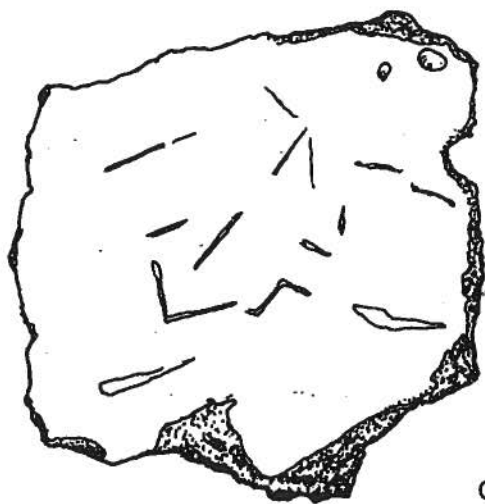
12A). Collected in ¼ inch screen from cultural zone in lower portion of Locality 3 (specimen number GAAR 7533).

4. Antler blank made from a subrectangular plate of antler with edges formed by regular linear cuts along its edges, possibly made by a burin. One short end exhibits a series of overlapping incisions while the other exhibits an evenly cut facet, as if severed with a single chopping blow. This blank was removed from a large caribou antler beam. Its form does not suggest a specific tool. Measures 9.8 x 1.8 x 0.7 cm (Figure 12B). Object weight is 11.0 g. Collected in ¼ inch screen from Locality 3 slump (specimen number GAAR 7532).
5. Tool point presumed to be made from antler. This object tapers to a fine, lightly worn point. Viewed from the side, the point forms an acute angle with the shorter edge being slightly flattened and the opposite edge rounded. The end opposite the point is a jagged transverse break. Its finished form results from a series of narrow adjacent facets that run longitudinally to converge at the tip. Faint striations run along the facets and the tip exhibits micro-flaking that has been rounded intentionally or by use wear. This item could function as an awl, a prong to a leister or fishing lure, or the tip of an arrow point. Measures 5.2 x 0.7 x 0.6 cm and weighs 1.5 g (Figure 12C). Collected in ¼ inch screen from Locality 3 slump (specimen number GAAR 7529).

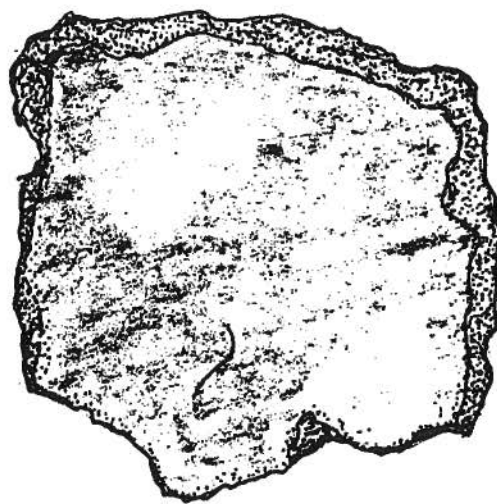
Pottery

1. One pottery fragment was found in Hearth 1 (Figure 13A). The fragment is roughly square in shape, and is large enough to exhibit a definite degree of curvature. The outer face is relatively smooth, light to medium gray in color, with a couple of pieces of pebble and grit temper showing through. The inner face has a similar texture but is nearly black in color. Measures 7.4 x 7.4 x 1.6 cm thick at its maximum thickness. Found *in situ* in association with Hearth 1 (specimen number GAAR 6671).
2. Pottery fragment found down slope from Hearth 2 (Figure 13B). Fragment is irregular in shape and charcoal in color. The piece exhibits some exposed grit and pebble temper. The outer face is slightly convex with a rough and irregular texture, while the inner face is slightly concave and has a relatively smooth texture. Maximum dimensions are 5.3 x 4.0

A



GAAR 6671



B



GAAR 6672

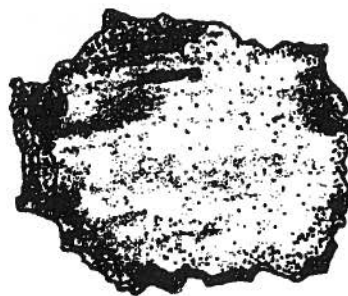


Figure 13
(from Spearman)

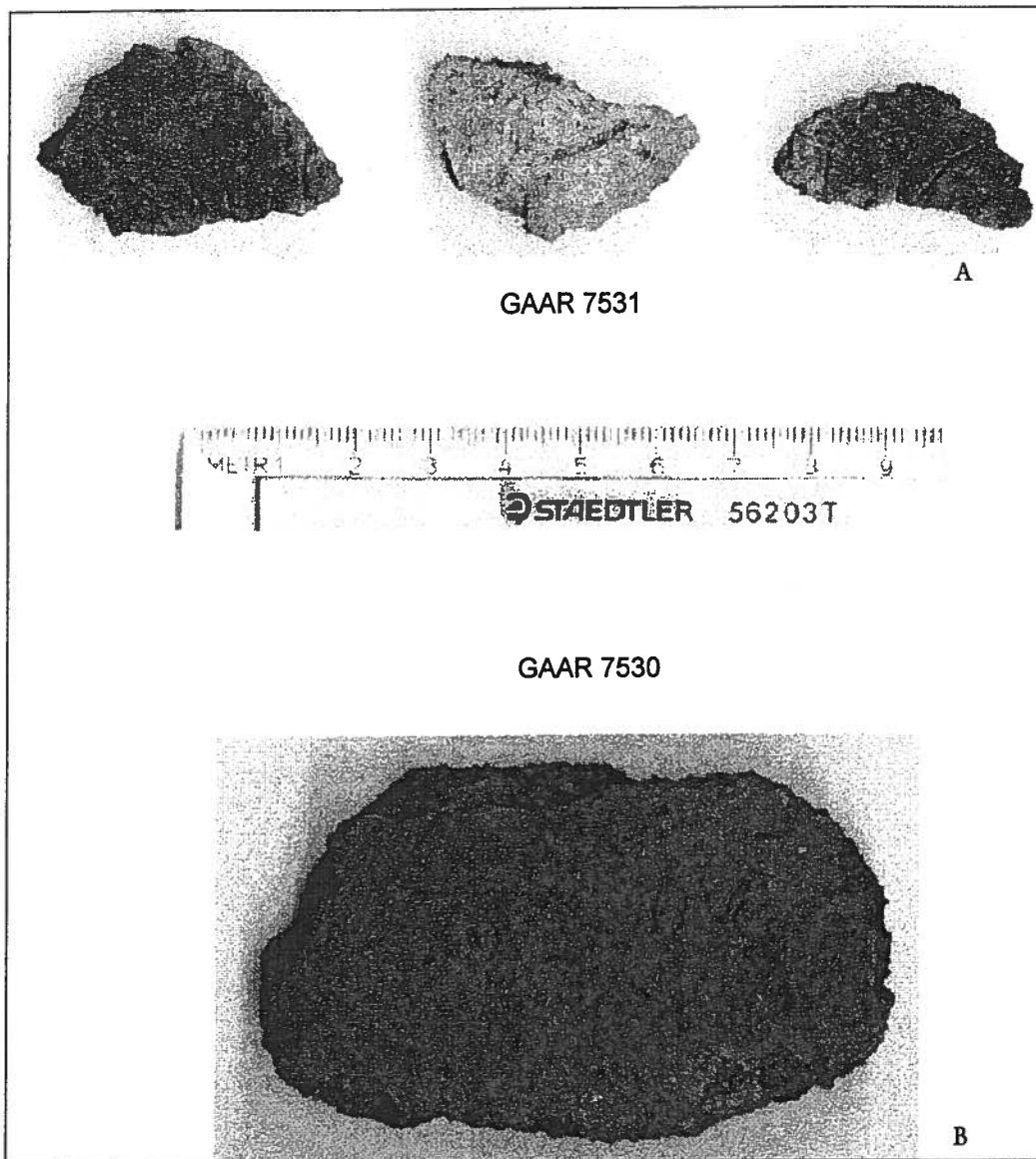


Figure 14

cm and 8.2 mm in thickness. Surface collection from down slope (specimen number GAAR 6672).

3. Vessel body fragment which is exfoliating into thin layers and is heavily sooted. Features feather and gravel temper. Originally measured 4.0 x 3.5 x 1.4 cm and weighed 15.7 g, although the specimen is currently in multiple fragments (Figure 14A). The sooty encrustation on the interior of this sherd may be suitable for radiocarbon dating of the vessel. Collected in ¼ inch screen from the upper portion of Locality 3 (specimen number GAAR 7531).
4. Vessel body fragment with organic fiber (possibly feather) and gravel temper. Exposed to reduced firing atmosphere. Measures 8.4 x 5.1 x 1.7 cm and weighs 71.2 g (Figure 14B). Collected in ¼ inch screen from Locality 3 slump (specimen number GAAR 7530).

Wooden Artifacts

Net Float

1. A wooden net float. Made of an as yet unidentified wood, though thought to be spruce or perhaps cottonwood. The float, which measures 17.3 cm long, 9.5 cm wide and 2.0 cm thick, is heavily weathered and cracked. It is oval to sub-rectangular in shape with parallel sides and rounded ends. Near each end a pair of small holes has been drilled to facilitate its connection to a net. The bottom face of the float is flat to slightly convex while on the top face the edges have been beveled (2 cm along the straight sides and 4 cm along the curved ends) giving the float a trapezoidal profile when viewed end on. This wooden net float is similar in form and size to a Nunamiut example recovered from the beach at Chandler Lake by Campbell in the 1950's and illustrated as Figure 7A in his doctoral dissertation (Figure 15 this report). Surface collection from down slope (specimen number GAAR 6676).

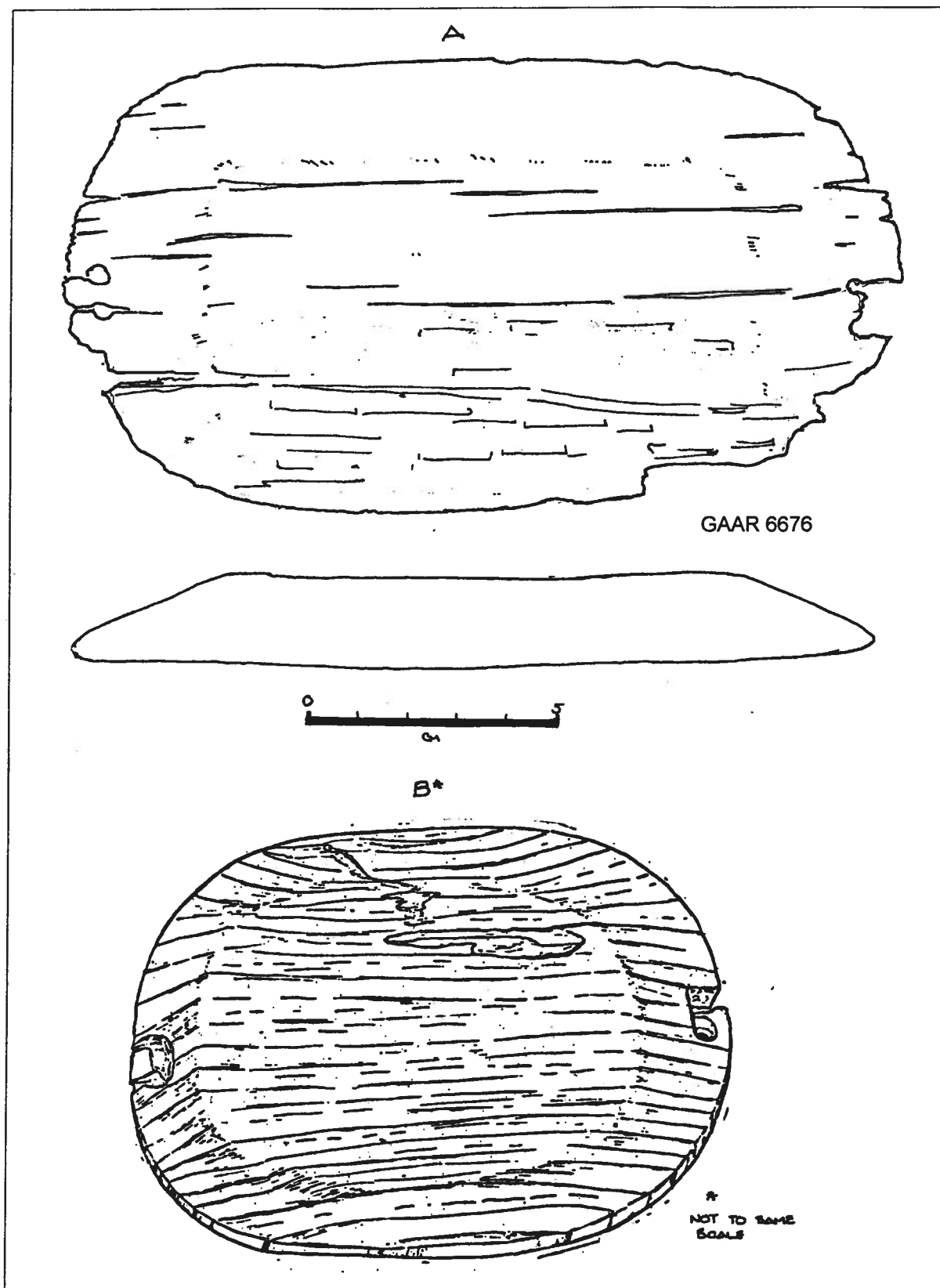


Figure 15
(from Spearman, lower image taken from Campbell 1962)

Faunal Materials

1992 Collections

Among the faunal materials collected in 1992 from the vicinity of Hearth 2, Locality 3 were:⁴

- Split rodent tooth
- Sheep horn knob or core
- Caribou cranial fragment with attached antler stub
- Fragment of caribou or sheep maxilla with teeth intact

The following were collected from the surface in the vicinity of Hearth 1, Locality 3:

- Fish vertebra
- Small bird bone
- Duck backbone plate

In addition to the above items, a small, generalized collection of faunal material was collected from the surface of the site. The 1992 report did not provide analysis or identification of these fragments.⁵

Faunal Materials Observed in 1993

The faunal assemblage described here was identified and documented while on site - no faunal material was collected and brought back to the lab for further analysis. Vinson spent the bulk of his short time on site examining faunal materials. The following discussion on process and findings is taken directly from his 1993 report.

“Clearing of a vertical face at the top of the bluff revealed dense bone, ash and fire-cracked rock lens with organic material and roots occurring at 1.07 to 1.25 meters below the ground surface at the top of the dune. The lenses are designated the cultural zone. The deposits above the cultural zone consist of

⁴ These four items were lot cataloged as GAAR 6678.

⁵ This small collection was cataloged as GAAR 6679.

fine light brown sand bedded with medium gray sands. There are refilled blowouts and animal burrows exposed in the cut. Below the cultural zone are light to dark gray mottled sands.

Cutting back the slope exposed the cultural zone in an area measuring 1.35 meters long, ranging from 0.60 to 1.00 meters wide. The top of this zone is a diffuse contact, with small bones and fire cracked rocks appearing just above the contact. The top of the cultural zone is a slightly sloping surface of dark gray brown, organic-stained sands with scattered burned slabs and cobbles, charcoal, antler fragments, and caribou bone that ranges in depth from 0.79 to 1.04 meters below the top of the dune. Due to the density of the bone, only a 0.50 x 0.52 area in the middle of the exposed cultural zone was excavated.

This [bulk-sample] section was excavated and screened through ¼ inch hardware cloth. All [the larger] faunal remains were examined. The fine fraction of material within the screen was washed with water, leaving approximately 2.00 liters of fine bone fragments, including the remains of medium to large mammals, rodents, and aves. The cultural zone [also] contained approximately 7.0 kilograms of reddened fire-cracked slabs and split cobbles. No artifacts were recovered in this test.

The faunal remains recovered in the test of the cultural zone included concentrated caribou, sheep, canid, and bird bones, as well as many fragments and splinters of medium to large mammal limb bones. The medium to large mammal bone assemblage, including caribou and sheep (and possibly others) [;] is estimated to consist of 30% ribs, 20% scapulas, 20% mandible fragments, 10% long bone fragments, and 10% cranial and other unidentified parts. [A ram horn core was present among the sheep remains.]...

The assemblage included at least 83 caribou elements. The caribou assemblage consisted of at least 75 [identifiable faunal] elements including: 5 scapulas, fragments making up at least 20 mandibles, 2 maxillary fragments, and many rib and limb bone fragments. The mandibles represent a minimum of 10 individual caribou.

[This] deposit of caribou elements and [other animal bone] is very dense, especially considering the small size of the test unit from which they were recovered. Two possible interpretations are possible based on the minimal knowledge gained [from the excavation]: 1) it represents an intensively used, possible multiple season camp or village, or 2) it represents a kill site where a large number of caribou were processed."

Research Potential

Return visits to this site have been fueled, in part, by the richness of the deposit and Ranger Jon Peterson's drawing of the projectile point base found in June of 1992. This point fragment, with its characteristic shoulders and contracting stem, is generally considered as diagnostic of Kavik, a late prehistoric Athapaskan Indian occupation in the Brooks Range that dates roughly between 600 and 150 BP.

This point fragment was very similar to one illustrated as Number 5 in Plate 1 of Campbell's 1968 publication "The Kavik Site of Anaktuvuk Pass, Central Brooks Range, Alaska" (see Figure 7 of this report). Additionally, Peterson's description of the point material as being similar to clear glass tallies well with a Kavik point recovered from the Atigun site, which was made of crystal quartz (Wilson 1976).

To date, only a half dozen Kavik sites have been found on the North Slope and in the north central Brooks Range. Three of those sites are located along the Trans Alaska pipeline corridor, one in the Ulu or Itkillik River Valley, one in the Anaktuvuk River valley (Campbell's Kavik site) and now, perhaps, one in the Killik River valley.

Currently, only two of those sites (Campbell's Kavik site, and the Atigun site, located some 60 miles to the east in the Atigun valley) have yielded any significant information regarding dates, seasonality of occupation, and tool inventory. Due to the overall paucity of Kavik sites, there remain many unanswered questions and much to learn from the Hungry Fox Site.

Should KIR-289 turn out to be Kavik (the radiocarbon dates so far are consistent with other known Kavik sites) it would represent the westernmost expression of this archeological culture. Additionally, it would be only the second such site located within the park boundary, the other being found in the Ulu Valley (PSM-052). The site's rich faunal remains, charcoal deposits and range of artifactual materials including pottery, ground slate, wood, etc., demonstrate excellent research potential. Future research and findings should add to our knowledge of Kavik material culture, the seasonality of occupation, the character and diversity of the resource base, as well as providing more information regarding the history and nature of Athapaskan occupation and use of this area in the late prehistoric period.

It is also important to note that, although the find of the Kavik-like point fragment and the correct time range of the carbon dates indicate the likelihood that this site may indeed be Kavik (or at least have a Kavik component) some of the artifacts recovered present a strong possibility that the site may actually be Eskimo, or at least have an Eskimo component. These materials include the presence of pottery and ground slate -- traits which none of the other Kavik sites are reported to possess, but which are common to Eskimo sites. In addition, the wooden net float found in Locality 3 in 1992 is quite similar to a Nunamiut example from the Chandler Lake area.

Should the site turn out to be Nunamiut Eskimo, and the carbon dates hold up, it may well prove to be one of the earliest, prehistoric Nunamiut sites found in this area and may potentially push back the horizon for their occupation of the north central Brooks Range by a century or more. As in the case of Kavik, very little is known, archaeologically, about the origins of the Nunamiut.

As Vinson observed, in the event that the site is found to contain both Indian and Eskimo material culture it may provide a unique opportunity to study prehistoric cultural interactions between those two very different groups. Depending on the nature of the contact, the site could help clarify the culture history of the area and help us untangle the story of how different groups expanded and contracted their territories in response to changing demographics and ecological relationships.

Cultural affiliations and interesting research questions aside, the location, condition and exposed setting of this site must, of necessity, bring into focus some of the more prosaic considerations regarding the protection and management of archaeological resources. The very nature of the site, defined as it is by large quantities of white, bleached bone eroding out and sliding down the exposed face of a sandy cut bank along the river, cannot help but draw the attention of river travelers and thereby increase the likelihood of loss of materials due to unauthorized collecting.

Of even greater seriousness are the cumulative impacts of ongoing wind and river erosion. Based upon the observations of Schmitz, Karraker, and Kunz this site has been exposed to view and eroding away for at least the last 14 years and, in all probability, quite a bit longer than that. Although there is no way of knowing what has already been lost, the fact remains that the site continues to yield valuable, formal and potentially diagnostic artifacts in remarkably good condition, not to mention the lenses with *in situ* faunal remains, charcoal, and pottery.

Given the paucity of either Kavik or Nunamiut sites of this age, the types of materials present, and the degree of preservation, KIR-289 offers good potential for adding significant new

information to existing knowledge of the late prehistoric period and perhaps to the origins of the cultural tradition(s) of this period.

General Observations

- Because very little cultural material is visible *in situ* along the top portion of the cut face, it appears that much of the site has already eroded away and that the lenses of material which comprise Locality 3 may represent the best of what is left.
- The bulk of cultural materials visible on the surface appears to be faunal remains, although there are a number of formal artifacts. All of these faunal remains, however, seem to be limited to the area of Locality 3.
- The site contains a large quantity of fire-cracked rock. Nearly every locality is defined by its presence. Interestingly, the overwhelming proportion of FCR is of a flat, tabular nature rather than the more commonly seen rounded cobbles.
- The quantity of lithic debitage on the site is rather limited. Waste flakes are not plentiful, even in the main concentration of Locality 3. The few flakes observed were either of black, gray, or greenish gray chert.
- No sign of any metal, glass, or any other Euro-American trade items which might indicate a post contact date were found to be present.
- Erosion is destroying the site, although an important archaeological component survives at this time.

Recommendations

As Vinson has stated, KIR-289 should be recognized as a source of unique information for archaeological and paleoecological research. The site should be monitored for signs of unauthorized digging or collecting and for the possibility of accelerated erosion. To address the effects of erosion on the research potential, the extent of the cultural zone must be more carefully assessed. The obvious approach to this problem is to implement a comprehensive subsurface testing program to more precisely define the limit of the cultural zone. This program of testing is planned for the summer of 2000 and will be undertaken in such a way as to have a minimal impact on the integrity of the overall site.

A series of soil auger tests along lines perpendicular to the dune face would indicate the presence of the cultural zone, if it is not buried beyond the range of the auger. If this is the case, an alternative approach is the excavation of test pits down to the level of the cultural zone. These would be placed far enough from the face of the dune cut and backfilled upon completion so as not to accelerate erosion.

Additional field work should include cutting back profiles and collecting datable material from the other localities at the site in order to ascertain if they represent the same period of use. To this end, Spearman has recommended conducting formal excavations on top of the hearth areas and the intact lens strata to explore the nature of the deposits, gather additional carbon samples, and attempt to recover additional diagnostic artifacts.

The faunal assemblage at KIR-289 can provide a sample large enough to supply an age profile of the caribou harvested. This profile can provide information about seasonality of use, caribou

herd demographics, and possibly herd selection criteria of the ancient hunters who exploited them. With a suite of dates and an age profile of the caribou remains, the site can contribute information about the density of caribou herds for constructing to models of human ecology for the Brooks Range and northwest Alaska in general.

Through these additional investigations it should be possible to determine how much of the site remains, whether it is a single or multi-component site, to define the specific cultural affiliations represented in the site, and determine the time of occupation. Given what appears to be the real likelihood that the materials currently exposed on the cutbank face are the last significant remains of the site, Gates of the Arctic should take the opportunity to salvage whatever important information can be obtained before the site disappears, which may well occur in the not too distant future.

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