

# THE DENBIGH FLINT COMPLEX AT PUNYIK POINT, ETIVLIK LAKE, ALASKA

Michael Kunz

Fairbanks District Office, Bureau of Land Management, 1150 University Avenue Fairbanks, Alaska 99709.

Mike\_Kunz@ak.blm.gov

**Abstract:** In 1954 William Irving initiated excavations at Punyik Point, a site that was to prove central in the thinking that ultimately led him to define the Arctic Small Tool material as a tradition. This paper traces the history of work at Punyik Point and reports on recent investigations at the site including a number of new radiocarbon dates. Irving's conclusions regarding four periods of occupation are assessed, and the presence of European trade materials dated to the period before direct contact confirmed.

**Keywords:** Denbigh Flint Complex, Arctic Small Tool tradition, Alaska Archaeology

## INTRODUCTION

In 1948, Louis Giddings, working at Cape Denbigh on Norton Sound, initiated excavation at Iyatayet, the Denbigh Flint Complex (DFC) type site and three years later published an article naming and describing the assemblage (Giddings 1951). In 1950, William Irving began archaeological reconnaissance and testing in the Brooks Range in the vicinity of Anaktuvuk Pass and along the Killik River. He noted that several of the sites he located contained materials similar to those excavated by Giddings at Iyatayet (Irving 1962, 1964). Irving continued his work in the Anaktuvuk Pass region in 1951, engaging in excavation at selected sites (Irving 1953). During the summer of 1952 Irving floated the Colville River from Umiat to the Arctic Ocean Coast looking for "archaeological traces of the coastal aspect of inland Eskimo culture" (Irving 1952). The following summer Irving's father Laurence, a biologist at the University of Alaska, and his assistant, Simon Paneak of Anaktuvuk Pass, conducted biological reconnaissance in the region east of Howard Pass (Irving and Paneak 1954). They noted several archaeological sites on the shores of Etivlik Lake, one of which was later named Punyik Point, and collected a representative sample of exposed artifacts at several of the sites. William Irving was given a description of the sites as well as the collected artifacts (Irving 1964).

In the early 1950s Giddings was of the opinion that the Denbigh Flint Complex might be quite ancient

(Hopkins and Giddings 1953). This may well have piqued Irving's interest both in the DFC and the Punyik Point site at Etivlik Lake, which contained Denbigh-style artifacts and was much larger and offered more research potential than any of the sites he had located in the Anaktuvuk Pass region. During the summer of 1954, accompanied by Leonard Douglas, a Kobuk Eskimo, Irving surveyed the shores of Etivlik Lake (Fig. 1), located eleven sites and conducted excavations at three of them (Irving 1954). Although this is speculation on my part, Irving may have regarded Punyik Point as a possible research locale that could bear on the question of the peopling of the New World. By the same token, he had expressed an interest in similarities and differences between inland and coastal prehistoric Eskimos and he may have considered Punyik Point to be a good locale for gathering inland Eskimo data.

In regard to the antiquity of the Denbigh Flint Complex, at the time Giddings was engaged in his work at Iyatayet, Willard Libby was developing the radiocarbon dating technique (Libby 1952). Giddings corresponded with Libby to arrange for charcoal from Iyatayet to be dated. In the early 1950s a radiocarbon assay was performed on solid carbon, which required a lot of charcoal, and in 1952 Giddings returned to Iyatayet for the sole purpose of collecting sufficient charcoal. Libby processed the samples, which returned dates that ranged between

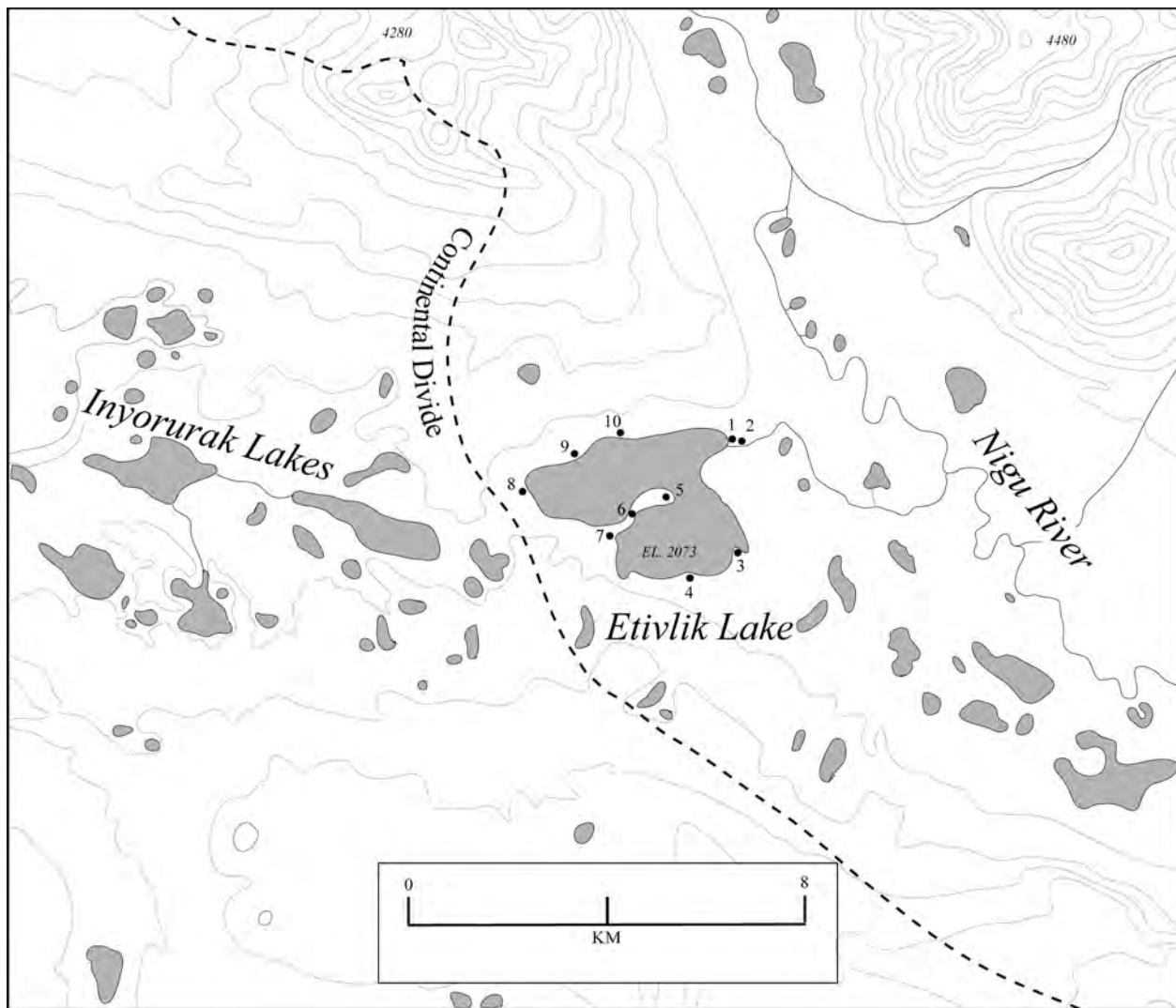


Figure 1. The local geomorphology and archaeological sites of Etivlik Lake: (1) Outlet site, with twenty to thirty late prehistoric houses; (2) Outlet knoll, a lookout station and campsite with materials dating to several periods; (3) Isugnak Point, with several temporary camps; (4) Kaksrauk Point, with late prehistoric winter houses; (5) Gale Point, meat cellars; (6) Isthmus, with a “stone platform hearth” and microblades; (7) West Point, with temporary late prehistoric camps; (8) Portage Point, with traces of a large, unidentified structure; (9) Punyik Point, a site with Denbigh Flint Complex and late prehistoric Eskimo materials, houses, middens, and caches (Irving 1964); (10) Lookout Knoll, undetermined occupation or use.

5000 BP and 3400 BP, thousands of years younger than Giddings had anticipated.<sup>1</sup> In light of this, it is worth noting that Irving’s initial excavations at Punyik Point were conducted in 1954, and shortly thereafter the Iyatayet dates were released suggesting that Denbigh was far too young to have anything to do with the initial peopling of the New World (Libby 1955). Whether or not it resulted from the release of the Denbigh dates by Libby, following the 1954 field season Irving abandoned his research at Punyik Point and the Brooks Range for seven years.

Over the remainder of the decade as more research was conducted in the Canadian Arctic and Greenland and the lithic assemblages were described (Giddings 1956; Larsen and Melgaard 1958; Mathiassen 1958; Melgaard 1952, 1955), Irving began to see a technological relationship between the Denbigh Flint Complex and the Pre-Dorset (Sarqaq) and Independence I cultures of the central and eastern Arctic. These circumstances, the possibility of identifying a techno-cultural entity that extended from Alaska to Greenland, may have rekindled his interest and lured him back to Punyik Point. Speculation aside,

<sup>1</sup> An interesting sidebar is that while the dates did not support Giddings’ thesis, he was not ready to change his mind and he was less than happy when Libby made the results public. This is evident from the tone of Giddings’ (1955) *American Antiquity* article, “The Denbigh Flint Complex is Not Yet Dated.”

subsequent to his 1961 excavations at Punyik Point, Irving (1962) described for the first time the Arctic Small Tool tradition (ASTt). Despite attempts by later archaeologists (Giddings and Anderson 1986) to modify the ASTt without an accompanying nomenclature adjustment, Irving's construct, as originally defined, remains viable today.

## LOCATION

Etivlik Lake lies in the southeasternmost portion of the National Petroleum Reserve-Alaska (NPR-A), less than 2 km north of the Continental Divide, at the head of a glaciated valley 32 km east of Howard Pass (Fig. 2).

Punyik Point is located along the northwest shore of the lake and occupies an area of more than five hundred meters east to west and extends more than 150 m back from the lake (Fig. 1). Lying just inside the range front in the western Brooks Range, the site is situated 160 km above the Arctic Circle and more than 65 km beyond latitudinal treeline. As a result, willow is the only readily available fuel or wood suitable for sled, boat, implement, and dwelling construction. The landscape of the region has changed little since the emergence of the tundra ecosystem roughly 9000 years ago and throughout that period caribou have been the primary subsistence animal for the human inhabitants of the region (Kunz, Bever, and Adkins 2003). Flora Creek, a tributary of the Noatak

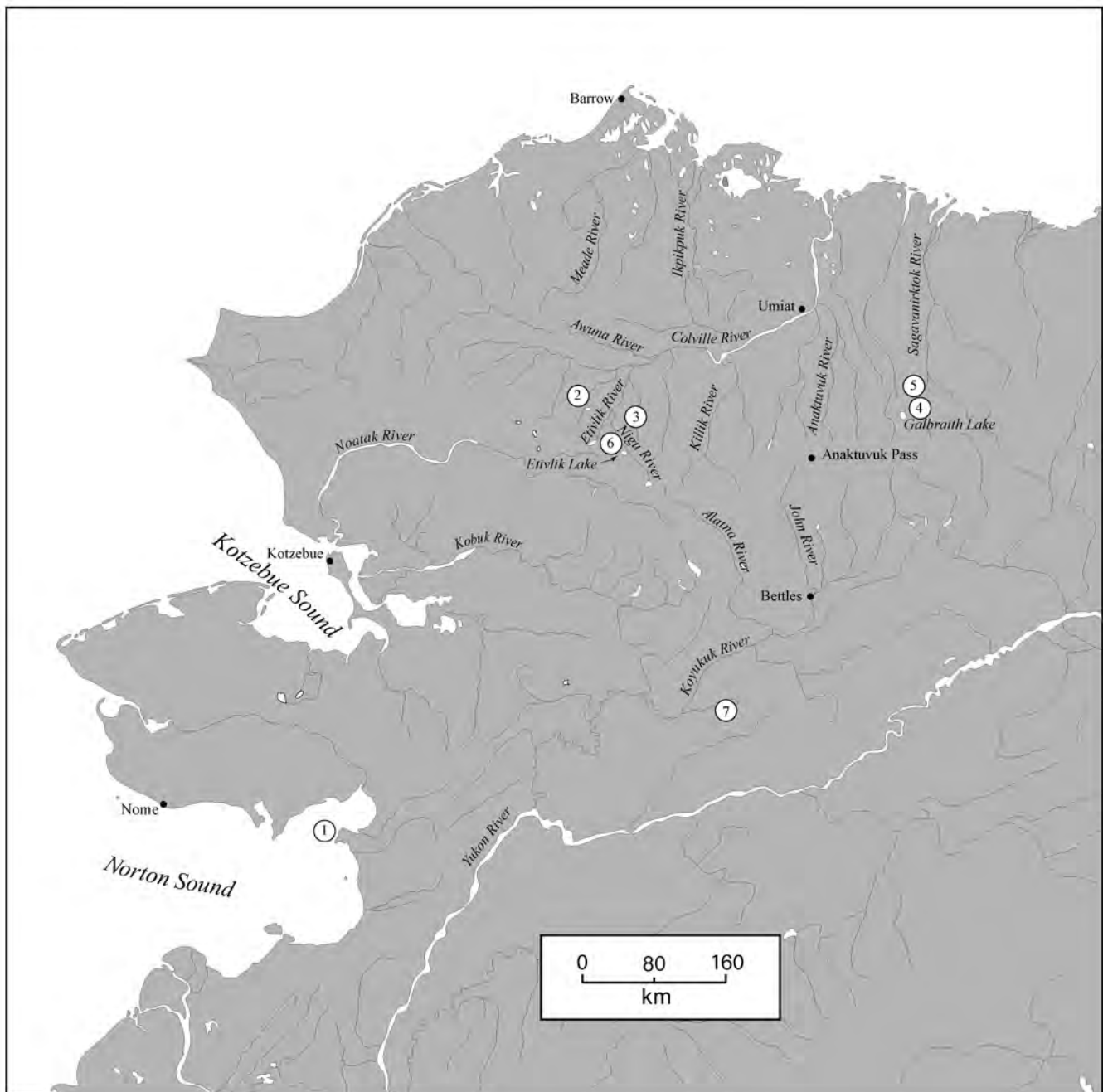


Figure 2. Northern Alaska site locations: (1) Iyatayet; (2) Croxton; (3) Mesa and Lisburne; (4) Mosquito Lake; (5) Gallagher Flint Station; (6) Punyik Point; (7) Batza Téna.

River, heads in the Inyorurak Lakes on the south side of the divide, slightly more than a kilometer to the west of the site. The creek provides access to an excellent year-round travel route to the Kotzebue Sound area 380 km to the southwest (Giddings and Anderson 1986). About 3 km to the east of the site the Nigu River flows northward to join the Etivlik River, a tributary of the Colville. In turn the Colville provides access to the Arctic Coast at its mouth, 440 km to the northeast and to the Point Barrow area more than 320 km to the north on the Beaufort Sea coast via the Awuna, Meade, and Ikpikpuk river drainages (Bockstoce 1988; Burch 1975, 1976) (Fig. 1). The Nigu River heads 32 km to the southeast of Punyik Point, less than 2 km from the headwaters of the Alatna River, a tributary of the Koyukuk, which provides access to interior Alaska. In the past, and as is still the case today, for overland travel, the river systems were the primary routes through this vast area. Punyik Point's presence at the nexus of these important travel corridors suggests that it may have functioned as a place of meeting and trade as well as habitation.

## RESEARCH HISTORY

William Irving and Leonard Douglas conducted the first excavations at the Punyik Point site during the summer of 1954 with the excavation of three semi-subterranean houses and associated features (Irving 1954). Irving's work that summer revealed two primary periods of occupation: (1) late prehistoric Eskimo represented by the numerous visible remains of semi-subterranean houses; and (2) an ASTt occupation evidenced by artifacts recovered through excavation or exposed by erosion. Irving returned to the site in 1961 with geologist Tom Hamilton and an Eskimo excavation crew comprised of Nelson Griest, Truman Cleveland, and Herbert Custer and excavated all or portions of nine houses, as well as a variety of external features, such as cache pits and middens (Irving 1962, 1964). Prior to 1964 Irving had two radiocarbon assays performed on material recovered during those excavations (P-64 and W-1154; see Table 1). Anderson (1970) reports a third radiocarbon assay (GSC-712) run by the Geological Survey of Canada on a sample from the site and references Irving (no date) as the source of this information.<sup>2</sup> The Canadian Archaeological Radiocarbon Database identifies Irving as the sample submitter, which indicates that the sample was assayed after Irving completed his dissertation in 1964, but before Anderson's 1970 paper was published. For the next forty-three years only limited informal research activities took place at the site, which after 1976 included annual visits by Bureau of Land Management archae-

ologists monitoring the site's condition. It was on a monitoring trip in 1989 that John Cook, Rick Reanier, and I collected two samples of cultural charcoal. Both of the samples were directly associated with artifacts from two different eroding middens: Beta 36803 (charcoal scrapings from the exterior surface of a pot sherd) and Beta 36804 (charcoal associated with an obsidian microblade) (Table 1). In 2004, prompted by twenty-eight years of monitoring data, a BLM archaeological team was flown to the site to conduct an in-depth evaluation. A comprehensive topographic map pinpointing the location of all visible cultural features was completed using a EDM total station interfaced with a global positioning system. Adversely impacted areas of the site were documented, exposed artifacts collected, previously unexamined areas of the site were tested, a metal detector survey of the entire site was conducted, and radiocarbon samples from Irving's partially excavated features as well as our own test locales were collected. The assay of these samples has resulted in sixteen new radiocarbon dates for the site (Table 1). In 2005 the archaeological team returned to the site and continued the assessment work.

## SITE OCCUPATION

Based primarily on the presence of semi-subterranean house remains and artifact typology, Irving determined that there had been five episodes of occupation at the site (Irving 1964). However, he lacked the chronological data needed to assign the occupations to more than roughly delineated time periods. He recognized that the Arctic Small Tool tradition as represented by the Punyik Complex (Denbigh Flint Complex) was the first cultural entity to utilize the site locale, and that there was evidence suggesting later occupations by the Norton and Ipiutak cultures. He assumed that the superficially evident semi-subterranean house remains represented a catch-all grouping referred to as "late prehistoric Eskimo," and he concluded his sequence with a historic period occupation.

With the addition of the sixteen radiocarbon assays resulting from BLM's 2004 work, a total of twenty-one dates have been obtained on material recovered from Punyik Point. These dates provide a solid chronological framework for the site and demonstrate that Irving's (1962, 1964) assessment of the culture history of the site was relatively accurate. Our work corroborates four of Irving's periods of occupation: Denbigh Flint Complex, 3300–3490 BP (1900–1700 BC); Norton, 1810 BP (AD 100–300); Ipiutak, 1200 BP (AD 700–900); and late pre-

<sup>2</sup>Anderson (1970) provides no additional information regarding the "Irving no date" citation in his bibliography.

Table 1. Punyik Point (XHP-308) Radiocarbon Dates

Lab. Number	<sup>14</sup> C Method	Measured <sup>14</sup> C yr BP	<sup>13</sup> C/ <sup>12</sup> C Ratio	Conventional <sup>14</sup> C age BP	2-Sigma Calibration (95.4% probability)*	Material/Comment
W-1154#	Standard	Not Reported	Not Reported	4470 ± 300	3810–2343 BC	Wood fragments: geological date relating to the formation of delta/fan upon which the site lies
GSC-721#	Standard	Not Reported	Not Reported	3660 ± 150	2356–1600 BC (95.2%)† 1597–1591 BC (0.02%)	Charcoal: 1961 excavation of a house or midden the exact provenance of which is unknown
Beta-193798	AMS	3500 ± 40	-25.6	3490 ± 40	1829–1654 BC (91.6%)† 1636–1616 BC (03.8%)	Charcoal: from the hearth in House H'61J associated with ASTt artifacts
Beta-193794	AMS	3460 ± 40	-25.7	3450 ± 40	1798–1590 BC	Charcoal: truncated midden remnant adjacent H'54B
Beta-36803	AMS	Not Reported	Not Reported	3435 ± 65	†1830–1532 BC (93.3%)† 1501–1486 BC (01.1%) 1479–1467 BC (01.0%)	Charcoal: recovered from a large shore-edge slump block directly associated with an <i>in situ</i> obsidian microblade
Beta-193799	AMS	3370 ± 40	-26.0	3350 ± 40	†1659–1626 BC (94.4%)† 1619–1457 BC (01.0%)	Charcoal: from Hearth #6 test pit on alluvial fan ridge crest; associated with chert microblade
Beta-193795	AMS	3310 ± 40	-25.8	3300 ± 40	1608–1427 BC	Charcoal: from lower hearth H'54A; Irving's sample from this hearth assayed at 2600 BP (see P-64 below) associated with ASTt artifacts
P-64#	Standard	Not Reported	Not Reported	2600 ± ???	~ 796 BC	Charcoal: Lower hearth H'54A (see above) associated with ASTt artifacts
Beta-193800	AMS	1840 ± 40	-26.9	1810 ± 40	AD 115–251 (80.7%)† AD 263–316 (12.5%) AD 82–100 (02.2%)	Charcoal: from H'61H, floor 2; chert discoids were associated with the hearth.
Beta-193796	AMS	1180 ± 40	-23.8	1200 ± 40	AD 725–857 (77.8%)† AD 657–717 (13.2%) AD 876–904 (04.4%)	Charcoal: from H'54A upper hearth; associated with discoids
Beta-193802	AMS	540 ± 40	-25.1	540 ± 40	AD 1386–1441 (56.8%)† AD 1308–1362 (36.8%)	Charcoal: from the hearth of House 11, late prehistoric Eskimo (LPE); one occupational event, associated with glass bead, copper scrap
Beta-36804	AMS	Not Reported	-27.6	485 ± 60	AD 1383–1521 (76.5%)† AD 1320–1366 (15.2%) AD 1591–1620 (3.6%) AD 1579–1580 (0.1%)	Charred material: material scraped from outside surface of an <i>in situ</i> pot sherd recovered from a shore edge slump block 2 m southeast of H'61B, a late prehistoric Eskimo house

Table 1 (continued). Punyik Point (XHP-308) Radiocarbon Dates

Lab. Number	<sup>14</sup> C Method	Measured <sup>14</sup> C yr BP	<sup>13</sup> C/ <sup>12</sup> C Ratio	Conventional <sup>14</sup> C age BP	2-Sigma Calibration (95.4% probability)*	Material/Comment
Beta-201353	AMS	420 ± 40	-22.0	470 ± 40	AD 1397–1489 (94.3%) <sup>†</sup> AD 1331–1338 (0.7%) AD 1604–1608 (0.4%)	Sinew: wrapped-around ends of copper bangle that was recovered with glass beads and iron pendants 11 m southeast of House 6; late prehistoric Eskimo house
Beta-193805	AMS	450 ± 40	-24.7	450 ± 40	AD 1407–1513 (92.0%) <sup>†</sup> AD 1601–1616 (3.4%)	Charcoal: from the hearth in House 7; late prehistoric Eskimo house
Beta-203437	AMS	450 ± 50	-26.6	420 ± 50	AD 1415–1527 (70.4%) <sup>†</sup> AD 1554–1633 (25.0%)	Willow: used to close gap between bangle ends; attached to bangle with sinew
Beta-193801	AMS	330 ± 40	-24.6	340 ± 40	AD 1462–1642 (95.4%)	Charcoal: H'61G, layer 3; late prehistoric Eskimo
Beta-193804	AMS	340 ± 30	-25.8	330 ± 30	AD 1477–1642	Charcoal: hearth, House 15; late prehistoric Eskimo
Beta-193803	AMS	360 ± 30	-27.6	320 ± 30	AD 1483–1645	Charcoal: hearth, House 6; late prehistoric Eskimo
Beta-193806	AMS	360 ± 40	-27.3	320 ± 40	AD 1469–1648	Charcoal: H'61G, layer 7; late prehistoric Eskimo
Beta-193797	AMS	320 ± 30	-26.3	300 ± 30	AD 1489–1603 (69.3%) <sup>†</sup> AD 1611–1654 (26.1%)	Charcoal: M61C (midden); mixed materials ASTt-LPE
Beta-202502	AMS	210 ± 40	-20.4	290 ± 40	AD 1483–1665 (93.5%) <sup>†</sup> AD 1784–1795 (1.9%)	Sinew: wrapped around ends of copper bangle holding willow over gap; cf. Beta-203437

\* The 2-sigma calibrations were performed by the author using Calib Rev. 5.0 (IntCal 04).

<sup>†</sup> Where multiple intercepts of an calibrated age occur, the dagger symbol indicates the date of greatest probability.

# These are standard radiometric dates that were run more than thirty-five years ago and have standard deviations three or more times greater than the AMS dates. Therefore they are not statistically comparable at the level of precision represented by the AMS dates (Stafford et al. 2005) and are included in this table as a record of the radiocarbon assay of the Punyik Point site.

historic Eskimo, 540 – 300 BP (AD 1300–1650). However, we found no evidence to support a historic period (post-AD 1732) occupation. Irving believed there had been historic period use of the site in part because during his excavations, he unearthed four blue glass beads, a copper bangle, and a copper bracelet (Irving 1964). He remarked that the bead type appeared to be unknown in interior and northern Alaska, but identified the copper as being “undoubtedly material of recent Euro-American origin” (Irving 1964).

Because of the copper artifacts that Irving recovered, we decided to conduct a systematic metal detector survey of the site. As a result eighty-six metallic objects were located, flagged, enumerated, tied into the site datum, and subsequently exposed through excavation. Most of these objects can be attributed to either Irving’s excavation activities in 1954 and 1961, or to more recent campers. However, the survey also located copper ornaments and associated beads very similar to material recovered by Irving. While in the field we assumed that the metal and beads represented a historic-period occupation of the site. However, later, upon receipt of the radiocarbon dates (Table 1) it was clear that the latest occupation of the site probably occurred around AD 1620 and certainly no more recently than AD 1660—more than seventy years before the first contact between Europeans and Alaska Natives (Black 2004). Other hallmark artifacts, which are found in almost all historic-period occupations in archaeological sites in arctic Alaska, were not present at the site. Such items include saw-cut bone, antler, and ivory; musket balls, bullet molds, cartridge cases, and other firearm paraphernalia; and tools of aboriginal manufacture made from bartered or salvaged metal, such as barrel hoops, saw blades, and cartridge brass. These types of artifacts postdate the late 1700s and none were recovered from Punyik Point. Thus, despite the presence of glass beads and metal ornaments, there is no historic period occupation at Punyik Point (Mills, Ross and Kunz 2006).

To this point I have identified the first inhabitants of Punyik Point as ASTt or DFC, and while in this paper I use the two terms interchangeably, in actuality, the DFC is an Alaskan component of the Arctic Small Tool tradition (Irving 1962, 1970). Irving, in his dissertation “Punyik Point and the Arctic Small Tool Tradition,” never identifies Punyik Point as a DFC site. What he says is that the site’s earliest occupants were ASTt people whose material remains comprise an archaeological assemblage that he calls the Punyik Complex. However, to Irving in his

post-dissertation years (Irving 1970), the Punyik Complex material is DFC, although between 1954 and 1964 Irving did not view it as such. There are probably several reasons why Irving initially saw the Punyik Point material as a separate complex. His work at Punyik Point took place at a time when many of the prehistoric cultural entities in Alaska were newly discovered at only a few locations and cursorily described. The Denbigh Flint Complex type site, Iyatayet, was a coastal manifestation and Punyik Point was more than two hundred miles from the coast in the middle of the Brooks Range in a totally different ecological setting (Irving 1964). In accord with the paradigm of culture history, Irving tended to split rather than lump categories. This mindset can be seen in his dissertation when he explains what he sees as the differences between the Denbigh Flint Complex assemblage at Iyatayet and the Punyik Point materials. An even better example of his perspective can be seen in his separation of the Punyik Complex from his Imaigenik Complex of Anaktuvuk Pass. Although comprised of tool types and styles identical to those of the Punyik Complex, Irving considered the Imaigenik assemblage, made up of *only seventy-three artifacts*, to be a separate complex because of slight differences in tool-type percentages and the absence of endblades (Irving 1964). From my perspective, these differences represent nothing more than intersite variation manifested by the same cultural entity. Having excavated at a number of DFC sites, I know the assemblages always display some variation, yet they are all undoubtedly Denbigh. Hereafter, Irving’s Punyik Complex will be referred to by the term “Denbigh Flint Complex.”

## THE SITE

Undoubtedly some portion of the Punyik Point site has been lost to beach erosion which, by virtue of the prevailing winds, occurs annually through ice bulldozing at breakup and wave erosion during the open water months. This is evidenced by truncated middens and semi-subterranean houses revealed in profile along the beachfront, as well as slump blocks, artifacts, bone, and fire-cracked rock (FCR) scattered along the shore, in the wash zone, and in the shallow water. Based on a comparison of the shoreline and shore edge features shown on Irving’s 1961 site map<sup>3</sup> and the site map we produced in 2004, as much as 1.5 m of shoreline may have been lost over the last forty-three years. However this loss is not uniform across the entire site; some beachfront areas were significantly affected and others were not. How much of the site has been lost since

<sup>3</sup>In 1961 Tom Hamilton mapped the Punyik Point site using a plane table and alidade. We were able to locate his datum monuments and determined that his map was extremely accurate.

Denbigh times is unknown; nor do we know how long the current erosional agents have been active. My gut feeling, based on impromptu observations over the past three decades, is that there has not been significant loss.

As a result of his two seasons of excavation at Punyik Point, Irving arrived at much the same conclusion we did after our fieldwork there: almost the entirety of the site area was initially occupied by people of the Denbigh Flint Complex. Denbigh material has been found scattered along the entire beachfront of the site and revealed in the majority of the locations where excavation and testing has taken place. Denbigh material was also encountered and displaced by later prehistoric occupants of the site during their excavation and construction of semi-subterranean houses.

Irving also encountered semi-subterranean houses that pre-date the late prehistoric Eskimo (LPE) period. He encountered these older features by chance during excavation, as they are not visible in topographic relief. Several of the LPE houses were superimposed over and partially excavated through earlier features, which Irving identified as houses and middens and, in at least one case, one of the older houses partially overlapped an even older house. However, after he had been excavating for a while, Irving realized that there was a recognizable vegetation community atop most midden deposits indicating their presence even though there was no visible topographic indication (Irving 1964). With all of the aboriginal excavation, the resulting stratigraphy was an archaeological nightmare and in an effort to decipher it, it is little wonder that Irving tended to split categories. To confuse the situation even more, some of the older houses had been used as trash dumps by subsequent site occupants. Still later inhabitants dug through all of that to construct their houses. Fortunately this scenario does not play out continually across the site and there are areas where the occupational sequence is straightforward and resolvable.

Primarily, Irving used style and manufacturing technique to identify formal DFC flaked stone artifacts. Their presence or absence in a deposit largely determined what cultural assignment was given to the deposit. Irving (1962, 1964) refers to what he calls, “the Arctic Small Tool tradition technique” as the primary defining trait for DFC tools. Visually this “technique” appears as a finished pattern of very narrow parallel flake scars that run obliquely across both surfaces (faces) of bifacially flaked stone

tools. Occasionally a single flake scar might run across the entire face of the tool, but generally flake removal initiated at the edge of the tool and terminated at the tool’s longitudinal midpoint abutting the termination of a flake initiated at the opposite edge. End and side blades, other bifaces, and burins displayed this technique to the greatest degree, while knives, scrapers, and discoids occasionally displayed it to a more limited degree. However, Irving was not a complete stickler for adherence to the ASTt technique criterion. While he did use the highly diagnostic “mitten-shaped” burin, its distinctive spalls, and, to a lesser degree, microblades to identify DFC deposits, when the deposits were mixed (Norton/Ipiutak), there were problems.<sup>4</sup> Depending upon which excavation unit an artifact came from, it may be designated ASTt without any trace of ASTt technique based on Irving’s *feel* for the situation. By the same token, a number of artifacts that may well be DFC were not identified as such by Irving. This statement should not be viewed as, “Irving bashing”. Like Irving, I rely primarily on artifact type, style and form to decide what is DFC and what is not. However, in most cases, if I were to encounter an *in situ* lithic assemblage, devoid of diagnostic artifacts and comprised of end and side blades, discoids, flake knives, etc., none of which display the “ASTt technique”, I have radiocarbon dating and an extensive radiocarbon chronology available to me as a resource at a level unavailable to Irving. As an example, it was the use of AMS radiocarbon assays that demonstrated that the Punyik Point beads, bangles, and pendants – seemingly historic artifacts – were actually prehistoric in age.

Along the eastern limit of the site there is an alluvial fan that runs downslope from the hills above to the edge of the lake. A low crest, less than a meter above the surrounding tundra, runs the length of the fan from a point roughly 60 to 140 m upslope from the lake shore. Although we noted no surface indication of any cultural materials or features along this ridge, in 1954, Irving excavated what he referred to as “a scarcely detectable depression marked by dwarf birch and willow that appeared unnatural and suggested a house” (1964). His excavation of the depression (H’54A) revealed two hearths and what appeared to be two living floors separated by a layer of sterile gravel (Irving 1964). Artifacts associated with the upper hearth are not described by Irving; he only indicates that they are neither ASTt nor LPE. The artifacts associated with the lower hearth are described as ASTt. In 2004 we tested what remained of this feature<sup>5</sup> and although we did not find stratigraphy

<sup>4</sup>Norton and Ipiutak end and side blades, discoids, flake-knives and scrapers are generally indistinguishable from Denbigh artifacts of the same type that lack evidence of the ASTt technique

<sup>5</sup>Using Hamilton’s map and Irving’s (1964) dissertation as guides, we were able to relocate all of Irving’s excavation locales and features.



quite as Irving described it, we did find an *in situ* microblade and an endblade as well as the remnants of both hearths, which we sampled and subsequently dated (Fig. 3, Table 1). The upper hearth returned a date of

50-square-centimeter test excavations, two of which contained Denbigh diagnostics. One of the two also contained a hearth. Charcoal from the hearth was assayed and returned a date of  $3370 \pm 40$  RCYBP (Beta 193799).

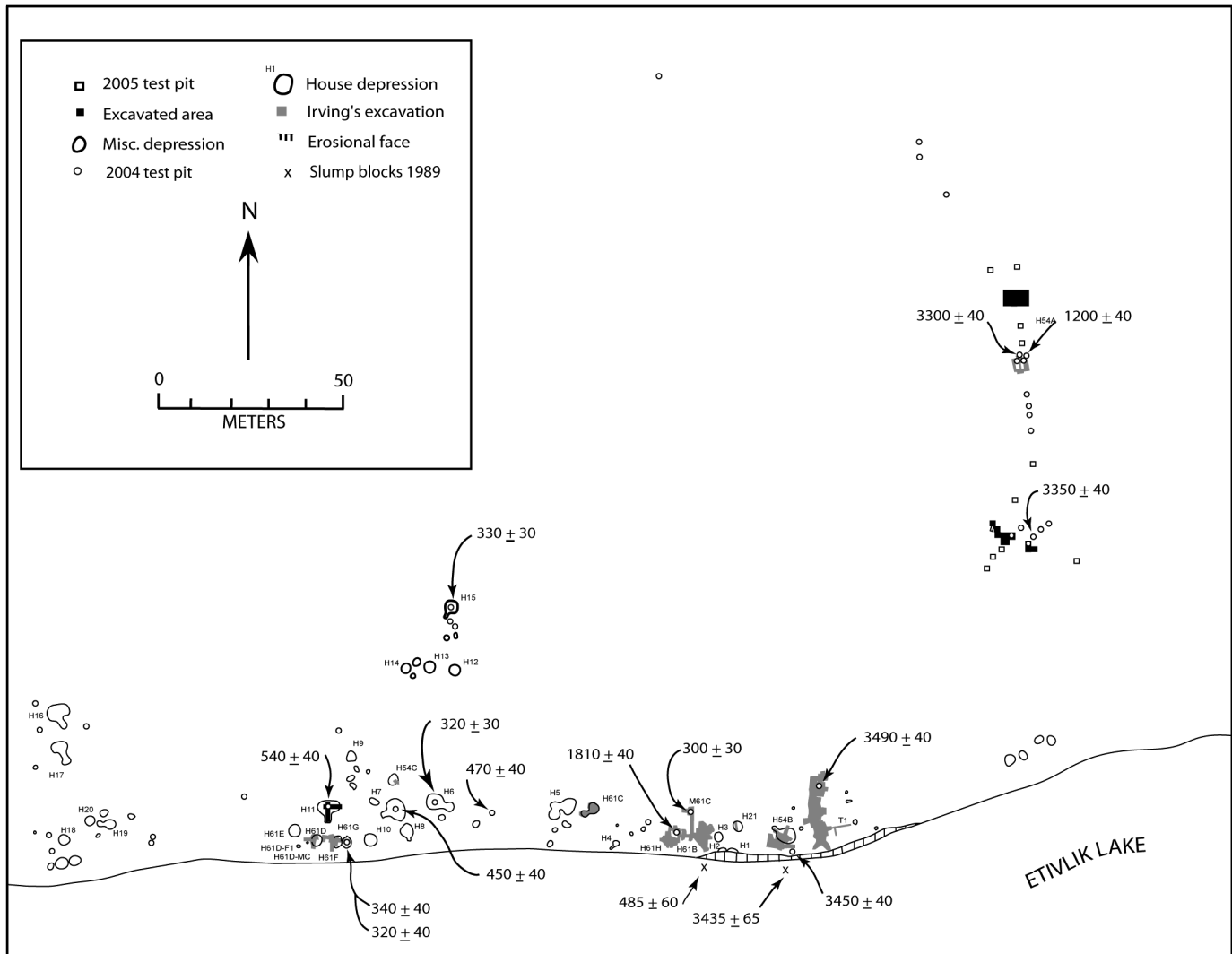


Figure 3. Punyik Point site map. The extreme western portion of the site is not shown on this map and is not discussed in the text. Although oval house depressions and cache pits are present in that portion of the site, neither Irving or BLM archaeologists conducted excavations there.

$1200 \pm 40$  RCYBP (Beta 193796) and the lower hearth  $3300 \pm 40$  RCYBP (Beta 193795). Irving also assayed a charcoal sample from the lower hearth that yielded a date of 2600 BP (P-64), a date he found unacceptable for the DFC. Based upon our assay of charcoal we collected from the same hearth, it appears that the results of Irving's assay are incorrect for unknown reasons.

Because this area of the site is the least disturbed and offered the best opportunity for gathering data relating to the Denbigh component, we randomly tested along the fan crest both up and downslope from Irving's excavation and found cultural material in all eight of the ca.

In 2005, I placed eleven ca. 50-square-centimeter test pits along the fan in an effort to determine the extent of the occupation. That work demonstrated that cultural material is concentrated along the longitudinal crest of the fan in an area roughly 20 m east-west by 80 meters north-south. Formal excavation was conducted in the southern (lower) third of this eighty-meter stretch in two locations totaling 2.5 m<sup>2</sup> and in the northern (upper) third at a single location totaling 3 m<sup>2</sup>.

Based on the testing and formal excavations the following is the generalized stratigraphy for the fan: Unit 1 is the surface. In all areas of the fan crest the surface

Figure 4 (right). Artifacts recovered during the 2005 alluvial fan excavation (artifact toolstone is chert unless otherwise noted). (a) Reworked Denbigh burin exhibits parallel oblique flaking on both surfaces. (b–d) Denbigh burins; b and d exhibit parallel oblique flaking on at least one surface. (e) Unifacial tool; dorsal surface completely worked by parallel oblique flaking. (f and g) Endscrapers. (h, i, k, l) Endblades; h, i and l exhibit parallel oblique flaking; k is obsidian and exhibits random flaking. (j) Sideblade exhibiting parallel oblique flaking. (m–p) Microblades. (q and r) Retouched microblades; q is obsidian.

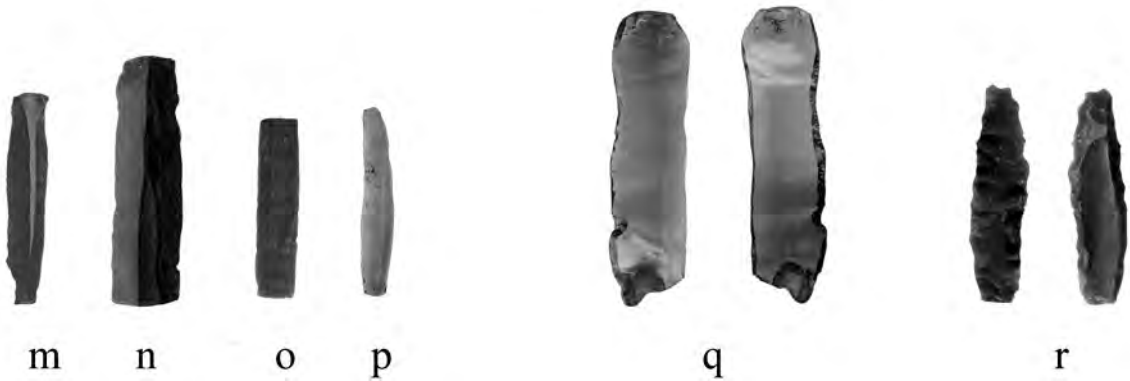
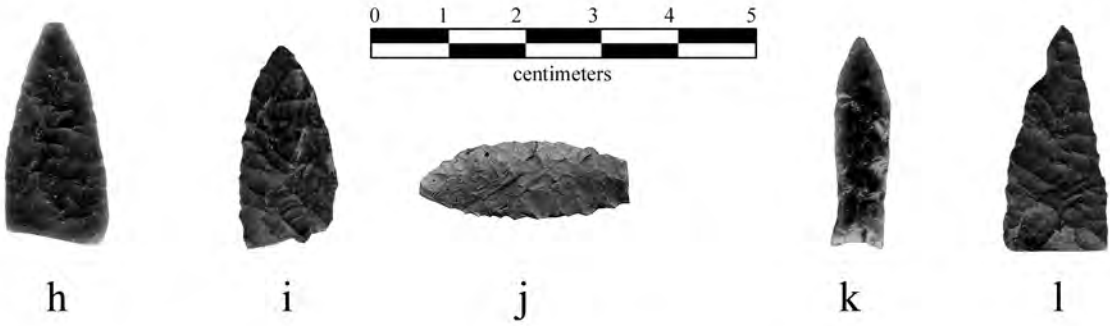
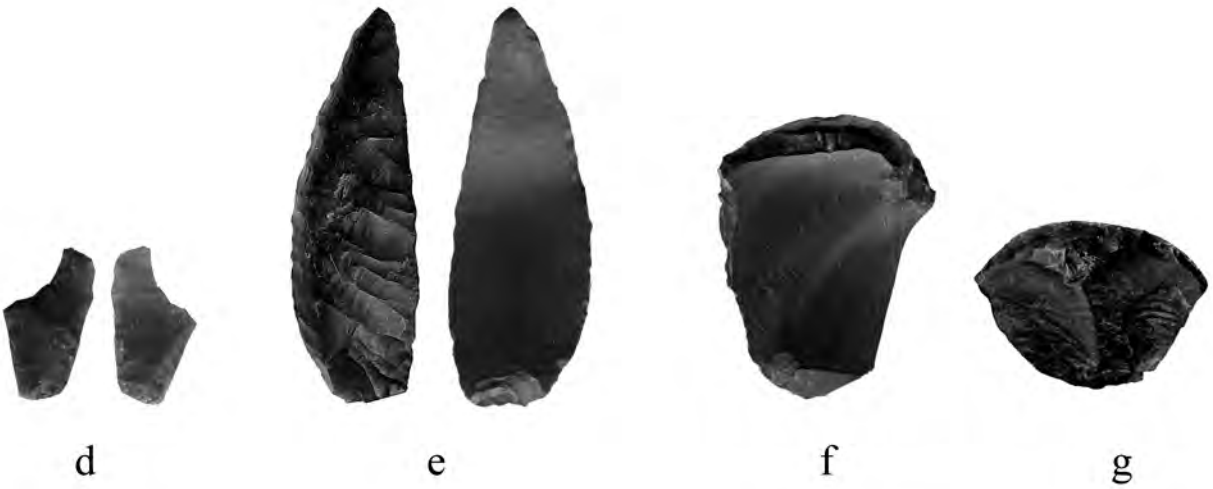
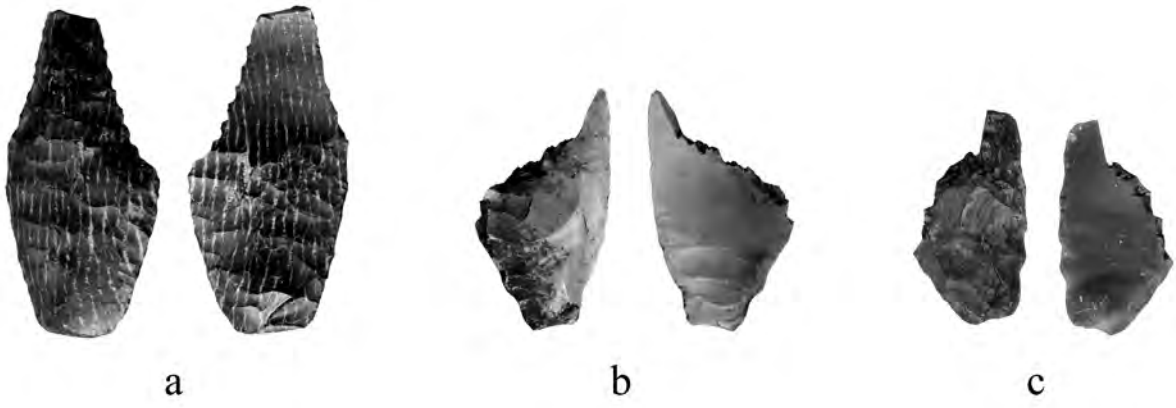
is robustly vegetated by willow, dwarf birch, moss, lichen, Labrador tea, *Dryas*, *Vaccinium*, grass, and other low woody and herbaceous plants. Occasionally small cobbles protrude and, rarely, fire-cracked rock (FCR). Unit 2 is the root mat, which is composed of the roots of the surface vegetation bedded in a dark brown organic soil averaging 4 to 6 cm in thickness. Fire-cracked rock and cobbles often protrude into the bottom of the root mat from below accompanied by an occasional flake. Other than these intrusives, the root mat is culturally sterile. Unit 3 is composed of a very dark brown organic-rich soil that varies in thickness from 3 to 6 cm depending upon location along the crest, tending to be thicker on the southern third of the fan. This unit contains a large amount of FCR and small cobbles. At the bottom, flakes, charcoal, and artifacts are often found. Although some cultural material is present in the bottom of Unit 3 and the top of Unit 5, the vast majority of the cultural material occurs in Unit 4. Unit 4 is subdivided into two co-occurring manifestations. 4A is a light gray sandy loam containing small cobbles, FCR, flakes and other artifacts and is a readily identifiable marker for the cultural deposit. 4A rarely exceeds 2 cm in thickness and is somewhat discontinuous, usually being replaced by 4B—a very dark charcoal-soil matrix that is often more than twice as thick as 4A but of lesser areal extent. Artifacts and flakes occur with greater frequency in 4A than in 4B but both are rich in cultural material. In a few spots, topographic high points of the underlying Unit 5 replace the Unit 4 components. The discontinuous nature of the Unit 4 components suggest disturbance resulting from past daily living activities of the site's inhabitants, which appear to have been intense. Unit 5 is a reddish brown, sandy, gritty soil that contains some pea gravel and numerous small-to-medium-size cobbles. The uppermost 1 cm may contain a scattering of artifacts, flakes, charcoal, and FCR. This unit can be more than 10 cm in thickness, becoming more gravelly with increased cobble size as the depth increases. Other than the uppermost portion, Unit 5 is culturally sterile. Unit 6 is a yellowish, sandy gravel-cobble matrix that is culturally sterile and extends to an unknown depth.

The crest of the fan is well drained and the increase in the field of vision gained from the crest and the hillside combine to make it an attractive place to camp. The apparent intensity of use of the fan crest is significant. Subsurface testing off the crest revealed a total absence of Unit 4 in the stratigraphy, indicating that Unit 4 derives totally from cultural activities. Every test pit and excavation on the crest contained an almost unbroken layer (Units 3 and 4) of fire cracked rock and charcoal smears and flecks. Further, it is my belief that the light gray color of Unit 4A results from ash, charcoal, and other cultural residues. I have never seen an area this size (approximately 2400 m<sup>2</sup> estimated from testing and excavation) display such artifact density and intensity of use. A test pit anywhere in this area would probably reveal a charcoal deposit that could be interpreted as a hearth.

All of the artifacts recovered through our testing and excavation of the fan crest can be attributed to the Denbigh Flint Complex (Figure 4). Although a few of the bifacial tools do not exhibit the “ASTt technique,” based on the cultural stratigraphy of the fan, there is little reason to think they do not represent the Denbigh occupation. On the other hand, we did obtain a 1200 BP date from Irving's H'54A “upper hearth,” which he said was associated with non-ASTt artifacts. It would be easy to consider the 1200 BP date anomalous (especially since our date from the H'54A lower hearth is in appreciable disagreement with Irving's date) if other areas of the site had not produced artifacts commonly associated with Norton and Ipiutak assemblages.<sup>6</sup> While our testing and subsequent excavations were adequate for our task, they were not extensive. Other than Irving's H'54A, we encountered nothing that we recognized as an architectural feature on the fan crest.

The evidence suggests that the fan crest was an open-air camping locale, primarily used during the summer months when aggregations of people tended to be greater than in the winter. The dwellings were probably caribou-skin tents and much of the daily activity occurred

<sup>6</sup>According to Irving (1964) there are not a lot of these artifacts but they usually manifest themselves in a clustered context and are numerous enough to unequivocally establish a limited presence for Norton and Ipiutak.



outside the tents, which accounts for the layer of fire-cracked rock that appears to carpet the entire fan crest. The fan crest was probably utilized on a regular if not annual basis during much of the period of Denbigh presence at Punyik Point, but saw little use thereafter. Sequential occupations during the snow-free months would account for the dense and compacted cultural layer (stratigraphic Unit 4), while the culturally sterile, straight-forward, well developed and unbreached soil profile overlying it is evidence of little or no use following the Denbigh occupation.

More than twenty late prehistoric Eskimo semi-subterranean houses are spread across the more than 400 meters of site that extend to the west of the alluvial fan. This area of the site is much better suited to the construction of semi-subterranean houses than is the fan; however, Irving (1964) remarked that he did not think that this area was a particularly good camping spot. The fact that middens exist in close proximity to most of the house features excavated by Irving suggests that the presence of houses indicates a significantly different mode of living than that which occurred on the alluvial fan ridge, where there are no middens. Since it is generally accepted that semi-subterranean houses indicate a winter occupation, the presence of middens containing only DFC materials suggests the presence of considerably more Denbigh houses than the few “ancient features” that Irving encountered (such as house H’61J; see Table 1, Beta 193798).<sup>7</sup> As previously mentioned, our testing of the site has demonstrated a general DFC presence throughout, although it is more prevalent in the eastern half of the site. While the area west of the alluvial fan is dominated by semi-subterranean houses and associated features—DFC through LPE—I think it is likely that some summer occupation may have occurred there as well during DFC times.

With the exception of the excavation of H’54A on the alluvial fan, all of Irving’s work occurred in the central portion of the site where the majority of the house features are located. Although he does not say much regarding flaking detritus, Irving does note that the vast majority of waste flakes are small, suggesting that primary reduction was being conducted off-site. In the absence of waste-flake numbers, which are usually a good indicator of occupational intensity, artifact numbers provide good insight. Irving recovered 145 side blades, 52

endblades, 155 burins, 604 microblades, and 10 microblade cores from an excavation area of about 200 m,<sup>2</sup> which represents a small portion of the site. That is a ratio of a little less than five artifacts for every square meter excavated. The only other large Brooks Range Denbigh site extensively excavated is Mosquito Lake, 260 km to the east and about a kilometer north-northeast of Trans-Alaska Pipeline Pump Station No. 4, near Galbraith Lake (Kunz 1977). There, the excavation of more than 550 m<sup>2</sup> produced 53 side blades, 18 endblades, 46 burins, 167 microblades, and 5 microblade cores for an artifact-to-square-meter-excavated ratio of slightly less than two. While Mosquito Lake was not a multiple-season habitation site like Punyik Point, both sites have about the same area available for use. However, the excavated area at Mosquito Lake is more than twice that of Punyik Point, yet the artifact-to-area-excavated ratio is much smaller. This comparison graphically demonstrates the intensity of the Denbigh occupation at Punyik Point.

Irving categorizes toolstone in four categories: black, light gray, other chert, and obsidian. While it is difficult to extrapolate summary data from his work, the percentages of types seem to correspond roughly to those of other large sites in the area such as Lisburne (Bowers 1982) and Mesa (Kunz, Bever, and Adkins 2003), 28 km and 20 km to the northeast respectively. This suggests that regional toolstone sources were providing the majority of the lithic material used by the site’s occupants. However, the use of obsidian at Punyik Point was considerably greater than at Lisburne or Mesa. Our research has shown that obsidian found in Brooks Range–North Slope archaeological sites is most often from the Batza Téna deposit on the Indian River about 320 km south of Punyik Point. The relatively common occurrence of obsidian in the Punyik Point Denbigh occupation suggests greater mobility or more extensive trade network during Denbigh times than had been the case earlier.

The sum of the archaeological work conducted at Punyik Point over the past fifty years as determined by artifact numbers, concentration, and areal extent unequivocally demonstrates that the most intensive use of the site occurred during DFC times. Not only was the site locale more completely used by the Denbigh folks than it was by more recent inhabitants, the population size at any given episode of DFC occupation may have been greater as well. There are several aspects of the

---

<sup>7</sup>Faunal remains suggest that the temperate season occupation at Punyik Point (and similar lake-side sites in the region) generally occurred in response to caribou availability. The presence of cache pits suggests that caribou were being “put by” to help sustain the inhabitants through the winter while the lake provided a reliable fish resource when the cached reserves were depleted and/or local game resources were meager. At Punyik Point the visible cache pits are associated with the late prehistoric Eskimo house depressions. It seems reasonable to assume similar circumstances prevailed during DFC times.

DFC occupation of Punyik Point that I think are particularly interesting. It is the only interior Arctic site that I am aware of that has such extensive evidence for multiple seasons of use or use of such intensity. Punyik Point may be the only DFC site to exhibit such unequivocal evidence of multi-season use. Additionally, the radiocarbon assays indicate that this use was short-lived, spanning only a two-hundred-year period between 3500 and 3300 radiocarbon years ago, a somewhat shorter duration than the ca. 350 years the Denbigh folks utilized the nearby Croxton site, 40 km to the northwest at Tukuto Lake (Slaughter this volume) and considerably shorter than the seven-hundred-year use of two large Brooks Range DFC occupations—the Mosquito Lake site and the Gallagher Flint Station, which lies near the headwaters of Oksrukuyik Creek 16 km east of the University of Alaska's Toolik Field Station (Bowers 1983; Kunz 1977; Slaughter personal communication 2006).

## REFERENCES

- Anderson, D. D.  
1970 Microblade Traditions in Northwestern Alaska. *Arctic Anthropology* 7(2):2–16.
- Black, L. T.  
2004 *Russians in Alaska 1732–1867*. University of Alaska Press, Fairbanks.
- Bockstoce, J. R. (Editor)  
1988 *The Journal of Rochfort Maguire, 1852–1854: Two Years at Point Barrow, Alaska, aboard HMS Plover in the Search for Sir John Franklin*, Vols. 1 & 2. The Hakluyt Society, London.
- Bowers, P. M.  
1982 The Lisburne Site: Analysis and Culture History of a multi-component Lithic Workshop in the Iteriak Valley, Arctic Foothills, Northern Alaska. *Anthropological Papers of the University of Alaska* 20(1):79-112.  
1983 A Status Report on the Gallagher Flint Station National Historic Landmark. Manuscript on file, Bureau of Land Management, Arctic Resource Area, Fairbanks.
- Burch, E. S., Jr.  
1975 Interregional Transportation in Traditional Northwest Alaska. *Anthropological Papers of the University of Alaska* 17(2):1–11.  
1976 Overland Travel Routes in Northwest Alaska. *Anthropological Papers of the University of Alaska* 18(1):1–10.
- Dumond, D. E.  
1981 *Archaeology on the Alaska Peninsula: The Naknek Region, 1960-1975*. University of Oregon Anthropological Papers No. 21.
- Giddings, J. L., Jr.  
1951 The Denbigh Flint Complex. *American Antiquity* 16(3):193–202.  
1955 The Denbigh Flint Complex is Not Yet Dated. *American Antiquity* 20(4):375–376.  
1956 A Flint Site in Northernmost Manitoba. *American Antiquity* 21(3):255–268.
- Giddings, J. L. Jr. and D. D. Anderson  
1986 *Beach Ridge Archaeology of Cape Krusenstern: Eskimo and Pre Eskimo Settlements Around Kotzebue Sound, Alaska*. Publications in Archaeology 20, National Park Service, U.S. Department of the Interior. Washington DC.
- Hopkins, D. M. and J. L. Giddings  
1953 Geological Background of the Iyatayet Archeological Site, *Smithsonian Miscellaneous Collections* 121(11).
- Irving, L. and S. Paneak  
1954 Biological Reconnaissance along the Ahlasuruk River East of Howard Pass, Brooks Range, Alaska, with Notes on the Avifauna. *Journal of the Washington Academy of Sciences* 44(7):201–211.
- Irving, W. N.  
1952 An Archaeological Reconnaissance of the Lower Colville River and Delta Regions. University of Alaska and Office of Naval Research–Arctic Research Laboratory Libraries.

- 1953 Evidence of Early Tundra Cultures in Northern Alaska. *Anthropological Papers of the University of Alaska* 1(2):55–85.
- 1954 Preliminary Report on an Archaeological Reconnaissance in the Western Part of the Brooks Range of Alaska. Peabody Museum, Cambridge. Copy on file at Bureau of Land Management Northern Field Office, Fairbanks.
- 1962 A Provisional Comparison of Some Alaskan and Asian Stone Industries. In *Prehistoric Cultural Relations between the Arctic and Temperate Zones of North America*, edited by J. M. Campbell, pp. 55–68. Arctic Institute of North America, Technical Paper No. 11.
- 1964 *Punyik Point and the Arctic Small Tool Tradition*. Ph.D. dissertation, Department of Anthropology, University of Wisconsin, Madison.
- 1970 The Arctic Small Tool Tradition. *Proceedings of the Eighth International Congress of Anthropological and Ethnological Sciences, Tokyo and Kyoto, 1968*. 3:340–342.
- Kunz, M. L.  
 1977 The Mosquito Lake Site (PSM-049). In *Pipeline Archaeology*, ed. J.P. Cook, pp. 747–982. Institute of Arctic Biology, University of Alaska, Fairbanks.
- Kunz, M. L., M. R. Bever, and C. M. Adkins  
 2003 *The Mesa Site: Paleoindians Above the Arctic Circle*. U.S. Department of the Interior, Bureau of Land Management. BLM–Alaska Open File Report 86. Anchorage.
- Libby, W. F.  
 1952 *Radiocarbon Dating*. University of Chicago Press. Chicago
- 1955 *Radiocarbon Dating*, second edition. University of Chicago Press, Chicago
- Larsen, H. and J. Melgaard  
 1958 Paleo-Eskimo Cultures in Disko Bugt, West Greenland. *Meddelelser om Grønland* 161:1–75.
- Melgaard, J.  
 1952 A Paleo-Eskimo Culture in West Greenland. *American Antiquity* 17(3):222–230.
- 1955 The Dorset Culture. *Kuml: Arbog for Jysk Arkaeologisk Selskap* 173–190.
- Mathiassen, T.  
 1958 The Sermermiut Excavations 1955. *Meddelelser om Grønland* 161(3):1–52.
- Mills, R.O., L. A. Ross and M. L. Kunz  
 2006 Evidence for Pre-European Contact Old World Trade in Alaska. Presented at the 39th Annual Conference on Historical and Underwater Archaeology, January 11-15, 2006, Sacramento, California.
- Stafford, T. W. Jr., R. Graham, E. Ludelius, H. Semken, G. McDonald, and J. Southon  
 2005 <sup>14</sup>C Chronostratigraphy of Late Pleistocene Megafauna Extinctions in Relation to Human Presence in the New World. Abstracts of the Conference, *Clovis in the Southeast: Technology, Time and Space*, Columbia, SC, October 26–29.