

ARTIFACTS, HOUSES, AND FAUNA FROM 1989 EXCAVATIONS AT THE MONASHKA BAY SITE ON KODIAK ISLAND

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ABSTRACT

In 1989, Christopher Donta directed investigations at the Monashka Bay site on Kodiak Island, previously investigated by Donald Clark in 1961–1962. Excavation of 40 m² of units revealed partial structural features and artifacts from the late Kachemak and Koniag traditions, including 147 incised slate stones, a single artifact of copper, and one sherd of fiber-tempered pottery. Radiocarbon dates span from about 1680 to 240 BP. The incised stones and dating highlight the need for reconsidering the delineation of Koniag tradition phases already demonstrated with the recent re-dating of the Karluk One site. Analysis of more than 36,000 bone specimens from the Koniag midden at the site indicates a focus on cod, with modest amounts of sculpin, and small amounts of flatfish, bird, salmon, sea mammal, and herring. These findings demonstrate diversity in Koniag subsistence, with unusually low proportions of salmon and high proportions of sculpins.

The Monashka Bay site (KOD-026) is located on the northeast tip of Kodiak Island, in the Kodiak Archipelago of Southcentral Alaska (Fig. 1). It was partly excavated in 1961–1962 under the direction of Donald Clark (1974a), revealing cultural deposits from the Kachemak and Koniag cultural traditions. These materials and their potential for better understanding the transition from Kachemak to Koniag made it of interest to the Bryn Mawr College research program on the island, which began under the direction of Richard Jordan in 1983 (Jordan and Knecht 1988). In 1989, Bryan Mawr graduate student Christopher Donta directed excavations at the site in order to investigate the Kachemak to Koniag transition, and compare the data from this site to previous Bryn Mawr excavations. Data from the

site were incorporated into Donta's (1993) Ph.D. dissertation and published papers on incised stones (Donta 1992, 1994a). A general report of excavation findings was drafted (Donta 1994b) but not published. This paper summarizes findings from the 1989 excavations as well as results of faunal analysis completed for Ayla Aymond's (2015) master's thesis.

SITE DESCRIPTION AND PRIOR WORK

The Monashka Bay site is situated approximately five km northeast of the town of Kodiak, on the northeastern part of Kodiak Island. It is located on land belonging to the City of Kodiak, adjacent to Fort Abercrombie State Park. By Kodiak standards, the bay is of moderate size, about

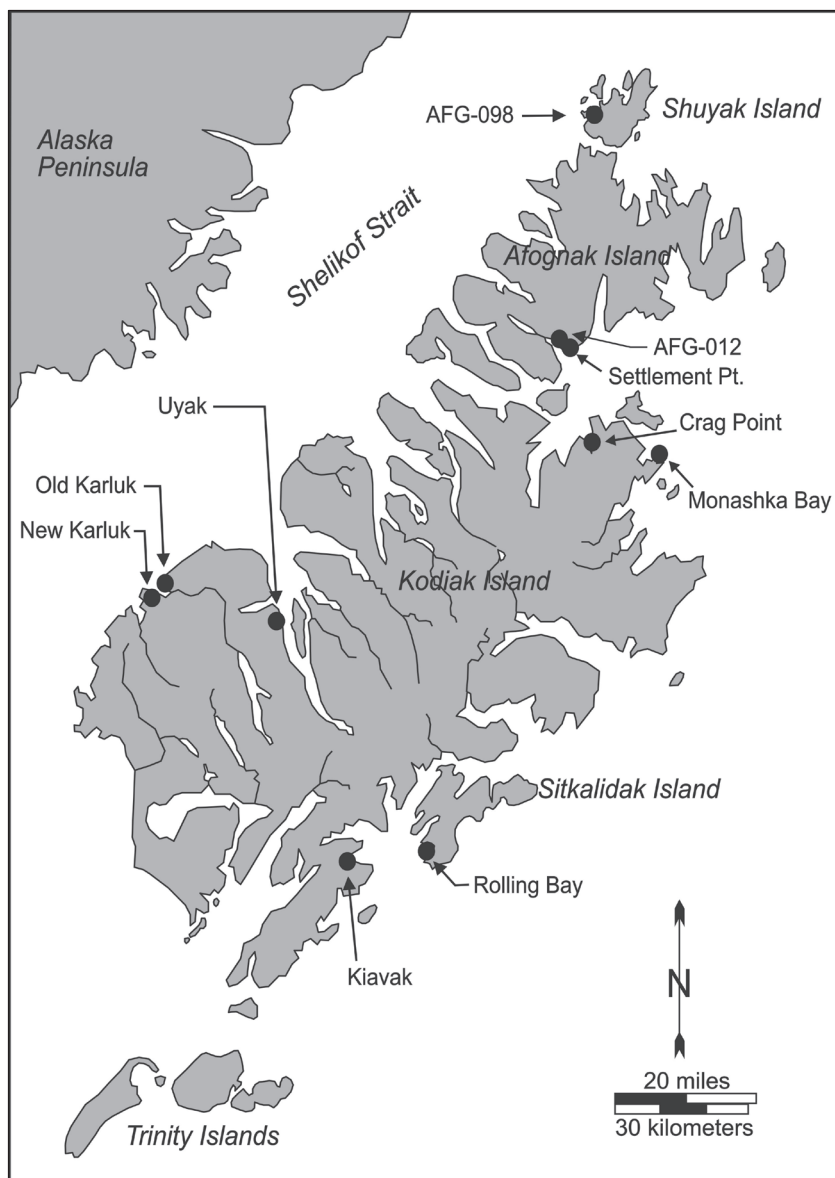


Figure 1. *The Kodiak Archipelago, with location of Monashka Bay and other archaeological sites mentioned in the text.*

4 km long and 2.4 km wide, opening into larger, more exposed Marmot Bay to the northeast.

In 1989, the Monashka Bay site (Fig. 2) consisted of a ~90-meter-long deposit of cultural materials lying in a north-south direction along the eastern shoreline of the bay, and extending ~20 m inland from the erosion face. Based on the erosion face, the lowest deposits at the site lie ~1 m above high tide level. Cultural deposits appear to have been relatively undisturbed prior to the 1912 Mt. Katmai volcanic eruption on the Alaska Peninsula, which covered and sealed the underlying stratigraphy. Later impacts to the site occurred during World War II mobilization at nearby Fort Abercrombie; plowing for cultivation;

creation of a parking area, road, and boat launch in 1959; and the tsunamis and subsidence from the 1964 “Good Friday” earthquake (Clark 1963, 1974a).

Donald Clark, in conjunction with the Kodiak and Aleutian Islands Historical Society, conducted excavations at the site during the summers of 1961 and 1962 (Clark 1963, 1974a). These were placed adjacent to the boat launch road and comprised four 6 x 6 ft units dug to a maximum depth of 2.4 m below ground surface. Clark divided the stratigraphic levels he encountered into two major units, which he labeled “A” and “B.” Materials from the lower, “A” levels Clark found to correlate with the Kachemak tradition, while the upper, “B” levels were identified with Koniag phase materials. A third, “C” level was also described by Clark. This consisted of a number of thin charcoal-stained gravelly laminae in association with a fire pit and a stone slab alignment, set within the “B” levels. This “C” feature appears to be a portion of a Koniag house (Clark 1974a:29–31). A single radiocarbon sample from the “C” levels yielded an age of 298 ± 44 BP (Clark 1974a:46).

1989 EXCAVATIONS, STRATIGRAPHY, AND DATING

In the summer of 1989, Christopher Donta directed investigations by a crew of four, with funding provided by the Kodiak Area Native Association and Bryn Mawr College, and supported by Fort Abercrombie State Park. Eight 2 x 2 m units, two 2 x 1 m units, and four 1 x 1 m test pits were excavated (Fig. 3), totaling more than 70 m³ of sediment, and about 39 m³ of cultural deposits. The majority of work took place within a block of seven and a half 2 x 2 m units named Area 2 (Clark’s excavation was named Area 1). An additional 2 x 3 m block (Area 3) was excavated at the southern end of the deposits, where a midden was observed. Four additional 1 x 1 m test pits were excavated in other parts of the site.



Figure 2. 1989 photograph of the Monashka Bay Site, from the southwest.

Excavation was by natural level, and recorded below a vertical datum for each block. Excavations proceeded through cultural deposits (e.g., midden) until culturally sterile sediment was reached at 130–250 cm below surface. Artifacts of interest were collected by point provenience. Excavated fill was not screened, but bulk sediment samples were taken systematically in Area 3. In this area, a sample was collected from each 1 x 1-meter subunit and every excavation level. In both Areas 2 and 3, three principal cultural strata were excavated and numbered Level 1 through Level 3 from the top down (Fig. 4). These apparently undisturbed cultural strata were buried beneath 1–90 cm of construction-disturbed overburden and Katmai ash.

In Area 2, Level 1 was a loose brown layer of loamy soil, approximately 30 cm thick. Level 2, approximately 10–70 cm thick, consisted of a number of thin, gravelly or silty layers, interspersed and underlain by lenses of shell midden and concentrated fire-cracked cobbles. The thin laminae, slate slab alignments and postmolds in Level 2 indicate that it included portions of house features. Fire-

cracked rock was abundant in both Levels 1 and 2. Level 3 was a 30–130 cm-thick layer of wet, greasy black sediment with moderate to high amounts of fire-cracked and unmodified rock.

Level 1 in Area 3 was a midden composed of fish bone, fire-cracked rock, and black, ashy soil, in most places about 20 cm thick. Level 2 was a denser faunal deposit comprised of shells, sea urchin, and bone in a dark brown clayey soil matrix, from 40 to as much as 80 cm thick. Level 3 was a darker, clayey wet soil, with a lesser amount of decaying faunal material and some fire-cracked rock, grading into a nearly sterile brown silty clay at its base, about 30 cm thick. This layer rested directly on a sterile orange-brown silt about 45 cm thick, which was in turn underlain by glacial till at a depth of 2.5 m below the ground surface.

As with the 1961–62 excavations by Clark, the 1989 excavations revealed both Kachemak and Koniag cultural materials, described in more detail below. Based on the distribution of these materials and radiocarbon dates,

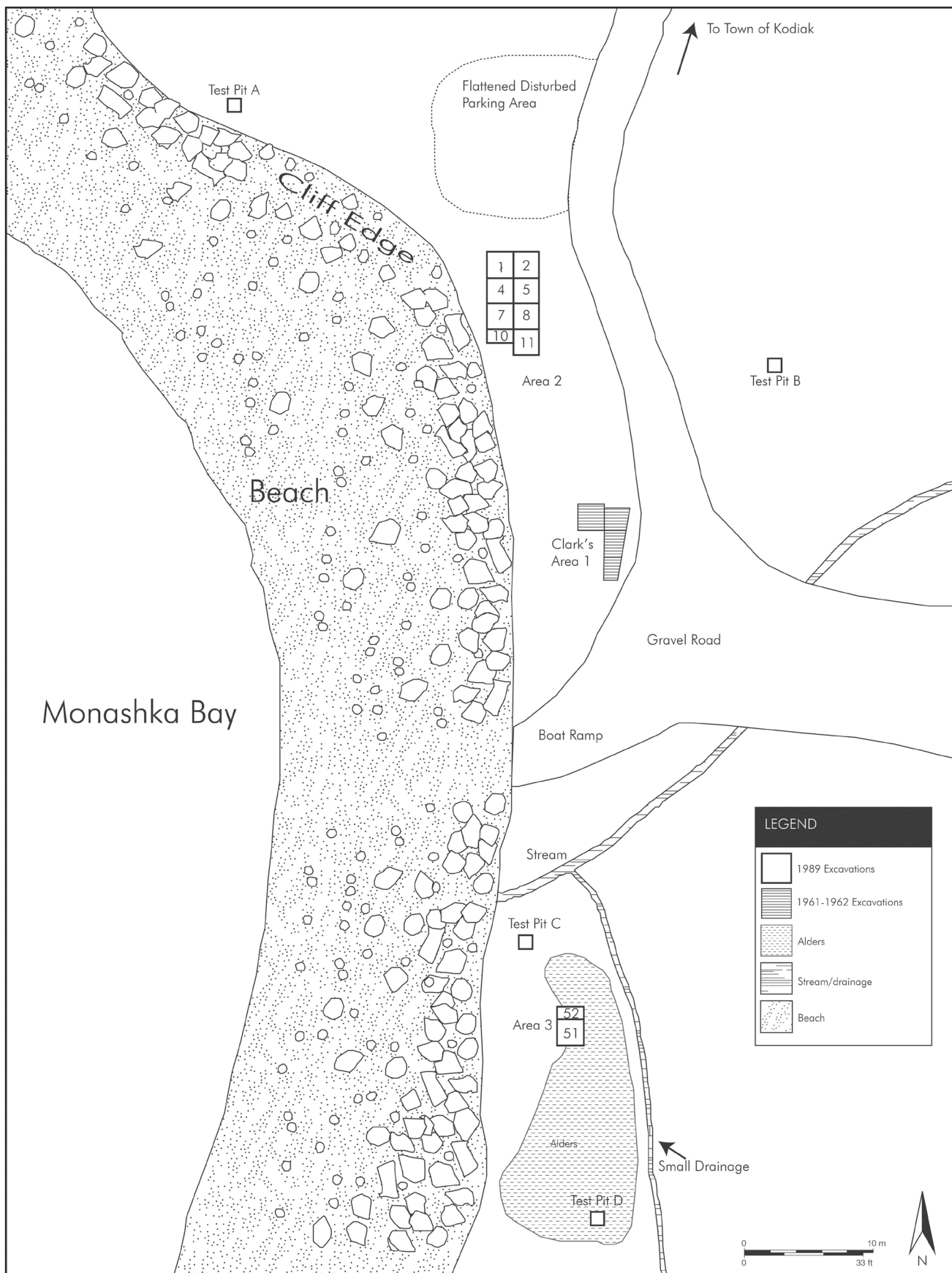


Figure 3. Excavations at the Monashka Bay site.

Area 2 includes a Late Kachemak component in Level 3 and Koniag component(s) in Levels 1 and 2, while Area 3 appears to be Koniag only. All radiocarbon dates obtained on the site are provided in Table 1.

The assignment of Area 2, Level 3 to the Late Kachemak phase of the Kachemak tradition is based principally on the radiocarbon dates obtained in this level, which fall comfortably within the typically expressed range of 2700–800 B.P. (e.g., Steffian et al.

2006:table 2). The assignment of Area 2, Levels 1 and 2 to the Koniag tradition is based on the occurrence of Koniag diagnostic artifacts such as a leaf-shaped end blade, points with medial ridges, and abundant incised stones (Saltonstall and Steffian 2006:table 7). The assignment of Area 3 to the Koniag tradition is based on its three radiocarbon dates that span the depth of the deposits, all of which fall comfortably within the typi-

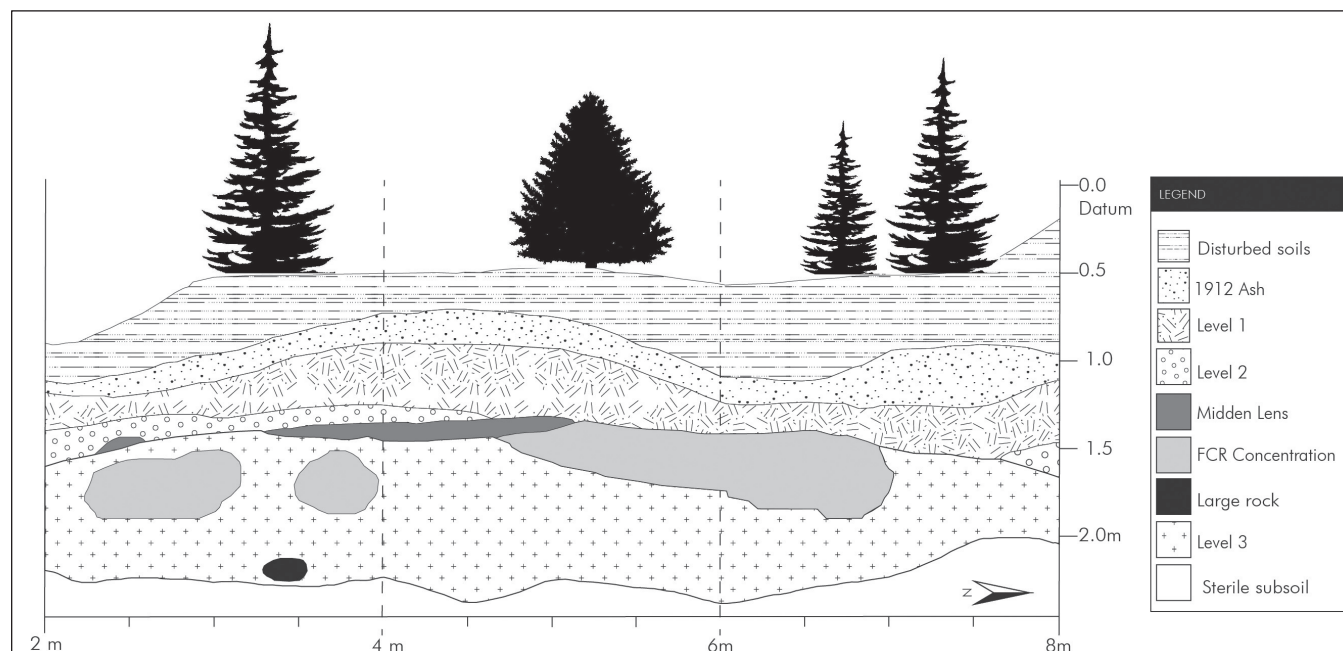


Figure 4. Stratigraphic profile of Area 2, west wall, showing Squares 1, 4, and 7 (right to left).

Table 1. Radiocarbon Dates from the Monashka Bay Site

Provenience	Charcoal material ¹	Lab No.	Raw Age (BP)	Calibrated Age ² (AD)	Reference
Area 2, top of Level 3	Unknown	Beta-34832	1680 ± 50	239–533	Donta 1993; Mills 1994
Area 2, base of Level 3	Unknown	Beta-33545	1570 ± 60	354–614	Donta 1993; Mills 1994
Area 3, Level 3	Alder	Beta-416118	320 ± 30	1484–1645	Aymond 2015
Area 1, Level C	Composite	P-1049	298 ± 44	1471–1792	Clark 1974a; Mills 1994
Area 3, Level 2	Alder	Beta-416117	290 ± 30	1493–1662	Aymond 2015
Area 3, Level 1	Alder	Beta-416116	240 ± 30	1526–1949	Aymond 2015

¹ The alder samples were identified as small fragments of short-lived *Alnus* sp. wood by Shaw (2015), while the Area 2 samples were not identified. The Area 1 sample was dated using the beta decay method on a large composite sample of charcoal, while the remaining dates were by accelerator mass spectroscopy. Carbon isotope values ($\delta^{13}\text{C}$ in ‰) reported with the dates were: Beta-416116 (–27.0), Beta-416117 (–25.2), and Beta-416118 (–26.3).

² Extent of 2 sigma age range calibrated with CALIB version 7.0.2 (Stuiver and Reimer 2014) using the IntCal13 dataset (Reimer et al. 2013).

cally expressed range of 800–200 BP (e.g., Steffian et al. 2006:table 2).

1989 ARTIFACTS

A total of 685 artifacts were recovered from the Monashka Bay site during the 1989 excavations (Table 2). Most of this sample came from Area 2 (577/685, 84%), while 11% (75/685) was from the Area 3 midden, and the remaining artifacts were from test pits and surface finds. A number of these artifact types were distributed across both the level interpreted as Kachemak (Area 2, Level 3) and the levels interpreted as Koniag (Area 2, Levels 1–2 and Area 3). These were primarily lithic artifacts, including ground slate points and ulus; pecked and/or ground cobble line/net weights, mauls, and adzes (made of greywacke, quartzite, basalt, or greenstone); sandstone or pumice abraders; split cobbles; hammerstones; polishing stones; and flat beach pebbles or tabular pieces of slate with incised markings on one or more sides. The worked cobbles and pebbles, presumably line or net weights, were placed into Clark’s (1974b:61) typology as follows: 3 Type 1, 8 Type 2, 3 Type 3, 26 Types 2ab/3ab, 7 Type 4, 4 Type 4b, 2 Type 6b, and 2 untyped. The only widely distributed bone artifacts were modified pieces of uncertain use. The remaining artifact types had a more limited distribution.

Artifacts limited to the Late Kachemak level include two ground slate Type III flensing knives (Heizer 1956), and a ground slate end scraper. The Type III knife has

been postulated by Heizer (1956:51) as limited to the Kachemak tradition. There was also a single piece of pottery, a body sherd with fiber temper measuring 35 x 36 x 7 mm thick, with two perpendicular incised lines. Two Type 4b tri-notched cobbles (Clark 1974a:34), sometimes considered a Koniag diagnostic, were recovered at the very top of this level.

The pottery sherd is unusual in the Kodiak Archipelago in both its early date and tempering material. Most pottery is limited to the Koniag tradition (Saltonstall and Steffian 2006:table 7), but Koniag pottery is usually sand or gravel-tempered (Clark 1974b:115), unlike the Monashka Bay specimen. A few sherds with fiber tempering were recovered in 1964 excavations at the Crag Point site (Clark 1970), located about 16 km west of Monashka Bay. The Crag Point sherds were found in Late Kachemak or transitional Koniag contexts, associated with a radiocarbon date (B-835) taken from charred materials on sherds (Clark 1974b:126–127). Mills (1994:133) rejects this 1110 ± 100 BP estimate as unreliable, since it was “scraped from numerous disparate pottery sherds.”

Cultural materials limited to Koniag levels include: two ground slate Type I flensing knives (Heizer 1956:51), a ground slate leaf-shaped end blade, two ground slate points with medial ridges, a graywacke lamp, a fragment of a spool-shaped labret made of coal, a bone harpoon socket piece, three bone awls, and a unique composite tool of bone and copper. The labret fragment has several scratches, but no apparent design, shows some evidence of

Table 2. *Artifact types from 1989 excavations*

Category	Type	Count	Category	Type	Count
Hunting/Fishing	Worked cobbles	55	Household	Lamp	1
	Bone socket piece	1		Paint stone	1
	Bone points	5		Pottery	1
	Ground slate points	24		Bone handle	1
Tools	Split cobbles	42	Miscellaneous	Coal labret	1
	Hammerstones	32		Shell bead	1
	Mauls	6		Stone ball	1
	Adzes	42		Incised stones	147
	Abrasive stones	18		Other objects	6
	Polishing stones	6	Waste	Chipped stone	52
	Ulus	105		Ground stone	67
	Other knives	11		Carved bone	33
	Drill bits	2		Carved wood	4
	Endscraper	1		Unmodified lithics	13
	Bone wedges	3			
	Bone stake	1			
	Bone awls	3			
	Engraving tool	1			

teeth wear, and would be about 41 mm long by 35 mm wide if whole. This spool or pulley-shaped labret is a typical Koniag style and size (Steffian and Saltonstall 2001). The origin of the coal is unknown, but possible sources exist on Sitkinak Island to the south of Kodiak Island, or on the Alaska Peninsula, based on a sample of Kachemak coal artifacts subject to vitrinite reflectance testing by Steffian (1992a).

The composite tool exhibits a 12-cm-long bone handle with a 7-mm-long copper blade inset into one end of the handle (Fig. 5). The artifact is interpreted as a fine knife or engraver, and the metal is presumed native copper. A small piece (1 g) of copper oxide was found in the same level. Copper artifacts are rare but present in sites of the archipelago, such as the 85-mm-long copper blade found more than a meter below surface at the Koniag-age Rolling Bay site on southeast Kodiak Island (Clark 1974b:99). The origin of the metal is uncertain, but there are a number of sources known in Southcentral Alaska, including the Wrangell Mountains and Prince William Sound (Cooper et al. 2008), and the inhabitants of the Kenai Peninsula traded for this material with the Chugach and Ahtna in the historic period (Davydov 1977:199).

The most common artifacts found during the 1989 excavation were incised stones. A total of 147 flat beach pebbles and tabular pieces of slate were collected with incised markings on one or more sides and ranging from 29 to 239 mm in length. Incised stones were found across the site, including both midden and structure contexts and Koniag and Kachemak levels, though the vast majority (132) were collected from structure contexts in Area 2. Of the 147 incised stones, 28 specimens were incised on both sides, raising the total number of images to 175. Of this total, nearly 75% represent some portion of a human

figure (Fig. 6). The remaining 25% consist of geometric or other, nonhuman images (Fig. 7), such as the tree-like motif found on 5% of images (Fig. 7a, b, c). The tree-like motif occurred on eight specimens and was found exclusively in the Kachemak level. Cultural interpretations of incised stones are beyond the scope of this paper, and the interested reader is directed to works by Donta (1992, 1993, 1994a) for further information.

1989 FEATURES

In addition to concentrations of fire-cracked rock and lenses of shell midden within Area 2, and extensive shell midden in Area 3, Area 2 excavations revealed partial remnants of structures. These included compact, charcoal-stained living floors, as well as stone alignments, postholes, pits, drainage ditches, and a single stone-lined hearth. Three distinct composite features were uncovered, two interpreted as partial semisubterranean structures (the Level 2 structure, and lower Level 3 house), and a more ambiguous possible structure near the top of Level 3.

The Level 2 structure was discovered at the very top of Level 2, and consisted of several floor layers, one wall margin, a rock alignment, three postmolds, and a clay-lined subfloor pit (Fig. 8). There was one distinct floor composed of a black, gravelly, compact layer at the top of the level, and at least two more similar but discontinuous floor layers below, separated by thin, brown clay laminae. The identified structure wall margin at the south end of the excavation block was expressed as a transition from the house floor deposit to a looser, brown sediment interpreted as collapsed wall and roof sods. The exposed portion of the structure was at least the width of the excavation block (4 m) and 6.5 m long. The rock alignment included 14

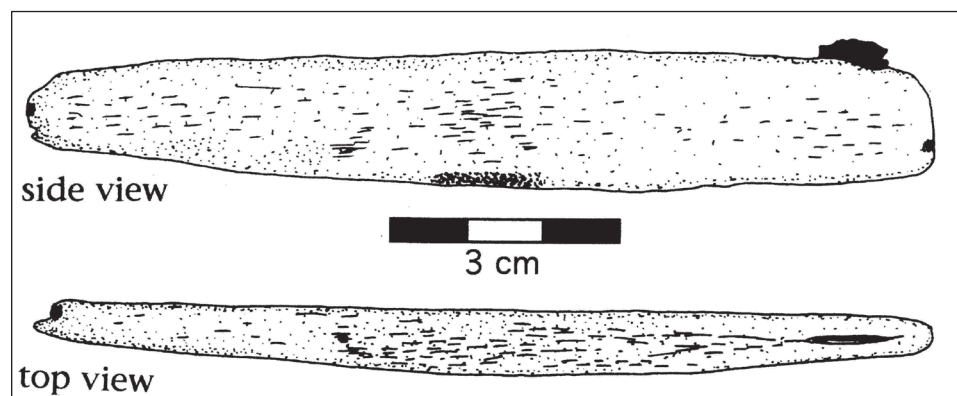


Figure 5. Bone and copper composite tool from Area 2, Level 2. The inset copper blade is indicated in black at the right end of the tool.

slate slabs, probably used for the subfloor drainage of water, as was noted in nearly every house at Karluk One (Jordan and Knecht 1988:260–263; Steffian et al. 2015:205–209). The three postmolds measured up to 15 cm in diameter and 7 cm deep. The clay-lined pit is approximately 75 x 53 cm in size. No hearth or entrance tunnel was found.

The dating of the Level 2 structure is based on the pres-

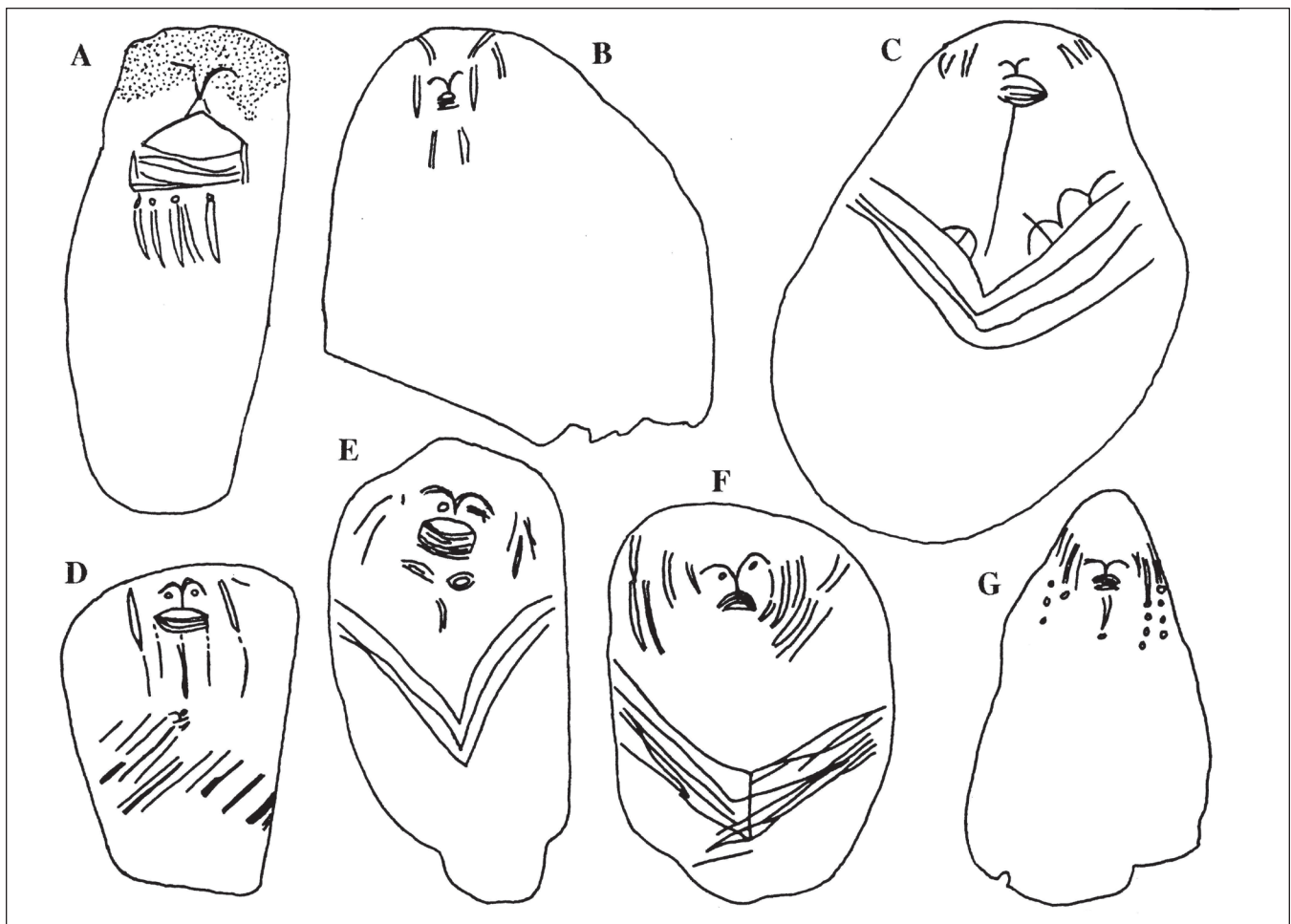


Figure 6. Examples of incised stones with anthropomorphic motifs. All from Area 2, Level 1.

ence of the many incised stones and single medial-ridge-type ground slate point found on the floor. There are no associated radiocarbon dates. It may be part of a Koniag house, a portion without multiple rooms. The area of the exposed portion is about 26 m², which is somewhat large for a Koniag central room, but smaller than the central room of Structure 1 at Nunakaknak (30.25 m²) or House 1 at Settlement Point (28.5 m²), according to data compiled by Saltonstall and Steffian (2006:table 31).

The upper Level 3 feature consisted of a stone alignment and two postmolds (Fig. 9) within a black, wet, disagreeable-smelling sediment encountered about 50 cm below the Level 2 structure floor, just under the top of Level 3. The rock alignment consisted of 25 slate slabs layered into roughly two levels, forming a sort of walkway approximately 80 cm wide by at least 160 cm long. Two postholes measuring up to 20 cm in diameter and 30 cm in depth were uncovered to the north and northwest of the slate slabs. No distinct floors or walls were identified with

this feature. It is dated by superposition with a charcoal sample collected 10 cm above, with a radiocarbon age of 1680 ± 50 BP (cal AD 239–533), and presumed to be affiliated with the Late Kachemak phase.

The lower Level 3 structure was the most intact structure at the site, and was found dug directly through the underlying sterile orange-brown sediment into glacial till. The portion exposed in the Area 2 excavation block measured about 4.4 m wide by at least 3.6 m long, with a sort of rectangular niche in its southeast corner measuring about 50 x 50 cm. It consisted of a distinct floor with three wall margins, three drainage ditches partially covered with slate slabs, nine postmolds, a stone-lined hearth, and nine small subfloor pit features (T. 10). It is interpreted as a house.

The drainage ditches originated in a large pit near the center of the house, with two large slate slabs adjacent, evidently once covering this central pit feature. The largest alignment, on the eastern side of the structure, included 19

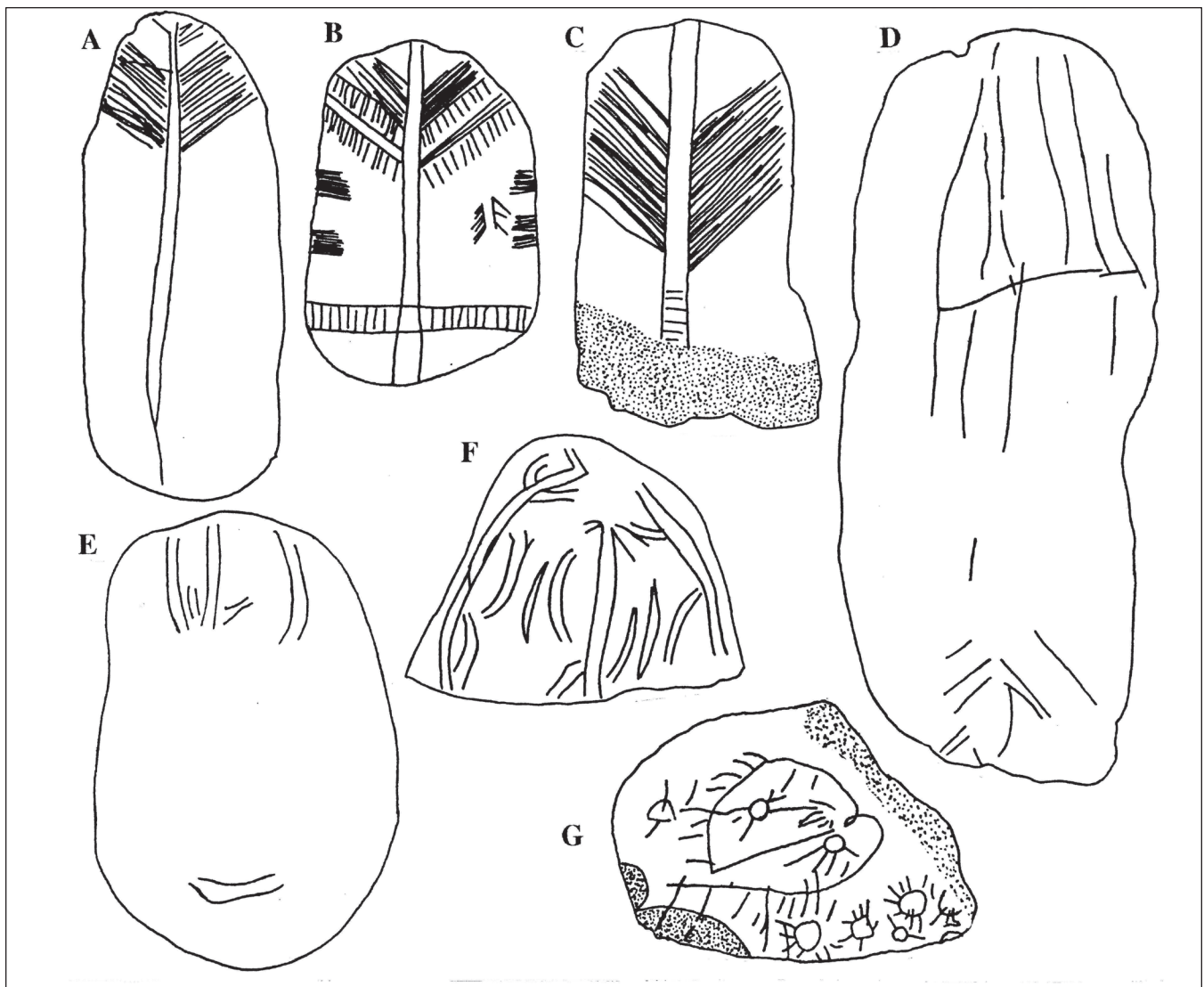


Figure 7. Examples of incised stones with nonanthropomorphic motifs. All from Area 2, Level 3 except item G, which is from Level 1.

stones, forming a walkway 80 cm wide and 240 cm long, underlain by a ditch. The alignment continued into the east wall of the excavation profile, beyond the floor limits. The nine postmolds were up to 25 cm in diameter and dug as much as 25 cm into the underlying till. Near the center of the house was a box-shaped hearth, lined with upright slate slabs, and filled with 26 cm of charcoal and charcoal-stained sediment. Nine individual pit features were found under and to the south of the hearth, ranging from 18 x 14 to 60 x 45 cm in length and width, and 3–19 cm in depth. Their specific dimensions (length x width x depth in cm): F7 was 20 x 20 x 11, F8 was 45 x 45 x 12, F10 was 60 x 45 x 16, F13 was 70 x 40 (partial) x 13, F17 was 27 x 18 x 14,

F19 was 25 x 10 x 3, F21 was 20 x 16 x 18, F22 was 18 x 14 x 19, and F23 was 58 x 23 (partial) x 9.

The basal Level 3 structure was dated with a charcoal sample collected from a pit underneath the hearth, which returned a radiocarbon age of 1570 ± 60 BP, which falls comfortably in the Late Kachemak phase. This house feature is similar in nature to Kachemak tradition houses excavated at the Uyak site (Steffian 1992b), in its slate-lined hearth, slate alignments, and subfloor pits, and the excavation of the house directly into underlying till. The area of the exposed portion (excluding the “niche”) is about 15.8 m², well within the range of Late Kachemak houses at the Uyak site, which ranged from 8.4 to 35.4 m² (Steffian 1992b:150).

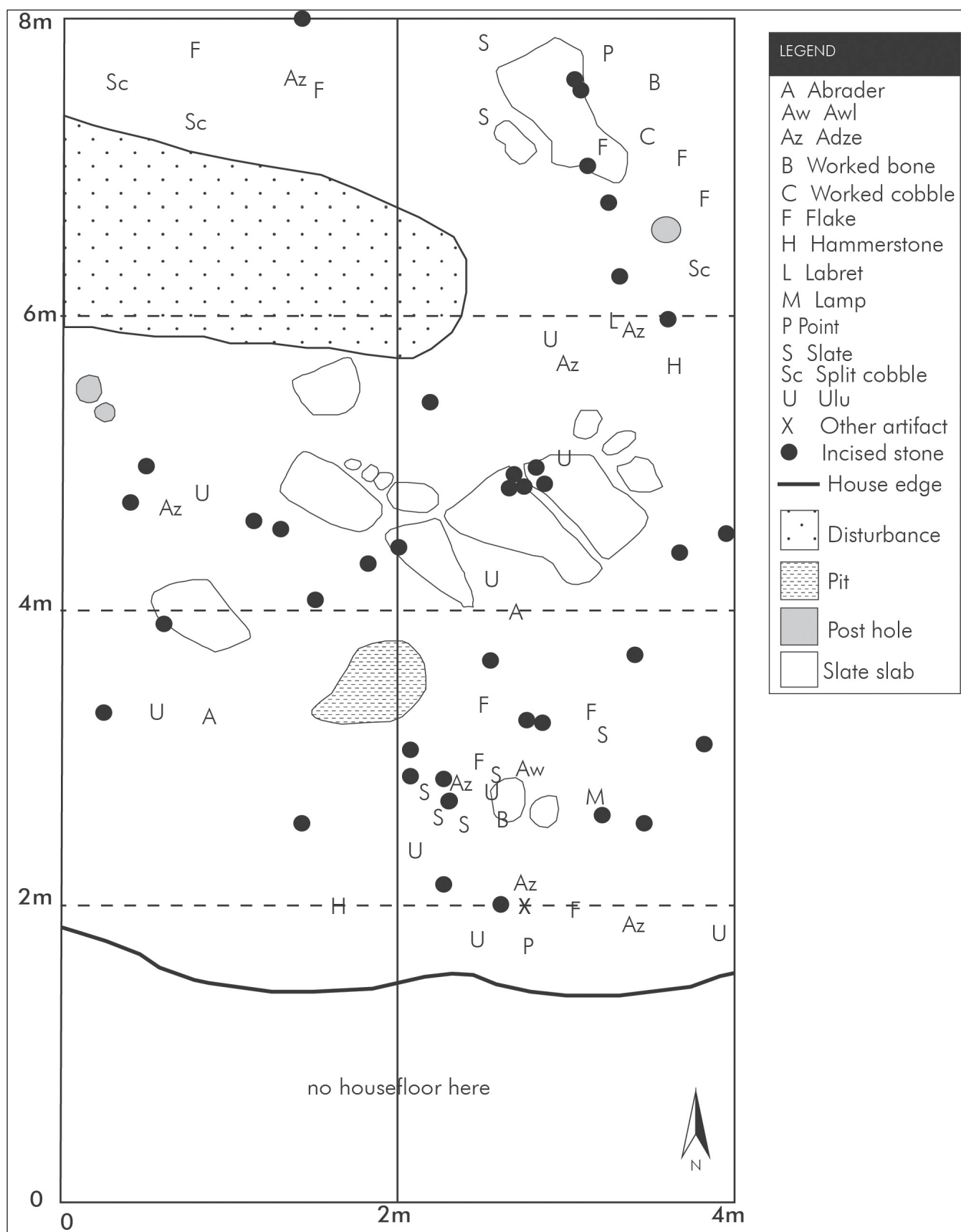


Figure 8. Plan of Level 2 house remnant and associated artifacts.

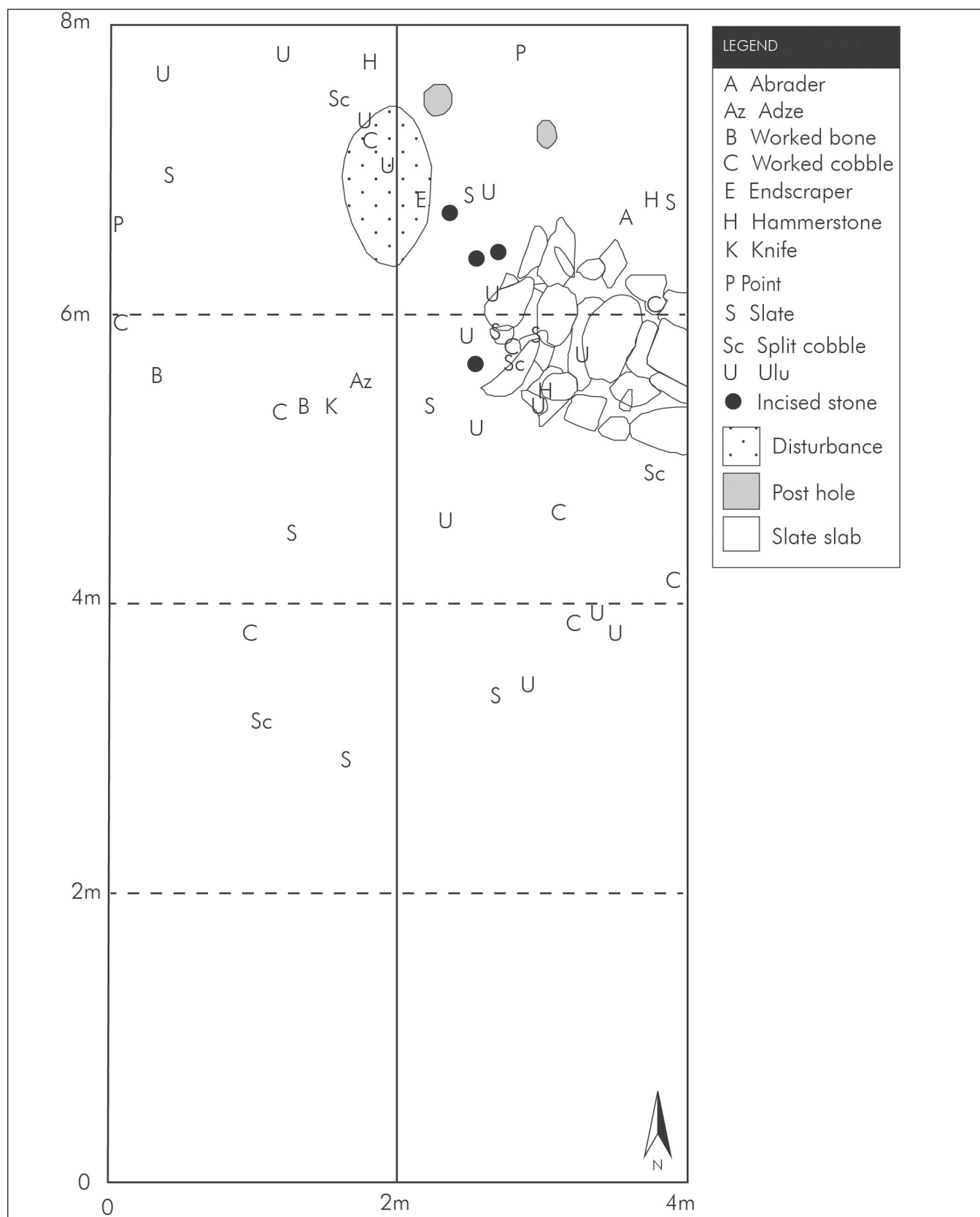


Figure 9. Plan of upper Level 3 feature and associated artifacts.

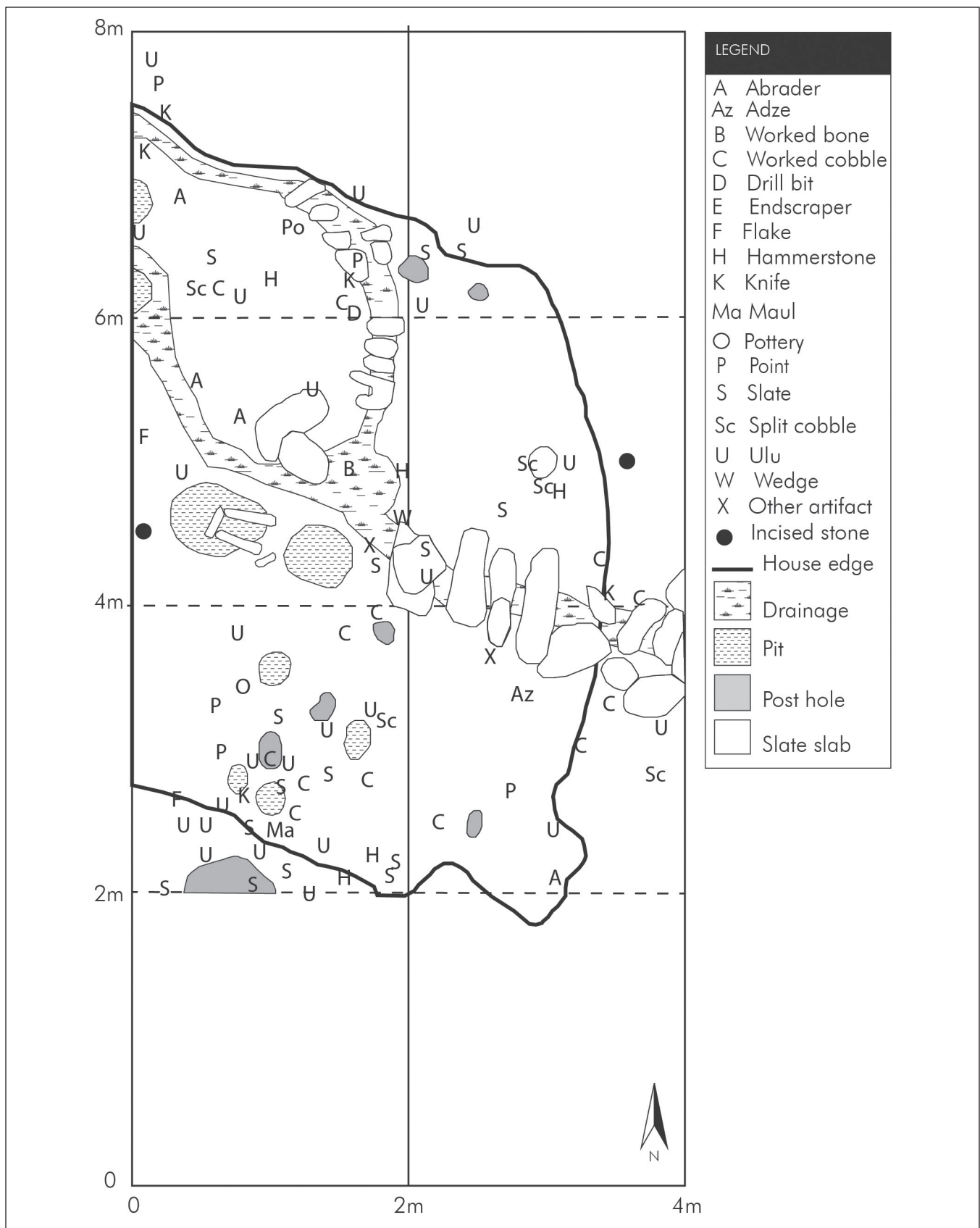


Figure 10. Plan of the basal Level 3 house remnant and associated artifacts.

FAUNAL ANALYSIS

In 2014, Ayla Aymond and Megan Partlow began analysis of fauna recovered from bulk sediment samples collected in the 1989 excavations, then curated at the Burke Museum of Natural History and Culture in Seattle. These samples originally were collected from every 1 x 1 m quadrant and level in the Area 3 midden. Three radiocarbon samples, one each from Levels 1, 2, and 3 of Square 51 Quad A, yielded age estimates all overlapping at the 2 σ level, with a mean pooled age of 283 BP. On the basis of these dates, the analyzed faunal assemblage is limited to the Late Koniag phase. Analysis focused on vertebrate remains from the 1/8" (3.2 mm) and larger fraction.

A total of 36,258 faunal specimens were examined, of which the majority (88%) were unidentified fish remains. Even if the unidentified fishes are omitted (leaving 4,281 specimens), ray-finned fishes overwhelmingly dominate the assemblage (96%), although there were small numbers

of cartilaginous fishes ($n = 1$), birds ($n = 117$; 3%), and mammals $n = 56$; 1%). At least 14 different fish taxa were identified, including shark/ray/skate, salmon, herring, cods (Pacific cod and walleye pollock), greenling, sculpins (Yellow Irish Lord, Red Irish Lord, cf. great sculpin), rockfish, and flatfishes (Pacific halibut, arrowtooth flounder, rock sole, and starry flounder). Cods dominate the fish assemblage, composing 68% of fish specimens identified to order level (Table 3). The next most abundant is Order Scorpaeniformes (24%, mostly sculpins), followed by Order Pleuronectiformes (5%; mostly halibut), Order Salmoniformes (2%; salmon), and Order Clupeiformes (1%, herring).

Identified birds include Northern fulmar, shearwater, eider, herring gull, mew gull, kittiwake, and marbled murrelet (Table 4). The gull family (Laridae) makes up the majority of the assemblage, composing 65% of specimens identified to order or family. Most of the remaining specimens (20%) were ducks (Family Anatidae).

Table 3. Fish Identifications from Area 3

Order	Taxon	Common Name	NISP	MNI
Class Chondrichthyes (cartilaginous fishes)				
Unknown	Unidentified	Unidentified shark/ray/skate	1	1
Class Actinopterygii (ray-finned fishes)				
Salmoniformes	<i>Oncorhynchus</i> sp.	Unspecified salmon	80	3
Clupeiformes	<i>Clupea pallasii</i>	Pacific herring	49	1
Gadiformes	Family Gadidae	Cod family	2,322	—
	<i>Gadus macrocephalus</i>	Pacific cod	460	43
	<i>Gadus chalcogramma</i>	Walleye pollock	1	1
Scorpaeniformes	Family Hexagrammidae	Greenling family	3	—
	<i>Hexagrammos</i> sp.	Unspecified greenling	11	1
	Family Cottidae	Sculpin family	57	—
	<i>Hemilepidotus jordani</i>	Yellow Irish Lord	99	6
	<i>Hemilepidotus hemilepidotus</i>	Red Irish Lord	1	1
	<i>Hemilepidotus</i> sp.	Unspecified Irish Lord	328	—
	<i>Myoxocephalus</i> sp.	Unspecified sculpin	3	1
	Family Scorpaenidae	Rockfish family	—	—
	<i>Sebastes</i> sp.	Unspecified rockfish	9	1
	Unidentified	Unidentified scorpaeniform	475	—
Pleuronectiformes	Family Pleuronectidae	Righteye flounder family	15	—
	<i>Hippoglossus stenolepis</i>	Pacific halibut	47	3
	<i>Atheresthes stomias</i>	Arrowtooth flounder	1	1
	<i>Lepidopsetta</i> sp.	Unspecified rock sole	4	1
	<i>Platichthyes stellatus</i>	Starry flounder	1	1
Unknown	Unknown	Unidentified pleuronectiform	130	—
Unknown	Unidentified	Unidentified ray-finned fish	31,977	—
TOTAL			36,074	65

The mammal assemblage (Table 5) was entirely sea mammal bone with the exception of a single red fox tibia. Identified sea mammals included harbor seal and sea otter. Small sea mammals (equal to or less than the size of a harbor seal) dominate the mammal assemblage.

The faunal sample yielded no direct indicators of season of occupation. However, a spring to fall seasonality is implied by the abundance of shearwaters, a summer resident of the archipelago (Forsell and Gould 1981), and by the abundance of cod and halibut, both typically caught long-line fishing in spring and summer (Holmberg 1985:47). The low proportion of salmon remains may also lend support to this interpretation, since one would expect more salmon bones in Koniag winter deposits after people consumed stored salmon, based on sites like Settlement Point and AFG-012 (Partlow 2000).

DISCUSSION AND CONCLUSIONS

The Monashka Bay site as investigated in 1989 had significant surface disturbance but apparently intact deposits below the 1912 Katmai tephra. The surface disturbance prevented the easy definition of site size or function by obscuring pithouse evidence typically seen on the surface of coastal Kodiak Island sites. However, based on the 1961–62 and 1989 excavations, the site can be interpreted as a multi-component Kachemak and Koniag settlement site with shell and bone midden deposits and remnants of at least four structures. Season of occupation of the Koniag midden in Area 3 appears to be spring to fall based on the faunal remains. Fauna from other portions of the site were not analyzed, but the presence of structures in Area 1 and 2 could imply winter seasonality.

Table 4. Bird Identifications from Area 3

Order	Taxon	Common Name	NISP	MNI
Class Aves (birds)				
Procellariiformes	Family Procellariidae	Shearwater/petrel family	1	—
	<i>Fulmarus glacialis</i>	Northern fulmar	1	1
	<i>Puffinus</i> sp.	Unidentified shearwater	7	3
Anseriformes	Family Anatidae	Duck/goose/swan family	15	—
	<i>Somateria</i> sp.	Unidentified eider	2	1
Charadriiformes	Family Laridae	Gull/kittiwake/tern family	20	—
	<i>Larus</i> sp. ¹	Unidentified gull ¹	16	2
	<i>Rissa</i> sp.	Unidentified kittiwake	19	3
	Family Alcidae	Auk family	—	—
	<i>Brachyramphus marmoratus</i>	Marbled murrelet	2	1
Unknown	Unidentified	Unidentified bird	34	—
TOTAL			117	11

¹Includes one herring gull (*Larus argentatus*) and two mew gull (*Larus canus*) specimens.

Table 5. Mammal Identifications from Area 3

Order	Taxon	Common Name	NISP	MNI
Class Mammalia (mammals)				
Carnivora	Family Canidae	Dog family	—	—
	<i>Vulpes vulpes</i>	Red fox	1	1
	Family Phocidae	Hair seal family	3	—
	<i>Phoca vitulina</i>	Harbor seal	6	1
	Family Mustelidae	Weasel family	—	—
	<i>Enhydra lutris</i>	Sea otter	1	1
Cetacea	Suborder Odontoceti	Toothed whales	4	—
Unknown	Sea Mammal: Small	Sea otter to harbor seal-size	32	—
	Sea Mammal: Large	Fur seal to whale-size	7	—
	Unidentified	Unidentified mammal	2	—
TOTAL			56	5

Site use spans over 1,400 years based on the radiocarbon dates, but there is little indication of occupation duration or intensity except for the presence of midden and structures. The structures exposed in 1989 do not appear to have had long use, however, based on the lack of extensive floor remodeling like that seen at sites such as Karluk One (Saltonstall 2015).

The vertebrate faunal remains from the Monashka Bay site are broadly similar to other reported Koniag faunal assemblages in the Kodiak Archipelago, with similar taxa identified and a heavy emphasis on fish. There are however, some interesting divergences. For example, the small bird assemblage is dominated by gulls, and has a total lack of cormorants, both unlike the six other reported Koniag bird assemblages: AFG-098 (Reger et al. 1992), Uyak (Friedmann 1935); AFG-012, Settlement Point, Kiavak, and Rolling Bay (Partlow 2000). The lack of cormorants is especially striking compared to Settlement Point, AFG-012, and Kiavak, in which cormorants are the first or second most abundant family (Partlow 2000). Historically, cormorant skins were highly prized for making birdskin parkas (Davydov 1977; Holmberg 1985).

The fish remains are also somewhat different than the five other reported Koniag midden assemblages: Karluk One and Old Karluk (West 2009), AFG-012, Settlement Point, and Kiavak (Partlow 2000). When comparing order-level fish identifications among these sites, Monashka Bay and Kiavak are the only samples in which salmon do not rank in the top two orders (Table 6). Salmon compose only 2–4% of specimens identified to order in these two samples, compared to the 25–42% in the other four samples. Monashka Bay is unique in the abundance of sculpins and greenlings, with Order Scorpaeniformes composing 24% of specimens identified to order, while this order composes from 0 to 10% in the other five samples.

On the other hand, the Monashka Bay sample is typical in the importance of cods, with Order Gadiformes the most abundant order, as in four out of five of the other midden samples.

It is not known why the Monashka Bay faunal assemblage varies from the other reported Koniag assemblages, although some diversity should be expected as more sites are analyzed, potentially representing variability in age, season, nearby habitats, prey abundance, and other factors (Cannon 1996; Cannon et al. 2011; Moss 2012). One possibility is that the Monashka Bay midden sample has little fauna from winter compared to other sites, such as Settlement Point (Partlow 2000).

The artifacts and radiocarbon dates from the Monashka Bay site highlight the need for reconsidering the delineation of Koniag tradition phases. The Koniag tradition (Clark 1997) was initially defined by Clark (1974b) as a single phase, and split by Jordan and Knecht (1988) into Transitional, Early, and Late Koniag phases based on their work at the Karluk One site. Reworking of the definition of these phases, their corresponding diagnostic artifacts and boundary dates has been ongoing, but recent re-dating of the Karluk One site by West (2011) has emphasized the issue. West showed that many of the radiocarbon dates from Karluk One initially used by Jordan and Knecht to define the phases were overestimates plagued by old wood problems.

The initial proposed boundary between Early and Late Koniag by Knecht (1995) was AD 1400, an age boundary accepted by many until recently (e.g., Saltonstall and Steffian 2006:table 2; West 2011:table 1). Using this boundary, the Monashka Bay site Koniag-age radiocarbon dates would all be Late Koniag, as all post-date AD 1400, even when calibrated at 2σ (Table 1). Interestingly, the incised stone artifacts associated with these Late Koniag

Table 6. Comparison of Koniag Midden Fish Assemblages Identified to Order in the Kodiak Archipelago¹

Site	Salmonif.	Gadif.	Scorpaenif.	Pleuronectif.	Other ²	NISP	Reference
AFG-012	1,763	4,469	712	36	40	7,020	Partlow 2000
AFG-015 Settlement Point	2,559	4,022	432	48	1	7,062	Partlow 2000
KAR-001 Karluk One	1,141	2,059	59	92	327	3,354	West 2009
KAR-031 Old Karluk	33	19	0	0	25	77	West 2009
KOD-026 Monashka Bay	80	2,783	986	198	50	4,097	Aymond 2015
KOD-099 Kiavak	13	315	16	10	0	354	Partlow 2000

¹ Compares only midden samples from these sites with the Monashka Bay midden sample, because Partlow (2000, 2006) has shown significant differences between midden and house floor fish samples. All of the assemblages reported here are 1/8" fractions.

² Includes Order Clupeiformes (herring), and Class Chondrichthyes (cartilaginous fishes)

dates at Monashka Bay do not match the usual definition of Late Koniag material culture.

Incised stones were initially considered the hallmark of the Early Koniag phase (Jordan and Knecht 1988:273), but dating at Monashka Bay and other sites suggests that these artifacts occur frequently after AD 1400 (Table 7). This is unequivocally the case for the 110 incised stones from B layers and seven from Area 3 at Monashka Bay. Five of the nine other Koniag sites have yielded incised stones associated exclusively with radiocarbon dates calibrated to post AD-1400, while the remaining four sites have more equivocal dating that could nonetheless be consistent with post-AD 1400 ages. Seventy-seven percent of the dates in Table 7 (24/31) calibrate no earlier than AD 1406. These data do not support the idea of incised stones as Early Koniag diagnostic artifacts, even at the site from which this was proposed, if by Early Koniag one means AD 1250–1400.

A simple solution could be to adjust the start of the Late or Developed Koniag phase to a later time, such as AD 1500 as suggested by Steffian and Saltonstall

(2014:table 2). While this may be warranted in light of the re-dating at Karluk, and fits well with Jordan and Knecht's (1988:271) original age estimate for incised stones as dating to AD 1350–1500, it is not clear that incised stones can remain a diagnostic Early Koniag artifact even with this change. In Table 7, four incised stone dates are post AD 1500 (including half of the Karluk One dates), and 28 of the 31 dates are consistent with post-AD 1500. Only the two dates from House 1 at Settlement Point and the date from Old Kiavak are too young for AD 1500. The problem of associating particular artifacts with Koniag phases is not new, as Clark (2005) notes the “identification of certain artifacts as ‘Transitional,’ Early Koniag,’ or ‘Developed Koniag’ remains highly uncertain.” (see also Fitzhugh 1996:281; West 2011:90) The issue is further confused if the incised stones from the Monashka Bay site Kachemak levels are considered: 28 from Donta's Area 2, Level 3, with calibrated age of AD 239–614. In light of these concerns, the idea that incised stones are an Early Koniag diagnostic artifact is called into question.

Table 7: Radiocarbon-Dated Occurrences of Incised Stones from Koniag Tradition Sites

Site	Context	Incised Stones	Calibrated Age ¹	Reference
AFG-012	House floor	15	AD 1473–1653 (<i>n</i> = 1) AD 1325–1634 (<i>n</i> = 1) ²	Partlow 2000
Settlement Point (AFG-015)	Houses and exterior midden	353	AD 1406–1795 (<i>n</i> = 8) AD 1334–1635 (<i>n</i> = 2)	Partlow 2000
Settlement Point	House 1	62	AD 1284–1436 (<i>n</i> = 2)	Partlow 2000
Old Kiavak (AFG-088)	Koniag component	4	AD 1321–1476 (<i>n</i> = 1)	Clark 1997
Karluk One (KAR-001)	HF 8, HF 9, Up. Basal Midden	> 120	AD 1522–1949 (<i>n</i> = 2) AD 1434–1624 (<i>n</i> = 2)	Knecht 1995; West 2011
Old Karluk (KAR-031)	Layer 3	3	AD 1477–1662 (<i>n</i> = 1)	Steffian and Saltonstall 2006; West 2009
Monashka Bay (KOD-026)	B layers	110	AD 1477–1663 (<i>n</i> = 1)	Clark 1974a
Monashka Bay	Area 3	7	AD 1526–1949 (<i>n</i> = 1) AD 1484–1662 (<i>n</i> = 2)	Aymond 2015
Kizhuyak (KOD-043)		88	AD 1217–1606 (<i>n</i> = 1) ²	Clark 1974a
Rolling Bay (KOD-101)	Area 1	2	AD 1435–1638 (<i>n</i> = 2)	Clark 1974b
KOD-478		1	AD 1522–1949 (<i>n</i> = 1) AD 1431–1620 (<i>n</i> = 1)	Steffian and Saltonstall 2014
Outlet Site (KOD-562)	Area C1	4	AD 1448–1949 (<i>n</i> = 2)	Saltonstall p.c. 2015; Saltonstall and Steffian 2006

¹ Extent of 2 sigma age ranges calibrated with CALIB version 7.0.2 (Stuiver and Reimer 2014) using the IntCal13 or Marine13 dataset (Reimer et al. 2013). All used IntCal13 except for Old Kiavak.

² Date from radiocarbon sample below the incised stone-bearing level(s) and so must predate the artifacts.

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