

EXPANDING THE RADIOCARBON CHRONOLOGY OF KACHEMAK BAY, KENAI PENINSULA, ALASKA

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ABSTRACT

The cultural chronology of Kachemak Bay, near the southern end of the Kenai Peninsula, southcentral Alaska, documents human activity occurring as early as 8,000 years BP (Klein and Zollars 2004). Dates of this magnitude from North Pacific maritime sites remain extremely rare, being limited to a few sites in the eastern Aleutians, Kodiak Island, and the Alaska Peninsula. Equally rare are the scholars who have, in the last three decades, fashioned regional archaeological time lines for North Pacific coastal areas that continue to benefit present-day researchers. William Workman, often working with others between 1974 and 1997, began the development of the radiocarbon chronology for Kachemak Bay. Many of the dates and artifact assemblages he procured demonstrate cultural continuity with the Alaska Peninsula, Kodiak Archipelago, and beyond. Presently, about fifty dates document six discontinuous cultural traditions. Most represent the Kachemak tradition. Of the twenty-one dates obtained by the authors, seventeen pre- or postdate the Kachemak tradition, two represent it, and two were discarded. This paper presents those dates and demonstrates how they support or fill gaps in the chronology of Kachemak Bay.

KEYWORDS: Kachemak tradition, Early Holocene, pottery

INTRODUCTION

Kachemak Bay (Fig. 1) is a 64-km-long, glacially carved embayment off the southeast end of Cook Inlet, southcentral Alaska. Pleistocene glaciers shaped the Kenai Mountains, which define the south shore, the submarine contours of the bay, and the Kenai Lowland, which defines the north shore. Deglaciation began prior to 15,000 ^{14}C yrs BP (Reger and Pinney 1996:27). The geology, physical geography, biology, botany, and climate have transitional characteristics from the south to the north shore.

In the three decades prior to his retirement from the University of Alaska in 2005, William Workman focused on excavating large shell midden sites in Kachemak Bay. He and Karen Wood Workman established a systematic,

long-term approach to understanding the peopling of the region, often spending multiple seasons excavating extensive sites at Cottonwood Creek, Chugachik Island, and Yukon Island. Their publications detail the Kachemak tradition, a complex tradition of marine mammal hunters and fishermen who occupied primarily coastal sites on the islands and fringes of the rugged and geologically complex south shore of Kachemak Bay (Workman 1992).

Millennia before the Kachemak tradition, people representing the Arctic Small Tool tradition (ASTt), described by Workman and Zollars (2002); the Ocean Bay culture, described by Workman et al. (1993); and those occupying a still earlier site of an unknown culture (Klein

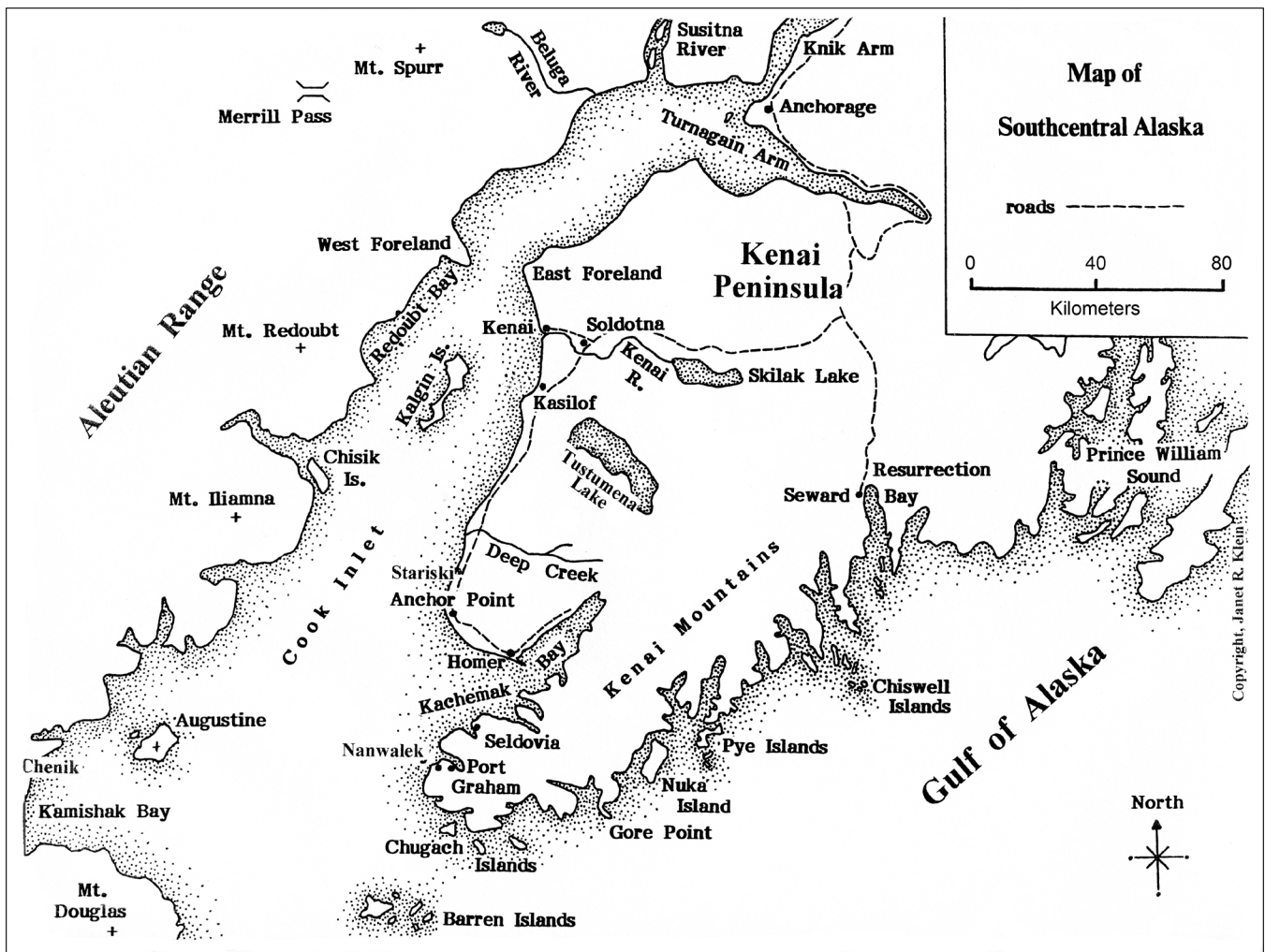


Figure 1. Map of Southcentral Alaska locating Kachemak Bay near the southern end of the Kenai Peninsula.

and Zollars 2004) used Kachemak Bay. Temporally, there was an approximate fifteen-hundred-year gap between the Kachemak tradition and the antecedent ASTt. Several dates presented here narrow that gap and, along with the artifact assemblage, suggest the possibility of another cultural entity in the region. In addition, centuries after the Kachemak tradition, people continued to utilize Kachemak Bay, as shown by many new radiocarbon dates from the Late Prehistoric Period.

HISTORY OF FIELDWORK

Field research has occurred sporadically in Kachemak Bay since 1883, when Johan A. Jacobsen, a Norwegian collecting for the Berlin Ethnological Museum, dug at a Native village called Soonroodna (Jacobsen 1977:198–199). The first survey, testing, and excavations by a professional archaeologist, however, were conducted by Frederica de

Laguna in 1930–32. Then representing the University of Pennsylvania Museum, she excavated, described, and named the Kachemak Culture, later renamed the Kachemak tradition when similar assemblages were identified elsewhere. Following de Laguna's enduring work and the publication of her monograph, *The Archaeology of Cook Inlet, Alaska* in 1934 (second printing, 1975), a forty-one-year hiatus occurred in archaeological work in Kachemak Bay until the Homer Society of Natural History initiated a site assessment survey. Douglas Reger, then at Washington State University, conducted the 1973 Kachemak Bay Archaeological Evaluation Project (Reger 1974). On his heels came the team of William and Karen Workman, often partnered with John Lobdell. Over the years, the Workmans led numerous large-scale, student-assisted excavations of the artifact- and fauna-rich Kachemak tradition sites. Their work expanded, elaborated, and refined de Laguna's. As they began what would become ten field

seasons in Kachemak Bay, other research occurred: the 1975 survey of Cook Inlet (Cook Inlet Native Association 1975), the 1976 survey of Eldred Passage (Lobdell 1976), and the 1977 survey of Halibut Cove and vicinity (Zinck et al. 1977).

We spent our first field seasons under Bill Workman's tutelage, digging into Kachemak tradition sites: Zollars as a student on the 1978 Yukon Island dig and Klein as curator of collections at the Pratt Museum in Homer, on the 1987 Yukon Island Fox Farm Site excavation. Zollars continued to excavate the basal component on Chugachik Island, served as Bill's field crew chief on several digs, and, along with Klein, joined him to excavate an Ocean Bay site at Aurora Lagoon in 1992 (Fig. 2).

On our own, we continued to survey, test, and excavate sites on private, state, and federal lands throughout Kachemak Bay. Bill supported us by signing the necessary permits, lending us the University of Alaska's Zodiac, and by being available for discussions about our excavations. Unlike Bill, we generally avoided deep Kachemak tradi-

tion middens (with one exception), and discovered instead numerous small, discrete, surface or near-surface erosional sites, which have provided datable materials to help expand the cultural chronology of Kachemak Bay.

SITE DESCRIPTIONS, EXCAVATION DATA, AND RADIOCARBON DATES

PRE-KACHEMAK TRADITION SITES

Aurora Spit in upper Kachemak Bay is a 1.2-km-long, 0.2-km-wide barrier spit that forms the west shore of Aurora Lagoon (Fig. 3). About mid-spit is a cluster of five rock knobs, the remains of former islands. On the larger northernmost knob is the Faulkner Site, SEL 009, which has a shell midden atop a north-facing, vertical erosional surface that lacks midden yet contains charred materials associated with several hearths (Klein and Zollars 2004:120).

Six radiocarbon dates (Table 1) were acquired from the actively eroding, stratified Faulkner Site, named for the landowners. One date represents the Kachemak tradition, while five represent the lowest sections of the lower component. The latter dates range from 6220 to 5470 BC (Klein and Zollars 2004:121). Due to an absence of diagnostic materials, we were unable to suggest an ethnic affiliation for the occupants, so we simply identified the site as early Holocene in age. Now the oldest radiocarbon dates in southcentral Alaska, they form the foundation of the Kachemak Bay chronology.

Eastward across Aurora Lagoon is the Sylva Site, SEL 245. The artifact assemblage and a radiocarbon date of 3059 BC (Reger and Boraas 1996:160) reflect a late Ocean Bay occupation. However, Level K, a deeper cultural component that lacked datable materials, could predate it (Workman et al. 1993:4). How the Ocean Bay site relates to the nearby early Holocene site has yet to be determined.

Another site, the stratified Island Creek Site, SEL 250, is located in the middle of the China Poot Bay estuary. It is situated on the south-facing side of a rock knoll that becomes insular when tides rise above 5.8 m. Eroded and exotic flakes, found in 1992 by resident Michael McBride, led to the discovery of the shallow dual-component site, which we tested in 1993 and 1994. The lowest component lacks datable materials; however, its artifact assemblage shares lithic similarities and typological characteristics with early Ocean Bay materials from the Kodiak archipelago.



Figure 2. Bill Workman ponders artifacts from the excavation of a late Ocean Bay site in Kachemak Bay. Photograph by Janet R. Klein.



Figure 3. Aurora Lagoon, in upper Kachemak Bay, has radiocarbon dated sites from an Early Holocene occupation and a Kachemak tradition occupation on distant Aurora Spit and from a late Ocean Bay site on the mainland in the foreground. Photograph by Janet R. Klein.

Table 1. Radiocarbon dates obtained by the authors.

AHRS # SEL-	Laboratory #	14 C yrs BP	13/12 C Ratio	Calibrated Yrs	Sigma	Material Dated
009-Aurora Spit	Beta-152922	7150 ± 100 BP	25.9 ‰	6220–5810 BC	2	charred material
009-Aurora Spit	Beta-158403	7070 ± 90 BP	25.3 ‰	6080–5740 BC	2	charred material
009-Aurora Spit	Beta-152923	6830 ± 90 BP	25.6 ‰	5880–5610 BC	2	charred material
009-Aurora Spit	Beta-152924	6790 ± 70 BP	26.2 ‰	5790–5610 BC	2	charred material
009-Aurora Spit	Beta-158402	6670 ± 90 BP	26 ‰	5720–5470 BC	2	charred material
269-Yukon Island	Beta-100545	3520 ± 70 BP	25.0 ‰	2015–1670 BC	2	bark (Level G)
269-Yukon Island	Beta-100544	3010 ± 100 BP	25.0 ‰	1450–930 BC	2	wood (Level G)
041-Yukon Is. Trench	Beta-152920	2450 ± 70 BP	24.1 ‰	790–390 BC	2	hearth material
009-Aurora Spit	Beta-152921	1750 ± 70 BP	26.4 ‰	AD 110–430	2	charred material
250-China Poot Bay	Beta-152928	1430 ± 50 BP	26.2 ‰	AD 540–680	2	charred material
269-Yukon Island	Beta-115450	1030 ± 70 BP	25‰	AD 885–1175	2	charred material (Level F)
275-Tutka Bay	Beta-152927	1030 ± 70 BP	25.7 ‰	AD 880–1170	2	charred material
275-Tutka Bay	Beta-152926	930 ± 80 BP	24.5 ‰	AD 980–1270	2	charred material
250-China Poot Bay	Beta-76534	910 ± 60 BP	not requested	AD 1010–1260	2	charred material
250-China Poot Bay	Beta-76535	900 ± 60 BP	not requested	AD 1010–1260	2	charred material
269-Yukon Island	Beta-115449	790 ± 40 BP	28.4 ‰	AD 1195–1290	2	charred material (Level F)
269-Yukon Island	Beta-110244	530 ± 50 BP	unknown	AD 1310–1355	2	charred material (Level E)
248-Seldovia	WSU-4471	515 ± 90 BP	26.4 ‰	AD 1450	1	birch bark
269-Yukon Island	Beta-100543	480 ± 50 BP	25.0 ‰	AD 1400–1485	2	charred material (Level E)
041-Yukon Is. Trench	Beta-152925	39,880	23.6 ‰	discarded		
269-Yukon Island	Beta-110245	30,250	26.7 ‰	discarded		

Yukon Island, a gateway island to inner Kachemak Bay, was occupied over the millennia by numerous cultures. Prior to our work, the oldest radiocarbon date from the island was 883 BC, obtained from materials de Laguna excavated from the depths of the Kachemak tradition midden (Reger and Boraas 1993:3). Although de Laguna avowed that the date was based on contaminated materials, Reger and Boraas accepted it for inclusion in the cultural chronology of Kachemak Bay (Reger and Boraas 1993:3).

SEL 269, a relatively shallow stratified site on Yukon Island, was discovered in July 1996 after Zollars and Anna Jacobs, a University of Alaska Anchorage student, found a piece of pottery on the beach near where we were excavating a historic Dena'ina midden. Because pottery is relatively rare in Kachemak Bay sites, we stopped our dig to locate its source and to test the site. In 1997, we continued to excavate SEL 269, which is located on a south-facing slope rising from the beach. The only features were two hearths loosely defined by culturally placed rocks. In Level G, exotic lithics and numerous tool types suggest an ASTt occupation, yet other materials and tool types are not reflective of the ASTt.

The radiocarbon dates from SEL 269 are intriguing. A sample of bark was dated at 2015–1670 BC, and a piece of wood at 1450–930 BC. These oldest dates from Yukon Island predate the onset of the Kachemak tradition by hundreds of years when using de Laguna's incipient date of 883 BC, and postdate the ASTt in Kachemak Bay by roughly a millennia: 3100–2450 BC and 2900–2200 BC (calibrated by Owen Mason from Workman's and Zollars's dates of 4205–3805 range BP and 4440–4000 range BP [Workman and Zollars 2002:40]). Do the dates represent an earlier beginning of the Kachemak tradition? Do they expand the tenure of the ASTt? Are we seeing a not-unexpected Norton or Norton-like occupation narrowing the temporal gap between the ASTt and the Kachemak tradition? Or are there other explanations for them and the associated eclectic artifact assemblage? With such a small inventory and the absence of diagnostics from either the Kachemak or the Norton tradition, we can only cogitate on the meaning of the unusual combination of lithics, artifacts, and dates.

KACHEMAK TRADITION SITES

The Fox Farm Site, SEL 041, is located slightly above sea level in a lush meadow on the southeast corner of Yukon Island. In 1978, de Laguna and K. Workman excavated

a trench through a Kachemak tradition midden. Because the trench was not backfilled, the landowners invited the authors to continue excavations. Sporadically over numerous seasons, we removed the slough, widened the trench, and excavated to sterile gravel. We obtained two radiocarbon dates: the deeper, Beta-152925, which dated to 39,880 ¹⁴C yrs BP, was discarded; the other, 790–390 cal BC, and the artifact assemblage represent the poorly documented phase II of the Kachemak tradition and support the only other Kachemak II date of 858 BC obtained from Chugachik Island (Reger and Boraas 1996:160).

The Kachemak tradition midden that capped the early Holocene site on Aurora Spit was initially located, tested, and identified by de Laguna in 1931 (de Laguna 1975:24 [1934]). We encountered the same midden, with numerous postholes, during our excavation. Charred material provided a date of AD 110–430 (Klein and Zollars 2004:120). The date and artifact assemblage, which represent the late Kachemak tradition phase, correlate nicely with the many late Kachemak dates acquired by the Workmans and others.

POST-KACHEMAK TRADITION SITES

SEL 269, the stratified site on Yukon Island, is about a mile from the Bluff Site, where abundant pottery was unearthed by W. Workman and Lobdell (1980:395). At SEL 269 one upper component (Level E) contained abundant pottery among slate points and knives, adzes, other artifact types, and fauna (Fig. 4). Four hearths, containing abundant carbon, were constructed with rocks weighing 9–13.6 kg. Smaller hearths, lacking large rocks, were lined with cobbles. Level F, the next deeper component, also contained pottery.

A minimum of ninety-two undecorated sherds were excavated from the two levels, including a few rim sherds and a sizable basal sherd. There are striking similarities between the sherds from SEL 269 and those from the Bluff Site. Dates associated with the pottery-producing components at SEL 269 are AD 885–1175, AD 1195–1290, AD 1310–1355, and AD 1400–1485. Pottery from the Bluff Site, SEL 041, dates to the late first millennium (Workman 1982:111).

Pottery, rather rare in Kachemak Bay, is known from four sites in Kachemak Bay. Three are on Yukon Island: SEL 269, SEL 041, and SEL 001, where de Laguna found a few enigmatic pieces (de Laguna 1975:68 [1934]). The only other known source is Soonroodna, the abandoned village, where Jacobsen excavated sherds, possibly from

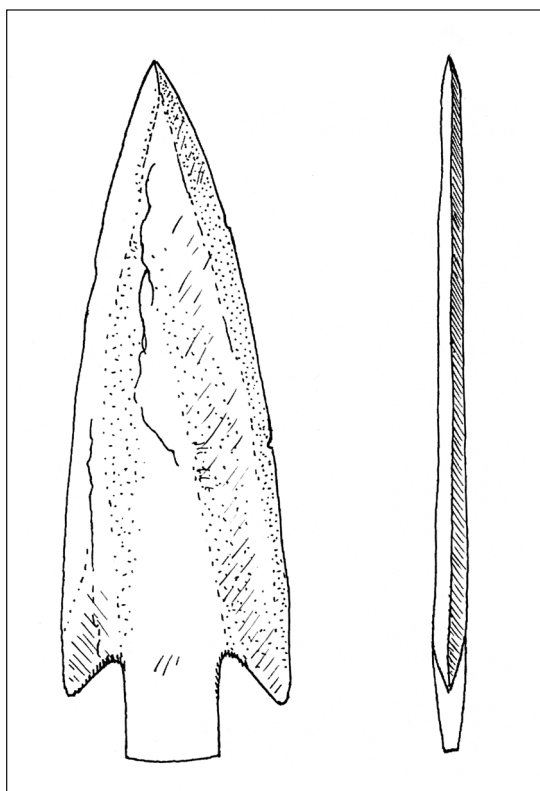


Figure 4. This point, crafted of black slate and associated with potsherds at SEL 269 on Yukon Island, was identified as a Three Saints Bay-style point by Douglas Reger. Length = 9.3 cm. Illustration by Lee Post.

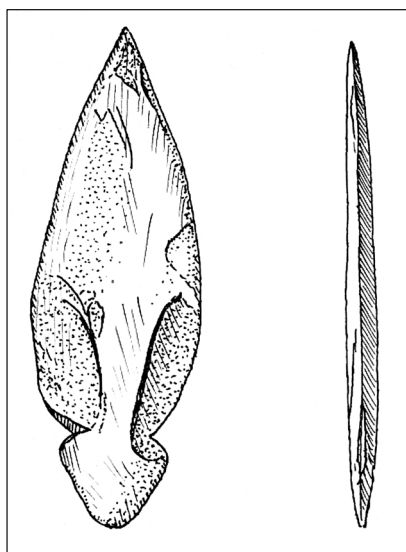


Figure 5. Crafted from brown slate, this point was found in the younger component at SEL 250, the Island Creek Site on the China Poot Bay estuary. Length = 6.6 cm. Illustration by Lee Post.

two levels (Jacobsen 1977:198–199). When Klein viewed the potsherds at the Berlin Ethnological Museum in 2002, she noted that six were similar to each other while the seventh was considerably different (cf. Klein 1996:84). It would be fascinating to see how the Soonroodna pieces compare with those from Yukon Island. For many reasons, including the presence of potsherds, Klein, along with Frederica de Laguna and Alaska historian Morgan Sherwood, believes that Soonroodna is located at the abandoned Waterbury Fox Farm in China Poot Bay.

Several dates from SEL 269 correlate temporally with the three dates obtained by the Workmans at SEL 027, the Port Graham Cannery Site. Those dates range between AD 1300 and 1500 (Workman and Workman 1998:100).

Another post-Kachemak tradition site, the Eckles Site, SEL 275, is a shallow dual-component site just above the high tide line inside a bight on the west shore near the entrance to Tutka Bay. An ash layer separates the two components. The uppermost is a shell midden from which charred material was dated at AD 980–1270. The lower component consists mainly of a housepit with a hearth well-defined by large rocks. Charred hearth material was dated at AD 880–1170. No ethnic affiliation was assigned to either component.

The Island Creek Site, SEL 250, which we excavated in 1993 and 1994 with the assistance of Thomas Eidel in 1994, contained about six hundred artifacts. Most lithic materials were siltstone flakes and tuffaceous materials, although a brown slate projectile point was unearthed (Fig. 5). No diagnostic artifacts were recovered.

Charred materials from two hearths of the uppermost component of the Island Creek Site date to AD 540–680 and AD 1010–1260. The latter dates complement the AD 915 date from the nearby Late Kachemak tradition site on Point West of Halibut Cove (Boraas and Klein 1992:183); however, no lithics or artifacts at Island Creek suggest a late Kachemak tradition use. The dates also form a neat chronological ladder with those from SEL 275, AD 880–1170 and AD 980–1270, with another date from SEL 269, AD 885–1175, and with a date from SEL 245 of AD 999 (Reger and Boraas 1996:160).

Atop and at the edge of a 4.27-m-high sea bluff near Seldovia is a shallow, eroding shell midden, SEL 248. The Hawkey Site was reported in 1993 by Susan Springer, a resident of Seldovia, and named in honor of her father. An excavation was sponsored by the Seldovia Native Association and the City of Seldovia. A 1.5 x 2.14 m test hole produced abundant fauna but few artifacts (Klein

1996:73). The 3-m deep midden was lined with birch bark, beneath which was sterile ash. A radiocarbon date of AD 1450 at one sigma places the site within the Late Prehistoric Period and is the first date for the Seldovia area. The small extent of the excavation and the paucity of artifacts, however, preclude any speculation about the ethnic affiliation of the occupants.

DISCUSSION

The nineteen radiocarbon dates obtained by the authors between 1990 and 2003 have added depth and some continuity to the chronological sequence of Kachemak Bay. However, they have also raised new questions, especially as to the ethnic affiliation of the occupants of numerous sites. Diagnostic materials were seldom unearthed in these often surprisingly shallow, multicomponent sites. The challenge to future archaeologists will be to obtain additional data from which they can describe the peoples who have utilized Kachemak Bay for over eight millennia.

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We are grateful to the many residents of Kachemak Bay who have donated transportation, housing, and camping sites, shared information about sites, and invited us to view their collections and to excavate on their land. We also greatly appreciate the many volunteers who have joined us from Homer, Anchorage, and beyond. Lee Post, of Homer, has gone far beyond just participating in excavations. His illustrations of artifacts and fauna have enhanced numerous publications and his identification of bones has been important through the decades. But most of all, we consider ourselves privileged and fortunate to have spent numerous seasons working with Bill Workman and learning from his field expertise and the extensive knowledge shared in his many publications and at professional meetings. We honor Bill and his decades of dedication to Kachemak Bay archaeology with these new radiocarbon dates.

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