

# REPORT

## RADIOCARBON DATES FROM THE CENTRAL ALEUTIAN UPLAND ARCHAEOLOGICAL PROJECT, SOUTHWEST ADAK ISLAND: 2007–2012

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### ABSTRACT

Research between 2007 and 2012 on the southwest side of Adak Island has contributed to our understanding of human settlement and land use on the Central Aleutian Islands by ancestral *Unanga*. Forty-seven calibrated radiocarbon dates from 20 individual upland and coastal archaeological sites are presented. Earlier research produced few archaeological sites dating before 2500 cal BP on Adak Island, and a hypothesized hiatus between approximately 6000 and 4000 cal BP was proposed based on dates from the north side of Adak Island. Our research indicates the human occupation of southwest Adak Island was under way by approximately 5200 cal BP and upland areas occupied 1000 years later. Furthermore, 23 radiocarbon dates from 10 archaeological sites are earlier than 2500 cal BP, and support suggestions that population density was sufficiently high to sustain an expansion of ancestral *Unanga* into the western islands of the Aleutian archipelago before 4000 years ago.

### INTRODUCTION

This report presents 47 radiocarbon samples from 20 archaeological sites on southwest Adak Island, Aleutians Islands, Alaska, collected between 2007 and 2012 from upland and coastal sites that date between the late-prehistoric period and approximately 5000 years ago. In addition to documenting the presence and distribution of upland archaeological sites on southwest Adak Island, these data also increase the number of documented sites older than 2500 years ago and fill, to some degree, a hypothesized hiatus between 6000 and 4000 years ago in the central Aleutian archipelago.

Prior to this research, dated sites in southwestern Adak were few, resulting largely from surveys conducted by the Bureau of Indian Affairs to support Alaska Native Claims Settlement Act (ANCSA) investigations in the

mid-1980s and early 1990s (O’Leary 2007). Dixie West and her colleagues (West et al. 2012:32–34, Appendix 1B; see West and Crockford 2012:322 for a discussion of the dates) reported 104 radiocarbon dates for the north side of Adak Island. These dates provide a significant amount of detail about human and natural history of the central Aleutian archipelago, including the earliest known human settlement, refining the tephrochronology of the region, and establishing the dates of the formation of terraces through tectonic uplift. West and Crockford (2012:318) noted a hiatus of human occupation between 6000 and 4000 years ago but found no obvious environmental reason for abandonment of the area. They proposed that either people moved to other parts of the island or onto adjacent islands, or that older sites within this time frame

on the higher terraces may be deeply buried and untested. The radiocarbon data collected on the southwest portion of Adak Island does not indicate that such a hiatus is reflected in this area.

Few sites dating before 2500 years ago have been reported in the central Aleutian archipelago, and even on north Adak Island, only one site dating earlier than 3500 years ago has been identified (Veltre 2012:40). Fieldwork in coastal and upland areas of southwest Adak Island resulted in 23 new dates from 10 sites that are earlier than 2500 years ago, suggesting that the occupation of the central Aleutian Islands may have been denser than has generally been understood, and increased density during the Neoglacial may have supported the expansion of ancestral *Unanga* into the western islands of the Aleutian archipelago sometime before 4000 years ago (Corbett et al. 2010; Funk 2011).

### THE CENTRAL ALEUTIANS UPLAND ARCHAEOLOGICAL PROJECT

The goals of the project are to (1) determine the chronological span of upland site occupation, (2) determine the density and distribution of upland sites on the southwest portion of Adak Island, and (3) investigate the use of upland sites and how they fit into the broader understanding of land use patterns in the central Aleutian archipelago. An ancillary goal of the project is to collect charcoal samples from coastal locations to determine if there is a spatial and temporal correlation of coastal and upland site occupations (Table 1).

Field efforts in 2007 on the southwest portion of Adak Island were conducted over six days and focused on the area around the first upland site reported on the island (ADK-00127), working under the assumption that more upland sites may be located in the vicinity of a confirmed upland site (Hanson and Corbett 2010; Hanson and Staley 1984). The 2007 survey resulted in the identification of eight previously unrecorded upland sites, two of which yielded charcoal that was submitted for radiometric analysis.

*Table 1: Radiocarbon samples and sites analyzed by year.*

Survey year	# of C <sup>14</sup> samples	# of sites
2007	2	2
2010	13	6
2011	14	5
2012	18	8

During the 2010 and 2011 field seasons, the crew conducted wide area pedestrian survey on the southwest portion of Adak Island, documenting the extent, number, and distribution of upland sites and unreported coastal sites (Fig. 1). We define upland sites as an observed concentration of *Unanga* cultural material or features that were positioned by their originators in a location that was not adjacent to or abutting the shoreline at the time of occupation, which was operationalized to mean more than 30 m above modern sea level and/or more than 50 m inland from the modern shoreline (see Anders 2013). In addition to identifying, recording, and sampling previously undocumented sites, we also investigated upland sites identified in 2007 to verify their cultural origin and collect charcoal for radiometric analysis. More intensive excavation of two sites was also undertaken in 2010 and 2011 (ADK-00266 and ADK-00237, respectively; Gordaoff 2016). In total, 27 charcoal samples from 11 sites were analyzed.



The 2012 field season focused on using geomorphological and tephrochronological information to target components of coastal archaeological sites that were occupied during the Neoglacial period in the central Aleutian Islands (circa 4700–2500 years ago) to identify coastal sites that could be compared to ADK-00237. The 2012 field effort resulted in 18 charcoal samples collected from eight coastal sites.

In all field seasons, potential cultural features and known sites were investigated through the excavation of tests within or adjacent to identified or suspected surface features, with the purpose of verifying the cultural origin of the feature(s) or the presence of subsurface archaeological materials. Trowel and entrenchment tools were used to excavate test units of 50 x 50 cm with all sediments screened through 6.4 mm (¼ in) hardware mesh. Test units were excavated to sterile C horizons or, in some cases, were excavated to the limits that could be reached using hand tools (i.e., > 120 cm deep; Fig. 2). Stratigraphic positions of artifacts and samples encountered were recorded and collected. As noted above, larger excavations were undertaken at two sites (ADK-00237 and ADK-00266), while a more conservative approach was used when sampling other sites.

### RADIOCARBON DATES

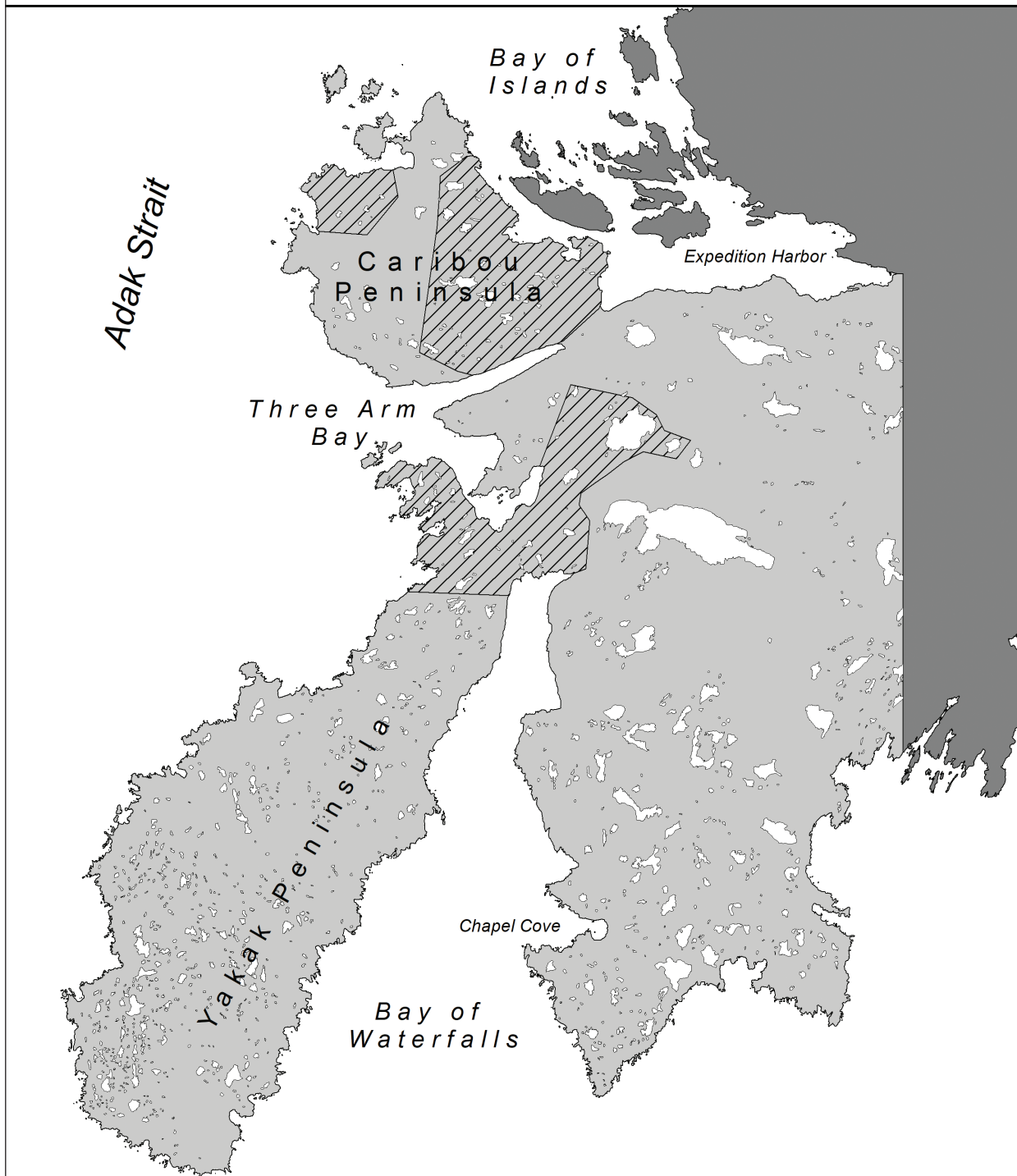
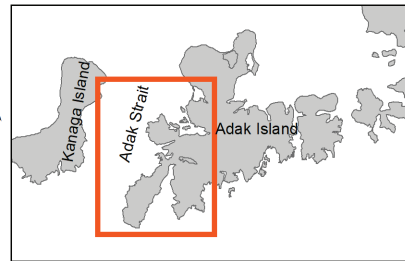
All charcoal samples presented in Table 2 were directly associated with cultural materials or horizons. While some of the identified sites did yield faunal remains, only

**Figure 1: Survey and Study Areas  
Southwest Adak Island, Alaska**

 Survey Area  
 Study Area

NAD83 Datum  
State Plane Projection Alaska FIPS 5010

0 3.5 7 km  
0 1 2 4 Miles



*Figure 1: Survey and study areas, southwest Adak Island, Alaska.*



*Figure 2: Test pit profile at ADK-00276. Photograph by Jake Anders.*

charcoal samples were submitted for radiometric analysis to limit the potential for inaccurate measurements deriving from the marine reservoir effect (cf. Khasanov et al. 2015). Furthermore, none of the submitted samples were recovered from within middens of sea mammal remains or oil-rich sediment deposits, and consultation with Beta Analytic Incorporated indicated that none yielded highly enriched  $\delta C13$  values, as would be expected if they had been subject to contamination by sea mammal oils (R. Hatfield, pers. comm. 19 May 2020). Table 2 is organized by Alaska Heritage Resources Survey (AHRS) site number and displays the samples collected for each site. Also included are the laboratory number, the reported conventional age of the sample in radiocarbon years before present (BP), the calibrated date range of the sample derived using BetaCal v3.21 and the IntCal13 calibration curve (cal BP), and the isotope fractionation correction value applied to the sample.

## DISCUSSION

*Unanga* use and occupancy of upland areas has largely gone unacknowledged by archaeologists working in the Aleutian archipelago, with some going so far as to suggest that noncoastal areas were irrelevant to *Unanga* way of life (Frohlich and Kopjanski 1975; Jochelson [1925] 1975; Laughlin 1980; McCartney 1972). This conception is partly a result of early ideas of land use patterns built upon early ethnographic accounts of the region (cf. Veniaminov 1984:258) and partly the result of logistical limitations and the resulting constraints on survey methods employed in the archipelago that focused most archaeological work to the coastal margins (e.g., Frohlich and Kopjanski 1975; McCartney 1972).

The results of the survey work and chronologic data collected by the project have revealed that ancestral *Unanga* use and occupation of upland areas, which included the construction of clusters of semisubterranean structures, was underway by at least 4239–3446 cal BP (ADK-00237), and that ADK-00238 at the head of Bay of Waterfalls was occupied as early as 5286–4970 cal BP and is on the nearly opposite side of the island from the next oldest site, ADK-00171 (circa 6000 BP) (Fig. 3). The confirmation that not only did ancestral *Unanga* use upland areas but that this use appears to be widespread, diverse in nature and location, and occurs shortly after the suspected initial colonization of the island by ancestral *Unanga* has provided an important additional context to the region's history.

## CONCLUSION

During our research on southwest Adak Island conducted between 2007 and 2012, we analyzed 47 radiocarbon dates from 20 upland and coastal archaeological sites. The results indicate that the scarcity of documented sites dating earlier than 2500 or 3500 years ago is the result of sampling and surveying methods, rather than the result of an abandonment of the region by ancestral *Unanga* peoples. These dates are derived from sites that have largely been sampled using minimally intrusive techniques. Much remains to be learned from these sites; however, these data contribute to building a more refined chronology of the occupation, dispersion, and settlement patterns of ancestral *Unanga* people in the central Aleutian archipelago.



*Table 2: Radiocarbon Dates from Archaeological Sites on Southwest Adak Island, 2007–2012*

AHRS site	Sample ID	Conventional age (BP)	Cal BP (2 $\sigma$ ) <sup>1</sup>	$\delta^{13}\text{C}$ value (‰)
ADK-022	Beta-327561	2970 $\pm$ 30	3229 to 3007	–23.5
	Beta-327562	3290 $\pm$ 30	3581 to 3450	–26.8
	Beta-327563	810 $\pm$ 30	781 to 680	–24.5
ADK-025	Beta-327564	2260 $\pm$ 30	2346 to 2158	–25.9
ADK-026	Beta-327567	330 $\pm$ 30	473 to 308	–23.3
	Beta-327568	1110 $\pm$ 30	1072 to 937	–24.0
ADK-044	Beta-327569	310 $\pm$ 30	465 to 300	–21.5
	Beta-327570	3510 $\pm$ 30	3867 to 3697	–24.8
ADK-104	Beta-327571	190 $\pm$ 30	302 to post-AD 1950	–21.7
	Beta-327572	100 $\pm$ 30	268 to 15	–22.2
ADK-228	Beta-327573	3360 $\pm$ 30	3691 to 3495	–25.1
ADK-230	Beta-315556	310 $\pm$ 30	465 to 300	–23.3
ADK-233	Beta-235598	180 $\pm$ 40	302 to post AD 1950	–24.2
ADK-236	Beta-235599	590 $\pm$ 40	654 to 534	–25.7
	Beta-315559	520 $\pm$ 30	626 to 507	–26.0
ADK-237	Beta-315560	3360 $\pm$ 30	3691 to 3495	–25.1
	Beta-315561	3340 $\pm$ 30	3678 to 3480	–26.3
	Beta-315563	3340 $\pm$ 30	3678 to 3480	–24.3
	Beta-315564	3440 $\pm$ 30	3827 to 3613	–25.9
	Beta-315565	3280 $\pm$ 30	3578 to 3446	–23.4
	Beta-315566	3450 $\pm$ 30	3829 to 3637	–23.7
	Beta-315567	3440 $\pm$ 30	3827 to 3613	–23.8
	Beta-315568	3680 $\pm$ 30	4139 to 3913	–24.3
	Beta-327575	3770 $\pm$ 30	4239 to 4000	–24.0
	Beta-327576	3300 $\pm$ 30	3592 to 3453	–24.4
ADK-238	Beta-315569	4460 $\pm$ 30	5286 to 4970	–25.3
ADK-239	Beta-327577	2780 $\pm$ 30	2952 to 2793	–25.1
	Beta-327578	2540 $\pm$ 30	2748 to 2496	–25.7
	Beta-327579	3270 $\pm$ 30	3572 to 3409	–25.5
	Beta-327580	3400 $\pm$ 30	3716 to 3572	–27.5
	Beta-327581	200 $\pm$ 30	304 to post-AD 1950	–22.3
ADK-265	Beta-292092	300 $\pm$ 30	461 to 296	–25.8
ADK-266	Beta-292085	1740 $\pm$ 40	1776 to 1550	–23.9
	Beta-292086	1630 $\pm$ 40	1612 to 1411	–23.2
	Beta-292087	2510 $\pm$ 40	2745 to 2458	–23.0
	Beta-292088	1960 $\pm$ 30	1989 to 1830	–24.5
	Beta-292089	1820 $\pm$ 30	1860 to 1630	–23.6
	Beta-292090	1860 $\pm$ 30	1870 to 1720	–25.6
	Beta-292093	330 $\pm$ 30	473 to 308	–22.5
ADK-267	Beta-292081	1670 $\pm$ 30	1629 to 1522	–24.6
ADK-271	Beta-292082	1740 $\pm$ 40	1738 to 1550	–24.9
ADK-272	Beta-292084	2280 $\pm$ 40	2354 to 2157	–25.0
	Beta-292091	2200 $\pm$ 30	2315 to 2135	–24.6
ADK-273	Beta-292080	2490 $\pm$ 40	2738 to 2380	–23.9
ADK-276	Beta-315550	3450 $\pm$ 30	3829 to 3637	–25.8
	Beta-315551	3410 $\pm$ 30	3814 to 3576	–24.3
ADK-290	Beta-315554	2090 $\pm$ 30	2144 to 1991	–26.3

<sup>1</sup> 2 $\sigma$  calibration using BetaCal v3.21 and the IntCal13 calibration curve.

Note: All submitted samples were comprised of charcoal.

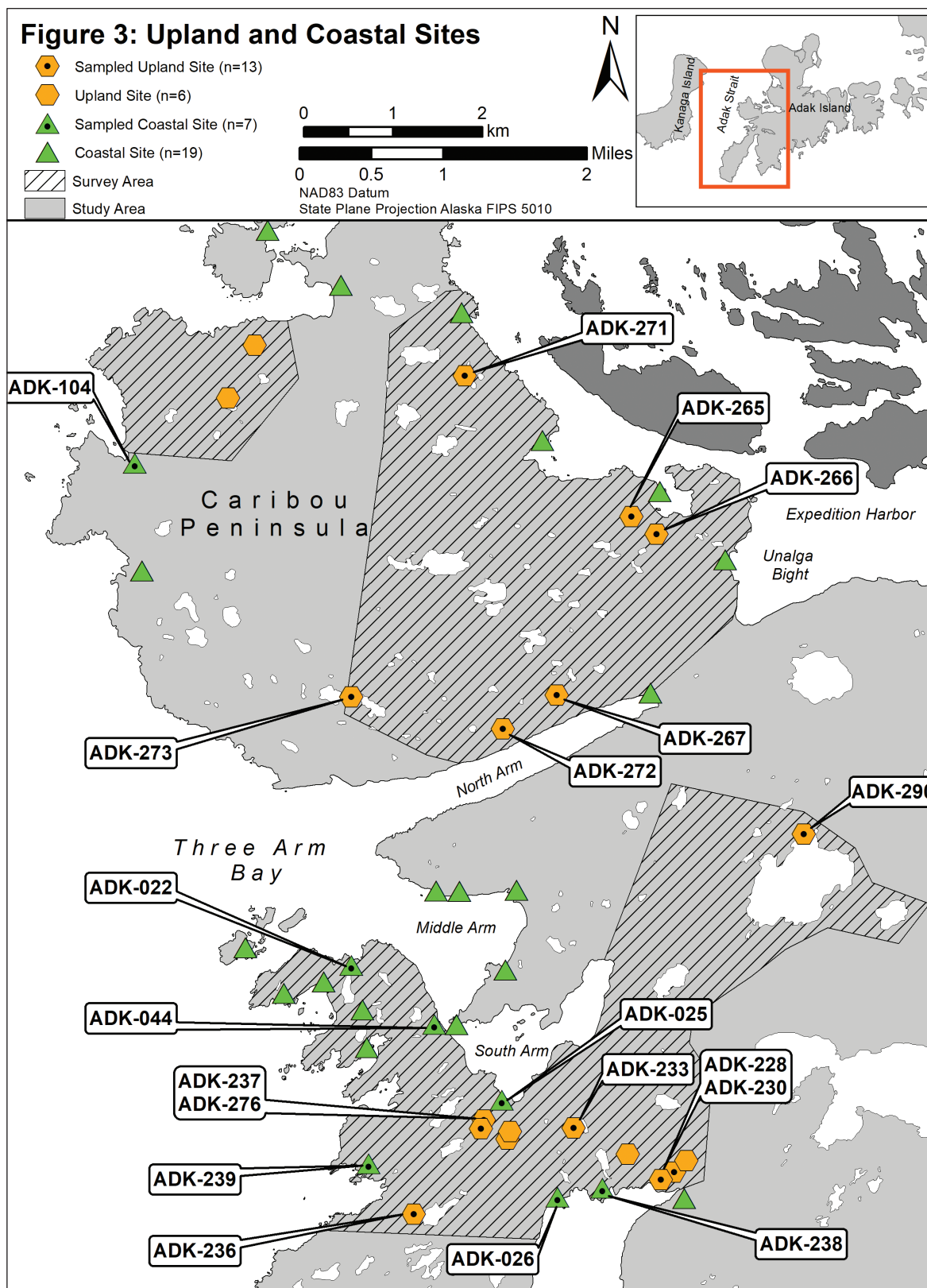


Figure 3: Upland and coastal sites.

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