Coastal Subsistence and Landscape Evolution on Eastern Santa Rosa Island, California: Perspectives from CA-SRI-667.

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SMU

The Northern Channel Islands

Introduction

The Channel Islands have a lengthy archaeological record, spanning roughly 13,000 calender years. Relatively little is known about cultural developments during the Middle Holocene, however, leaving a substantial gap in our understanding of regional prehistory (see Glassow 1997; Kennett 2005). Our research at CA-SRI-667, a large dune site with three components dated between about 6200 and 4000 cal BP, demonstrates significant changes in the composition of local environments and shellfish communities. Faunal remains and artifacts from the site document the disappearance of a local estuary, intensive dune-building episodes, and the presence of relatively mobile settlement systems.

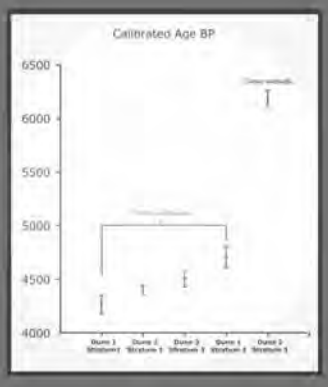
View of entire site looking northeast.

Site Context

CA-SRI-667 is situated on two large dunes separated by a low-lying swale on eastern Santa Rosa Island. This stratified site consists of three separate shell midden deposits interdigitated with several meters of sterile sand. The site covers roughly 279 x 110 m and most of the surface contains a scatter of eroding midden debris (shell, bone, rock, etc.). The upper component of the site, Stratum 1, is an intact deposit that caps both dunes. An AMS shell date from Stratum 1 yielded an intercept of 4260 cal BP (OS-41892). The middle component (Stratum 2), located about 3 m below Stratum 1, produced an intercept of 4700 cal BP (OS-41893). The basal component (Stratum 3), situated at the bottom of Dune 2, yielded an intercept of 6180 cal. BP (OS-41894). Radiocarbon dates from Stratum 1 and Straum 2 in Dune 2 confirm this chronology.

Methods

Our research at CA-SRI-667 was conducted in 2003, associated with a revegetation and site stabilization project conducted by Georganna Hawley of Channel Islands National Park. We excavated three bulk samples: 1) Bulk Sample 1 (25 liters) was obtained from a roughly 15 cm thick midden deposit capping Dune 1(Stratum 1); 2) Bulk Sample 2 (25 liters) was obtained from Stratum 2, a roughly 40 cm thick deposit located about 6 m below Stratum 1 in Dune 1; and 3) Bulk Sample 3 (30 liters) was obtained from Stratum 3, a roughly 20 cm thick deposit at the base of Dune 2. All residuals were poured over 1/16-inch mesh and retained for analysis. In the lab, all residuals from the 1/8-inch and larger mesh were sorted and identified to the most specifie unit possible.



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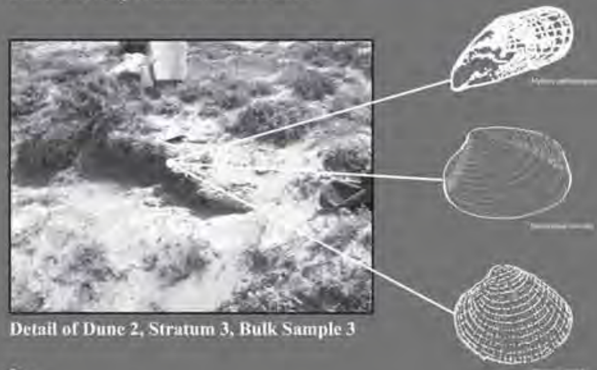
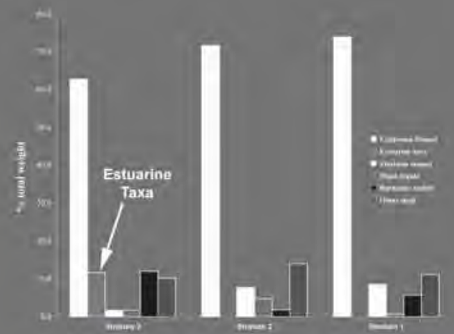
Dune 1 looking southeast from Dune 2



Detail of Dune 2, Stratum 3, Bulk Sample 3

Results

Roughly 13 kg of shell was recovered from the three strata, with 3.9 kg in Stratum 1, 3.0 kg in Stratum 2, and 6.4 kg in Stratum 3. At least 31 shellfish taxa were identified in the deposits. All three strata were dominated by California mussel, however, a substantial amount of estuarine taxa were recovered from Stratum 3. Although most small barnacles were probably incidental riders, in Stratum 3 several large barnacles were recovered (about 12 % of the total assemblage) and may have been consumed by people. Vertebrate remains were relatively rare, but in Stratum 2 fish bone were considerably more abundant. Artifacts were also limited to a few pieces of chipped stone debitage, a chert projectile point, a donut stone fragment, one Olivella barrel bead, one Olivella spiral lopped bead, and several fragments of worked Pismo clam shell.



Conclusions

CA-SRI-667 appears to be a camp or logistical site occupied at several times during the Middle Holocene.

The earliest deposits, dated to ca. 6200 cal BP, suggest the people who occupied the site transported shellfish from the Abalone Rocks Estuary roughly 3 km away, but most of the shellfish appears to have come from local rocky intertidal habitats.

The later occupations at the site, occuring between 4700 and 4200 cal BP, contain primarily rocky intertidal shellfish species, greater quantities of fish bone, and no estuarine taxa.

These differences in the shellfish assemblages are probably related to the transition of the Abalone Rocks Estuary to a primarily freshwater system after about 5000 years ago (see Rick et al. 2005).

Our analysis of the site also supports recent research on dune formation on adjacent San Miguel Island, suggesting there was a relatively intensive period of Middle Holocene dune building on the Northern Channel Islands (Erlandson et al. 2005). Similar to San Miguel Island, the midden refuse deposited on the dunes at SRI-CA-667 appears to have stabilized portions of the sand dunes.

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