

Accepted Manuscript

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PII: S0305-4403(14)00202-7

DOI: [10.1016/j.jas.2014.05.024](https://doi.org/10.1016/j.jas.2014.05.024)

Reference: YJASC 4082

To appear in: *Journal of Archaeological Science*

Received Date: 2 April 2014

Revised Date: 22 May 2014

Accepted Date: 25 May 2014

Please cite this article as: Ainis, A.F., Vellanoweth, R.L., Lapeña, Q.G., Thornber, C.S., Using Non-Dietary Gastropods in Coastal Shell Middens to Infer Kelp and Seagrass Harvesting and Paleoenvironmental Conditions, *Journal of Archaeological Science* (2014), doi: 10.1016/j.jas.2014.05.024.

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Using Non-Dietary Gastropods in Coastal Shell Middens to Infer Kelp and Seagrass Harvesting and Paleoenvironmental Conditions.

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Abstract

Archaeologists analyzing shell middens typically focus on larger (>2 cm) mollusks to examine subsistence practices, impacts on littoral habitats, and paleoenvironmental conditions as well as a host of other natural and cultural phenomena. Small (<2 cm), non-dietary gastropods in archaeological shell middens also provide important clues regarding human resource procurement in littoral areas and coastal paleoenvironments. We present data from two sites on the California Channel Islands to demonstrate the range of information that can be gained by analyzing small gastropod shells. Identifications revealed the remains of over 4,500 non-dietary small gastropods from 75 taxa. Human harvesting of marine macrophytes is suggested by the presence of 18 species that are predominantly associated with seaweeds and seagrasses. Quantification measures revealed high diversity and equitability indices, oscillating taxonomic richness, and decreasing densities through time at both sites. Likelihood ratio tests revealed differences in assemblage composition between Early Holocene and later components at one site, and demonstrated similarities in the relative composition of non-dietary shell assemblages between both sites during the Middle Holocene. Incorporating detailed studies of less conspicuous “incidental” shellfish remains in archaeological midden studies has the potential to contribute to our understanding of past human land use practices and littoral paleoecology. Our

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