A New Look at Subsistence and Habitat Use at the Preclassic Maya Site of Cerros, Belize

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Introduction

Located on the mouth of the New River by the Corozal Bay in northern Belize, the ancient site of Cerros provides a unique opportunity to examine how one of the earliest Maya communities made use of its local animal resources. Cerros developed into an important civic-ceremonial center during the Late Preclassic period (400 BCE – 250 CE), when the first Maya states began to form. Its strategic location would have allowed it to take advantage of a wide variety of animal species, both from the sea and nearby river as well as the inland forests and grasslands. A chronological and regional analysis of the faunal remains recovered from the site may allow us to better understand how the site sustained itself over time, and how its acquisition and use of species differed from similar sites elsewhere in northern Belize.

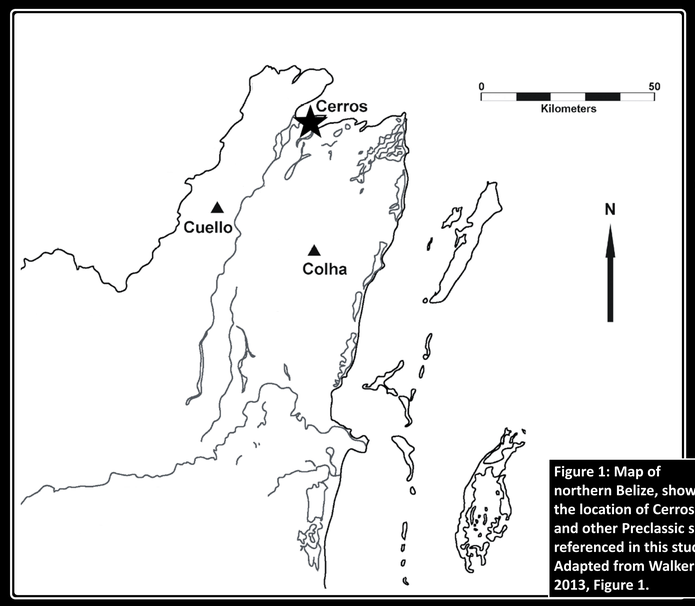


Figure 1: Map of northern Belize, showing the location of Cerros and other Preclassic sites referenced in this study. Adapted from Walker 2013, Figure 1.

Site Background

Cerros developed as a coastal village and trade hub during the Late Preclassic period (Freidel 2002; Reese-Taylor and Walker 2002). A dock, constructed *c.* 300 BCE, facilitated trade across the bay, and a canal, dug *c.* 200 BCE, would have improved agricultural efforts and provided a welcoming habitat for fish, turtles, and other freshwater species. The site reached its political apogee between 150 - 50 BCE, when many large ceremonial structures were constructed in the site core. Cerros's political and economic stability dissipated markedly after 150 CE until the site was abandoned about a century later.

Cerros was one of the first Preclassic period sites excavated by Maya archaeologists (Robertson and Freidel 1986, Walker 2013). Much of the vertebrate fauna was analyzed by Helen Sorayya Carr (1986), while many of the mollusk shells were analyzed by Rachel Hamilton (1987). The unanalyzed mollusks, modified bone and shell artifacts, and fine-screened assemblages are being identified here at the Florida Museum of Natural History. The present study takes a new look at the original Cerros zooarchaeological data, using revised chronological and contextual data, new methods to examine species and habitat preference, and comparable datasets from other neighboring Belizean sites to examine how the Preclassic inhabitants of Cerros made use of their local fauna.

White-tailed deer (*Odocoileus virginianus*)[3] and deer bone tools.[5]

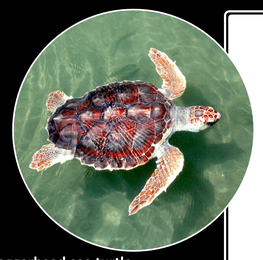
Methodology

Bone and shell remains are quantified in this study using the number of individual specimens (NISP), a technique that calculates the number of whole or fragmented remains of each taxon (Reitz and Wing 2008). Two Preclassic chronological phases are assessed: the Early Facet Tulix phase (354 - 58 BCE) and the Late Facet Tulix phase (58 BCE – 159 CE). Preclassic fauna that cannot be associated with a specific phase is not included in this part of the analysis. Taxa categories are compared both by general classes (mammals, birds, etc) and by species diversity within each general class to determine whether species richness changed at the site over time (as per Reitz and Wing 2008:111).

The entire Preclassic zooarchaeological assemblage from Cerros is compared with contemporaneous Preclassic assemblages from the sites of Colha and Cuello, both located in northern Belize (Carr and Fradkin 2008; Shaw 1991; Wing and Scudder 1991). Since the local environments of all three sites differ, habitat fidelity analysis (Emery and Thornton 2008) is used to determine the extent to which the local environment played a role on the acquisition of non-marine animal species at each site. Habitat fidelity analysis uses environmental and behavioral data of various neotropical species to estimate the average amount of time members of each species spend in different ecological zones. The ecological zones included in this study are mature forests, secondary/disturbed forests, agricultural fields and residential zones, rivers, and wetlands. Fully domesticated species are also represented in the analysis, but only include dogs (*Canis familiaris*) in this study.

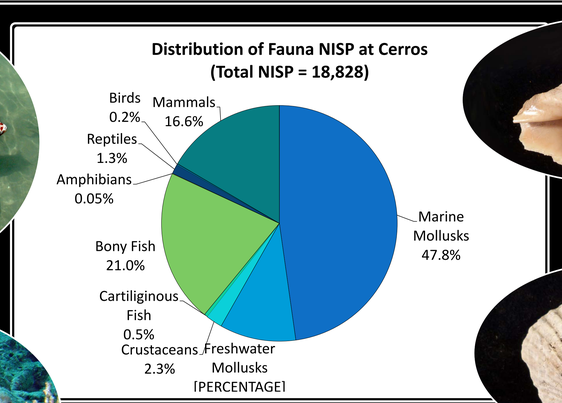
Results and Discussion

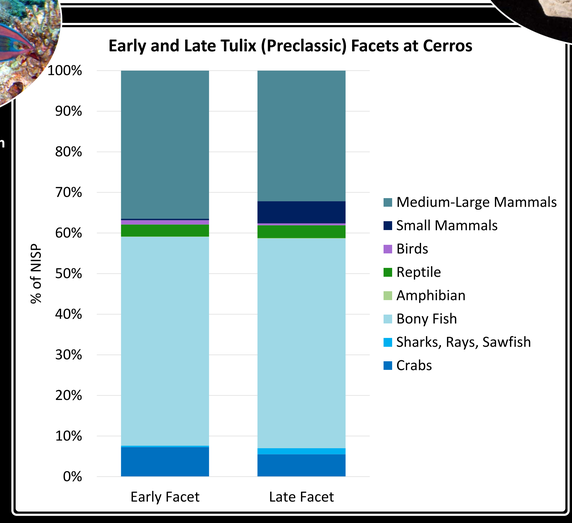
Combining mollusk and vertebrate data, it is evident that nearly 75% of Cerros's subsistence base came from the sea. Mollusks made up the majority of remains, principally the edible Caribbean crown conch (*Melongena melongena*, 47% of mollusks recovered). Bony fish, 0.1% of which were identified as freshwater species, also comprised a significant portion of the assemblage. Dogs and deer were the most common mammals (16.7% of mammals).



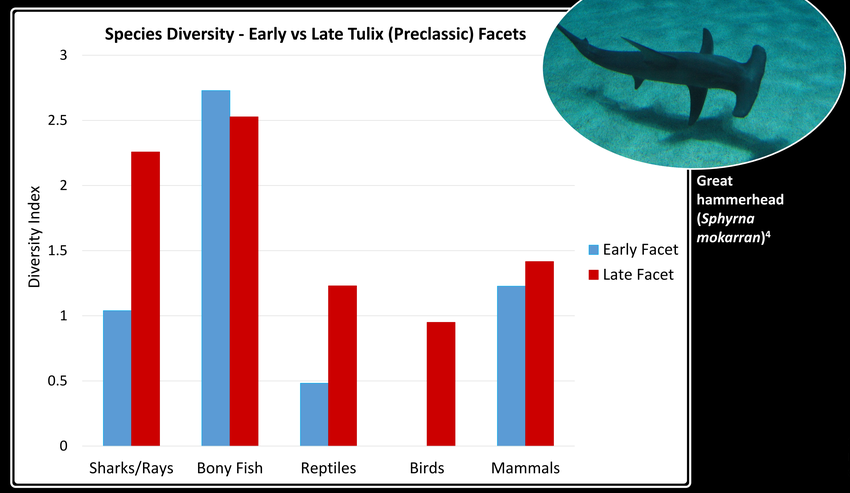
Loggerhead sea turtle (*Caretta caretta*)[1]

Black parrotfish (*Scarus niger*)[2]





The overall proportions of general taxonomic classes did not change significantly over time. Bony fish and medium-large mammals made up the majority of the assemblage in both Preclassic facets. The Late Facet made greater use of cartilaginous fish, particularly sharks and stingrays, in addition to smaller-bodied mammals, mainly rodents. Examining species diversity among the taxa categories we see that there is considerably more variation between the two facets. The Late Facet acquired a wider variety of birds, reptiles, and cartilaginous fish. The proportion of fish and mammals was roughly the same, with a focus on dogs, deer, parrotfish, snapper, and barracuda. The construction of the canal may have attracted freshwater turtles (Carr 1986: 241), resulting in the higher diversity of reptiles apparent in the Late Facet phase. It is also possible that species previously preferentially hunted had become increasingly scarce over time, so that a wider diversity of species was hunted instead.



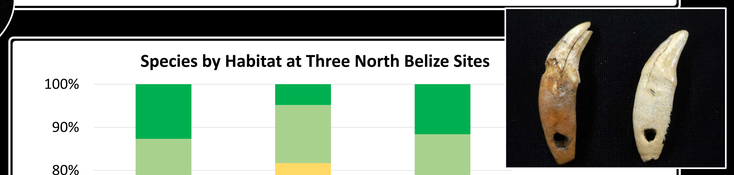
Great hammerhead (*Sphyrna mokarran*)[4]

Discussion (continued)

Using habitat fidelity analysis on the non-marine taxa, we see that Cerros differed from its inland neighbors in where and how it acquired animal resources. Cerros had a higher proportion of domesticated species, in this case dogs. Dogs were eaten to a greater or lesser extent at many Maya sites, as evidenced by butchered bones recovered in zooarchaeological assemblages and from eyewitness accounts from early Spanish explorers and historians. Dogs also played an integral role as sacrifices in ceremonies. Canines may have been valued for both purposes at Cerros. Forest taxa were represented about equally at both Cerros and Cuello, and to a lesser extent at Colha, where the local wetlands were the main source of subsistence. Freshwater species were noticeably more significant at Colha and Cuello, and primarily consisted of turtles. Cerros instead mainly sustained itself on marine resources.

Fighting conch (*Strombus cf pugilis*)[5]

Ark clam (*Anadara sp.*)[5]



Drilled dog teeth[5]

Conclusions and Future Research

The preliminary results show that Cerros was a unique early coastal community whose population relied on the abundant resources available from the Corozal Bay. Although located near both river and forest habitats, it did not seem to make extensive use of resources available from these locations; rather, marine fish and shellfish, in addition to domesticated dogs, made up the majority of the Cerros subsistence base.

Cerros's use of fauna differed considerably compared to other Preclassic Maya centers in northern Belize. A portion of the Cerros zooarchaeological assemblage awaits analysis, including unanalyzed shells and the fine-screened material of small-boned species. Ongoing analyses will address such questions as how bone and shell material was used for crafting and which species were preferred for ritual events, allowing us to better understand how this ancient Maya community interacted with its surrounding environment.

Carved shell "axe heads"[5]

Acknowledgements

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References

Carr, Helen Sorayya. 1986. *Faunal Utilization in a Late Preclassic Maya Community at Cerros, Belize*. Ph.D. Dissertation, Tulane University, New Orleans.
Carr, Helen Sorayya and Arlene Fradkin. 2008. Animal Resource Use in Ecological and Economic Context at Formative Period Cuello, Belize. *Quaternary International* 191:144-153.
Emery, Kitty F. and Erin K. Thornton. 2008. Zooarchaeological Habitat Analysis of Ancient Maya Landscape Changes. *Journal of Ethnobiology* 28(2):154-179.
Freidel, David A., Kathryn Reese-Taylor and David Mora-Marín. 2002. The Origins of Maya Civilization: The Old Shell Game, Commodity, Treasure, and Kingship. In *Ancient Maya Political Economies*, edited by Marilyn A. Masson and David A. Freidel, pp. 41-86. Altamira Press, Walnut Creek.
Hamilton, Rachel J. 1987. *The Archaeological Mollusca of Cerros, Belize*. Bachelor of Arts Thesis, Univesity of South Florida, Sarasota.
Reese-Taylor, Kathryn and Debra S. Walker. 2002. The Passage of the Late Preclassic into the Early Classic. In *Ancient Maya Political Economies*, edited by Marilyn A. Masson and David A. Freidel, pp. 87-122. AltaMira Press, Walnut Creek.
Reitz, Elizabeth. J. and Elizabeth S. Wing. 2008. *Zooarchaeology*. 2nd ed. Cambridge Manuals in Archaeology. Cambridge University Press, Cambridge.
Robertson, Robin A. and David A. Freidel (editors). 1986. *Archaeology at Cerros, Belize, Central America. Volume 1: An Interim Report*. Southern Methodist University Press, Dallas.
Shaw, Leslie C. 1991. *The Articulation of Social Inequality and Faunal Resource Use in the Preclassic Community of Colha, Northern Belize*. Ph.D Dissertation, University of Massachusetts, Amherst.
Walker, Debra S. 2013. *Caching in Context at Cerros, Belize*. Cerros Research Online Catalogue Report. Florida Museum of Natural History, Gainesville.
2005. *Sampling Cerros' Demise: A Radiometric Check on the Elusive Protoclassic*. Foundation for the Advancement of Mesoamerican Studies, Inc.
Wing, Elizabeth S. and Silvia J. Scudder. 1991. The exploitation of animals. In *Cuello: An Early Maya Community*, edited by Norman Hammond, pp. 84-97. Cambridge University Press, Cambridge.

1 – "Loggerhead Sea Turtle" (c)NOAA, CC-Public Domain; 2 – "*Scarus niger*" (c)Fernando Herranz Martín, CC-General Public License; 3 – "White-tailed Deer" (c)Scott Bauer, CC-Public Domain; 4 – "Great Hammerhead" (c)Jake Mohan, CC-Attribution 2.0 Generic License; 5 - Photo by Ashley Sharpe