

The Graveyard Shift

Spatial Analysis of South Texas Hunter-Gatherer Cemetery Sites

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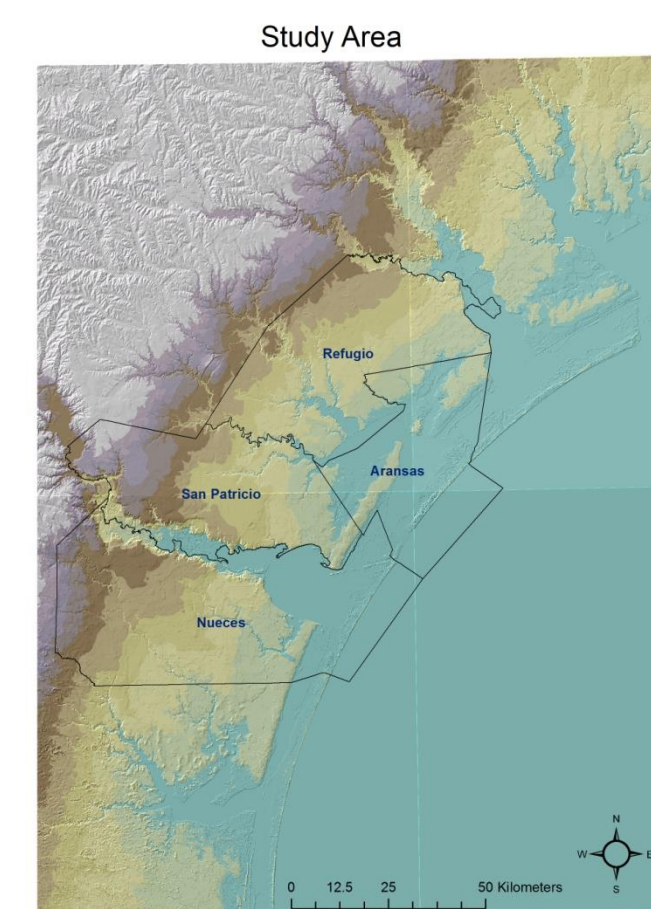
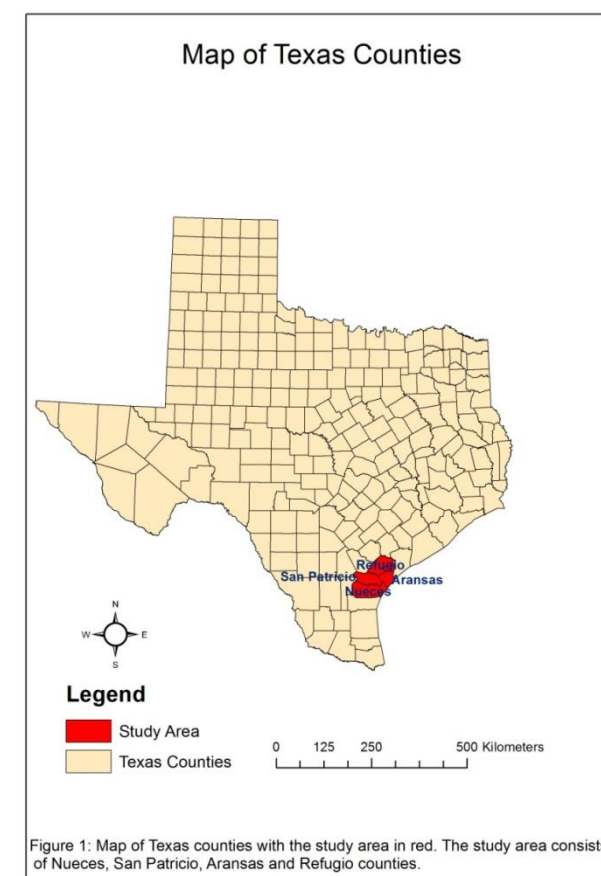
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Introduction

The coastal groups that occupied the south Texas coastal plain during the Archaic (7000 -950 BP) and Late Prehistoric (950-250 BP) periods were hunter-gatherers. Like many hunter-gatherers they were mobile; these specific coastal groups had seasonal mobility. Unlike many hunter-gatherers in pre-Columbian Texas, these groups had mass cemetery sites more similar to the hunter-gatherers of the American Southeast than other Texas natives. How did mobile hunter-gatherers locate and pick specific sites to bury their dead? This study focuses on archaeological sites (n=646) located in Aransas, Nueces, San Patricio, and Refugio counties (Figure 1 and Figure 2) along the south Texas coast. Several of these sites (n=29) were cemetery sites, although some had few or isolated burials. Dates and locations of the cemetery sites were used to explore what factors were important to Archaic and Late Prehistoric hunter-gatherers in picking out ideal locations for burying their dead. Initially, location of water resources was an obvious factor, but with further analysis it seems time and population growth also played a role in cemetery site location.

Background

Cemetery sites are rare amongst hunter-gatherer groups. The exception to this rule is amongst coastal groups. According to Binford (2004), hunter-gatherers that use large communal cemeteries consistently rely on aquatic/marine resources, live in high population density conditions, and have reduced mobility. Early Spanish explorers reported campsites of over 500 individual, or about 1 person/km².



Large cemetery sites are present along the Texas coast during the Middle Archaic and through the Late Archaic. One cemetery site, Buckeye Knoll, is dated to the Early Archaic (Ricklis 1996). The Texas coast was occupied by the Rockport Complex and their descendants, the Karankawas.

Data and Methods

Data: A spread sheet containing information on 646 sites located in Aransas, Nueces, San Patricio, and Refugio counties, Texas, was obtained from a database collection stored at the Center for Archaeological Research (CAR) at the University of Texas at San Antonio through the permission of Dr. Steve Tomka. The spread sheet contained the archaeological site number, time period(s), site size, features, artifacts, date of discovery, and nearest source of fresh water.

GIS environmental data was downloaded from the Federal Emergency Management Agency (FEMA) and from the Texas Natural Resources Information System (TNRIS) websites.

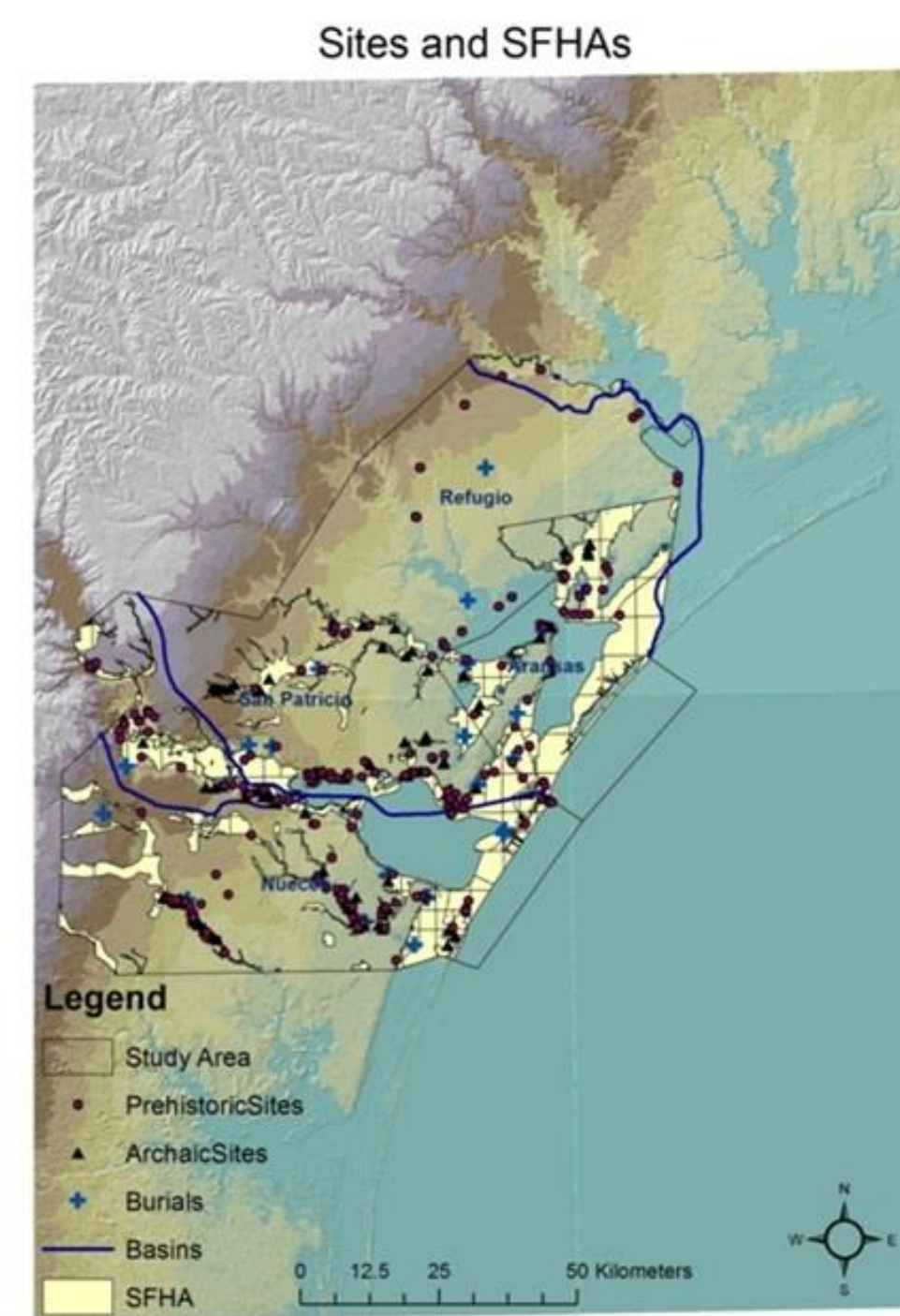


Figure 3: Archaic, Prehistoric, and burial sites mapped against FEMA data. Yellow areas represent special flood hazard areas (SFHA). As can be seen, many sites, including burials sites, are in SFHAs.

Methods: Site coordinates were used to create a point feature class in ArcGIS and a coordinate system, GCS North American 1983 was manually applied to the feature class based on TNRIS data.

Cemetery sites and residential sites were separated into two feature classes resulting in 29 cemetery sites. Both cemetery sites and residential sites were further separated into time periods Archaic or Late Prehistoric.

All point feature classes were overlaid against various raster data including vegetation coverage, precipitation cover, elevation data, FEMA flood data, and basin data. All point feature classes were also run through density tests.

Results

The most immediately identifiable pattern was that all sites, including burials, appear to be clustered at bays and streams. FEMA data shows that many burials were located within or near special flood hazard areas (SFHAs) rather than at high elevations, away from water sources and residential sites (Figures 3 and 4). This means that cemeteries were located near residential areas that had been selected for their proximity to water resources.

All burial locations average to a mere 15 feet above sea level. This average was slightly skewed due to one burial location being at 50+ feet about sea level, however this burial is considered an outlier.

Precipitation proved inconclusive as precipitation coverage was similar throughout all four counties. Vegetation coverage was also inclusive as paleoecological data was not available and most sites were located in modern days crop or urban areas.

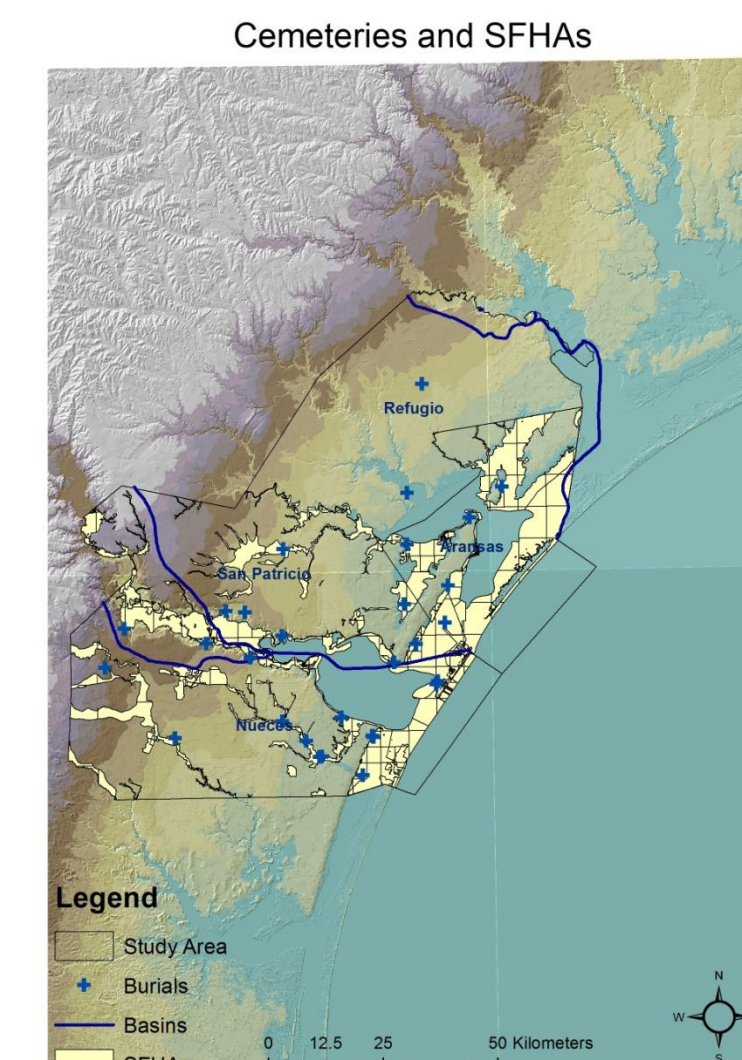


Figure 4: Only cemetery sites against FEMA data. As can be seen, a great number of cemeteries are in SFHAs.

Results of site density tests provided the most conclusive information. There is a shift from streams to bays between Archaic and Late Prehistoric/Early Historic for residential sites (Figure 5). There is also a shift between Archaic versus Late Prehistoric /Early Historic cemetery sites. During the Archaic, cemetery sites are few and spread out. During the Late Prehistoric through Early Historic, cemetery sites cluster around major bays and increase in density (Figure 6).

These results match Spanish accounts of high population densities during the Late Prehistoric. These accounts also state that the Karankawa (Late Prehistoric) were confined within a narrow strip of territory about 40 km wide due to the presences of other groups (Ricklis 1996, Nunez 1961).

Archaic VS Prehistoric/ Historic Site Density

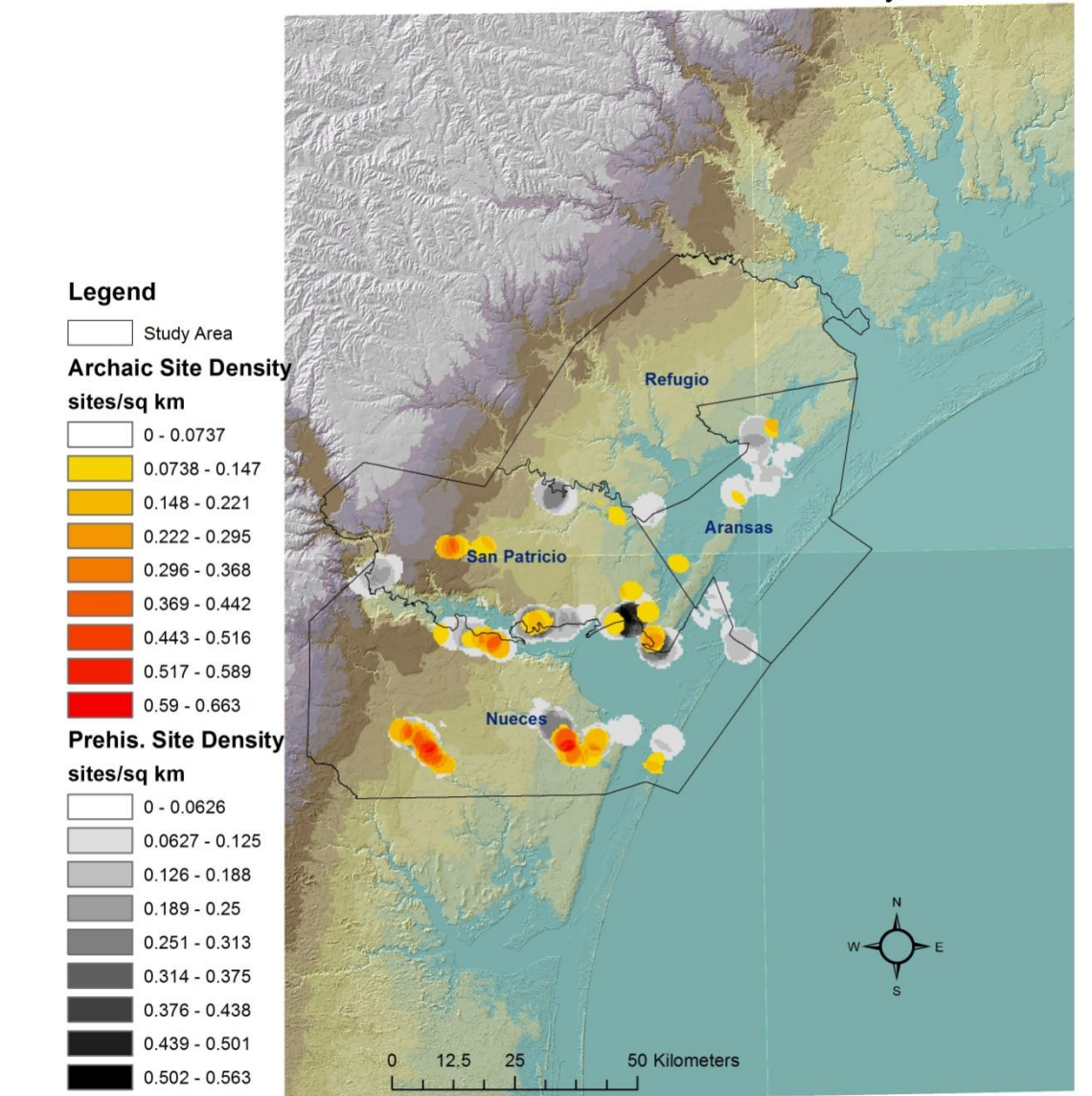


Figure 5: Archaic vs. Prehistoric/historic site density. A shift from streams to bays occurs between these two periods. Prehistoric site density is clustered closer to the coast than Archaic sites.

Cemetery Site Density

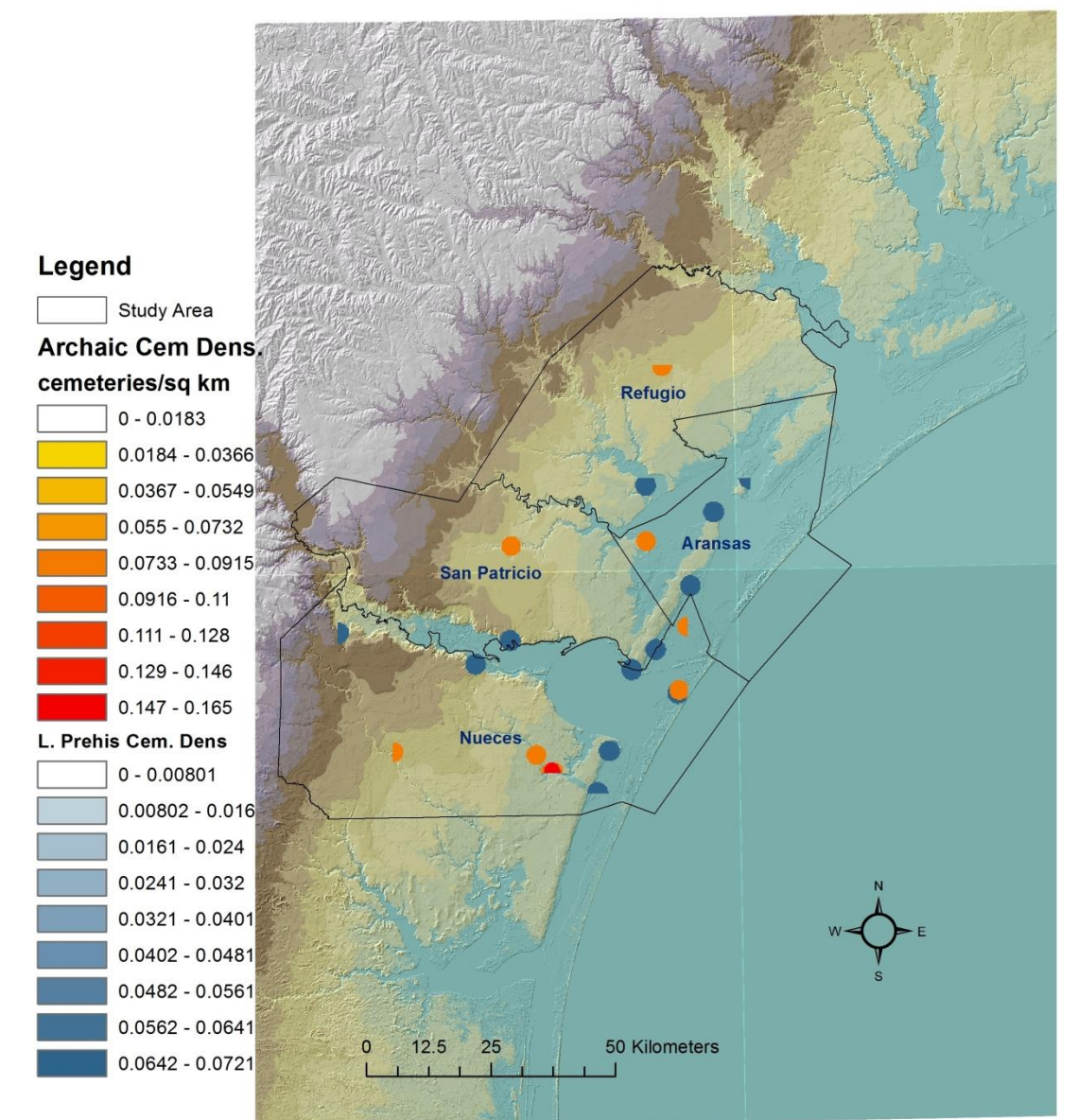


Figure 6: Archaic and Late Prehistoric/Historic Cemetery Site density. This image shows clearly that Late Prehistoric/Historic sites were clustered around major bays in this era, while the earlier sites of the Archaic were more spread out in the study area.

References

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