

Presentation 15: Ervan G. Garrison and Jessica Cook Hale

Scour Nuclei, Erosion and the Potential for Site Discovery

This paper discusses a survey methodology to locate and study submerged prehistoric archaeological sites. Typically, these studies demand the use geological and geoarchaeological methods such as coring. Though high probability areas can be identified using datasets such as local relative sea level curves, local hydrology, regional cultural history, and raw material resources such as high quality lithic outcrop locations, marine landscapes can present a problem: offshore sediments are usually a condensed stratigraphic section formed during marine transgression/regression. These processes erode and deflate formerly terrestrial sediments, leaving prehistoric materials not *in situ*. Instead of intact deposits, then, sites and assemblages are commingled, time transgressive lag deposits lacking stratigraphic and chronological contexts necessary for archaeological interpretations.

To improve chances of finding archaeological remains in their original contexts, we have targeted erosional features that often form around artificial reefs and shipwrecks termed “scour nuclei.” These features form when erosion causes the nucleating object to erode and embed itself into a sediment matrix, exhuming stratigraphy along with any buried features. This process results in a profile, with good potential for stratigraphically intact paleontological and archaeological deposits that do not require “heroic methods” for detection and assessment. This method *uses* marine processes to reveal potential sites, instead of fighting the results of those processes. Proof of concept has been demonstrated by the co- principals at artificial reefs such as the wreck of the Liberty Ship AB Daniel near JY Reef, off St. Catherine’s Island (GA), as well as at artificial reefs off Savannah.