



2019

ADVENTURES
IN FLORIDA ARCHAEOLOGY

RIBAULT'S
LOST FLAGSHIP

THE CAT CAME BACK

**THE KEY MARCO CAT
AND OTHER ARTIFACTS
RETURN TO FLORIDA**

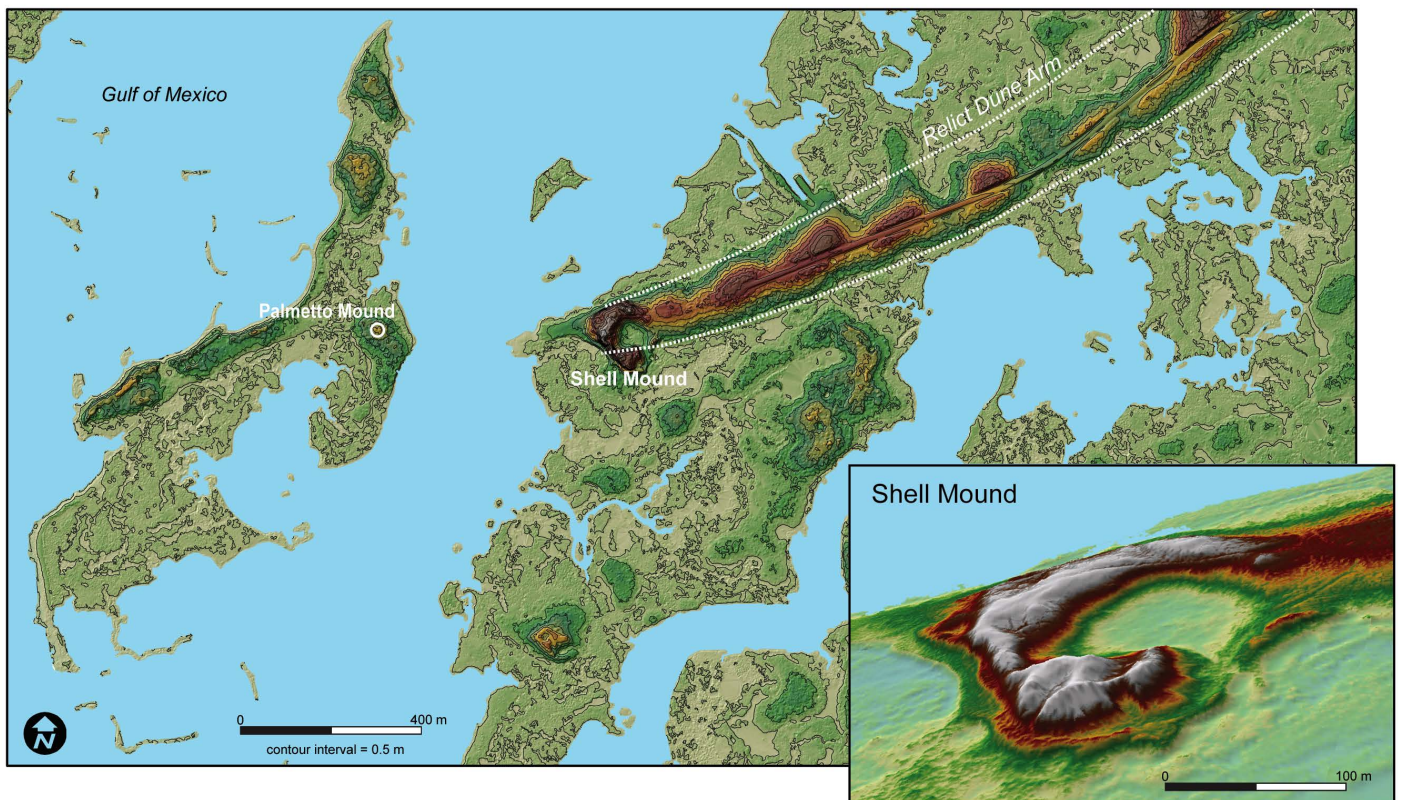
**IN THIS EDITION:
RESEARCH AT SHELL MOUND
ICE AGE WAKULLA SPRINGS
AND MUCH MORE!**



SOLSTICE FEASTS AND OTHER GATHERINGS

RESEARCH AT SHELL MOUND ON FLORIDA'S GULF COAST

Kenneth E. Sassaman



Topographic map shows the locality of Shell Mound with 3-D inset (lower right) of the C-shaped ridge and open plaza. Image by the author and Terry Barbour from both open-access LiDAR data and higher-resolution LiDAR data provided by GatorEye

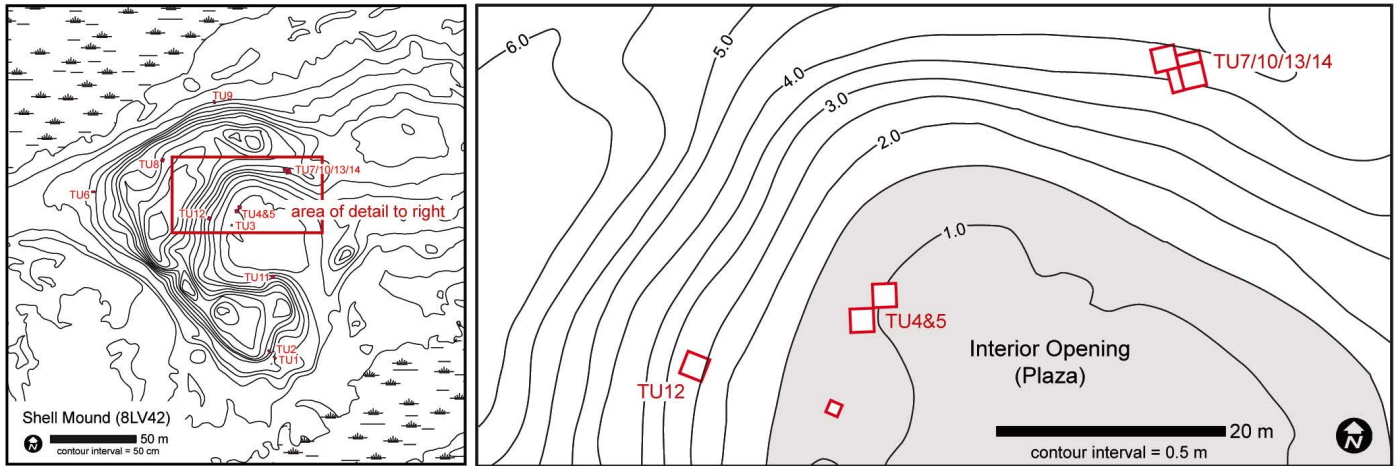
We have tried over the past two summers to see the rising sun at Shell Mound on June 21, the longest day of the year. Stormy weather and overcast skies dashed our hopes twice, but we will keep trying in years to come. University of Florida (UF) students and I have been working at this special place north of Cedar Key since 2010. We have un-

covered evidence that Native Americans feasted at Shell Mound during summer solstices. Not coincidentally, the elongated landform on which the site sits is physically aligned with these solar events. Our dating shows that solstice feasts took place from about 400 to 650 CE, the heyday of civic-ceremonial centers on the northern Gulf coast of Florida.

Shell Mound today is an archaeological site on the Lower Suwannee National Wildlife Refuge, under the stewardship of the United States Fish and Wildlife Service. The site is accessible to the public and is outfitted with a new interpretive trail. A nearby county campground is where we await the rising solstice sun.

Even if we do catch a clear sky on the morning of June 21 this year or next, we may never know what it was like for Native Americans to gather at Shell Mound on the longest day of the year. Still, we can

learn much from an archaeological record of pits, pots, shell, and animal bone that resulted from the activities of summer feasts. Bony remains consist mostly of fish, but also turtles, water birds, deer, and a variety of other animals. To provision large gatherings, Shell Mound hosts constructed a tidal fish trap and managed offshore oyster beds. They dug large pits and made big pots to process lots of food. Honoring those buried in the cemetery of a nearby island may have been the intent of their feasting, but given the solar timing of these events, communal rit-



Large in-filled pits were exposed in test excavations on the southern slope of dune arm at Shell Mound. Drawing and photos by author

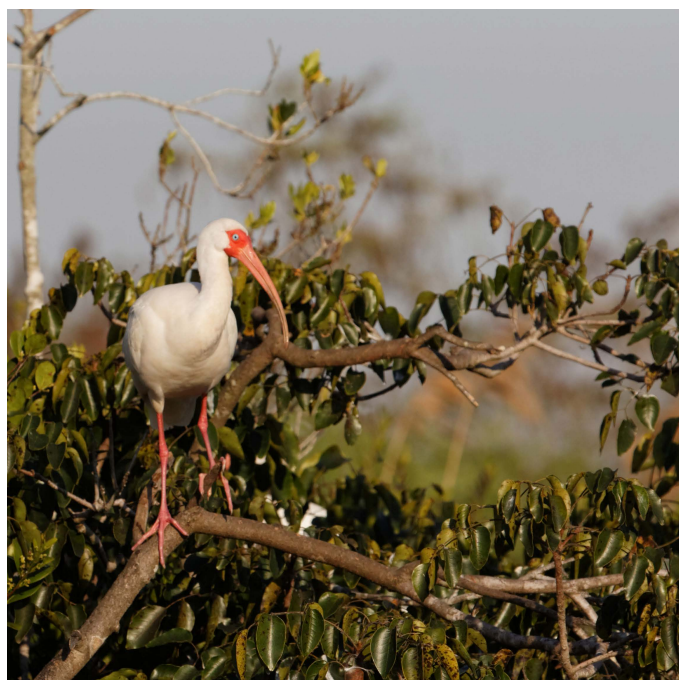
uals of world renewal are another possibility. Some background on the site and its setting helps to put this into perspective.

In its present form, Shell Mound is a C-shaped ridge of mostly oyster shell roughly 180 by 160 m in plan and about 7 m tall at its apex. Enclosed by the ridge is an open plaza 60 m wide. Our test excavations into both the ridge and plaza show that the site evolved over time. It actually started as an intensive occupation on the top of a relict dune arm. Having formed during the last Ice Age when sea level was low and the coast far to the west, parabolic dunes of the region are now mostly eroded away; the one on which Shell Mound resides is among the few with large portions still intact. Prevailing winds of the Ice Age assured that the dune of Shell Mound, like others in the area, would migrate in the direction of the summer solstice rise, resulting in long “arms” or “horns” extending in the opposite direction, the winter solstice set. The orientation of these landforms is a matter of happenstance, but it stands to reason that anyone attentive to the annual migration of the sun would notice the alignments.



A small sample of the thousands of bones of mullet recovered from pit fill at Shell Mound. Photo by author

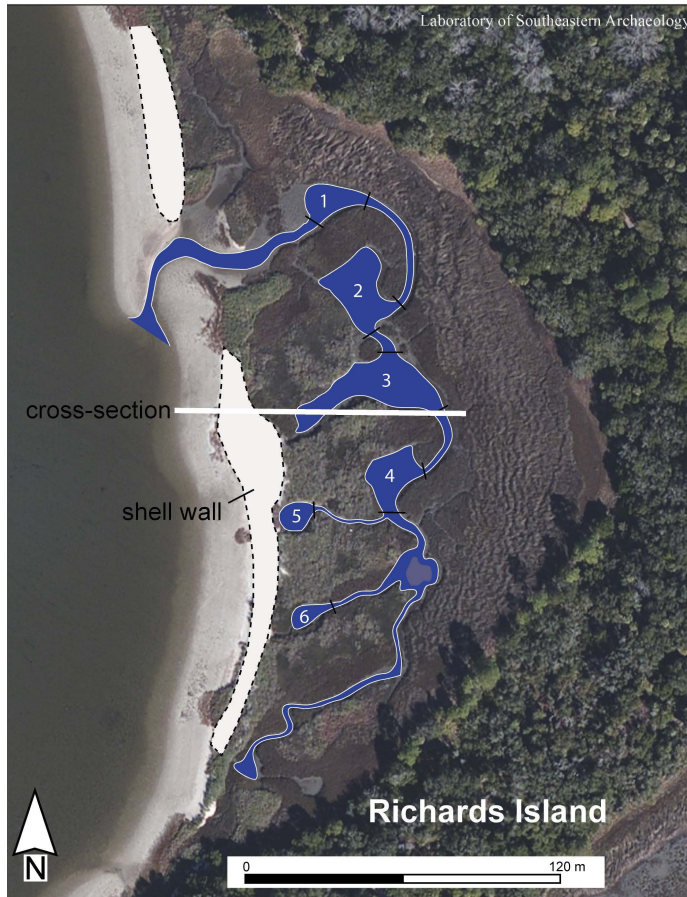
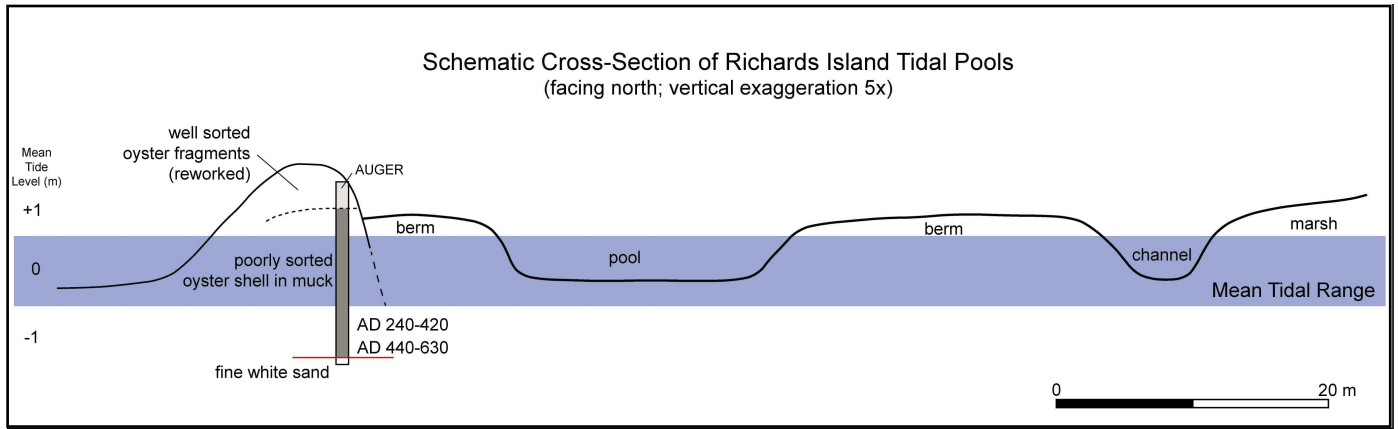
As early as 4,500 years ago, local communities emplaced their dead in cemeteries on the ends of dune arms. The cemetery west of Shell Mound is probably not that old, but it predates summer solstice feasts by at least 500 years. Former UF doctoral student Mark Donop documented the history of this mortuary in his dissertation. What is known today as Palmetto Mound was destroyed long ago by illicit digging, but two large collections of pottery and other materials were available for study at the Florida Museum of Natural History (FLMNH) and the South



Adult white ibises (*Eudocimus albus*) like the one shown here were collected by Shell Mound residents occasionally, but more commonly collected were juveniles that were taken from the rookeries of offshore islands in mid to late June. Photo by Kimon Berlin, Wikimedia Commons

Florida Museum. Mark was able to demonstrate that Palmetto Mound was the densest and longest-lived cemetery in the region. It also contained a record number of effigy vessels, most of which likely were emplaced in the cemetery after Shell Mound was abandoned around 650 CE. Despite the importance of Palmetto Mound, mortuary activity actually may have ceased during the period of summer solstice feasts. Two other small mounds in the vicinity of Shell Mound—one recently documented by UF graduate student Anthony Boucher—may have been active mortuaries during this interlude, but they, too, are mostly gone.

The dune arm of Shell Mound was more than a place for the dead. Into the southern side slope of the elevated landform, residents dug pits up to 2 m wide and 1.6 m deep. We presume these were used to cook food, although direct evidence for steaming or roasting eludes us. Irrespective of food processing, pits were backfilled immediately with abundant animal bone, shell, pot sherds, broken stone and shell tools, charcoal, ash, and occasional nonlocal items such as mica and quartz crystal. Thanks to the zooarchaeological expertise of Meggan Blessing, we know that mullet bones dominate the fish remains of pits, followed by the bones of jack, sea trout, red drum, hardhead catfish, and sheepshead, along with lesser amounts of several other species. Turtles make up about 10 percent of the vertebrates, with



A probable tidal fish trap at Richards Island would have been ideally suited to the mass capture of young mullet and other fishes. Figure by the author

roughly equal numbers of sea and pond turtles, and occasional box turtles. Each of the six pits analyzed thus far also contain the bones of white-tailed deer—at least 17 total and most of them young.

Bird bone in pit features proved to be especially important for estimating the timing of feasting events. Of the 60 birds identified from six pits, more than half are white ibises (*Eudocimus albus*), a common wading bird in the region. Notably, the majority of ibises were immature when they were collected. In consultation with FLMNH ornithologist Dave Steadman, former UF graduate student Josh Goodwin was able to determine that juvenile ibises were taken in mid to late June, the time of summer solstices.

Rookeries on offshore islands in the Cedar Keys were the likely source of these birds. Josh could not determine whether ibises were collected as food or for nonsubsistence purposes, such as plumage, or perhaps both. Given the prevalence of bird imagery in Native American art, we might expect that the collection and use of birds at Shell Mound went beyond feeding families.

The scale of fish collection and consumption also points to more than daily fare. Mullet, for example, were collected by the hundreds, if not thousands. Those in pits consistently measure about 30 cm in total length, which puts them in the third year of their life, on the verge of their first fall spawning



Fragments of large cooking vessels (bottom two rows) and small serving bowls (top two rows) were recovered from the fill of large pits at Shell Mound. Photo by the author



This is one of eleven new interpretive panels installed on the trail at Shell Mound by the US Fish and Wildlife Service and Friends of the Lower Suwannee National Wildlife Refuge. Photo by Anthony Boucher

run out into the Gulf. Collecting schools of mullet in a nearshore habitat in June would have required some means of mass capture. This is the subject of UF doctoral candidate GiNESSA Mahar's research. In addition to experimenting with fish weirs and participating in seine netting with Florida Fish and Wildlife staff, GiNESSA is investigating a probable fish trap on Richards Island that may have been ideally suited to capture mullet. Other fishes in Shell Mound pits point to alternative methods of capture, notably nets for the collection of large and small fish.

Oysters, of course, are abundant at Shell Mound, as they are at every pre-Columbian site in the Suwannee estuary. UF graduate student Jessica Jenkins has amassed data to support the idea that oyster beds occasionally were managed. The evidence is subtle but convincing. Jessi has documented traces of parasitism on the attachment scars of subtidal oysters, a condition that could occur only if mature oysters were culled from clusters and younger ones returned to the water for further growth. In addi-

tion, a disproportionate ratio of left to right valves in Shell Mound deposits suggest to Jessi that people were "shelling" oyster beds, a maricultural practice still used today. We do not know if managed oysters were collected for summer solstice feasts. Seasonality studies at other coastal centers in the region indicate that oysters were collected primarily in the winter. That may have been the case at Shell Mound as well, given that the evidence for oyster mariculture is confined to thick strata of mounded shell and not in pits. If so, winter feasts may have been a counterpart to the summer feasts of an annual ritual cycle.

The material culture of Shell Mound pits lends support to the idea that summer solstice feasts were attended by large gatherings of people. Fragments of pottery vessels from feasting pits come from massive, unrefined cooking pots and small, refined serving bowls. UF graduate student Terry Barbour and others have assembled fragments of cooking pots to show that some were as much as 50 cm wide and at least as tall. These were made locally in the tradition

of limestone-tempered Pasco pottery. Remarkably, the surfaces of many of these large vessels were barely smoothed before they were fired; irregularities and exposed coils attest to expedient manufacture. They evidently were not made to last very long, and some were deliberately broken before being deposited in pits. In contrast, small serving vessels assume various forms and were made from a variety of ceramic pastes, some from nonlocal sources. One gets the impression that the hosts of Shell Mound feasts took care of food preparation, and guests arrived with their serving vessels to partake of their generosity.

There is far more to Shell Mound than solstice feasting. After about 100 years of activity on the dune arm, much of the accumulated oyster shell and other materials were dug up and displaced to the south to form the C-shaped mound we see today. We know this because of the widespread occurrence of reverse stratigraphy, the condition of having older deposits on top of younger ones. Whereas this is usually a nightmare for archaeologists expecting to find order in the layers of a site, in this case it signals what we call “terraforming,” the deliberate effort to construct a world according to a prescribed design. We may never know why Shell Mound was reconfigured in this way at this time, but it coincides with waning activity at other civic-ceremonial centers in the region. Causes for these developments may trace to climate change and human interventions for dealing with change, not all of which necessitated abandonment. Shell Mound would continue to be occupied and summer solstice feasts held for another century, and Palmetto Mound in fact would witness an uptick in mortuary activity for centuries to follow.

After several field expeditions to Shell Mound and many hours of lab work, we are in a good position to revise the narrative of a site that hitherto was defined more by presumption than serious investigation. To that end, UF archaeologists partnered with USFWS and its Friends organization to design and install new interpretive panels on a trail through the site. Refuge Managers Andrew Gude and Larry Woodward, and USFWS Archaeologist Rick Kanaski, recognized the importance of Shell Mound not only for its historical significance, but also as an archive of ecological information for a region that is feeling the impacts of climate change.

The next time you are in the vicinity of Cedar Key, take the excursion to Shell Mound and see how much more we know now than we did only a decade ago. If you visit during the solstices, look for a group of UF archaeologists and Friends of the Lower Suwannee, whose enduring optimism for clear skies someday will be rewarded.

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