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Cover: Photographs of Basin Bayou Incised jar from the Gotier Hammock site (cat nos. 08-39, -44, -49, -51,-99, -107).
See the White article beginning on page 149 for more information.

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GOTIER HAMMOCK MOUND AND MIDDEN ON ST. JOSEPH BAY, NORTHWEST FLORIDA

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Project and Site Background

The Gotier Hammock site (8GU2) is a burial mound and midden on the southeast shore of St. Joseph Bay in Gulf County, northwest Florida (Figure 1), recently relocated and investigated by University of South Florida (USF) field teams. The mound is mostly destroyed but retained cultural deposits radiocarbon-dated to A.D. 650. The associated midden yielded Middle Woodland and later ceramics and radiocarbon dates in the fourteenth and sixteenth centuries. This research documents an unusual prehistoric site for the St. Joe Bay region and provides some new data on Middle Woodland mound ceremonialism.

Early History of the Site

Diggers. C. B. Moore (1902:210-11; Brose and White 1999:212-13) recorded the “mound in Gotier Hammock” a century ago. He placed it 800 m northeast of Conch Island (itself a prehistoric shell midden, 8GU20, a quarter-mile offshore) and 800 m inland (Figure 2). The mound was “a truncated cone of dark sand” 1.5 m high and 8 m in diameter, but already plagued by looters when Moore arrived. He said it was “famous for successful relic searches” and had been “practically dug to pieces, one relic hunter or treasure seeker filling the hole made by another.” The several flexed or bundle burials he uncovered were scattered around the mound, with some in shallow pits below the mound base. Nearly a half-century later, Willey (1949:253) noted that any intact ceramic mortuary deposit(s) had largely been removed by Moore’s time, though Moore still obtained Weeden Island and Swift Creek pottery.

One of the pre-Moore diggers in the mound was named Floyd. According to Willey (1949:28, 256-57 [Willey’s footnote misspells the name as Lloyd, but later corrects it]; Jones 2002:4), in 1893-94, C. H. B. Floyd sent to the Smithsonian National Museum of Natural History (NMNH) his collection of pottery, stone celts, and shell artifacts from a mound 25 miles from the town of Apalachicola on St. Joseph Bay. There is no other mound anywhere near this location, so Willey was correct in calling it Gotier Hammock. But he gave the collection another site number, “GU-6” (now corrected in the Site File).

Willey (1949:256) cites discussion and illustrations of the Floyd collection in William Henry Holmes’s classic book on eastern U.S. aboriginal pottery. Holmes (1903:111-112, Plates LXXVIII and LXXVIII A) also misspelled Floyd’s name, but illustrated 10 finely-made Weeden Island Plain and Incised and late-variety Swift Creek Complicated-Stamped pots. Museum records show that these artifacts were actually recovered in the fall of 1892 by S. A. Floyd and sold to the NMNH (accession number 027333) a year or two later, for \$25, by his son C. H. B. Floyd, who was at the time 18 and in school in Savannah, Georgia. Samuel Augustus Floyd was a Confederate veteran who came to northwest Florida from Savannah, worked in the timber industry and was elected representative to the Florida House in 1877 and Franklin County sheriff in 1883. Son Charles Henry Bourke Floyd (Harry or Harvey), “during his school days.....was somewhat erratic but very brilliant” (Mathews 1998:69; Shores 2008:59); perhaps he sold the collection to the Smithsonian for school money (\$25 in 1894 was worth between \$500 and \$2000 today). He was later a lawyer, tax assessor, justice of the peace in Apalachicola, and also a state legislator. Both Floyds are buried in the Magnolia Cemetery in Apalachicola (where Moore documented other famous mounds!).

Moore claimed that he “completely demolished” Gotier Hammock mound. But, judging from the status of other sites he claimed to have dug completely in his many northwest Florida travels, I assumed he left something. The site was not relocated by Willey (1949:253-4), nor Florida State University (FSU) archaeologists working in the panhandle in the 1960s and ‘70s, perhaps because it was heavily forested.

Homesteaders. There is published information on the historic use of the hammock area on which the mound sat, as well as some papers in the Gulf County Library in Port St. Joe. In the early nineteenth century, it was inhabited by the Gautier family, descended from French and English migrants who came to America around 1790 and lived in Georgia, then northwest Florida. Peter Gautier had settled somewhere in the area before 1827, when there is a record of his son Thomas’s birth (Gulf County Golden Anniversary Commission 1975:16). Peter William Gautier, Jr., another son, had owned a hotel in Marianna, then another one in Apalachicola. In 1836 he migrated to the new boom town of St. Joseph, which was just being founded, and apparently some time around then

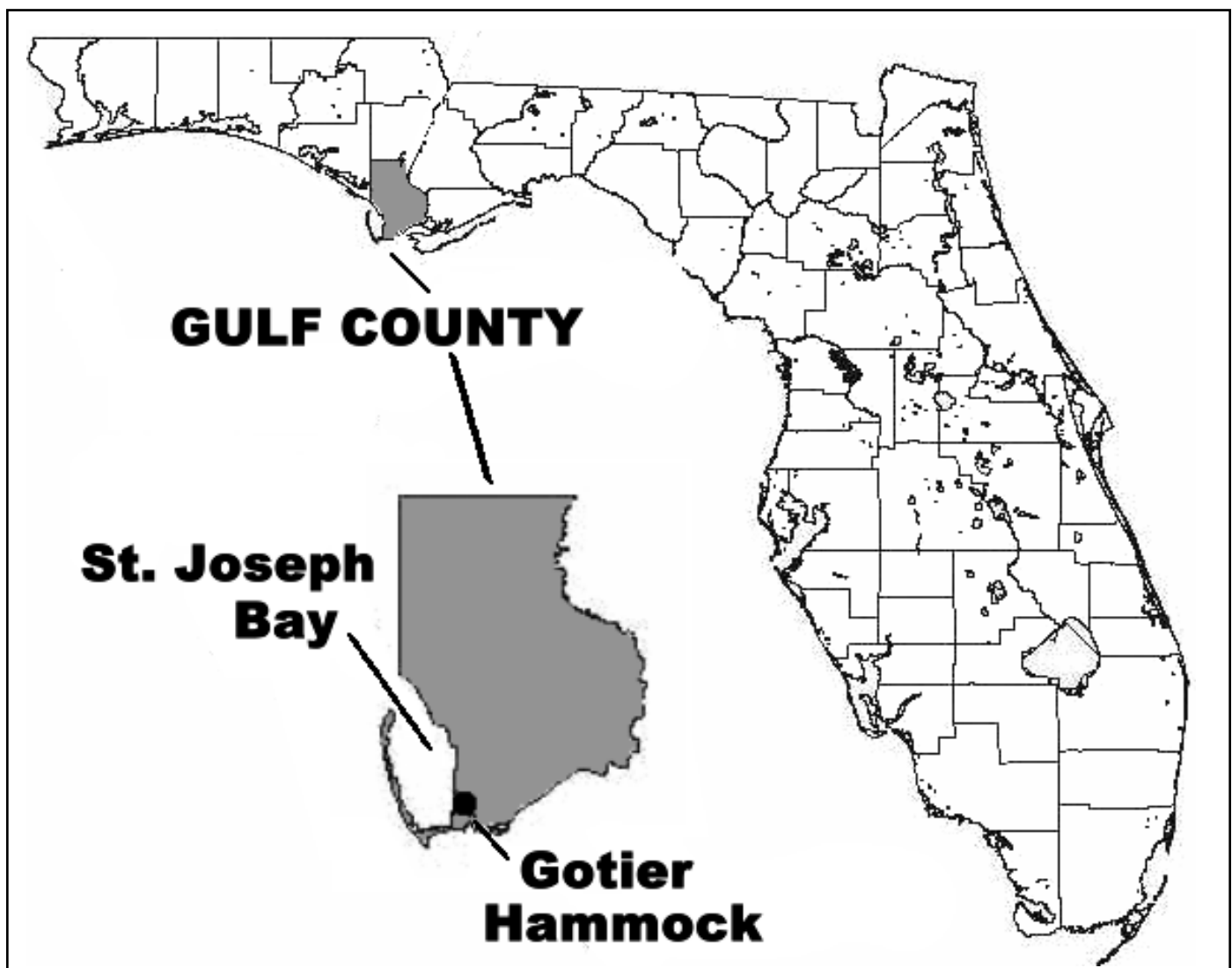


Figure 1. Location of Gotier Hammock and St. Joseph Bay in Gulf County, Florida.

built a home some four miles outside town on the hammock that became named after him. He was active in politics, and was the publisher of the *St. Joseph Telegraph*, which later in 1836 became the *St. Joseph Times* until it ended in 1841. He backed the successful attempt to hold the first Florida Constitutional Convention in St. Joseph (now commemorated in the Constitutional Convention Museum in Port St. Joe). In 1841 he was elected Speaker of the Territorial House of Representatives.

Though no record is known of what the Gautiers' plantation home looked like, a historic note said to be based on hearsay described an old mansion surrounded by majestic oaks. When the 1841 yellow fever epidemic devastated St. Joseph, Peter Gautier and his family fled to Texas (Gulf County Golden Anniversary Commission 1975:16; Porter 1975:33-35). Many others who had once enjoyed the good life in old St. Joseph either died of the disease or fled, and the remainder of the town was destroyed by succeeding hurricanes. Today's city of Port St. Joe was founded decades later on roughly the same spot (leaving old St. Joseph as an archaeological site itself yet to be explored). Gotier Hammock was apparently unoccupied for about a half-century.

Then brothers John and Dave Maddox and their family came from Apalachicola in 1893. They built a house next to the Gautier home ruins, which were apparently still standing, and grazed cattle on the coastal grasses. According to local oral history, they moved away after just a few years because of both mosquitoes and better opportunities elsewhere (Gulf County Golden Anniversary Commission 1975:16; Jones 2002:4). If the reported timing is correct, perhaps Floyd's collection of pots from the mound came just before the Maddoxes arrived or at the time when their building may have disturbed the ground and exposed artifacts. After the Maddoxes left, the land was used for hunting, possibly cattle-grazing, and planted pine. Some people in the area apparently have known about the mound over the years, sometimes collecting artifacts. Local historian and avocational archaeologist Herman Jones (2002) wrote a newspaper article about this site and others Moore visited in the region.

This hammock, a formation of higher ground amid the bay shore lowlands, still bore the Gautier family name over 60 years after they left, when Moore recorded it, which must have been after the Maddoxes left as well. Since Moore, a well-educated man, misspelled the name, he may have had only

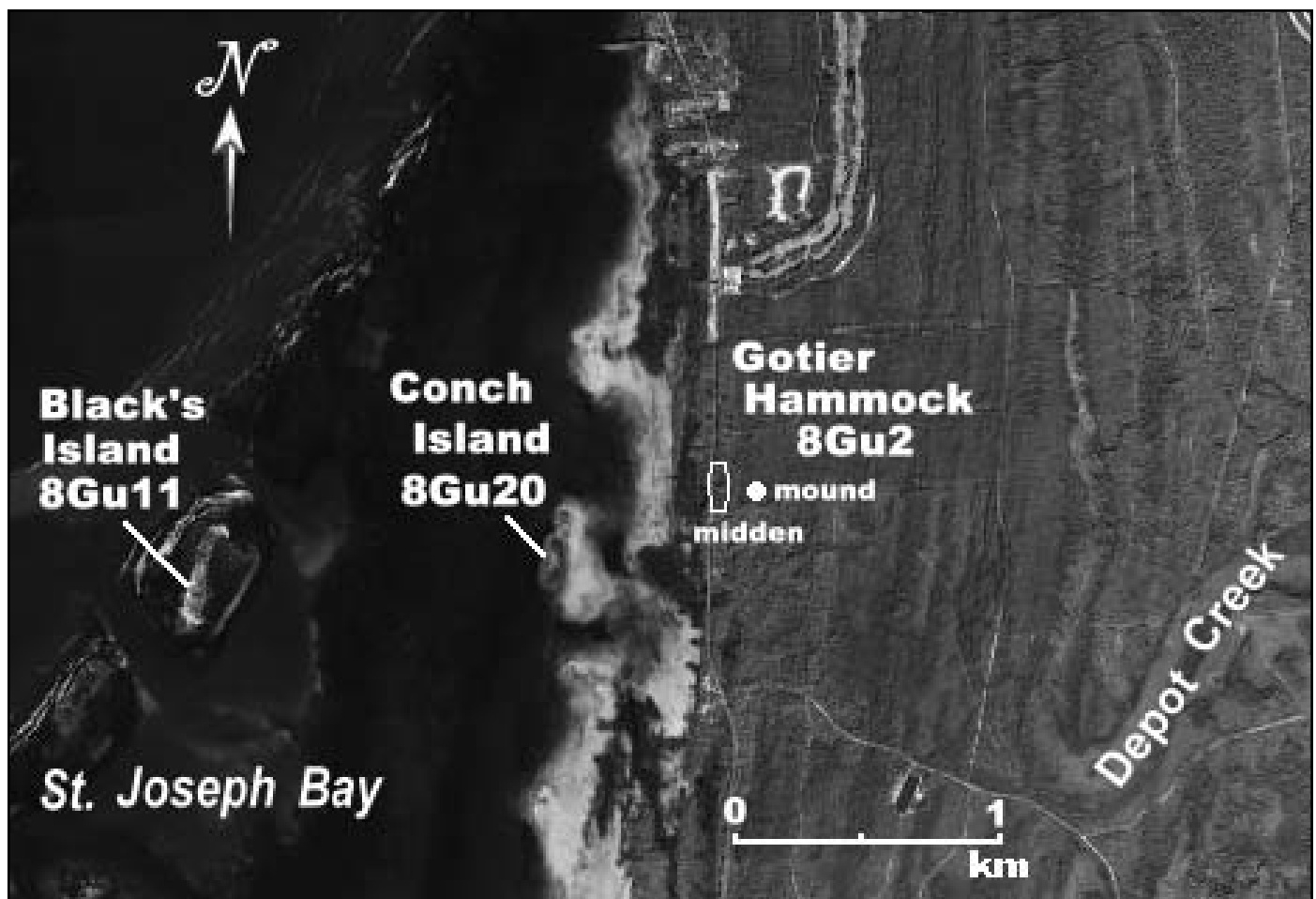


Figure 2. Location of Gotier Hammock mound and shell midden on aerial photo adapted from Google Earth.

local oral history and pronunciation (“Go-teer”) to identify the place (Jones 2002:1). Today there are no standing structures, only diverse bricks, probably from both historic families’ buildings, littering the surface.

Recent History

For the last several decades, the land has been owned by the St. Joe Paper Company, famous in Gulf County for its timberlands and paper mill in Port St. Joe. They planted pine there, creating the high furrows around the mound that are characteristic of modern methods of pine plantation in low wetlands (thanks to Neal Land and Timber Company director Phil McMillan of Blountstown for explaining this to me). St. Joe, the largest private landowner in Florida, is responsible for remaking the landscape of much of the panhandle (Ziewitz and Wiaz 2004:66), but they did not plant trees on the small elevated hammock itself, leaving the old oaks. Possibly the road that pushed through the mound was first made by the Gautiers and over time cut deeper into the ground, expanding disturbance to the mound. (the old highway from Apalachicola to Port St. Joe ran nearby). St. Joe Paper Company is now renamed the St. Joe Company, having closed the paper plant and moved toward housing and other land “development” (Ziewitz and Wiaz 2004; Herring 2009). But they still maintain pine plantation around Gotier Hammock.

In 2001, after years of drought and a fire, artifacts exposed in a firebreak plowed at this site were reported by a St. Joe company official to Apalachicola National Estuarine Research Reserve (ANERR) personnel, who brought me to the firebreak (midden) area. Pottery and shell tools were exposed on the ground surface, showing the site was near where Moore had said, and that it covered a large area from close to the paved highway eastward. From 2002 through 2004, I conducted archaeological survey of the St. Joseph Bay State Buffer Preserve lands (White 2005), immediately south and north of Gotier Hammock, and became concerned about the mound, one of the very few known in Gulf County. USF’s research program in the area always includes public outreach with “archaeology day” programs to obtain/share data with avocationalists and other interested folks. In October 2003, a local resident contacted through these programs took me and my crew into what he thought was the actual mound, on the higher ground of the hammock, southeast of the midden. A dirt track appeared to have bisected the mound and exposed a few artifacts. This collector had recovered a small piece of mica here four decades earlier.

To determine if anything was left intact, I planned a formal investigation. The St. Joe Company gave permission in May 2008 for test excavations, and the St. Joseph State Buffer Preserve and its Friends support group provided assistance. Fieldwork and test excavation were conducted by the USF

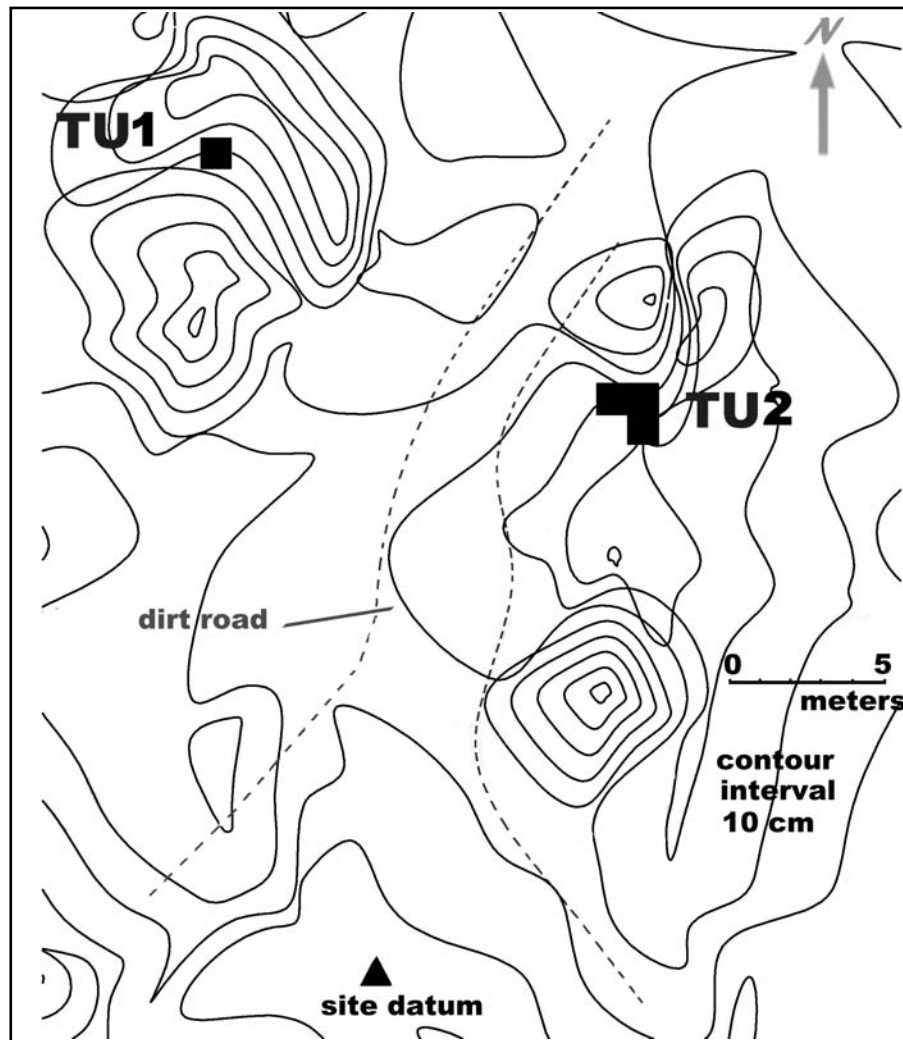


Figure 3. Contour map of Gotier Hammock Mound area showing remains of mound (three small elevations) and test excavation units (TUs).

student field school crew from 12-26 May (and also for a few days in May 2009), joined on a couple days by personnel from the Buffer Preserve.

Environmental and Archaeological Setting

St. Joseph Bay is unlike all other bays in the lower Apalachicola River delta region in that it is a non-estuarine, hypersaline lagoon, saltier than the Gulf of Mexico, since little fresh water feeds into it. It is enclosed by a 24-km-long barrier spit running north-south, connected to the mainland at the south end by a shorter east-west arm of land (see Figure 1). The St. Joseph Peninsula barrier spit is less than a km wide and made of the pure white sand for which the region is famous (the state park at its northern tip was declared top beach in the country in 2002). The bay is 8 to 13 km wide, mostly landlocked, and has one of the least-disturbed coastal bay systems in Florida. Salt marshes and sea grasses contribute to its enormous productivity. Though flowing tributary streams are scarce, fresh water is sometimes available in swales between dune formations (Davis 1997:166-67; Rupert 1991).

Inland from the bay shore the topography consists of sets of parallel, low beach ridges that may merge at unusual angles. For example, Figure 2 shows Depot Creek, here a shallow, seasonal, linear wetland, originating as a long swale between dune ridges and flowing south, then being pushed around by newer ridges to go northeast toward the Apalachicola River. The inland environment is one of low sandy flatwoods, today planted in slash pine but originally in longleaf pine in open, fire-maintained forest. Small oaks dot the understory of saw palmetto, wax myrtle, and wiregrass (Schuster et al. 2001:20). The elevated hammock cover is old oaks and sabal palms.

The archaeological landscape around St. Joe Bay is distinctive for northwest Florida (Benchley and Bense 2001; White 2005; White and Fitts 2001; White et al. 2002). As in any coastal region, shoreline sites are usually shell middens, but the saline bay waters harbor species of fish, shellfish, and turtles otherwise obtainable only in the Gulf. So typical middens here are characterized by large gastropods, lightning or left-handed whelk (*Busycon perversum* [formerly *contrarium* or *sinistrum*]) and horse conch (*Pleuroploca gigantea* – the state shell of Florida), along with the usual oysters, clams, and other

species. In addition to shell ecofacts in the dark sand middens, there are often artifacts made from these big shells. Back from the shoreline, prehistoric sites are small and scattered, represented usually only by a few sherds or shell tools but no shell middens. Lithic resources are fairly distant, at least 100 km to the north in chert outcrops (though some agatized coral is occasionally available as beach rock). So it is not surprising that hard, thick shells were made into tools (Eyles 2004; White 2005:136-38).

The earliest sites around the bay known so far, based on ceramics recovered, date to Early Woodland Deptford times – as early as 1000 B.C. (Mayo 2003; White 2005). Prehistoric settlement patterns show heavier shoreline occupation and scattered, probably seasonal use of inland areas for hunting and gathering. The lack of fresh water is probably the reason for the lack of large inland sites. This scenario made it all the more fascinating to see Gotier Hammock mound 200 m inland and about 200 m away from a tiny creek, and the bayshore midden area with only scattered oyster and no large-gastropod shell.

Fieldwork: Mound Investigation

Field Operations

Surface collection of all exposed areas produced only a few prehistoric artifacts. Though project goals did not include directly documenting the historic component, a sample of bricks and other recent items was saved for any future research. We also gathered all the modern trash, both to clean up the place and to inventory the materials before discarding them, in case such data might be useful for study of modern hunting and logging activities (the inventory of modern stuff was labeled the “trash-a-logue” by the students).

The site was mapped using a mechanical transit and stadia rod, with the site datum set at the south end (Figure 3). The road appeared to have cut through the center of the mound, leaving two small high areas. We set up 1-x-1-meter Test Unit 1 on the west side high ground, and 1-x-2-meter Test Unit 2 on the east side high ground. Though I originally intended to dig only one-meter-square units, ANERR’s Pat Millender persuaded me to extend TU2 northward another meter, promising to help with the additional labor (of course that north square meter produced the complete pot!). The units were dug in 10-cm arbitrary levels, with all soils dry-screened through quarter-inch mesh. For each level, soil samples were taken from the unit southwest quadrant: a 9-liter (30 x 30 x 10 cm) sample for flotation and another liter for permanent storage/future research. All excavation continued to culturally sterile soil, and all units were backfilled.

Test Unit 1. This square had a large pine stump in the middle of it (Figure 4), making excavation difficult. Fire ecologist Jean Huffman, manager of the St. Joe Buffer Preserve, estimated the stump was from a tree cut between 1900 and 1910. The soil layers showed a recently buried brown topsoil/forest duff stratum up to 8 cm thick above the stump, separated from the current, similar topsoil stratum by up to 22 cm of mixed gray plow zone. This suggested more recent pine

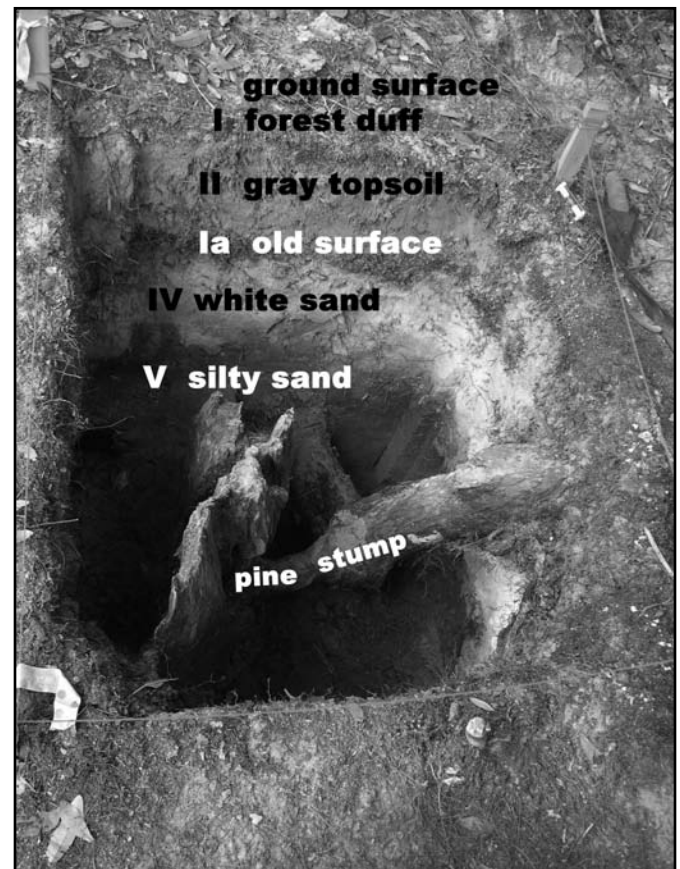


Figure 4. Test Unit 1, with pine stump in center and buried soil surface (Stratum Ia), but no undisturbed mound stratum; view facing west.

planting or other disturbance had pushed soil on top of the stump and old ground surface. Below this earlier old surface, both the white (20 to 25 cm) and the light yellowish-brown (into which we excavated another 48 cm) silty sand subsoil strata produced a few pieces of prehistoric pottery, including the only red-painted sherds recovered.

When the very tiniest remains recovered by flotation were sorted under magnification, the extent of disturbance in this unit was realized. A few historic items such as slivers of glass came from Levels 3, 4 and 5, and a copper bullet tip from Level 4 (see discussion of cultural materials below). Since these levels also contained nearly all the prehistoric materials as well, the interpretation is that disturbance from looting and pine planting allowed such tiny items to travel downward. The absence of the black mound stratum in this unit could mean that it was obliterated or that the mound did not extend this far west, despite the slightly higher elevation.

Test Unit 2. This rectangular unit (Figure 5) had a black stratum of undisturbed mound deposits between the topsoil and white sand natural subsoil. It also had more and larger ceramics, including a complete plain bowl, on either side of which were sherds of a Basin Bayou Incised jar, and other Middle Woodland types. Some had an exterior deposit of a yellow substance, as well as black, burned organic matter (soot?). Samples of the yellow deposit were scraped off for analysis, and a black soot sample was also scraped off and radiocarbon-dated to A.D. 650 (discussed below).



Figure 5. Test Unit 2 showing pottery being exposed; K. Hageman recording, J. Clevinger troweling, S. Lonergan brushing, and E. Kimble photographing; view facing northeast.

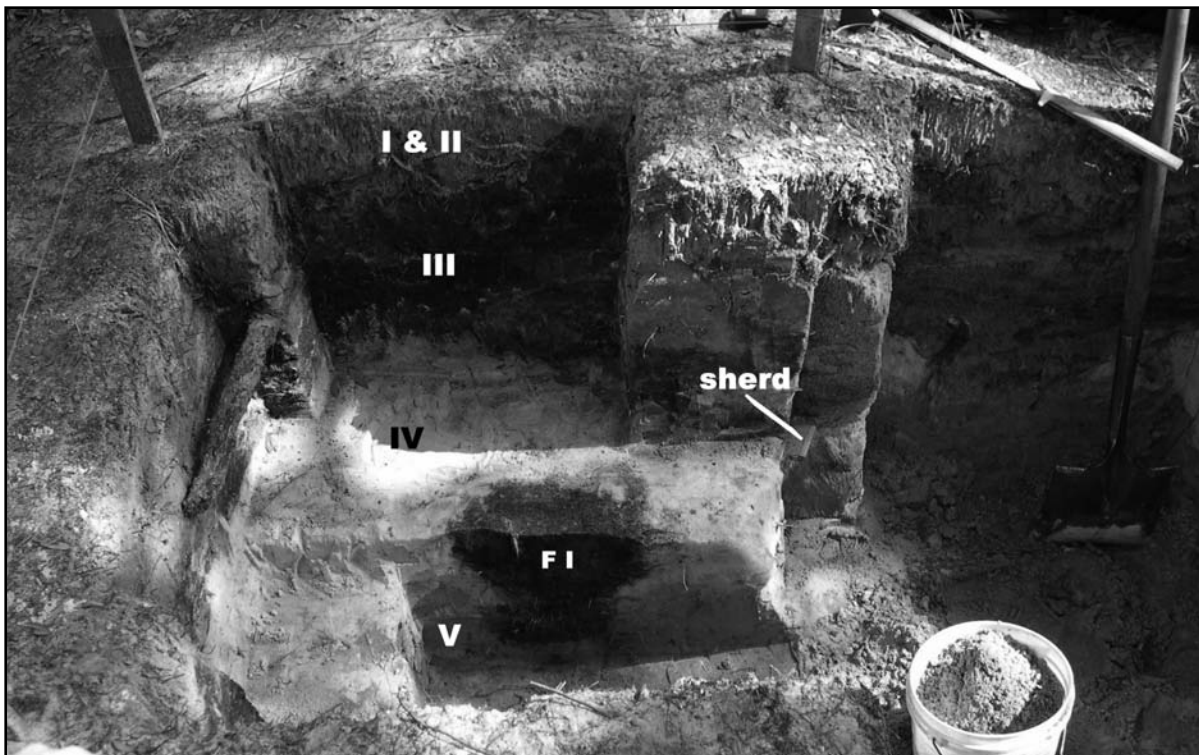


Figure 6. Test Units 2A (left) and 2, view facing north, showing Feature 1 in cross-section, north walls with dark mound stratum III), Basin Bayou Incised rim sherd still embedded in the uncleaned balk, large root in west wall. Walls are not yet cleaned so topsoil stratum is obscured.

TU2A. Since the pottery was surrounded by dark, partially disturbed soil, to understand the stratification, near the end of the project we extended the north half of TU2 another meter westward, calling it TU2A. This square uncovered more sherds and a dark stain in the white subsoil, labeled Feature 1 (Figure 6), a small possible pit. The black mound stratum appeared in this unit, but in places it was clearly cut into from above and mixed with topsoil; tiny glass fragments (one may be plastic) were recovered as deep as Level 4.

Features. Feature 1 consisted of the same black soil as in the mound stratum. It was an irregular oval in plan view, 34 cm east-west by 19 cm north-south. In cross-section it had a shallow basin shape, 15 cm at maximum depth, but either intruding upon or intruded into by a flat-bottomed, straight-sided apparent post mold 20 cm wide that extended another 15 cm from the bottom of the basin. Feature 1 was taken out in north and south halves, and totaled 17.5 liters (weighing 2.58 kg). The contents recovered by flotation included charcoal, charred seeds, a Swift Creek Complicated-Stamped sherd and sand-tempered pottery crumbs.

Two other dark stains that showed up later in the unit walls were not given formal feature numbers, but one suggested a post mold similar to that in Feature 1. In the middle of the east wall of TU2, this 20 cm wide, dark gray, straight-sided possible postmold extended down 30 cm from the base of disturbed, lighter gray, terminating with a flat bottom in the thin black remnant of the mound stratum. A small pit feature

in the north wall of TU2 extended 16 cm from the bottom of the mound stratum into the white subsoil but was filled with mottled gray, white, and yellowish-brown sand.

These three features are hard to interpret. The disturbed nature of the gray topsoil made it impossible to see whether they originated in prehistoric or more recent times, since both the mound builders and the mound looters had caused such soil disturbances. On the other hand, unit profiles, especially the north wall of TU2A, did show lighter-colored disturbances, originating in recent times from the surface, which churned up the top of the black mound stratum without completely penetrating it, and resembled typical shovel-tunneling done by looters. If the features described above were historic they could have been from shovelings that penetrated the black mound layer but did not go through it. The best estimate is that the lighter gray disturbed areas are from looters and the grayish-black disturbed areas are from the mound builders, mostly because the looters would probably not have left the whole pot or large decorated sherds that we recovered.

Establishing site boundaries. Shovel testing was done as we crashed through the thick, understory vegetation with a 30-meter tape measure while maintaining compass orientation. The 50-cm square shovel tests (Figure 7, Table 1) averaged 1 m deep, though some hit water shallower. Shovel Test 1 was 50 m north of the datum, and Shovel Tests 2-8 were spaced 15-20 m apart moving westward from the datum. None of these shovel tests produced any prehistoric cultural materials

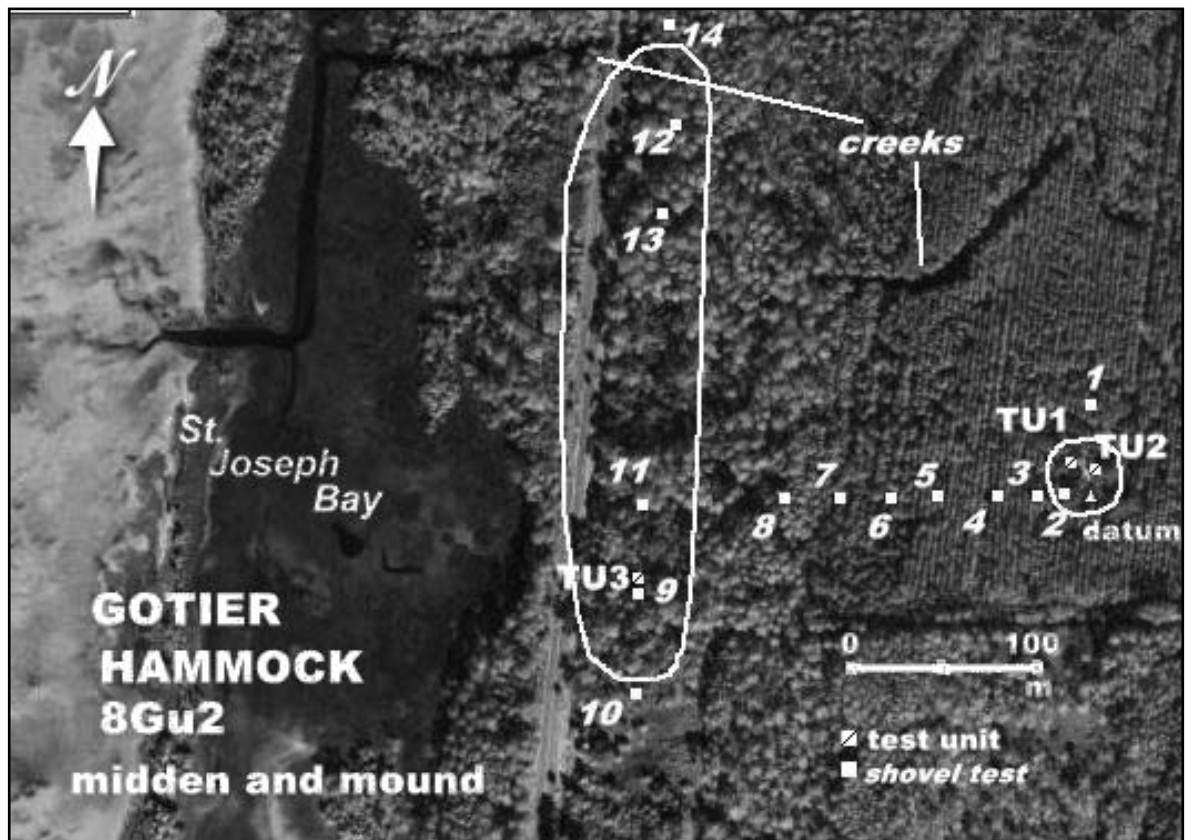


Figure 7. Aerial photo of Gotier Hammock mound and midden areas and excavations, adapted from Google Earth.

Table 1. Shovel Test Data from Mound Area, Gotier Hammock, 8GU2.

No.	Location	Max depth	Stratigraphy (depths in cm; all soils = sands)	Cultural materials
1	50 m N of site datum	98 cm	0-20 10YR 6/2 lt brownish gray topsoil 21-23 10YR 4/2 dk grayish brown 24-26 10YR 5/1 gray 27-55 10YR 7/1 light gray 56-60 10YR 3/2 very dk grayish brown 61-70 10YR 3/6 dk yellowish brown 71-82 10YR 4/6 dk yellowish brown 83-98 10YR 7/3 very pale brown	<i>topsoil:</i> iron skillet handle, 252 g; green glass, 4 g; 7 brick frags, 57 g; 1 metal frag, 7 g; 1 bullet casing, 5 g; oyster shell, 12 g; charcoal, 2 g
2	14 m W of site datum	100 cm	1-19 10YR 4/1 dk gray 20-32 10YR 5/2 grayish brown 33-41 10YR 3/2 very dk grayish brown 42-48 10YR 3/6 dk yellowish brown 49-71 10YR 5/6 yellowish brown 72-100 10YR 7/4 very pale brown	none
3	18 m W of Shovel Test 2	98 cm	0-25 10YR 6/1 gray 26-31 10YR 3/2 very dark grayish brown 32-35 10YR 3/6 dk yellowish brown 36-58 10YR 5/4 yellowish brown 59-98 10YR 7/3 very pale brown	none
4	21 m W of Shovel Test 3	99 cm	0-31 10YR 5/1 gray 32-52 10YR 6/2 light brownish gray 53-72 10YR 2/2 very dark brown 73-99 10YR 5/4 yellowish brown	none
5	28 m W of Shovel Test 4	59 cm	0-6 10YR 3/1 very dark gray 7-30 10YR 5/2 mottled with 3/2 grayish brown, very dk grayish brown 31-59 10YR 2/1 black	none
6	25 m W of Shovel Test 5	55 cm	0-55 10YR 2/1 black	none
7	28 m W of Shovel Test 6, 1 m E of plowed firebreak	76 cm	0-76 10YR 2/2 very dark brown	none
8	30 m W of Shovel Test 7	82 cm	0-82 10YR 2/1 black	none

or shell as far as about 185 m west of the mound area. Historic items were limited to those in Shovel Test 1, near the mound; these included bricks, metal, glass, iron – old garbage from the historic occupations – as well as a few modern oyster shells. Cores were attempted with a 4” bucket hand auger, but were abandoned since the dune sand was so dry and loose it slipped out of the core bucket.

Stratigraphy and Soils

The soil profile in the mound area consisted of the following strata of fine to medium sand:

- I. brown (10YR3/4) forest humus/duff layer, 10 to 20 cm thick.
- II. gray to grayish brown (10YR6/1 to 5/2) topsoil up to 20 cm thick that was a mixed layer of topsoil/plow zone with or without mound soils and later historic materials; mottling and some clear features originating near the surface show historic disturbance.

III. dark brown (10YR3/3, 2/2) to nearly black, slightly harder-packed zone of apparently undisturbed mound deposits, only 7 to 20 cm thick, with charcoal flecks; this stratum was what remained unmixed with lighter material above it from looting or other disturbances. It was only seen in Test Units 2 and 2A, and lensed out by the south end of TU2. Its appearance agreed with Moore’s statement that the mound was a truncated cone of dark sand.

IV. mostly culturally sterile, natural white dune sand (10YR8/1), averaging 20 cm thick.

V. light yellowish-brown (10YR5/6 to 6/8) silty sand natural subsoil, culturally sterile; color of peanut butter, may be 20 cm thick or greater; fades into next stratum.

VI. white to very pale brown (10YR8/1 to 8/2) coarse wet sand near and at water table; color of butter pecan ice cream.

The contrast was stark between the distinctive white sand (IV) underlying the mound and the nearly black mound deposits above it (see Figure 6). The sugar-white beach sand

Table 2. Shovel Test Data from Mound Area, Gotier Hammock, 8GU2.

No.	Location	Max depth	Stratigraphy (depths in cm; all soils = sands)	Cultural materials
9	just N of E-W plowed firebreak line	60 cm	0-4 forest duff, reddish brown 4-20 10YR 5/1 gray topsoil 20-46 10YR 6/2-6/1; probably undisturbed midden; 46-57 10YR 7/1; undisturbed dune sand 57-60 10YR 4/4	-4-50 cm: 1 sand-t plain sherd, 2 g; 1 check-st rim sherd, 9 g; oyster shell frags (not saved)
10	~50 m S of TU 3	55 cm	0-21 dk gray sand topsoil 21-55 transition to light gray, water table at 55	none, no shell either
11	~50 m N of TU 3	100 cm	0-2 brown forest duff 2-8 dk gray topsoil 8-42 medium gray, begin coring 42-60 dark brown (about 10YR4/2); water table at 61 60-100 light yellowish-brown	none, no shell either
12	~45 m S of creek, 20 m E of road, 250 m N of TU 3	74 cm	0-4 brown forest duff 4-30 lt gray topsoil 30-51 10YR4/4 brown midden 51-74 wet, about 10YR5/4	-30-50 cm: 1 grit-t plain rim, 46 g; 4 sand-t plain sherds, 65 g; 2 grog-t plain sherds, 14 g; charcoal, 1 g <i>E wall</i> : -48 cm: 1 cordmarked, grog-t sherd, 9 g; 1 sand-t plain sherd, 29 g; no shell
13	~200 m N of TU 3, 100 m S of creek	83 cm	0-6 brown forest duff 6-28 light gray topsoil, scattered shell 28-39 light grayish brown 39-62 hard-packed dark brown 74-83 pale about 10YR8/1; water table at 81	0-20 cm: 1 check-st sherd 4 g; 4 sand-t plain sherds 5 g; charcoal 1 g; 9 oyster shells & frags, 147 g DATED to A.D. 1500 -20-35 cm: 1 indet stamped sherd, 4 g; 1 grit & grog-t plain sherd, 6 g; 3 grog-t plain, 12 g; charcoal, 2 g -35-43 cm: 1 grog-t plain sherd, 1 g; charcoal, 4 g -43-83 cm: 1 sand-t plain sherd, 2 g; charcoal, 9 g
14	~5 m N of creek	84 cm	0-5 brown forest duff 5-40 gray topsoil 40-84 dark gray	none, no shell either

naturally occurs beneath the topsoil. The clean line between it and both underlying and overlying strata where there was no disturbance may mean that this white sand was leveled or otherwise prepared before mound construction.

The stratification described above but without the dark mound layer was present in Test Unit 1 (see Figure 4), which also had an additional brown forest-humus former ground surface that was buried when the pine whose stump remained in the unit was harvested a century ago.

Shovel tests (Table 1) showed that the above-detailed strata are distinct to the hammock formation. Off the hammock, the gray topsoil stratum, plowed to a depth of about 30 cm for planting the pines, most often directly overlay the yellowish-brown (peanut butter-colored) subsoil, which soon transitioned into the lighter, nearly white (butter pecan-colored) sand near the water table. In some tests the ground was so low that the shallow water table colored the yellowish-brown sand nearly black, typical of wetland deposits.

An interesting aspect of the site was the absence of bone, human or otherwise, from the surface or the excavations, in this supposed burial mound, except for crumbs (usually <.1 g)

recovered from soil samples in the fine screen after flotation. Perhaps the skeletons of people buried in this mound were long ago removed by looters or left to decay on the surface after exposure. Surface bone exposed to the elements disappears quickly in Florida. One collector said he may have seen bone fragments lying around when the area was first bulldozed in the 1960s. The crumbs recovered may be from burials or faunal remains, but are too tiny to identify without extensive DNA testing.

Fieldwork: Midden Area Investigation

Just west of the line of shovel tests extending westward from the mound, we returned to the plowed firebreak closer to the bay, where evidence of the midden, including scattered oyster shell, was exposed on the surface. This occupation area was not recognized or associated with the mound until recently, probably because it was covered in thick forest until the firebreaks were cut into it. We assumed it was the living area on the bay shore for the people who utilized the burial mound, especially since it produced Middle Woodland pottery

from the surface. It is closer to a couple of small, intermittent streams (see Figure 7), including the one (apparently unnamed) creek big enough to be now channeled into St. Joseph Bay. This midden is 185 to 200 m west of the mound, near the paved road (C30A) that skirts the bay shore. It extends some 350 m north-south, with the north end at the creek. It was originally probably no more than 50 m wide but was spread and damaged by the construction of the paved road.

Field Operations

Shovel testing to establish midden area boundaries.

Shovel Test 9 was excavated in 2008 north of the east-west firebreak, over 100 m south and 185 m west of the mound (Table 2), near what we learned was the south end of this linear, discontinuous midden. It was placed in an area with surface oyster shell and black sand, and produced a check-stamped rim and a sand-tempered plain sherd. During the 2009 season we returned briefly to determine the midden's extent and integrity with four more shovel tests (Figure 7), and to obtain material for dating.

Fifty meters north and south of Shovel Test 9, Tests 10 and 11, respectively, contained no cultural material, not even shells. But farther north, approaching the creek, the shovel tests produced plain and check-stamped pottery, and a few charcoal bits. The nine sherds in Shovel Test 12, near the creek, included a cordmarked one as well. The dozen sherds in Shovel Test 13, about 100 m from the creek, were also accompanied by prehistorically-collected oyster shells. A sample of 75 g of this shell from 0-20 cm below the surface produced an AMS radiocarbon date of A. D. 1500 – some 850 years later than the date obtained for the mound (see discussion below).

Just to be sure of site boundaries, we returned in 2010 to shovel-test north of the creek. In March, our efforts were mostly useless since this is the height of rainy season and we hit water within 20 cm. Another attempt in early September was more successful in that we reached a depth of 84 cm, but no cultural materials were seen. So the south bank of the stream can be established as the northern boundary of the site.

Test Unit 3. This was a more controlled, 1 x 1-m excavation adjacent to Shovel Test 9, dug to obtain stratigraphic data that could tie the midden area to the mound. It had the same forest duff top stratum overlying gray disturbed topsoil, and then a stratum of the white sand mixed with cultural materials that produced a light gray midden zone from 10 to 20 cm thick. Under that, the natural subsoil was very dark brown (10YR2/2), unlike the light yellowish brown hammock subsoil. The dark color was probably due to the low elevation and proximity of the water table. This unit produced 64 sherds, check-stamped and plain and one indeterminate incised, as well as a few tiny chert flakes.

In the northeast corner of the unit, a portion of a prehistoric pit feature was exposed. Filled with darker gray mottled soil (from 10YR3/2 to 6/1), it clearly originated from the midden stratum and was a large round basin perhaps originally a meter in diameter and about 28 cm at maximum depth. Removed separately, the soils of the south side of this feature were

dry-screened, and the north portion (9.5 liters, over 10 kg) processed through flotation. Feature contents included a couple of sherds and charcoal radiocarbon-dated to A.D.1350 (see discussion below), some 700 years later than the mound date.

Midden Area Summary

From the shovel test data and surface materials in the many firebreak segments in the area we estimated the extent of the midden and saw that the shell was not continuous but patchy. People lived along the shore but did not only or always collect oysters here or camp in the same spot. The Middle Woodland ceramics demonstrate that they were here at least as early as the time the mound was built. If the two radiocarbon dates are correct, they indicate that people returned during later prehistory. Mound builders must have stayed on this shoreline, since food and water were dependable, as compared with the deer and seasonal acorns available back in the forest. As noted, also interesting in the midden area was the absence of the large-gastropod food garbage that characterizes other shell middens around St. Joe Bay, though some shell tools were recovered from the surface.

In sum, the archaeological picture is very interesting. The mound is isolated atop the natural hammock that rises less than a meter above the surrounding flatwoods, relatively far – 200 m – from fresh water and from the bay shore. The midden extends some 300 m north-south and at most 50 meters back from the water.

Data and Materials Recovered

Materials and data processing in the lab was accomplished from fall 2008 through fall 2009. Flotation of the 9-liter soil samples was done with screen sizes as follows: A fraction = 1/4" (6.35 mm), B = #20 geological screen or .034" (.86 mm), and C = #50 geological screen or .0166" (.29 mm). Recovery was good; a test with the standard 100 charred poppyseeds in one soil sample resulted in the later recovery of nearly all of them (an exact count is difficult since some became fragmented). All materials, notes, maps and other data are curated in the USF archaeology lab. A summary report (White 2008a) and a comprehensive final report (White 2010) were prepared to fulfill grant and permission requirements.

All cultural remains from the USF investigations, as well as my reconstructions of those obtained by Moore (1902:210-11) and Floyd (Holmes 1903:111-112), aided by information from the Smithsonian NMAI and NMNH collections, are summarized in Table 3 (except for the historic artifacts, which were only recovered on the mound area surface and in Shovel Test 1 [reported in Table 1]). One can only idly speculate about what might have been removed from Gotier Hammock before (or after) Floyd and Moore got there. But Table 3 lists all prehistoric cultural materials known from the site. The first two columns are the old collections, the next four are from our recent investigations of the mound and the last three from the midden area.

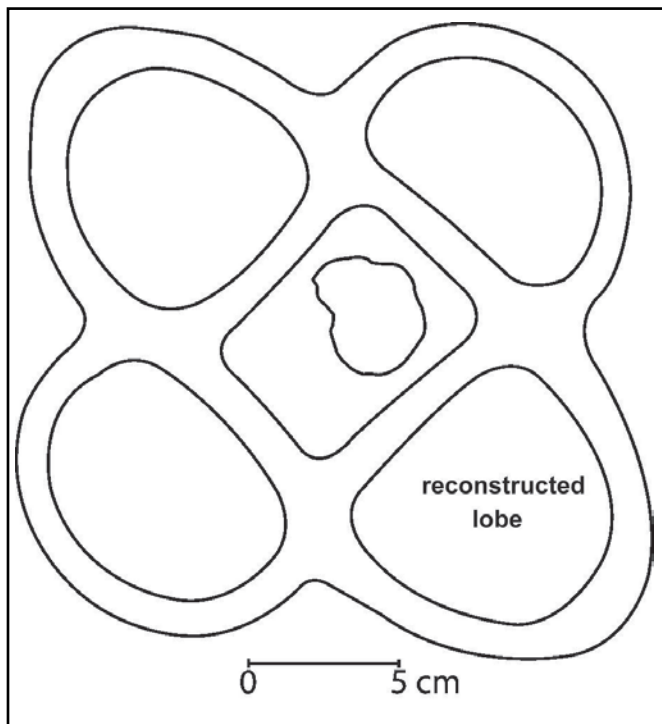


Figure 8. Weeden Island Plain compound bowl (plan view) from C.H.B. Floyd collection, Smithsonian NMNH (cat. no. A155329-0) recovered in 1893-4 from Gotier Hammock mound; drawing by J. Du Vernay based on photo in NMMH online collection.

Ceramics

Mound pottery included both plain and fancy Middle Woodland types. The midden area produced mostly non-diagnostic check-stamped and plain ceramics, but some Middle Woodland sherds.

Floyd's Ceramics. The NMNH Floyd collection is in 11 separate catalog numbers (A155318-0 through 155328), comprising the following: 10 ceramic vessels (all apparently shown in the Holmes [1903: Plate LXXXVII] illustration), two labeled as "small" and one as "four-cornered"), 1 pottery "pan," and 8 sherds.

The only one of these items with accompanying photos in the online collection is the "pan," which is a Weeden Island Plain compound vessel (Figure 8 – drawn from the online photo). This 5-chambered, shallow open bowl has four rounded lobes (one clearly reconstructed, differently colored and shaped) surrounding a central rectangular chamber. Calculated based on the photo scale, the central rectangular opening is 10.6 x 15 cm, and the vessel's widest point, between the tips of the two opposing original lobes, is about 46 cm, so this is a large vessel. It has an irregular "kill" hole in the base, and the paste looks yellowish. The photo of the underside shows the label "Franklin County," which would have included in Floyd's time what was later to be Gulf County.

Compound bowls of this type are common as Weeden Island funerary offerings. Moore (1903:457) recovered another one from the Chipola Cutoff mound on the other side of Gulf County. It is smaller, painted red, and measures about

20 cm at the widest point; it has only three lobes around an interior rectangular chamber (2.5 x 6.5 cm) with raised sides. I like to think of these vessels as prehistoric chip-and-dip bowls, but it is unknown if they were actually for serving something or had some other function (paint pots? offering trays?).

Holmes's (1903:111-112; Jones 2002:1) discussion of the collection obtained by Floyd included photos and some description of the 10 other vessels in the NMNH collection, summarized as follows:

- an apparently plain, flattened globular bowl with a curvilinear incision running around the vessel and looping from the neck down around the body of the bowl
- a Swift Creek Complicated-Stamped late-variety flattened globular bowl with a short, straight neck and the concentric-teardrop pattern stamped in a narrow band around the base of the neck
- a plain, red-painted globular jar with a bird-head effigy adorno looking inward on the thickened rim "flat on the upper surface and nearly an inch wide"; basal perforation was not knocked out after firing but is a 1-inch-diameter circular hole made apparently when the clay was wet
- a plain (apparently) shallow open bowl
- a Swift Creek Complicated-Stamped late-variety globular bowl with squared neck at top, incurving in profile; the pattern is stamped in a narrow band below the folded rim
- a Swift Creek Complicated-Stamped late-variety globular jar with a folded rim and a long, tapering neck and the pattern stamped in a wide band around it, covering almost half the vessel
- a small, plain, very flattened jar or bowl with incurving neck and thickened, folded rim
- an unusual Weeden Island Incised jar, 16.5 cm tall, of reddish paste, with a straight long neck; squarish body as viewed from above, with wing-shaped molded protrusions at each corner that were incised in teardrop and other curved patterns; and a narrower cylindrical base, itself incised and punctated in interlocking scrolls and other patterns. Holmes (1903:111, Plate LXXXVIII A) illustrated this jar also in a separate, larger figure, with rollout drawings of the incised and punctated patterns. He called this a remarkable vessel and thought it demonstrated links with the aboriginal pottery of the Caribbean and Yucatan, though it was "as a whole, essentially Floridian"
- a small plain globular bowl with incurving rim and (apparently) one incision relatively far below the lip
- a plain jar with a small globular body and long curved neck and folded rim

Holmes (ibid.) said all vessels were of siliceous, fine-grained paste (so, sand-tempered – but would he have recognized grog?) and some had mica flecks (typical of Apalachicola delta ceramics). The paste was a "warm gray" except for one pot, which had a reddish paste (unclear if this was the one painted red also). Plain surfaces were polished. All had basal perforations or "kill" holes. He notes another specimen not illustrated: a rim sherd with another animal effigy head. This piece may be included in the NMNH catalog entry labeled 8 sherds.

Wiley (1949:256) remarked on the heavy rim reinforcement on the 3rd and 7th of these pots listed above as being reminiscent of the Weeden Island I (Middle Woodland) type Oklawaha Plain in north-central and northeast Florida. He also noted that the Swift Creek Complicated-Stamped was of his Late Variety since the decoration was confined to a band on the upper vessel.

Moore's Ceramics. Moore's (1902:210-11) specimens, based on his prose and NMAI records, are as follows:

- a Weeden Island Plain "rude, undecorated, imperforate toy bowl," the only piece of pottery with a burial; possibly the basal perforation was not done because the bowl was too small
- a Weeden Island Plain "coarse, undecorated pot of about three pints capacity, with basal perforation, [which] lay alone." Since he said "pot" and not "bowl" this may have been of a different shape, perhaps another jar
- "A four-sided cup with flat base, of about 1 pint capacity, [which] lay in the sand alone"; this is a classic squared-neck small Weeden Island Plain vessel with a folded rim, about 10 cm wide; it is of "brown ware" and has a perforated base (Figure 9).
- a Swift Creek Complicated-Stamped "perforate vessel of about 3 quarts capacity, semi-globular body, upright and slightly flaring rim"; it had no association, and was found near the base of the mound. Wiley (1949:253, 429-435) called it late-variety since the stamp was around the rim only.
- a Weeden Island Incised sherd Moore (1902:Figure 140), illustrated with a drawing of the stylized bird decoration, which "lay with others in undisturbed sand"; it is a bowl rim with a folded lip and yellowish paste (observable in a photo in the NMAI online collection, catalog number 174942.000).
- a Swift Creek Complicated-Stamped rim sherd, illustrated by Moore (1902:Figure 141) in a photo, but not enough to tell whether it is of the early or late variety; its pattern seems unusual and asymmetrical.

The only other facts extractable from Moore's (1902:211) account concerning ceramics are that, "While all vessels from this mound were of most inferior quality, numbers of sherds were of excellent yellow paste and decorated with crimson paint or with incised designs, showing that the aborigines who built the mound could hold their own in pottery making with any in this region." Moore made more than one trip to the Apalachicola delta/lower Chattahoochee Valley region (Brose and White 1999) seeking what he considered to be the most beautiful finds, Middle Woodland pots; he liked what he called "yellow ware." Since he was more interested in whole vessels, his disappointment that the only four whole ones he found at Gotier Hammock were plain and ugly is understandable (he apparently did not know about the Floyd pots).

Ceramics from USF Investigations. To permit comparison, I describe pottery from the mound area for each ceramic type, then the midden pottery. The majority of the cultural materials from all four test units (Tables 4-7) and the surface of both areas (Table 3) are ceramics. The total ceramic assemblage from the mound area consists of 118 specimens, weighing



Figure 9. Small Weeden Island Plain vessel recovered by Moore at Gotier Hammock Mound, NMAI collections (cat. no. 174013.000). Photo detail (background cropped by author) courtesy of the National Museum of the American Indian, Smithsonian Institution; photo by NMAI Photo Services Staff.

2368 g (including the whole bowl and partial jar). From the midden area we obtained 249 sherds weighing 2055 g. Minus the bowl and jar from the mound, ceramic sherds from both areas weighed an average of about 8 g each.

Test Unit 1 (Table 4) was at the disturbed periphery of the mound and only produced 12 sherds (87 g). It contained nothing cultural in the first two levels, which comprised the buried topsoil and plow-over that covered the pine stump about a century ago (strata I, II, I-A in Figure 4). There was no stratum III, the dark mound layer. The disturbed strata IV and V contained the artifacts (down to Level 7, 70 cm deep), probably because plowing for pine planting, house construction, or even earlier looting disturbed whatever (probably thin) mound stratum might have once existed. In TU2 and 2A (Tables 5 and 6) the shallowest materials were right below the surface (possibly thrown up there by pushing the road through), but most pottery was encountered in Levels 4 and 5 (30-50 cm deep), in the mound stratum (III; see Figure 6).

The Basin Bayou Incised jar (Figure 10, and seen in situ in lower left of Figure 5 and right-center of Figure 6) was reconstructed from sherds in the mound stratum in the north end of TU2 and northwest corner baulk of TU2-2A (though it is listed only on Table 5 as one vessel). It is sand-tempered, with an interior diameter at the rim of 18 cm, exterior of 19.5 cm, and total weight of 857.6 g. The bottom of the vessel, which was plain-surfaced, is mostly missing, but most of the incised

Table 3. Prehistoric cultural materials from Gotier Hammock site (wts in grams, rounded up).

Type	Floyd, mound		Moore, mound		Surface, mound		TU1		TU2		TU2A		TU3		Surface, midden		Shovel Tests, midden		TOTALS	
	N	N	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
CERAMICS																				
Sw Cr Comp-St	3*	2*	4	17			1	12	3	17			1	33			12*	73+		
Crkd R Comp-St													1	35			1	35		
Basin Bayou Inc++		?**					1*	858									1*	858++		
Weeden I Inc	1*	1+?***	2	3													3	3+		
Weeden I Pl red-pt	1*	**	1	5	3	16											5	17+		
Weeden I Plain	6*	3*															9			
Indian Pass Inc													2	26			2	26		
Keith Incised													1	4			1	4		
Carrabelle Punc													1	22			1	22		
indet inc			1	10	1	5	1	21	1	8	1	1	1	2			6	47		
cordmarked			2	40			1	13	1	4						1	9	5	66	
check-st							1	2				21	186	81	813	2	13	105	1014	
indet st									3	6			2	15	1	4	6	25		
sand-t pl			19	78	4	20	28	310	23	308	22	67	40	284	11	103	147	1170		
grit-t pl			5	17			1	<1				8	28	10	108	1	46	25	200	
grog-t pl					4	46	2*	525				11	56	19	128	6	27	42*	782	
grit &grog-t pl			4	20			1	6				1	9	1	16	1	6	8	57	
Total ceramics	11*	3+	38	190	12	87	37	1748	31	343	64	347	162	1500	23	208	381*	4423+		
LITHIC MATERIALS																				
point tip							1	9									1	9		
chert flakes			1	9	10	<1						10	<1	1	15		22	25		
ground stone celt	2												1	299			3	299+		
mica frags	2		1***					<1		<1							4			
red sandstone								<1		<1		<1						<1		
SHELL ARTIFACTS																				
columella	2		21	818									4	432			27	1250		
scoop/scrapper			5	76									2	74			7	150		
whelk debitage			20	168									3	36			23	204		
ECOFACTS																				
oyster shell						17								111		147		275		
unident bone frag								<1		<1		<1						<1		
charcoal						16		120		37		88				17		279		
charred seed								<1		<1		<1						<1		

* includes whole or nearly whole vessel(s)
 ? unclear which type represented by Moore's descriptions
 ** Moore's numbers of sherds
 + actually greater but no data for Moore's/Floyd's materials
 ++ all from 1 jar, though Moore may have had some of this type as well
 *** private collection

Table 4. Cultural materials by level, Test Unit 1 (1 x 1 m; 10-cm levels; wts in grams, rounded up).

Type	L 3		L 4		L 5		L 6		L 7		TOTALS	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
Weeden I Plain red-painted	2	13			1	3					3	16
indet incised	1	5									1	5
sand-t pl	2	20.6	1	14	1	<1			1	<1	4	20
grog-t pl	4	46									4	46
TOTAL SHERDS	9	85	1	14	2	4			1	1	13	104
chert flake	4	<1	4	<1			2	<1			10	<1
oyster shell		12		5								17
charcoal		3		6		5		2				16
historic items (glass slivers, copper bullet tip)	2	<1	2	2	1	<1					5	3

Table 5. Cultural materials by level, Test Unit 2 (1 x 2 m; 10-cm levels; wts in grams, rounded up).

Type	L 1		L 2		L 3		L 4		L 5		L 6		L 7		L 8		L 9		TOTALS	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt			N	Wt	N	Wt
Basin Bayou Inc									1*	858									1	858
Sw Cr Comp-St							1	12											1	12
indet incised							1	21											1	21
cordmarked	1	13																	1	13
check-st	1	2																	1	2
sand-t pl			1	5	2	24	11	211	8	60	3	8	1	<1	1	<1	1	<1	28	310
grit-t pl											1	<1							1	<1
grog-t pl							1	27	1**	498									2	525
grit & grog-t pl											1	6							1	6
TOTAL SHERDS	2	15	1	5	2	24	11	204	9	1416	4	8	1	1	1	1	1	1	32	1675
chert point tip					1	9													1	9
mica						<1		<1												<1
red sandstone										<1		<1								<1
bone frags				<1		<1														<1
charcoal				13		10		34		28		26		5		3		<1		120
charred seeds				<1		<1		<1		<1				<1		<1		<1		<1

*many sherds all from one (partial) jar, extending into TU 2A, with soot deposit DATED to A.D. 650

** includes entire bowl

design remains around the neck. This design is a pattern of slanted or leaning, opposing loops lying on top of one another, with the spaces around them filled in with curving parallel lines and the spaces within the loops and within the smallest curving lines filled in with straight parallel lines oriented in an opposing direction to the flow of the curve. Though this partial jar is the only example of this type recognizable in the Gotier Hammock assemblage, other sherds labeled indeterminate incised may be from other vessels of this type. Pieces of the

bottom of the jar might be unrecognizable among the rest of the sand-tempered plain sherds, though we examined everything carefully to try to restore the whole jar.

Basin Bayou Incised (Willey 1949:374-76) is the sand-tempered, Florida version of Marksville Incised, a Lower Mississippi Valley type with predominantly grog ("clay" and some [crushed] "sherd") temper but including some sand temper, with designs including line-filled "meanders" but vessel forms of bowls (Phillips, Ford, and Griffin 1951).

Table 6. Cultural materials by level, Test Unit 2A (1 x 1 m; 10-cm levels; wts in grams, rounded up).

Type	L 1		L 2		L 3		L 4		L 5		L 6		Mixed		F 1		TOTALS	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
SwCr Comp-St									2	14					1	3	3	17
indet stamped			2	3	1	3											3	6
poss cordmarked									1	4							1	4
indet incised							1	8									1	8
sand-t pl			3	11	2	1	10	265	5	4			1	10	1	<1	22	292
TOTAL SHERDS			5	14	3	4	11	273	9	38			1	10	2	4	31	343
bone frags							<1											<1
charcoal				1		1		2		3		1		1		28		37
charred seeds				<1		<1		<1		<1					<1			<1
red sandstone				<1						<1								<1
glass, plastic?	1	45	2	1			1	1									4	47

Table 7. Cultural materials by level, Test Unit 3 (1 x 1 m; 10-cm levels; wts in grams, rounded up).

Type	L 1		L 2		L 3		L 4		L 5		L 6		L 7		F 09-1*		TOTALS	
	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt	N	Wt
indet incised					1	1											1	1
check-st			4	22	12	112	5	52									21	186
sand-t pl			6	14	11	20	3	17	1	5					1	11	22	67
grit-t pl			3	15	4	12									1	<1	8	28
grog-t pl			6	42	4	10	1	4									11	56
grit&grog-t pl							1	9									1	9
TOTAL SHERDS			19	93	32	155	10	82	1	5					2	12	64	347
chert flake			3	<1	7	<1											10	<1
sandstone					1	<1											1	<1
bone frags				<1			<1		<1		<1					<1		<1
charcoal		1		43		24		9		<1		<1		9		<1*		88
charred seeds				<1		<1				<1		<1		<1		<1		<1

* charcoal from feature sent for radiocarbon DATING; returned result of cal. A.D. 1290 to 1420

Wimberly (1960:93-98) recognized Basin Bayou Incised in south Alabama, though he included punctations in the range of decoration, not just incisions (thus making it overlap with Weeden Island Incised). His illustrations of the type (1960:Figures 54, 55) show resemblances with the Gotier Hammock jar.

The loopy design on our jar is reminiscent of the kinds of patterns seen on slightly earlier and contemporaneous Swift Creek Complicated-Stamped vessels, e.g., Willey's (1949:433; 1966:Figure 5-42c) illustrations of stamped patterns with lots of loops, parallel curving lines, parallel straight lines filling in other spaces, and decoration only on the neck of the vessel.

This resemblance of incised patterns to complicated-stamped designs has also been noted by Ashley Dumas (2008; Price 2008:156), who found similar Basin Bayou Incised pottery in coastal Alabama at Plash Island, some 250 km westward along the coast from Gotier Hammock. Moving forward in time, the broad-line scroll-shaped patterns incised on the Middle Woodland Gotier Hammock jar clearly foreshadow the running scrolls on Fort Walton Incised and other later prehistoric and protohistoric ceramic types. All these designs can be interpreted as birds, snakes, waves, or just curvy patterns of unknown significance; our Gotier Hammock jar fits the last. However Moore's (1902:210) Weeden Island Incised

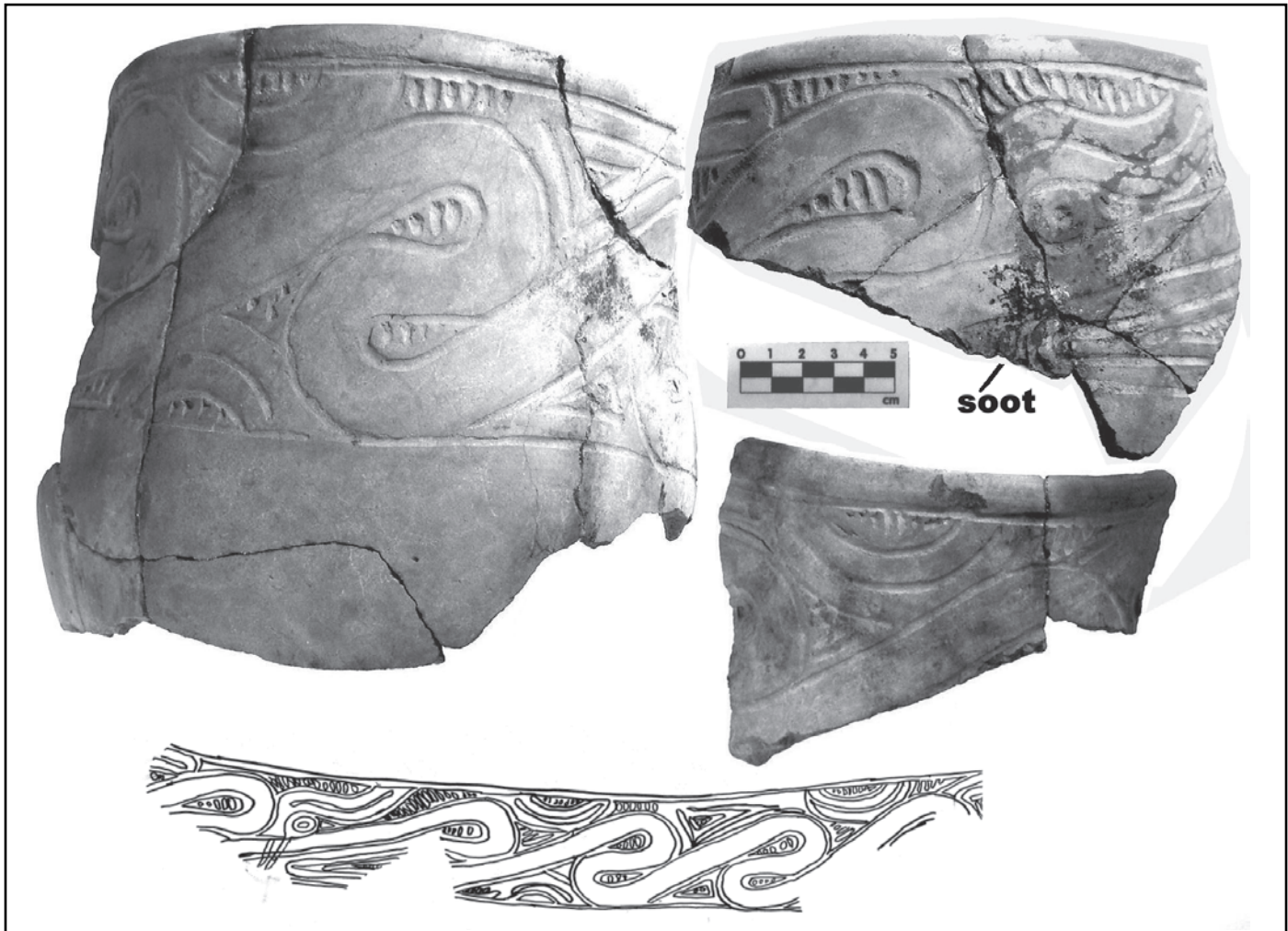


Figure 10. Basin Bayou Incised jar from TU2 N1/2 and TU2A balk (cat nos. 08-39, -44, -49, -51, -99, -107); sherds make up complete upper portion but are too fragile to stay glued together; note encrusted soot, AMS radiocarbon-dated to A.D. 650; rollout of incised design below was done by hand-tracing.

sherd from Gotier Hammock clearly shows a bird head figure among other stylized elements.

The Basin Bayou Incised jar (and all the other pottery) has the micaceous paste typical of this region, deriving from the natural inclusion of this mineral in the soils. It also has caked-on (baked-on?) black deposits that are not dark firing clouds but solids adhering to the surface after heating or some other process. Less than a gram of this soot (or whatever its proper name may be) was sliced off with a scalpel and AMS radiocarbon-dated to A.D. 650±40 (see discussion below). The small standard deviation suggests the date is very reliable for the vessel and the mound. The jar could be older, perhaps kept by family members who were descendants of its original owners or makers, and only buried in the mound at some special occasion. Or it could have been made specifically for some mortuary ceremony, which may also have resulted in the soot deposit. The Plash Island materials noted above in coastal Alabama, including similar Basin Bayou Incised ceramics, were likewise dated to as late as A.D. 650, though the Porter Phase recognized there had previously been thought to extend only to about A.D. 400 (Dumas 2008; Price 2008)

The few indeterminate incised sherds recovered by USF operations (three from excavated contexts) for now must be assumed to come from either Weeden Island Incised or Basin Bayou Incised vessels, as no other incised types are known from the mound. We did obtain from the surface of the mound area two very small sherds of Weeden Island Incised (Figure 11 bottom), one of which also has a black, baked-on deposit. Swift Creek Complicated-Stamped sherds from the mound are few, but interesting. Besides Moore's (1902:Figure 141) single, complex-patterned example, our investigations produced eight, including one (Figure 11 top) with more of the baked-on black deposit and two (probably from the same pot) with a ladder-like design (one is in Figure 11, middle right) from TU2A. Three mound-area sherds had to be classified as indeterminate stamped since their surfaces were obscured (eroded or smoothed).

The red-painted sherds from TU1 are probably all from the same vessel and have the red pigment on the interior. They are classified as Weeden Island Plain, since this type (Willey 1949:409) includes sand-tempered plain vessels with red paint. Moore and Holmes also both found red-painted pots here. The



Figure 11. Artifacts from mound area: clockwise from top, complicated-stamped sherd in fine-line pattern with soot deposit, from TU2 N1/2 L4 (08-24), complicated- stamped sherd with ladder-like pattern from TU2A L5 (08-92); 2 Weeden Island Incised sherds from surface (03-1); pinkish (probably thermally altered) point tip from TU2 S1/2 L3 (08-23).

most notable of the plain-surfaced ceramics is the whole bowl (Figure 12), which is grog-tempered, with a typical Middle Woodland folded rim and yellowish paste, and weighing 766.7 g. It had been carefully exposed and recorded in situ (Figure 5), but when it was lifted from the soil it fell into two halves, from old damage. The bottom had been knocked out irregularly, and pieces of the rim fold had broken off. Though what appears to be a firing cloud darkens the lower part of the bowl exterior, a baked-on black deposit (which could be dated) coats this area as well. The exterior bowl diameter is 19.75 cm and interior, 17.75 cm. By definition it is classified as Weeden Island Plain, just like the small plain vessel Moore recovered, which it closely resembles in style, especially the folded rim (though Moore's was a square cup); it is also similar to some of Floyd's pots.

Another interesting plain specimen is a sand-tempered ceramic disc from TU2, L 5, nicely cut to have a beveled edge. It is a near-perfect circle, 5.7 in internal and 6.9 external diameter, weighing 50.3 g (though part of it is broken off). Such disks have been interpreted as gaming pieces or other

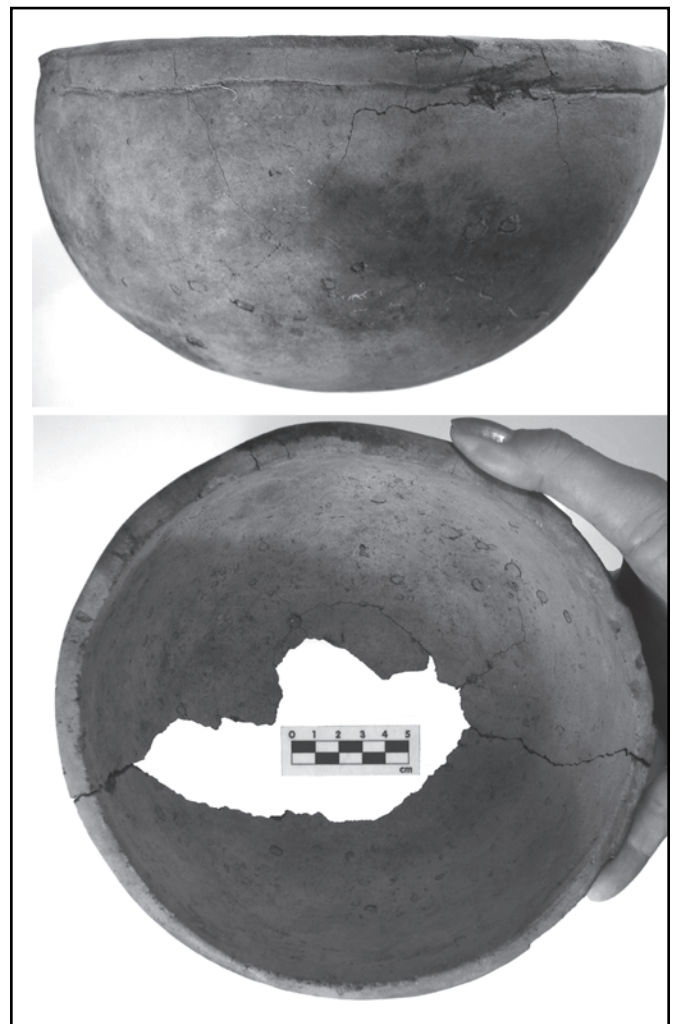


Figure 12. Weeden Island Plain bowl from mound, exterior side and interior top views; note black soot deposit on exterior and irregular "kill" hole; cat. no. 08-40.

kinds of functional/ceremonial items, but also may just be the pieces left when the bottom is cut/knocked out of a sacrificed vessel during the burial or other ceremony (assuming the person performing the ceremony does a neat job, not like the irregular bottom piece missing from the complete bowl in Figure 12).

All the plain sherds are given generic labels by temper because they may be from plain vessels or pieces of other types from portions where the decoration was not applied to the surface. Among the plain sherds listed on the tables are various extremely tiny crumbs recovered from flotation and only able to be examined for temper. They usually weigh less than a gram or even a tenth of a gram, so do not add much to the totals; but their presence indicates something cultural even at deep levels (though they may have filtered down).

Though the tempers of the whole vessels in the Moore and Floyd collections are mostly unknown, some interesting trends in temper can be documented with the controlled data (Table 8). In the mound area, most of the pottery is sand-tempered (81% by number of specimens and 54% by weight),

Table 8. Tempers in plain-surfaced ceramics from Gotier Hammock, USF investigations.

Temper	MOUND AREA				MIDDEN AREA			
	N	%	Wt	%	N	%	Wt	%
sand	74	81%	716	54%	73	56%	454	52%
grit	6	7%	17	1%	19	15%	182	21%
grog	6	7%	571	43%	36	27%	211	24%
grit & grog	5	5%	26	2%	3	2%	31	3%
TOTALS	91	100%	1330	100%	131	100%	878	100%

with lesser amounts of grit, grog, and mixed grit and grog temper. However, the one complete plain grog-tempered bowl, while counted as a single specimen, brings the amount of grog-tempered in the mound area to 43% by weight. Grog is understood to be crushed clay particles, perhaps fired, perhaps from crushed sherds, of many colors, from pale off-white to gray or brown to red. The sand-tempered plain has occasional particles of grit (or perhaps large sand grains). Several sherds from TU2 glue together to make the side of what must have been another simple plain sand-tempered bowl, also notable because it, too, is caked with a baked-on, datable, black deposit.

In the midden area, sand-tempered pottery is still the majority, at little over half by both count and weight, but grog temper characterizes a quarter of the sample, and there are considerably more grit-tempered plain sherds as well (Table 8). Such greater diversity may reflect the fact that the midden area occupation took place at several different time periods in prehistory, as compared with the single-component late Middle Woodland mound. In summary, concerning temper, Middle Woodland folks apparently preferred sand, but used grit and grog as well in differing amounts for both plain and all other ceramics (for unknown reasons).

Cordmarked sherds (Figure 13) were recovered from the mound area, two from the disturbed road surface, and one from TU2. All are sand-tempered and have impressions of S-twist cords about 1.5 to 2 mm thick, set 1.5 to 4 mm apart on the vessel. The rim sherd showed that the cord impressions run nearly vertically on the vessel exterior; the top of the rim is folded over and smoothed a bit to cover the tops of the cord marks. The sherd from TU2 had cord impressions covering only a portion of the surface, leaving the rest plain. This type of pottery could be considered fancy or utilitarian depending upon one's impression of what constitutes "decoration," as opposed to a surface treatment for some functional purpose (thermal properties, ability to grip a rougher surface better, or some other reason).

A cordmarked sherd (Figure 13, right) was recovered from the midden area, from 48 cm deep (embedded in the wall) in Shovel Test 12. It is tempered with grayish-white grog particles as well as fine sand. It has impressions of S-twisted, about 2 mm-thick cords close together enough that the sherd was originally identified as sloppy check-stamped. The twists of the cord, 2 to 3 mm apart, are visible in the sherd and perhaps more so in a clay positive impression, which shows

a faint hint of thinner strands woven in between those cords, which may actually make this sherd more accurately classified as fabric-marked.

Check-stamped pottery is important for understanding this site and has an unusual distribution. Only one small sherd of this type, weighing 2 grams, was recovered from the mound area, and it was not deep, near most of the mound ceramics, but in TU2, Level 1. All the other check-stamped (104 sherds, 1012 g) came from the midden area (Figure 14). Check-stamped pottery is non-diagnostic; panhandle Florida natives began making it during Deptford (Early Woodland) times, around 1000 B.C., and kept making it for another three millennia into protohistoric times (Marrinan and White 2007). The type associated with Middle Woodland, by definition, is Gulf Check-Stamped (Willey 1949:387-88), but this type is only recognizable by its notched or scalloped rim, not in body sherds. There are no such rims in the entire ceramic assemblage from Gotier Hammock. Check-stamped pottery from the midden area, tempered with grit or grog in about equal amounts, probably represents several different prehistoric time periods based on the radiocarbon dates (see below). Understanding the midden area requires noting the other ceramic types present (Table 3, Figure 14): two complicated-stamped sherds, one of the Crooked River type; two Indian Pass Incised; one Keith Incised; one Carrabelle Punctate; and one indeterminate incised, as well as all the plain specimens described above. All are general Woodland types.

In sum, the ceramics at Gotier Hammock mound are typical of Middle Woodland assemblages from both mounds and habitation sites in the Apalachicola delta. A lot of the pottery is caked with the black, baked-on deposit that produced the single radiocarbon date, so additional dates could be obtained to support the interpretation. Ceramic tempers are variable but seem not to correlate with type or anything else; they may have been just what was convenient. Ceramics from the midden area are diagnostic of only generic Middle- to Late-Woodland habitation, but the check-stamped sherds, more numerous than plain sherds, could also be associated with the Fort Walton occupations indicated by the radiocarbon dates.

Stone Artifacts

Few stone artifacts were found at Gotier Hammock, probably a function of the lack of local rock for artifact manufacture. People would have had to go up the river and



Figure 13. Cordmarked pottery: left top, rim sherd from dirt road surface (cat no. 08-1); bottom, sherd from TU2 L1(08-6); right, from midden area, Shovel Test 13 (09-8), with clay positive impression of the sherd below it, showing twisted cords and possible interwoven strands on left side.

other streams some 80 km to chert outcrops in Calhoun or Jackson County to get raw material for chipped-stone tools, and at least equally far for quartzite and other cobbles on the lower Chattahoochee gravel bars for ground-stone artifacts.

From the mound area, only two chipped-stone items of typical size were recovered: a biface fragment and a piece of debitage. The former, a pink chert projectile point tip (see Figure 11) weighing 8.5 g, came from TU2, L 3. Its rosy color and lustrous appearance mean it was thermally altered to make flaking easier. A single flake of local whitish chert (8.9 g, nearly 6 cm long) came from the dirt road surface. It is a secondary decortication flake, indicating later stages of tool manufacture, or even sharpening a tool that may have still had cortex on it. The flake has use wear on three sides of the wider end and so the narrower end may have been kept as a handle. It is an expedient tool, possibly kept longer in a region where stone is scarce.

Chert micro-flakes appeared in the remains recovered by flotation and sorted under the microscope or magnifying lamp.

In TU1, Levels 3, 4, and 6 had a total of 10 tiny secondary flakes from bifacial thinning. One or two of these flakes even exhibited use wear or retouch; together all weighed less than .1 g. They might have been produced just by sharpening some tool. Unfortunately they were accompanied by the glass noted for this unit that indicated modern contamination. Whether these tiny items migrated downward naturally or not is unknown. The other units on the mound did not produce such flakes. Also during sorting of flotation remains a few tiny crumbs of red sandstone were found recovered from TUs 2 and 2A; they could be from a material used for pigment, or just natural inclusions in the soil.

The midden area also produced very few stone artifacts. From the surface at the south end came one large chert secondary flake with a little use wear and the ground-stone celt. This unusual celt has some narrowing at the butt (left end in Figure 14) apparently for hafting, and it is of raw material that is not the typical greenstone but olivine-rich granite (identified by FSU geologist Joe Donoghue), an igneous rock



Figure 14. Artifacts from the disturbed surface of the midden area: top, right to left, Keith Incised, Carrabelle Punctate rim (with huge punctations), two Indian Pass Incised rims, Swift Creek Complicated-Stamped, all cat. no. 01-1; middle, four check-stamped sherds (a rim, two body sherds, another rim); bottom, ground stone celt, two pointed Busycon shell columella tools with broken bases, all cat. no. 08-02 except middle right sherd and shell tool below it, 08-111.

clearly foreign to northwest Florida. With a chip gone from the bit and a general battered appearance, it appears to have been an ax head heavily used before being lost or discarded. Since the granite probably came from as far away as the north Georgia mountains, perhaps down the Chattahoochee/ Apalachicola system, the celt may have been an “expensive” and valued tool and therefore kept until it was worn out or lost.

Chert excavated from TU3 totals 10 flakes so tiny that together they do not even weigh a gram (similar to the microflakes from TU1 noted above); all are from the flotation B-fractions. Of the three flakes from Level 2, the largest, at .1 g, is a secondary decortication flake; another tiny one is block shatter and another is a secondary flake from bifacial thinning or sharpening. All seven tiny flakes in L 3 are secondary except

one, which is both secondary decortication (with a little cortex on it) and bright red, indicating thermal alteration.

The Floyd collection at the NMNH includes 2 polished stone celts (cat. no. A170270-0) but the collection information does not say raw material or any other data. It also includes an entry for mica (catalog number A170272), indicating there were two pieces, but no further data, and also the notation “[Removed]”; so this mica may also be lost to further research. Doubtless these mica pieces were cut or broken fragments, since the catalog would have indicated if they were in some recognizable shape. A mica fragment recovered by a local avocational archaeologist is amorphously shaped and measures roughly 5 x 4.5 cm. It is silvery-yellowish and probably much broken and eroded, since it came from the

surface. Though mica occurs naturally in the alluvial sands of the region, a piece this big would have had to be obtained at a quarry, probably in north Georgia. Small mica flakes were in the flotation recovery from TU2, Levels 3 and 4, apparently all layers of the same piece, which measured about 1.1 cm long. They (and all the other pieces) may be crumbs that flaked off larger, fragile mica artifacts.

Shell Artifacts

Moore did not record any shell artifacts from Gotier Hammock. The Floyd collection at the NMNH includes two "spiral shells" (catalog number A170271-0) but the records do not indicate what species or if they were fashioned into artifacts. Also, the notation "[Removed]" with these items may indicate they are lost to further study. They had to be artifacts, however, since gastropod shells, which they must be, would not occur naturally 200 m away from the bay where the mound sits. The spiral description and the rest of the shell artifact assemblage strongly suggest they were columella tools.

Prehistoric whelk and conch shell artifacts are common in this region, where the raw material is so abundant from the salty bay waters (White 2005). The USF investigations recovered 32 shell implements from Gotier Hammock, 25 from the mound and 7 from the midden area. They are listed in Table 9 (which does not include the pieces of shell debitage in Table 3, since those are not finished tools). For years we have been trying to establish a typology of shell tools for the Apalachicola delta region, where they are rare except at coastal and estuarine sites. Though we have made progress (Eyles 2004; White 2005), the type names used below should still be considered provisional.

The majority of the specimens from the mound area are of *Busycon perversum*, lightning or left-handed whelk: 9 pointed and 10 bipointed tools. Three pointed columella tools (Figure 15j-l) are of *Pleuroploca gigantea*, horse conch, recognizable by the parallel curved grooves and right-hand direction of the spiral (the naturally pointed base might cause some workers to classify them as bipointed tools). Another pointed columella is so heavily shaped that the original shell species is not observable, except that it cannot be lightning whelk since it opens to the right, like most large gastropods (it may be of some other *Busycon* species, or horse conch, or even tulip shell). Six columella tools have the apex end bifurcated into a distinctive U-shaped notch (Figure 15b, c, g, h, o) for some function. Two columella tools have much of the whorl left around an interior, sharpened apex, as if to shield the point of the tool (Figure 15e). Another conch columella is a hammer or cutting tool (Figure 15a) with some of the whorl left, possibly as a handle. Many of these columella tools have a distinctive right-angle cut part of the way above the base that seems to be for more than just removing all the whorl from the apex so as to make the point. More columella tools with such right-angle cuts were recorded at other sites in the immediate area in the St. Joseph State Buffer Preserve (White 2005). Five lightning whelk artifacts are scrapers, mostly squarish, with at least one smooth edge. Two of them are very small; one of these is smooth on all edges and has a narrower side that may have

been for hafting or grasping (Figure 15q), and the other has a wide (possible) notch out of one edge and a long narrow notch cut into another edge (Figure 15r).

Midden area shell artifacts are also predominantly pointed columella tools. Those of lightning whelk are a rectangular scoop with a smoothed edge and narrower, probable handle area, and five pointed columella tools (Figure 14). One of the latter has a sharply pointed apex inside a cut-away section of whorl that shields the point. Most of the shell is still present on this specimen, and also on a horse conch pointed columella of similar design. Like the two described above from the mound area (Figure 15e), this may be some previously unrecognized tool type, a punch or awl with a tip perhaps cushioned from damage during transport. One additional shell tool from the midden area is a rectangular scoop of clamshell that retains a hinge fragment and a possible handle area for grasping. It is unusual in that it is not a gastropod but a clam, probably *Chione cancellata*, cross-barred venus. Usually clams and oysters are not suitable for tools in this region because their shells are too thin, but this one is fairly thick.

The shell artifacts from both mound and midden are similar. Many are expedient tools, squarish fragments cut from the whorl used as scrapers such that at least one side is smoothed from use wear. Others are the carefully shaped pointed columellae. Some had to be multi-purpose tools with more than one working end. The whole assemblage is very different from a typical shell artifact assemblage in south Florida (e.g., Luer 1986; Marquardt 1992), which would contain large, hafted whelk hammers, net sinkers, adzes and other cutting tools, as well as beads and pendants. Possibly the greater availability of stone in northwest Florida accounts for the different kinds of tools here, but some other factors may be at work. For example, the marine quahog or venus clam (*Mercenaria campechiensis*) shells, large and thick, were frequently made into tools in south Florida, and I have seen occasional tools made from them in sites along the Apalachicola in the riverine interior; but none were found at Gotier Hammock. This species occurs off the Apalachicola delta barrier islands, but may not have been available in St. Joe Bay in the past.

The fact that the shell artifacts are all tools, with no decorative items, is notable. An important wider research question for this whole region has been why there is little evidence for processing and exchange of decorative, ritual, or sacred objects made of the big gastropod shells, which had such great significance throughout the eastern U.S. in Middle Woodland burial mound ceremonialism (Florida whelks with Ohio Hopewell burials, for example), as well as later Mississippian times. This is an especially pertinent question for Gotier Hammock, a Middle Woodland burial mound.

In addition to finished tools, 23 shell fragments classifiable as debitage were recovered, 20 from the mound area and three from the midden area. Though only a few have cut marks on them (see Table 3), they are probably all from artifact manufacture. All are of lightning whelk except for one horse conch fragment from the mound area. All are whorl fragments except for one columella piece from the midden area. Some are roughly square, for example, the cut piece in Figure 15m.

Table 9. Shell Artifacts from Gotier Hammock (all surface finds, all whelk, *Busycon perversum*, except as indicated).

Cat No.	Type	Size (cm)	Wt (g)	Comments
MOUND AREA SHELL ARTIFACTS				
03-2	bipointed columella	L=14.5	31.1	apex blunt, base sharp
	bipointed columella	L=9	17.8	apex sharp inside longer whorl fragment to make u-shaped end, broken base
	bipointed columella	L=9	7.0	apex tiny, sharp; base possibly shaped
	bipointed columella	L=12	55.4	apex sharp inside whorl fragment; base sharp
	pointed columella	L=10	20.7	apex blunt, probably unmodified base with whorl cut at right angle; of horse conch, <i>Pleuroploca gigantea</i>
	pointed columella	L=5	3.0	apex cut & pointed, base probably unmodified; of horse conch, <i>Pleuroploca gigantea</i>
	pointed columella	L=4.7	2.5	small, young shell, apex pointed, base probably unmodified; of horse conch, <i>Pleuroploca gigantea</i>
	scraper	7 x 7.5	26.3	squarish cut whorl fragment with 1 straight edge smooth, worn
	scraper	3.3 x 4.3	6.3	squarish cut whorl, small; 2 straight edges worn smooth, 1 with wide shallow notch; another, long, thin notch cut into 3 rd edge
	scraper	2.5 x 2.7	2.9	trapezoidal whorl, very small, all edges worn smooth; shape suggests section for grasping
08-54	columella hammer/ cutting tool	L=18.8	190.2	some of whorl left (handle?), broken apex and base; 3.5-mm diam hole partially drilled into thickest part of whorl (but is not a pendant); of horse conch, <i>Pleuroploca gigantea</i>
	bipointed columella	L=11.8	41.5	apex pointed, with U-shaped notch; base unmodified
	bipointed columella	L=9.9	23.6	apex and base sharply pointed; U-shaped notch at apex and part of whorl surrounding it is squared-off and smooth from use
	pointed columella	L=10	112.9	tiny point of apex surrounded by whorl, base broken
	scraper	4.9 x 4.6	22.7	squarish, 2 edges somewhat smoothed
	scraper	4.4 x 5	17.6	squarish, 1 smoothed edge
	bipointed columella	L=8.2	16.1	apex broken but has U-shaped notch; base more chisel-shaped
08-87	pointed columella	L=10.4	21.3	all very smoothed, apex U-shaped, base pointed
	pointed columella	L=9.3	23.5	apex broken but poss. once pointed; base pointed, right angle portion of whorl left above base
	pointed columella	L=16.6	188.5	apex poss. once pointed inside much larger whorl fragment, base sharply pointed
08-102	pointed columella	L=3.8	1.2	tiny, unmodified base of shell, sharp tool tip
09-1	bipointed columella	L=4.9	3.1	U-shaped notch at apex
	bipointed columella	L=4.6	3.2	apex has chisel-like point
09-2	bipointed columella	L=12.8	25.0	
	pointed columella	L=3.7	5.2	all smoothed, pointed apex, unmodified whorl around base; not <i>B. perversum</i> ; could be tulip shell, horse conch, other <i>Busycon</i>
Cat No.	Type	Size (cm)	Wt (g)	Comments
MIDDEN AREA SHELL ARTIFACTS				
01-1	pointed columella	L=7.4	29.7	chisel-pointed base, apex rounded (for pounding?)
	rectangular scoop	L=10, W=5.5	34.5	has handle area, smoothed edge
	rectangular clamshell scoop	L=8, W=ave. 4.5	39.9	rectangular with hinge fragment present, all smooth and worn with one sharp edge, possible handle are for grasping; probably cross-barred venus <i>Chione cancellata</i>
01-2	pointed columella	L=23	274.5	apex pointed and whorl cut away, sides cut, rest of shell present; of horse conch, <i>Pleuroploca gigantea</i>
08-2	pointed columella	L=8.5	20.1	sharply pointed apex, base broken
08-111	pointed columella	L=10.8	25.0	broken base
09-7	pointed columella	L=14	108.1	sharply pointed apex inside cut-away whorl that surrounds it; much of shell still present; base unmodified

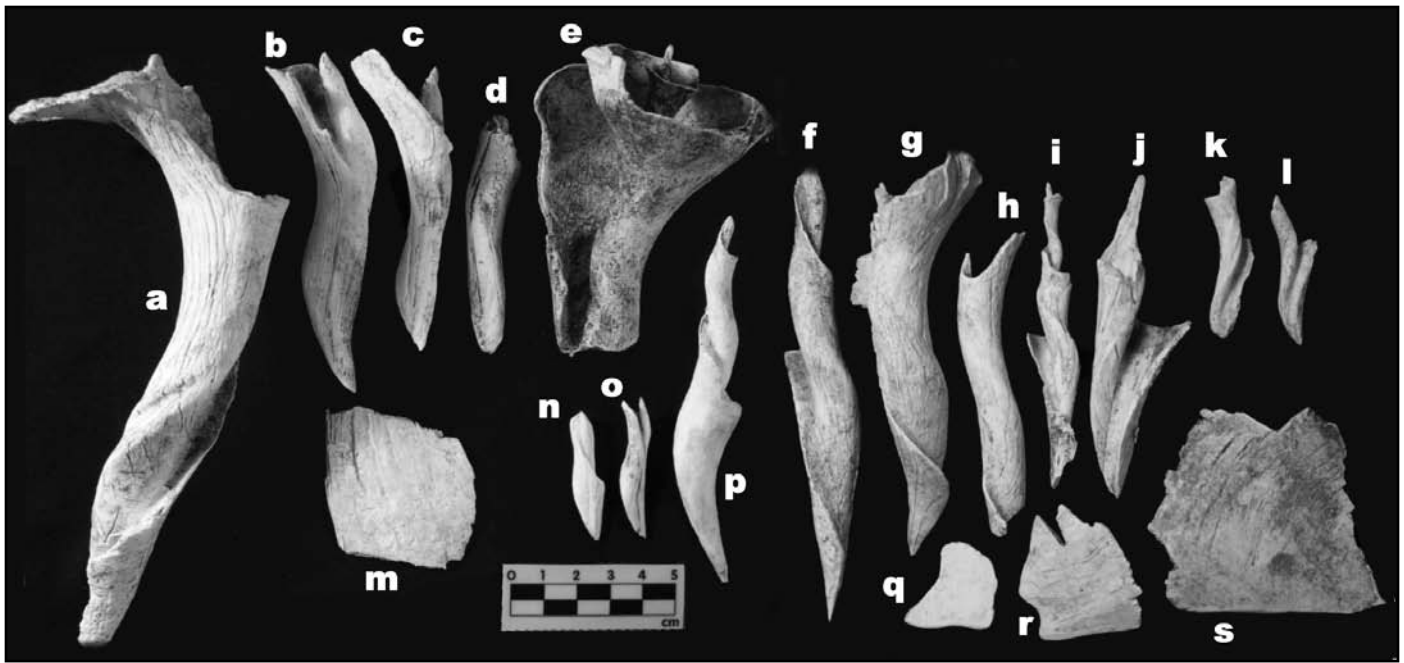


Figure 15. Shell tools from mound area: a) conch columella hammer with part of whorl (handle?); b-d) 3 bipointed whelk columellae with notched apices; e) whelk with broken base, tiny pointed apex (all these cat. no. 08-54); f-i) 4 whelk bipointed columellae (2nd and 3rd with notched apices); j-l) conch pointed columellae (all these cat. no. 03-2); m) cut whorl debitage (08-54); n) small bipointed columella; o) small pointed columella with notched apex (both cat. no. 09-1); p) bipointed columella (cat. no. 09-2); q-s) 3 whelk scrapers, showing worn edges at bottom (all cat. no. 03-2).

All the shell artifacts are from the surface of the site. Perhaps they were still there because looters prefer to take pottery and stone tools but find shell to be of less interest, since they live near the bay that produces so many such shells.

Biotic Remains: Ecofacts

Unmodified faunal remains were few at Gotier Hammock (Tables 2-7). Oyster shell at the mound area was minimal; a few were seen scattered on the ground surface but not collected, and the recovered oyster was all from the disturbed upper levels in TU1 and shovel test 1. This shell has to be from modern hunters, who sit and wait for deer and traditionally often eat oysters (and drink beer). By contrast, the midden area has ancient oyster shells, but they are scattered only loosely and intermittently across the whole 50-m-wide-by-350-m-long area. Besides surface shells exposed and moved around in firebreaks, oyster was uncovered in Shovel Tests 9 and 13, at opposite ends of the linear bayshore midden (Table 2).

Most shell midden sites around St. Joseph Bay, from Early Woodland through historic Native American times, as noted, are characterized by large gastropod shells that presumably resulted from harvesting these creatures for food, since they are so easily available in the salty bay. There are typically also oyster, clam, and other shells and animal bone better preserved than usual since the shell cuts the soil acidity that causes decay. (In addition, there are typically shell tools, as described above). So an important research issue at Gotier Hammock is the very different nature of the midden, with its sporadic oyster and no large-gastropod ecofacts. It is unknown why the prehistoric inhabitants of different time periods did

not harvest these species like typical campers, and why they did not harvest a lot of shell in general. Perhaps they only stayed for brief visits, and mostly ate fish.

Another fascinating research question concerns the oyster shell in the midden area and in other large-gastropod shell middens around the bay. Since oyster-shell middens are common along the Gulf, it never occurred to me over the years of this research to ask where the St. Joe Bay prehistoric people got their oysters. But experts have recently pointed out to me that this bay is far too salty for oysters. So people had to go either around the delta to Apalachicola Bay for the oysters, or else farther north and west to other bays with fresher water. An alternative explanation is that St. Joe Bay was less salty at some time(s) in the prehistoric past (discussed more below).

Only the tiniest crumbs of bone were recovered, from both mound and midden, and always from the excavated levels' soil samples after they were processed through flotation and the remains sorted under magnification. Even identification of some of these crumbs as bone is uncertain, not to mention what species they might be. Far more evidence is required before we can discuss prehistoric animal use.

Charcoal was also recovered from mound and midden excavations. Most of it is small pieces recovered in flotation samples, and most looks like wood charcoal. Some of the carbonized material in both mound and midden areas (specifically in TU1, L5, and TU3, L3) looks like bubbly burned sugar and may be charred resin fragments, perhaps from pine. Though modern natural materials identified in the flotation remains, such as insect carapaces and roots, have been omitted from the tables, some of the things included, such as seeds, may indeed be modern. Given this caution, it is important that

many clearly charred seeds were recovered. For example, TU3 Level 2 flotation remains in the B- and C-fractions included hundreds of charred seeds of various shapes and sizes. Some are spherical, between 1-2 mm in diameter; perhaps some of these are fern spores. Others are oval and fluted, some 3 mm long, and resemble the forms for different species of bulrushes (Martin and Barkley 1961:90-91). Still others are sub-rectangular or bi-lobed or other shapes. More research could be done here by a paleoethnobotanist to get useful data on past environments and human use of them.

Though it may not be biological in origin, the carbonized deposits on the mound pottery are worth noting again. Besides the dating, they could be analyzed for composition. The yellow soil deposit also on the jar, which appeared silty and slightly slimy at the time the sherds were first uncovered in the field, was analyzed further. After drying, this deposit was not as bright a shade of yellow (10YR6/6, brownish yellow) as when first exposed (10YR7/6 to 8/6, yellow). The ceramic paste of the jar is yellowish too, ranging from 10YR7/4 and 8/4 (very pale brown) to 8/6 (yellow), to 7.5YR7/6 (reddish yellow). Also the natural subsoil under the white sand is light yellowish brown silty sand (10YR5/6 to 6/8). But the yellow deposit was brighter than the subsoil or the ceramic paste. It was investigated by Christian Wells, USF archaeological soils expert, and grad student Kara Rothenberg. Table 10 summarizes the characteristics manifested in the two samples analyzed, some yellow soil adhering to the jar exterior, and some mixed gray and yellow soil on the interior.

Results indicate this yellow deposit is sandy soil with relatively high clay content, and very high in phosphate, indicating the decomposition of organic remains. With soil organic matter of less than 1 percent, the high phosphate is not natural, but likely anthropogenic. The soil conditions (20-30 percent clay and slightly acidic) are ideal for long-term preservation. The yellow deposit is likely from some organic

substance included in the pot. It might also be from the clay of the ceramic pot itself wearing off under moist conditions during burial.

Dating the Site

The three radiocarbon dates obtained for the Gotier Hammock site (Table 11) require discussion. Dating the black deposit on the Basin Bayou Incised jar is the same as dating the mound. Even if this deposit came from burned wood, food, or some other substance that was older than the jar, or younger, probably the age difference would be in years or tens of years, not centuries. Two notable aspects of this A.D. 650 date are that the small standard deviation makes it fairly tight, and it is fairly late for a Middle Woodland, Swift Creek-early Weeden Island mound. However, as noted, similar results are being obtained for late Middle Woodland elsewhere along the Gulf Coast.

The two dates on the midden include one on oyster shell, sometimes considered less accurate. But if correct, either or both of these dates indicate, not unexpectedly, that people were staying on the shores of St. Joseph Bay and obtaining its resources at many different times in the past. The check-stamped and plain pottery could fit well with the dates, and be associated with both prehistoric and protohistoric Fort Walton. There is nothing in the midden artifact assemblage to prevent the dates from being correct, but this assemblage is mostly so generic as to be near-useless for indicating cultural affiliation except for the Middle Woodland sherds that do indicate a component contemporaneous with mound use.

Historic Artifacts

Since this project is concerned with the prehistoric component of Gotier Hammock, historic materials from the

Table 10. Analysis of Yellow Soil on Basin Bayou Incised Jar in Mound.

Sample	Texture			Soil Organic Matter	Hydrogen Potential	Ave. Phosphates		
	Sand (%)	Silt (%)	Clay (%)	SOM (%)	pH	P2O5 (ppm)	PO4 (ppm)	P (ppm)
1G (yellow, exterior)	73.30	6.67	20.03	0.91	6.55	437.75	584.38	191.25
2 (mixed, interior)	60.00	10.00	30.00	0.74	6.34	337.88	452.63	146.63

Table 11. AMS Radiocarbon dates for Gotier Hammock site.

Provenience	Material	Cat No.	Date No.	Radio carbon yrs (BP)	Calibrated Intercept(s)	Calibrated 95% probability age range	Cultural affinity
TU2 NW baulk&TU2-A, NE baulk, sherds <i>in situ</i> 53 cm depth, in mound stratum	<1 g soot sliced off Basin Bayou Incised jar exterior	08-107	Beta 257057	1380 ±40	A.D. 650	A.D. 610 to 680	late Middle Woodland (Swift Creek-early Weeden Island)
TU3, Feature 09-1, NW half, from flotation, B-fraction (.86 mm mesh)	ca. 2 g charcoal	09 -31	Beta 262382	610±40	A.D. 1320 A.D. 1350 A.D. 1390	A.D. 1290 to 1420	must be Fort Walton
Shovel Test 13, 0 to 20 cm depth, with check-stamped and plain sherds	75 g oyster shell	09-12	Beta 262381	830±40	A.D. 1500	A.D. 1450 to 1580	protohistoric and/or late Fort Walton

mound area are not examined here, though they are included in the database of site materials. These artifacts characterize what could be considered three components. The early and late nineteenth-century occupations and probably the early looters' activities are represented by bricks of various types, and domestic items such as some of the glass, whiteware ceramic sherds, porcelain, and metal fragments, including an old skillet handle (see Table 1). Early twentieth-century turpentine produced sherds of Herty cups used for collecting pine resin. Recent visitors to the site left glass, metal, and plastic. No historic items came from the midden area excavations, and surface items were all modern garbage this close to the paved road.

Mound and Midden Interpretations

Mound Natural and Social Context

The Middle Woodland was the time of the height of burial mound ceremonialism in the eastern U.S., and the lower Chattahoochee-Apalachicola drainage basin was a major heartland for it. Though Gotier Hammock mound is not large or impressive, it probably served well what may have been a relatively remote corner at the southwest end of the river delta. Typical of the rest of this valley, people used both Swift Creek and early Weeden Island ceramics. More interaction northward into the interior than east-west along the Gulf is indicated. While the Basin Bayou Incised jar suggests westward connections, it is very interesting that there is no Santa Rosa pottery, which would be characteristic of Middle Woodland closer to the Pensacola area. This is not Santa Rosa-Swift Creek Middle Woodland but clearly Swift Creek-early Weeden Island Middle Woodland (Willey 1949). The late date could reflect the amount of time that burial mound building took to get here if transportation networks included intermittent, seasonal streams or, more likely, that Middle Woodland hung on longer here after things were changing elsewhere.

This location is today away from major transportation routes, except for easy (but long) movement by water around the bay and Gulf shores. Technically St. Joe Bay is not even part of the Apalachicola drainage system at present, since no streams connect it directly to the river. But it is part of the main delta formation of this big river, which originates hundreds of km away in north Georgia. The river might have been reached by way of Depot Creek, some 1500 m to the east of the mound (Figure 2), which may have been more navigable 1350 years ago. Figure 16 shows the lower Apalachicola region and this potential connection. Today in its upper reaches, Depot Creek is a wide, shallow, often dry depression, but it does flow some 20 km northeastward into Lake Wimico, which flows east into the Jackson River, which goes east into the Apalachicola River.

The Apalachicola was farther west earlier in time. It has been migrating eastward since the end of the Pleistocene, pushed by rising sea level. Archaeological sites demonstrate human responses in settlement pattern to this fluvial change over time (Donoghue and White 1995). Our survey of Black's Island, in St. Joseph Bay just 3 km offshore from Gotier Hammock, provides supporting evidence. The 11-acre Black's

Island (see Figure 2) is a multicomponent prehistoric site. Faunal remains recovered there associated with Woodland and/or Fort Walton components included bones of freshwater fish (Mayo 2003:75). While this could mean people went far from the salty bay to get food, more likely it means that more fresh water was closer during the past than it is today. Depot Creek itself may be former river channel. Its upper course, with a near 180-degree meander, indicates it has been heavily influenced by the natural formation of successive beach ridges that run north-south on its west side, as well as those south of it that run east-west.

Gotier Hammock mound's small size and absence of a nearby large contemporaneous village suggest a relatively small population bringing the honored dead to be buried but not staying long. The mound location, back from the bayshore on higher ground, may indicate pains taken to find a suitable place more secure from flooding or storms, or more apart from living areas. The higher ground of the hammock itself, covered in oaks and palms amid the fire-maintained pine flatwoods around it, may have been appealing exactly because of its topography. In a natural fire or flood the hammock would not be damaged, perhaps avoiding disrespect to those buried there. While camp ground could easily be moved in response to adverse conditions, the mound could not. Returning in the winter of 2009 to take more photos of the site, we saw how a recent controlled-burn fire had blackened all the pine woods but not even touched the oaks on the mound.

Florida's pine forests are now often dense because they are planted that way, but before modern wildfire suppression the landscape was very open, with understory plants that were sun-loving, not shade-adapted. The thick tangle of forest in the midden area today is a direct result of secondary growth that has not been burned, either naturally or by human intent. Any fire in recent times will go out at the first ditch or firebreak, and not regularly burn off the undergrowth. But in the past, the natural land around the mound and higher hammock would have been low, open pine savannah. Thus we might imagine that at the time it was being used, the mound might have been very visible from the habitation area nearly 200 m away.

Midden Location and Water Relationships

The isolated mound was perhaps removed from living areas because of its nature as sacred space. People who used it apparently came from far away and did not live at the mound. They probably did camp on the bayshore, the most reasonable living area. Short-term stays, only long enough to bury the dead, might be indicated by small zones within the midden that our shovel testing and especially our selected couple of dates just did not hit. On the other hand, while the single check-stamped sherd from TU2 at the mound could be of the Middle Woodland type Gulf Check-Stamped (only identifiable from rim sherds), it could also be from later Woodland or Fort Walton occupants of the midden who went in to the mound (hunting inland? visiting an old holy place?).

The mound is today some 120 m from the nearest fresh water, an intermittent creek to the north-northwest. The larger creek that joins it (both apparently unnamed), about 300

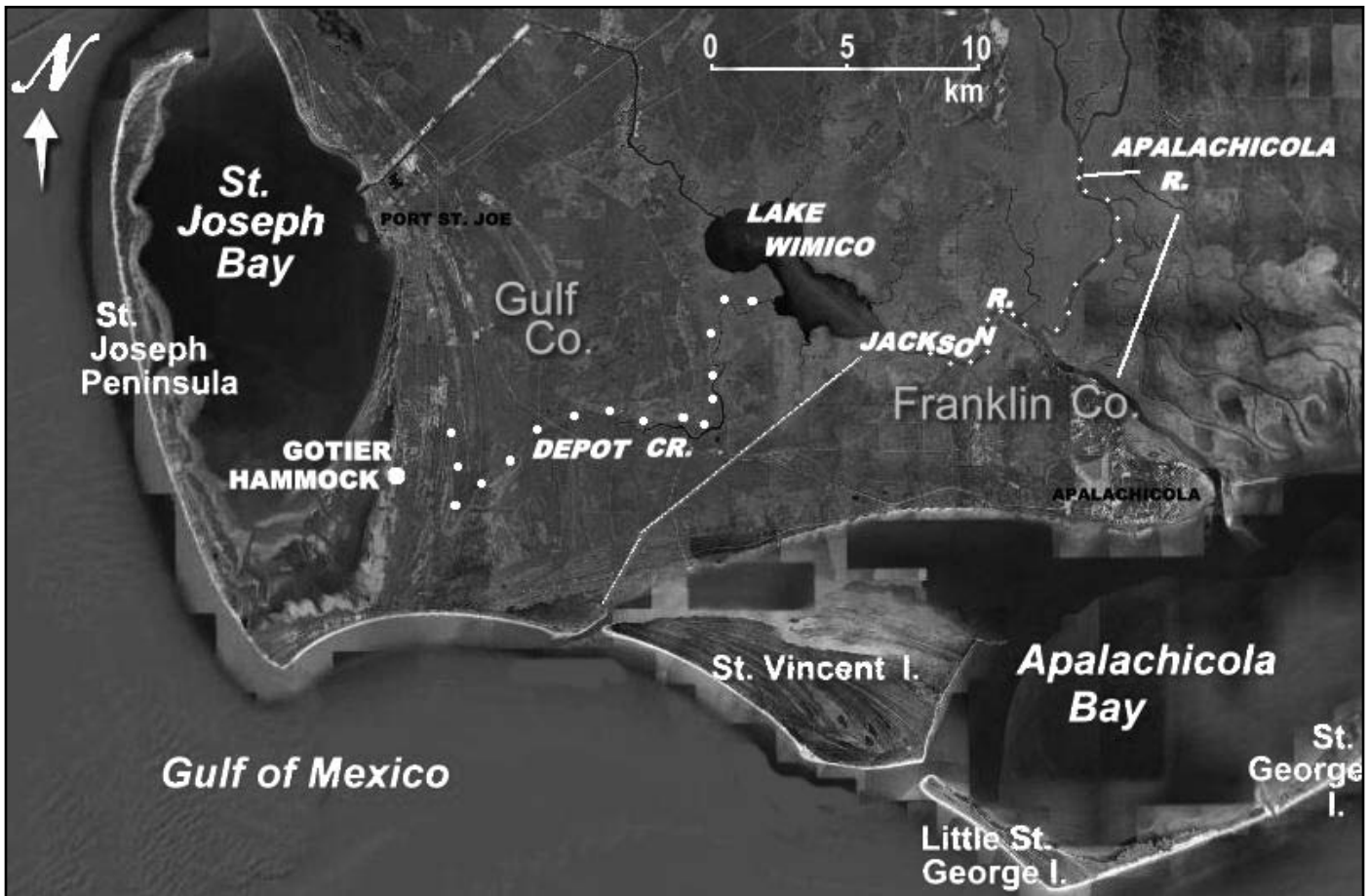


Figure 16. The lower Apalachicola River delta and St. Joseph Bay region, showing connection between Gotier Hammock and the main river via Depot Creek (white dots), Lake Wimico and the Jackson River; Gulf-Franklin County line shown in light gray and tiny gray dots (main river channel); adapted from Google Earth (whose individual images leave squarish patches around the islands).

m northwest of the mound, may have been the reason the hammock was chosen for mound building, if the larger creek was a more permanent water source. People could camp on its banks at the bay shore and get fresh water and seafood while staying to use the mound. This larger stream, which is now channelized at its mouth (visible in Figures 7 as a backwards black Z shape northwest of the midden), seems today to be the only fresh water feeding into the south end of the bay.

The configuration of these streams during prehistoric times may never be known. Certainly they feed into or from the swales between the dune ridges. Depot Creek flows southward down a swale (see Figures 2, 16) until it hits the east-west-trending old shoreline ridges and is abruptly turned north to flow north into Lake Wimico. But the small stream drainages to the west of the Gotier Hammock mound were probably closer and may have provided the fresh water necessary for people to stay there a while; they may even have connected to Depot Creek.

Researching another site, I found interesting historic information about drainage patterns here. In 1718 the French constructed a fort on the mainland at the north end of the bay opposite the point of St. Joseph peninsula. Though the fort was abandoned after only two months, its historical location appears on early maps that also show nearby streams, which

the French (unlike the Spanish) noted carefully and used to their advantage (Rogers 2009; Weddle 1991:208-10). Jean Béranger's map, made when he came to St. Joseph Bay, dated May 1, 1718 (Béranger 1718; Weddle 1991:Figure 11), and Jean Baptiste Bourguignon d'Anville's map of Louisiana (excerpted in Figure 17), completed in 1732 and published in 1752 (University of Alabama 2010), both show the fort's location at the north end of the bay next to a stream described as "Ruisse l'au dousse" and "Eau douce," respectively, meaning freshwater creek. So this was a good reason for the French to be at that spot, to have a source for drinking water, and a small creek still flows in that vicinity today. The only other stream on both maps emptying into the bay is drawn at the middle-south end, and certainly looks like it could be the unnamed stream near Gotier Hammock. But it is labeled "Ruisseaux sallé" and "Eau salée," respectively, on these two maps, indicating a saltwater creek.

Full of mistakes for much of northwest Florida and the Apalachicola valley, these maps are nonetheless fairly accurate for the St. Joseph Bay area, though the cartographer for the later map probably copied the earlier one and had not actually been there. The maps even indicate with little white ovals the locations of Black's Island (labeled "Island of Turtles") and Conch Island (labeled "Island of Savages").



Figure 17. Detail from the 1732 Bourguignon d'Anville map (adapted from University of Alabama 2010) showing St. Joseph Bay, stream near Gotier Hammock labeled “Eau salée” (salt water); black dot is location of Gotier Hammock; note dotted line from that stream going northeast to a big river.

Both islands themselves are archaeological sites, and the names are interesting. The bay is full of sea turtles, which were easily obtained by native inhabitants and are well-represented in shell middens of the region (White 2005). Conch Island is small and so visible as a white shell midden that the French may have recognized it was actually built by the native “savages.” The most interesting aspect of the Bourguignon d'Anville map here is the dotted line connecting the saltwater creek near Gotier Hammock with a larger stream named the “Calistobole River” (origins of that name are so far unknown). Since the Apalachicola is yet another river east of this stream, perhaps the map shows an interpretation of Depot Creek leading to the Jackson River. It all indicates a navigable or at least an established route, whether all by water or not, between St. Joe Bay and the big river. Other old maps suggest a similar connection, so more research on this topic is planned.

The larger creek near Gotier Hammock today, from which the shell midden extends southward, is definitely a freshwater stream (I tasted it). But it has been altered a great deal in modern times. Saltwater intrusion in the past could have been possible from storms, tides, seasonal effects or other causes, making what is today fresh water not available in the past. What few streams there are in this region originate usually as intermittent swales between the dune and beach ridges that constitute the whole area. Fresh water accumulates and in rainy periods may swell the linear trough until it can flow out to the bay and become a running stream (this is clear on St. Vincent Island to the south, which we surveyed in 2009, where archaeological sites were located at the mouths of such

streams). During dry times, or perhaps severe storms that cause encroachment of saltwater, such an intermittent stream might become salty. People may have sampled it before they decided to camp in a given year/century, knowing it was changeable.

Prehistoric natives undoubtedly knew exactly what season, even which years the water would be running deep and fresh. The midden area was probably inhabited during the fall and early winter rainy season. By late winter it might have been too wet; in March 2010, I saw the landscape from the mound westward to the midden was in shin-deep mud and water after typical winter rains. Middle Woodland people may have conserved the bodies or skeletons of their dead (a common practice in the aboriginal Southeast) until the right season to bring them to bury in the mound, when they could be assured of adequate camping conditions. There are other reasons for using shell middens seasonally (Meehan 1982; Waselkov 1987), ranging from availability of different plant and animal resources to the avoiding the summer insects. Both the historic residents of Gotier Hammock, as noted above, and the archaeology crew testified to the latter!

The Gotier Hammock midden area, extending 350 m along the bay shore, was inhabited during late prehistoric and protohistoric times, according to the radiocarbon dates, as well as the Middle Woodland, according to the ceramics. It is a shallow, low-density midden with atypical scattered oyster. These facts may indicate that it was only used sporadically over prehistoric time, perhaps because the fresh water source was sporadic. People using Gotier Hammock mound could also have stayed on another piece of shore around the bay, or even on Black's or Conch Island. But the Gotier Hammock midden was the closest motel with groceries, drinks, and a nice view! Perhaps some more long-lasting saltwater infusion made the nearby creek unusable and ended the appeal to Middle Woodland mound builders before they could get much of a settlement going. Later, short-term, overlapping occupations may have resulted when the water turned fresh/flowing again.

The Mound in Regional Context

It is important to understand Gotier Hammock mound within its wider archaeological context. Compilation of information from the USF northwest Florida archaeological database (Frashuer 2006:80-81) shows Middle Woodland mounds are distributed all along the Apalachicola valley and the portion of the lower Chattahoochee valley (about 25 river navigation miles, or 40 km) in Florida (Figure 18). All but four of the 30 known mounds have both Swift Creek and Weeden Island pottery. Three have produced only Swift Creek ceramics and one only Weeden Island ceramics (though these numbers could change with future investigations).

Related Nearby Sites

Contemporaneous Middle Woodland mounds closest to Gotier Hammock are two others in southern/coastal Gulf County. One is Richardson's Hammock (8GU10), on St. Joseph peninsula, on the opposite (west) shore of St. Joe Bay from Gotier Hammock. It does have the large gastropods

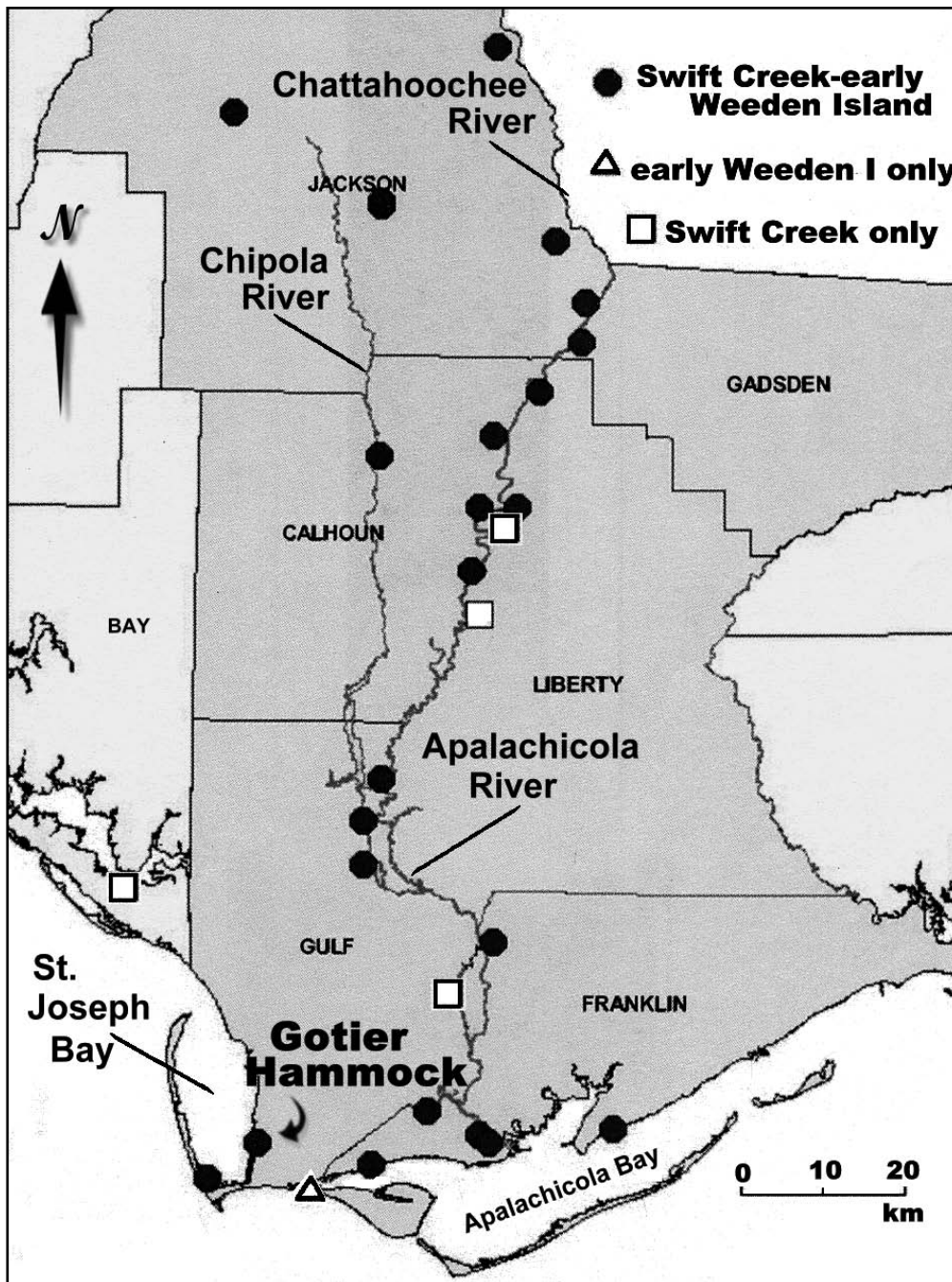


Figure 18. Distribution of Middle Woodland mounds in the Apalachicola-lower Chattahoochee Valley; most have both Swift Creek and early Weeden Island ceramics (adapted from Frashuer 2006).

more typical of the region, and a superimposed Fort Walton occupation (White et al. 2005, White and Fitts 2001; White et al. 2002). The other mound is at Indian Pass peninsula (8GU1; Moore 1902:211-14; Willey 1949:253), southeast of Gotier Hammock; it is the only one in the valley with no known Swift Creek pottery (triangle on Figure 18). Indian Pass mound is on the central ridge of the peninsula and has an oyster shell midden (8GU17) some 200 m west of it on the bay, similar to the situation at Gotier Hammock. The next-closest Middle Woodland burial mound is at Eleven Mile Point (Moore 1902:214-16) on the Apalachicola Bay shore even farther

eastward; its oyster shell midden is adjacent to the mound but also has Deptford and Fort Walton components.

Recently archaeologists with the National Park Service Southeast Archaeological Center in Tallahassee have been investigating prehistoric sites on Tyndall Air Force Base in Bay County, on a barrier peninsula that forms East Bay, the next drainage system west (northwest) of St. Joseph Bay. They relocated Moore's (1902:196-7; Willey 1949:247-8) Mound Near Baker's Landing, 8BY29 (the white square in Bay County on Figure 18), which had eluded many previous twentieth-century archaeologists. At 1.6 m high and 22 m diameter, this

sand mound was comparable to the one at Gotier Hammock. It was also looted, and produced one St. Andrews Complicated-Stamped and at least two Swift Creek Complicated-Stamped vessels but no Weeden Island ceramics. A circular oyster shell midden sits on the bay shoreline 10 m from the water, while the mound is inland 70 m to the southwest (Russo 2009; Shanks 2009). Not only did the Swift Creek pottery include at least one tetrapodal base, but also the radiocarbon dates obtained were on the midden and were A.D. 290 and 380. These data suggest an Early Woodland occupation earlier than the mound or an early Middle Woodland mound.

Shanks (2009:12) notes that Hare Hammock mound, about 5 miles from Baker's Landing, has a shell midden dated to A.D. 80 to 300, but also a later midden dating to A.D. 400 and 425, with ranges overlapping the ranges for the Swift Creek-only midden at Baker's Landing. So caution is needed in the region, since middens may not be necessarily associated with nearby mounds, and later folks may have continued to use mounds or middens.

Apalachicola Middle Woodland

Middle Woodland Swift Creek-early Weeden Island ceramics in the Apalachicola-lower Chattahoochee valley region "mark an aesthetic high point in Eastern prehistory" (Willey 1966:288). Along with fancy pottery, this time period sees, even at habitation sites, the use of the widest variety of stone raw materials and other exotics of any prehistoric time period. Middle Woodland begins early and lasts a long time here, and includes both Swift Creek and early Weeden Island ceramics. Despite the tendency for some archaeologists to think those two ceramic series represent successive archaeological "cultures," there is so far no supporting evidence for this idea.

A common dilemma occurs where earlier researchers equated specific dates with archaeological "cultures" and recognized both the culture and the time period by the presence or absence of specific marker types of artifacts or other characteristics. New dates and other information may not fit exactly within these established "culture-periods." The awkward terminology of archaeological writing includes many constructed sequences in culture history that surely would have bewildered the past peoples themselves and that now may be seen as more variable than originally thought. Middle Woodland culture means the time of the burial mound-building throughout the eastern U.S. and the production of elaborate grave goods. But the exact dating varies from region to region.

In the Apalachicola delta, where Middle Woodland sites are almost always characterized by a mixture of both Swift Creek and early Weeden Island ceramics, the former may appear slightly earlier. Gotier Hammock mound fits well within the majority of these mound centers, with both Swift Creek and Weeden Island ceramics. Swift Creek pottery without any early Weeden Island types does appear at habitation sites perhaps as early as A.D. 200 in what we could call late Early Woodland, and extends through Middle Woodland. Documenting a Swift Creek occupation and

possible platform mound on a creek in the Chipola River valley (lower Chattahoochee-upper Apalachicola drainage) at the Waddell's Mill Pond site (8JA65), Tesar and Jones (2009:716-717) obtained a date of 1780±80 radiocarbon years, which can be calibrated (at one-sigma; Cologne Radiocarbon Calibration & Paleoclimate Research Package 2007) to A.D. 243±98. The Overgrown Road site (8GU38), a small Swift Creek camp I tested in the lower valley, produced a raw radiocarbon date of 1650±50 (White 1992:24) which, similarly calibrated, comes out to A.D. 407±76.

Data and materials from USF's research at the Otis Hare site (8LI172) in the middle valley (White 1991) are not yet completely processed, but radiocarbon dates from this multicomponent freshwater shell midden suggest a similar age range for Swift Creek without accompanying Weeden Island ceramics. Two pit features from the earliest occupation of the site, containing only Swift Creek Complicated-Stamped and plain ceramics, produced raw radiocarbon dates of 1580±80 (Feature 15) and 1480±70 (Feature 22), calibrated at A.D. 470 and 547, respectively. After this, the early Weeden Island sherds begin to appear in the stratigraphic sequence.

Thus, the full-blown expression of Middle Woodland culture seems to be centered around A.D. 500-650 in this valley. After that, there is a relatively slow slide into Late Woodland, late Weeden Island, characterized mostly by check-stamped and plain pottery, with the fancy Weeden Island Incised, Punctated, and red-painted, and most of the Swift Creek Complicated-Stamped disappearing and only the more (to us) mundane types Keith Incised and Carrabelle Incised and Punctated remaining as a remembrance of fancier things past. Late Woodland also has far fewer exotic artifacts/raw materials in general, and the mound building apparently diminishes or stops. Willey (1966:250) recognized that the elaborate ceramics and mound building lasted longer on the coast. Milanich (1994) was less willing to call anything Middle Woodland if it was later than the Hopewellian manifestations of the Midwest, with their own elaborate burial mound traditions, and so sidestepped the issue of labeling. But his excavations at the McKeithen site in north Florida demonstrated that burial mound building and elaborate pottery production probably extended from A.D. 300-700 (Milanich et al. 1997:186).

Sacred, Secular, or Both

Long ago William Sears (1973) came up with the idea of a dichotomy in the prehistoric Southeast between the sacred and the secular. This meant, most immediately, that the ceramics in mounds were "ceremonial" and sacred, in other words, fancier (more highly decorated, better made), not to mention imbued with special meaning, while those in domestic areas were plainer, less important, for everyday use. Why this idea has hung around for so long is a mystery. The evidence from Moore's mound explorations published 70 years before Sears wrote this fails to support the idea. Brose (1979:142) long ago and others more recently (e.g., Tesar and Jones 2009:22) have pointed out how many of Moore's works mention plain, undecorated, "inferior" ceramic wares he came across in the

many mounds he dug; these ceramics were so mundane he rarely found them even worth describing.

Gotier Hammock mound provides more evidence that we should rethink the sacred-secular concept. Unadorned, poorly made or otherwise unremarkable pots were recovered by Floyd and Moore and by our investigations a century later in the mound. The fanciest pots – the Basin Bayou Incised jar, the Weeden Island Incised and Swift Creek Complicated-Stamped sherds– as well as the plain bowl all had irregular, dirty-looking, baked-on deposits, suggesting their use for cooking (and people not washing dishes afterwards!). Other mounds in this region have also produced fancy Middle Woodland ceramics with baked-on black deposits (e.g., Tesar and Jones (2009:240). Of course the cooking could be for special occasions such as burial ritual, but it might have been the actual use, not the pot design, that made it meaningful.

Since the majority of the pots recovered from Gotier Hammock mound, plain or not, have kill holes in the base, the suggestion is that all these vessels were part of some (probably funerary) ritual and that non-material considerations led to their being sacred, not just or not necessarily any fancier decoration. Plainness or ugliness or any other characteristic we bestow upon these pots is a judgment based on our own esthetic (and other) standards. The sacredness of a pot or any other artifact may have depended on characteristics completely unknowable in the material record, not scientifically discernible– just like holy water is indistinguishable from any other water and only considered sacred because of religious ritual associated with it, only materially identifiable as holy because it is found in special containers, and so forth.

Stephenson and Smith (2008) suggest that Middle Woodland vessels in mounds are perhaps more associated with service and individual consumption, then killing and caching apart from burials, whereas domestic-use vessels may indicate more a utilitarian function such as cooking. But the high amount of cooked-on sediment on some of the Gotier pots suggests such utilitarian use. Perhaps the shell columella tools had some ritual importance, but they also look very utilitarian. Many were recovered from the mound, what should be a sacred site. But others came from the midden area, and all resemble typical artifacts from habitation sites all over the St. Joe Bay area.

Many traditional societies, including Native American groups, did/do not separate in their minds or activities their ideology from their perceptions and understandings of everything else in daily life. Spirituality pervades many cultures all day long. Even in secular, western society, there are groups (in monasteries, convents, religious schools) and individuals for whom every act, practice, and thought is part of living in a spiritual as well as a material world. The material record does not reflect this, of course, since there are churches and places of worship and then there are domestic, secular areas, though sometimes religious artifacts reside in the domestic zone too. We cannot know if spirituality and a concern for the sacred permeated Middle Woodland society or was only a part of life during mound ritual or other important ceremonies, since “emic” archaeology is impossible when dealing with prehistoric peoples in the very distant past.

Culture Process

The remoteness of the lower Apalachicola delta may have continued into later prehistory and even historic times. While Late Woodland peoples in the riverine interior were beginning horticulture, then intensifying it to become agriculturalists during the Fort Walton times that followed, contemporaneous coastal and estuarine sites show no evidence of food production but only continual dependence upon aquatic resources (White 1994, 2005). Middle Woodland may have lasted as late as it did at Gotier Hammock because people found little reason to change.

That burial mound building possibly lasts longer on the coast than upriver in the Apalachicola delta and other parts of the interior Gulf Coastal Plain is a testable hypothesis. The coast, especially away from river and stream mouths, is more distant, possibly less accessible, lower in elevation, often inundated. Overland trails or other routes may wash away more rapidly in lower ground, and small streams that were also communication pathways may dry up seasonally or for multi-year periods. Inland riverine cultures may have devoted more time later in the Middle Woodland or Late Woodland to horticulture. But coastal salty air and poor, white sandy soils are not good for farming. Food production is more work that may have been unnecessary for people who got all they needed by just sitting in the boat with a net or wading into shallow water (or sending the kids to get it). People inland took advantage of fertile, annually-renewed alluvial soils and the particularly productive crop called maize by Late Weeden Island times. For poorly understood reasons they intensified subsistence activities and became true agriculturalists. Coastal groups maintained full-time collection of wild resources. Whether this resulted in different sociopolitical organization for them, as compared with their gardening and farming cousins inland, is still unknown, though of course a topic of continual investigation.

Summary and Contributions of this Work

Northwest Florida Archaeology

The season and a half of field investigations at Gotier Hammock and the additional intermittent visits, lab work, and other research over the past nine years provide what I hope are some useful contributions to the knowledge of the archaeology of northwest Florida and the Southeast in general.

Lost Mound Found. A lost C. B. Moore mound has been investigated in detail, the first in Gulf County. Though Gotier Hammock mound is nearly gone, some of it remains. Re-excavation and reanalysis are important in archaeology, and collections data (online or otherwise) can add hugely to the record of what we thought we knew.

Middle Woodland in the Apalachicola Delta. The solid date on this mound helps define the time frame for Middle Woodland in the region. The data confirm the tight association of Swift Creek and early Weeden Island ceramics in the whole definition of Middle Woodland here.

Big Shell on St. Joseph Bay. St. Joseph Bay-area typical shoreline shell middens are piles of large gastropod shells, in addition to oysters and other species. They illustrate a good example of how ecological-functional explanations still work well in archaeology. People usually (but not always) do what is most convenient: saltwater shellfish are what's for dinner (and toolmaking) because of the atypical bay. On other bays in the region, oyster, which tolerates less salt, predominates at shell middens. Farther inland in estuarine settings *Rangia* (marsh clam) shell predominates, a species that needs more fresh water, such as at stream mouths.

The artifact data from Gotier Hammock, both mound and midden, follow the St. Joe Bay pattern with large-gastropod-shell tools. However, the bayshore midden is atypical, with no conch or whelk ecofacts. Perhaps people did not stay long enough to gather these big gastropods to eat, but just came for brief burial ceremonies. Or perhaps they did not want them for food (to me, eating conch is like eating shoe leather), or they came at the wrong season to get them, or at a time when these resources were less available because the bay was less salty. Probably combinations of these reasons were in effect for Middle Woodland and later peoples.

Prehistoric and Protohistoric on St. Joseph Bay. Besides the Middle Woodland component, this work documents later occupation on the bayshore near Gotier Hammock. Though no diagnostic Fort Walton ceramics were recovered, the plain and check-stamped sherds could easily be associated with a Fort Walton camp during the 1300s. The later date probably means additional Fort Walton; groups with this material culture lasted in the region until about 1700 (Marrinan and White 2007).

Sacred May Be Ugly. The Gotier Hammock mound data do not support the once-sacred idea of a "sacred-secular" dichotomy in ceramic types. The mound's many plain ("ugly") pots were, according to the original definition, in sacred contexts. Modern esthetic values lead us to see intricately-patterned incised and punctated or stamped pots as being something special for the grave, but material correlates for this are not evident at Gotier Hammock. Such concepts may indeed have existed in past people's conceptions of ritual and spirituality. But the mound data described here suggest that it was not what they had, but what they did with whatever they had that counted. Sacred may not be beautiful or even specially-made, but just whatever is used in the important ceremony that then gives it new meaning.

Public Archaeology

Modern culture process at Gotier Hammock mound is also worth noting. This research shows that, even after disturbance by historic occupants, erosion, ill treatment by nineteenth-century looters, "demolishing" in 1902 by C. B. Moore, twentieth-century disturbance by pine-planting and harvesting machinery, and additional attention from recent collectors and indignities from modern looters, a site such as this mound retains small intact portions that constitute enough for scientific investigation.

Professional archaeologists are not the only ones searching for Moore's mounds. The Apalachicola-lower Chattahoochee

valley region is so rich in prehistoric sites and what many consider beautiful pottery and other elaborate artifacts that Moore came back several times during his decades of work, and thousands of other collectors have been active for well over a century. Even with modern insults and injuries, sites are not necessarily completely destroyed. Furthermore, they can be relocated far more easily with the help of those who live in the area, perhaps collect artifacts, know and use the land, and graciously share their knowledge with professionals (White 2008b).

This project resulted from a happy collaboration of professional and student archaeologists, the private landowner, local collectors, public and private land managers, and other area residents. More than just benefitting science, such public archaeology also helps tell the story of people from the distant past who inhabited and enjoyed the St. Joe Bay region that is so beloved today.

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