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THE SITE IN-BETWEEN IN THE LOWER SUWANNEE: EXCAVATIONS AT DAN MAY (8LV917), LEVY COUNTY, FLORIDA

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At about A.D. 700, settlement of the Lower Suwannee region of Florida transitioned into dispersed, small-scale encampments following the abandonment of Woodland Period civic-ceremonial centers of the northern Gulf Coast. Places like Garden Patch (8DI4), Shell Mound (8LV42), and Crystal River (8CL1), were known for a shared tradition of elaborate monumental architecture and diagnostic material culture related to large-scale communal gatherings and mortuary practices (Pluckhahn et al. 2010; Sassaman et al. 2016; Wallis et al. 2015). After the abandonment of civic-ceremonial centers in the Lower Suwannee region, coastal habitations were scattered and small in size, leaving behind only ephemeral archaeological signatures. In the Lower Suwannee region, these small, dispersed sites include Butler Island (8DI50) (McFadden 2014), Bird Island (8DI52) (McFadden and Palmiotto 2012), and the latest component of Richard's Island (8LV137) (Sassaman et al. 2016). Coeval with these and other post-abandonment sites is Dan May (8LV917), a previously undocumented single-component site dating to the tenth century A.D. (Figure 1).

Described herein are the methods and results of fieldwork undertaken in March of 2014 at Dan May, which consisted of nine auger tests, one shovel test pit, and one 1 x 2-m test unit (Jenkins et al. 2017). The excavation of Dan May was undertaken in accordance with the goals of the Lower Suwannee Archaeological Survey (LSAS), a long-term program designed to document the full range of variation in the distribution, timing, and content of archaeological sites in the Lower Suwannee region of Florida's Gulf Coast (Sassaman et al. 2011). The Lower Suwannee region encompasses the 42-km stretch of largely undeveloped coastline centered on the Suwannee River Delta between Horseshoe Beach to the north and Cedar Key to the south. This stretch of coastline is a relatively flat, low-relief landscape that is vulnerable to flooding with only minor rises in sea-level, compromising many archaeological sites. In conjunction with U.S. Fish and Wildlife Service, research in the

Lower Suwannee has been undertaken by archaeologists at the University of Florida through the Laboratory of Southeastern Archaeology (LSA) and the Florida Museum of Natural History (FLMNH).

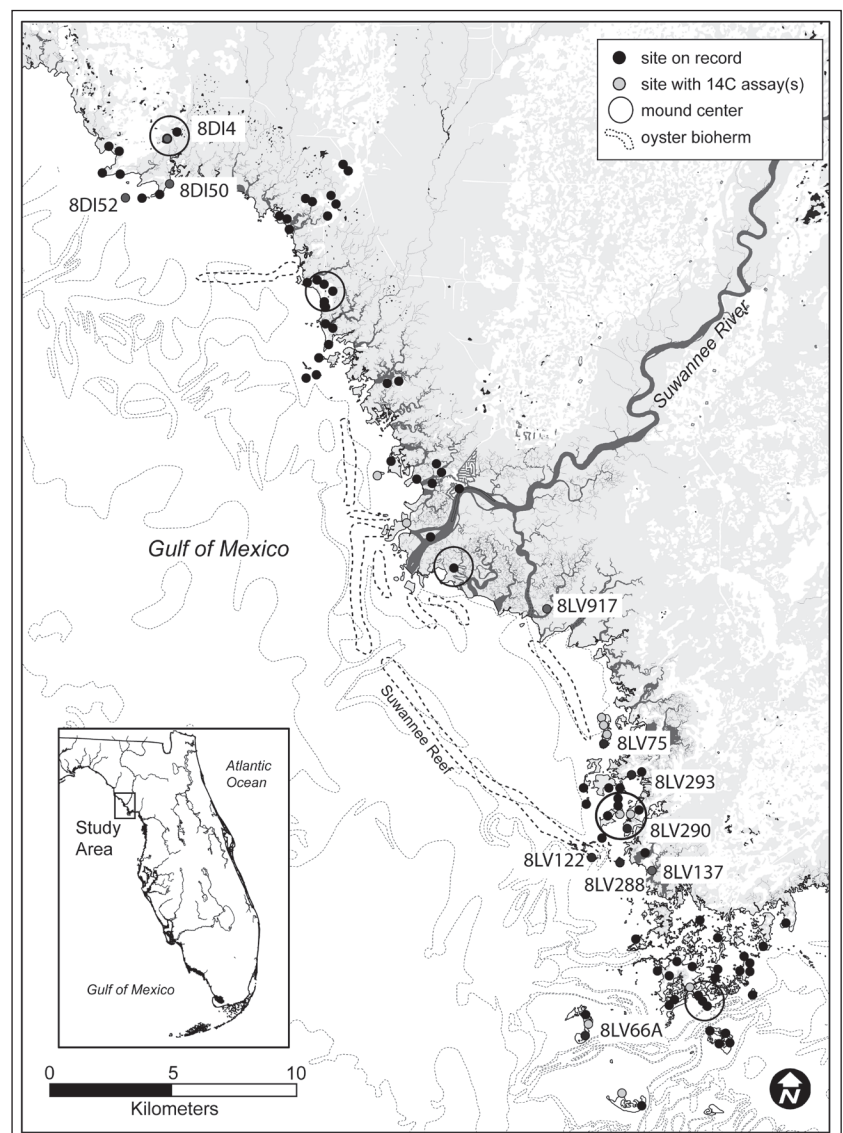


Figure 1. Location of recorded sites in the Lower Suwannee Research area with Dan May and coeval sites indicated (adapted from Sassaman et al. 2016).

The study area is comprised primarily of the Lower Suwannee and Cedar Keys National Wildlife Refuges, along with a few private inholdings and state and county lands. As part of the research design of the LSAS, the region was divided into five research tracts that reflect patterned variation in site density and type. These five tracts include: the Horseshoe Beach Tract; the Shired Island Tract; the Suwannee Delta Tract; the Shell Mound Tract; and the Cedar Key Tract. The Lower Suwannee is home to 112 documented archaeological sites ranging from the Archaic to Mississippian periods, nearly a quarter of which have been dated, surveyed, or excavated as part of the LSAS to date.

Dan May is among the private inholdings in the LSAS study area. Before fieldwork was conducted by the Laboratory of Southeastern Archaeology (LSA) in 2014, no previous research had been reported for Dan May Island. Dan May has now been added to the Florida Site Files as site 8LV917. The initial work at this site contributes important information concerning a period of time (A.D. 700–1000) that is not well understood in the research area.

Environmental Setting and Background

Dan May lies between two survey tracts of the LSAS (see Sassaman et al. 2011:31). This “in-between” quality also applies to ecological and historical dimensions of variation. Ecologically, the site occupies an ecotone between freshwater and saltwater biomes. Historically, the tenth century A.D. was a time between the civic-ceremonial centers of the Middle Woodland period in the Lower Suwannee and the cultural and political influence of Southeastern Mississippian chiefdoms of the ensuing centuries. A pattern that emerges from these multiple dimensions of “in-betweenness” is a heightened level of diversity in the material culture of Dan May, particularly pottery.

Environmental Setting

Dan May is a 72-acre island surrounded by brackish water. The estuarine environment surrounding the island is created by the East Pass of the Suwannee River

flowing to the west and Dan May Creek to the east (Figure 2). The estuarine habitat provides the ideal conditions for a diversity of flora and fauna, including a variety of waterbirds, fish, and shellfish. The island is situated in a way that provides easy access to the proximate Lone Cabbage, Half Moon, and Great Suwannee oyster reefs. Located within the Lower Suwannee National Wildlife Refuge, the broader area consists of hardwood swamps, natural salt marshes, tidal flats and tidal creeks, as well as pine forests and scrub ridges. On the island is a restored 100-year-old 1,700-square-foot cypress log hunting lodge.

Lower Suwannee Middle and Late Woodland Culture History

Dan May is located relatively distant from Middle Woodland civic-ceremonial centers in the region, in a portion of the study area that is otherwise devoid of archaeological sites, owing, in large measure, to the 10-km stretch of wetlands that extend southeast of the Suwannee River Delta. The occupation of Dan May dates to a few centuries after the initial abandonment of Middle Woodland civic-ceremonial centers in the region at about A.D. 700. At their height, Middle

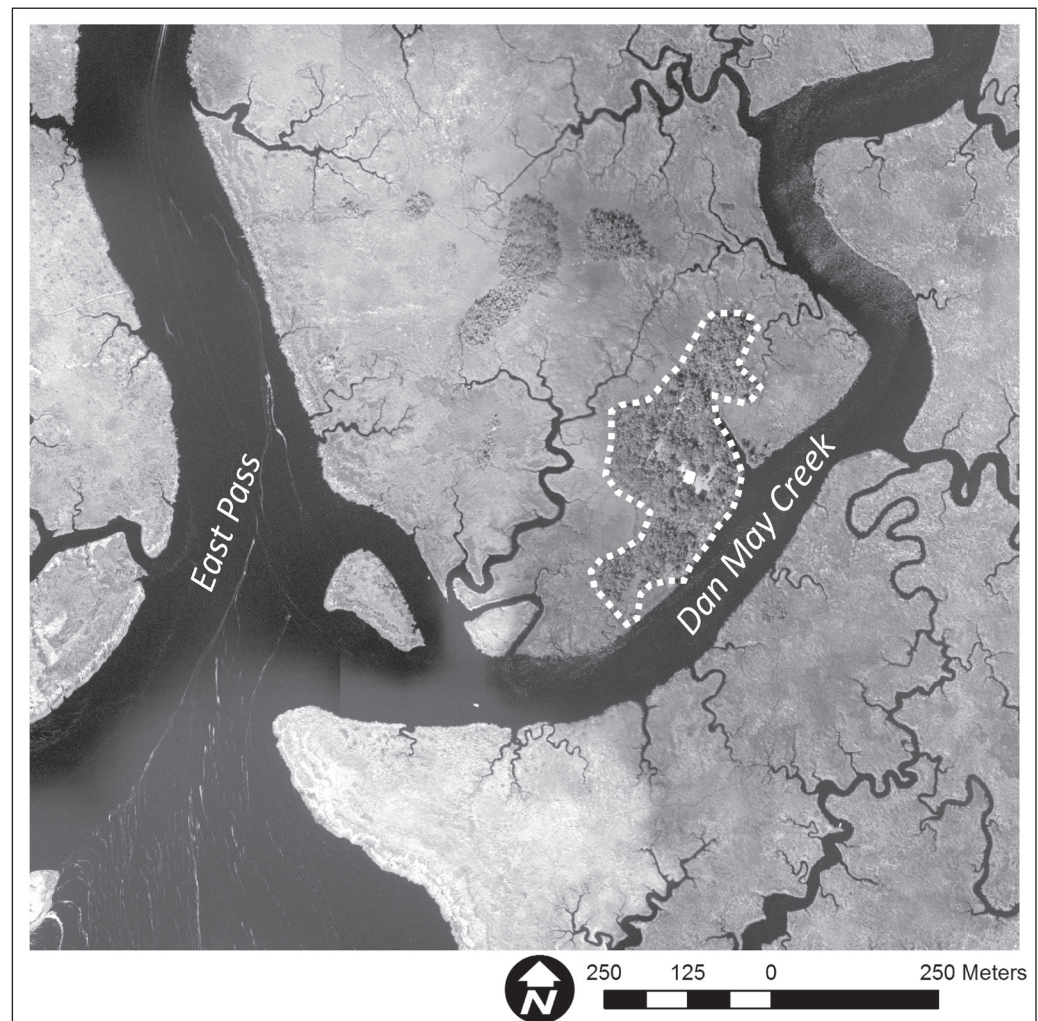


Figure 2. Location of Dan May Island in relation to channels that deliver freshwater to the estuarine biome of the Suwannee River Delta (ornographic image courtesy of NOAA).

Woodland civic-ceremonial centers brought diverse groups of people and objects together for ritual gatherings, likely tied to celestial events such as the solstices (Sassaman et al. 2016).

The reason for regional abandonment of these centers remains unknown, although one possible reason would be the environmental and cultural effects of the Vandal Minimum. The Vandal Minimum was a climatic event that occurred between A.D. 500 and 800 when temperatures were cooler and sea-level regressed (Marquardt and Walker 2013; Wang et al. 2011). These environmental changes likely affected local resources, changing migratory patterns for example. It is also possible that sea-level regression had cultural impacts as well. For example, the watery barrier separating Shell Mound from its mortuary counterpart, Palmetto Mound (8LV2) on Hog Island, is very shallow, and may have disappeared during the Vandal Minimum, altering the way people understood and interacted with their landscape.

Dan May is one of a diverse array of sites that were dispersed across the length of the Lower Suwannee research area during the Late Woodland period (A.D. 700–1000). Many of these sites are small-scale villages located away from places of the dead. During this period communities reoccupied earlier sites (i.e., Bird Island, Butler Island, Deer Island, Richards Island), while others settled new locations (i.e., Dan May), and some settled to the immediate west of former civic-ceremonial centers (i.e., Area I at Garden Patch). This diversity extends to the types of sites that date to this period, some of which are terraformed (Deer Island and Richard's Island) others of which are not. These disparate, diverse communities were united through shared burial mound practices which included the interment of elaborate Weeden Island and effigy vessels, many of which were nonlocal, in caches in burial mounds (Wallis et al. 2017).

Methods and Results of Field Excavations

As no previous archaeological work has been reported on the island, field excavations at Dan May began with an exploratory auger survey. Once the auger survey was complete, one 1 x 2-m test unit, revealing several pit features and post holes, and one shovel test were excavated. Soil from excavation

was screened through ¼-in hardware cloth and all artifacts were bagged and transported to the LSA for further analysis.

Auger and Shovel Test Pit Survey

Nine three-inch bucket auger holes, placed at discretionary locations, and one 50 x 50-cm shovel test pit were excavated to determine the extent and integrity of archaeological deposits on the island (Figure 3). Materials recovered in auger tests were collected to assess the variation in the artifact assemblage across the site in order to determine where the test unit should be located. The area with the highest density of cultural material was the central part of the island, to the west of the hunting lodge (Augers 7–9).

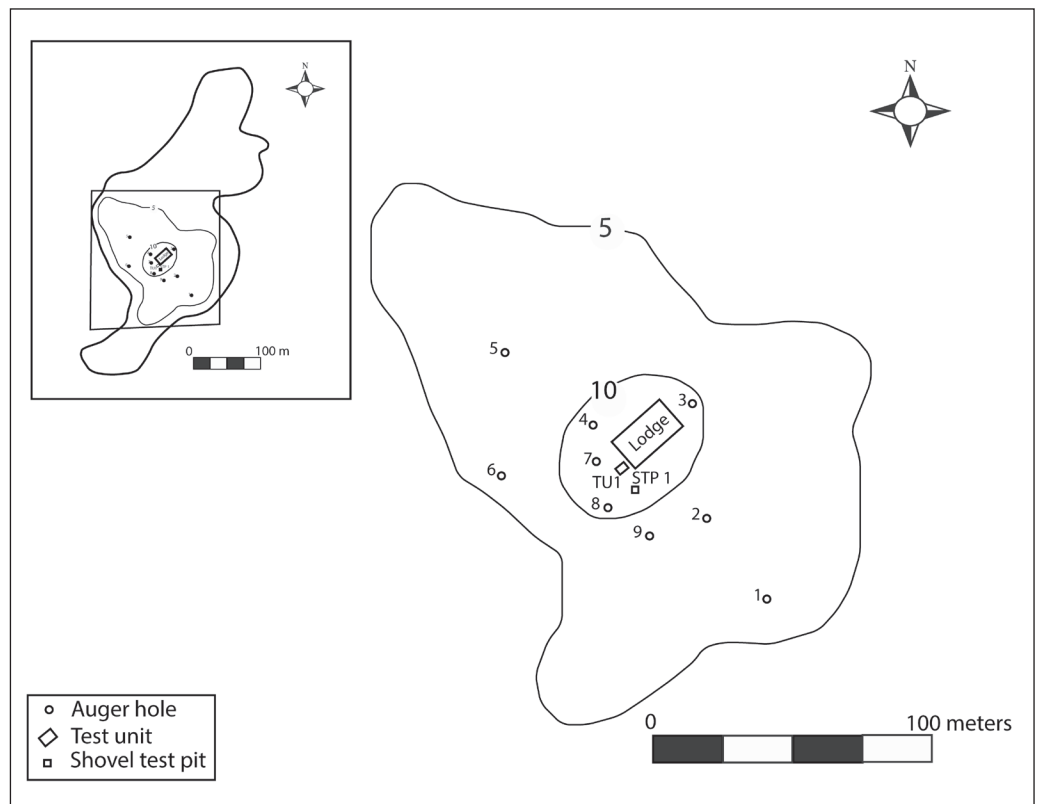


Figure 3. Topographic map of Dan May Island showing locations of augers, STP1, TU1, and the lodge (contour interval = 5 ft [1.5 m]). Representations of excavation units not to scale.

Augers 7 and 8 contained faunal remains, shell, pottery, and historic artifacts. These augers revealed two lenses of shell (interpreted in the field as possible middens) separated by medium brown sand. Auger 9 was placed southeast of Augers 7 and 8 to investigate the extent of possible middens observed in the previous two augers. The middens did not appear to extend into this area, although the light brown, dry, loose sand from 20 to 58 centimeters below surface (cmbs) was interpreted as redeposited fill, likely making Auger 9 a disturbed context.

Given the density of cultural material in this part of the island, a 50 x 50-cm shovel test pit (STP1) was placed between Augers 7 and 8, off of the southwest corner of the lodge. At about 60 cmbs, a utility line was encountered and testing was halted. A variety of pottery and vertebrate fauna

was recovered from the unit, along with modified *Merceneria* clam, a limestone abrader, and historic glass.

Test Unit Excavation

Based on the results of auguring, a 1 x 2-m test unit was sited adjacent to the lodge and proximate to Auger 7. Test Unit 1 (TU1) was excavated in arbitrary 10-cm levels until sterile soil, with the exception of the first level, Level A, and the last level, Level F. Level A was excavated to 20 centimeters below datum (cmbd) as it was likely a disturbed context. Level F was excavated from 60 to 95 cmbd, as it was mainly comprised of sterile subsoil into which features extended. There was no indication of plowing, and four distinct strata (I–IV) and four features (1–4) were encountered. Profile photographs and drawings of all four walls of TU1 are provided in Figure 4; descriptions of stratigraphic units are provided in Table 1. Bulk samples were taken from Strata II and III for flotation. Pottery and vertebrate fauna were encountered in all levels, and shell was present in all levels except Level F. Levels B and C (20–40 cmbd) yielded the densest amount of cultural material. Several pit features were encountered, emanating from between 40–55 cmbd into Stratum III.

Features

Three hemispherical pit features (Features 1–3) and one post hole (Feature 4) were identified in TU1. Feature 1 was first recorded at 40 cmbd, measured 49 cm in length, 35 cm in width, and was terminated at 75 cmbd. Feature 2 measured 51 cm in width, 54 cm in length, and extended 77 cmbd. Feature 3 is visible in the west unit wall profile and extended into the west wall 12 cm. Feature 4 was 10 cm in diameter and extended to 68 cmbd. Two other possible post holes were also identified in the side walls, one in the west profile and one in the east profile, but were not assigned feature numbers. While not in a clearly defined pattern, the post holes indicate the possible presence of a structure. Photographs and drawings of Features 1 and 2 in plan and profile are provided in Figure 5. Features 3 and 4 can be seen in profile in Figure 4 in the west and east unit wall profiles respectively. All three pit features contained pottery sherds, vertebrate fauna, shell, and charcoal, and a few lithic flakes were recovered from Features 1 and 3.

Site Chronology

Charcoal recovered from bulk samples taken from the three pit features was submitted to Beta Analytic, Inc. for AMS dating. Charcoal from Feature 1 produced an AMS assay of 1090 ± 30 B.P. (calibrated at two-sigma range of A.D. 890–1015), charcoal from Feature 2 produced an AMS assay of 1040 ± 30 B.P. (calibrated at a two-sigma range of A.D. 970–1025), and charcoal from Feature 3 produced an AMS assay of 1060 ± 30 (calibrated at two-sigma range of A.D. 900–925) (Table 2). Figure 6 shows the modeled summed probability distribution of calibrated age estimates as calculated with OxCal v 4.2.4 (Bronk Ramsey and Lee 2013). Highlighted in Figure 6 is the highest probability of actual age, which is 970–960 cal B.P. (cal A.D. 980–990).

Occupation at Dan May is contemporaneous with small-scale dispersed occupations at several other sites in the Lower Suwannee study area, including a component at Bird Island dating to 1150 ± 30 B.P. (calibrated at two-sigma range of A.D. 810–980) (McFadden and Palmiotto 2012:94); a component at Butler Island dating to 1070 ± 30 B.P. (calibrated at two-sigma range of A.D. 885–1015) (McFadden 2014:80); and overlaps with the latest dated component at Richard's Island dating to 1200 ± 30 B.P. (calibrated at two-sigma range of A.D. 765–895) (Sassaman et al. 2016:14). Other sites dating to this period include the earliest dated component at Raleigh Island (8LV293), an extensively terraformed island (Terry Barbour, personal communication, 2018), and the reoccupation of the western portion of Garden Patch (Area I) after the abandonment of the site as a civic-ceremonial center (Wallis et al. 2015). Furthermore, during this time there was intensification of ritual activity at Palmetto Mound, which included the emplacement of several ritual deposits and an unusually high number of effigy vessels characteristic of the Weeden Island Tradition (Donop 2017).

Material Culture

The bulk of the material culture recovered from Dan May consists of pottery sherds, with a total of 733 sherds weighing 2652.3 g. In Table 3, sherd counts and weights are presented by temper, surface treatment, and portion represented (rim, body, base, crumb). By count, over half ($n = 401$) of the assemblage consists of “crumb” sherds, or sherds less than ½-inch in maximum dimension. Crumb sherds are classified by temper but not surface treatment, given their small size.

Four temper types and six surface treatments are represented in the Dan May pottery assemblage. The most prominent temper is sand, followed by limestone, spicule, and lastly, “assorted,” which is characterized by the inclusion of multiple tempering agents (sand, limestone, shell, spicule, charcoal, or grog) in varying amounts and combinations. In order of frequency, surface treatments include plain, stamped, punctated, impressed, and incised. Within these broad categories, considerable variation is glossed over. For example, sherds labeled as stamped can be further divided into check stamped, simple stamped, stamped on the interior and exterior, dentate stamped, and complicated stamped.

Fifty-eight vessel lots are inferred based on sets of shared characteristics (e.g., surface treatment and paste) (Table 4) (Buchanan 2017). Crumb sherds were not considered in the determination of vessel lots. Sherds from vessel lots were refitted whenever possible to obtain portions suited to vessel size and shape characterization. Unfortunately, none of the vessels portions were sufficiently large enough to determine vessel form with certainty. Wall thickness of rim sherds was measured at a point 3 cm below the lip and orifice diameter was estimated on sherds exceeding five percent of the orifice circumference. Wall thickness could be measured on sherds from nine vessel lots, and orifice diameter was estimated for five of the vessel lots. As a result, orifice diameters range from 10 to 18 cm, and wall thickness ranges from 6.0 to 9.6 mm.

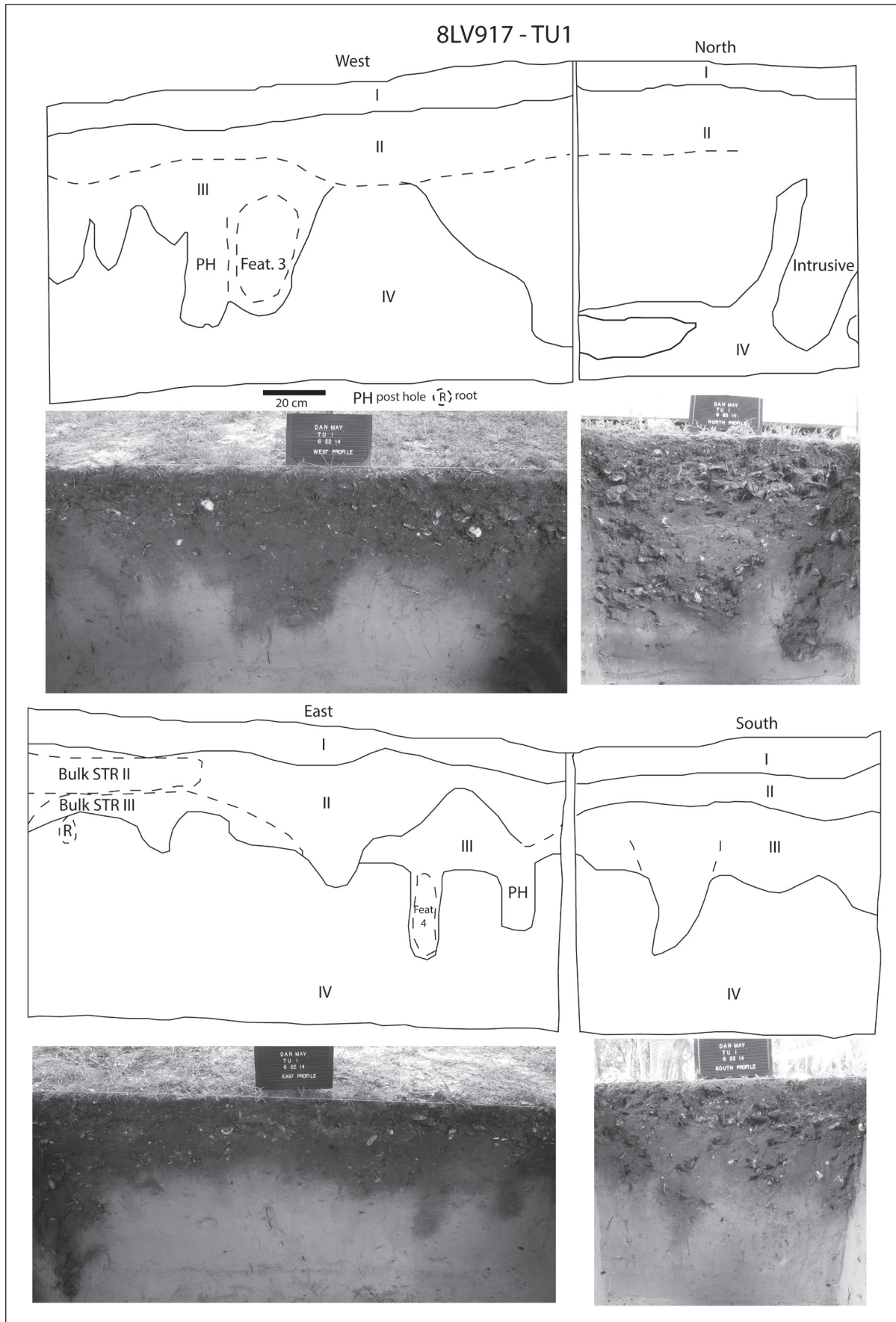


Figure 4. Photographs and scaled drawings of the profiles of all four walls of Test Unit 1, 8LV917. (PH = post hole).

Table 1. Stratigraphic Units of Test Unit 1, 8LV917.

Stratum	Max Depth (cmbd)	Munselle Color	Description
I	12	10YR2/2	Very dark brown fine sandy loam with no shell
II	44	10YR2/2	Very dark brown fine sandy loam with whole oyster and marsh clams
III	78	10YR3/1	Very dark gray fine sandy loam with sparse shell
IV	95	10YR7/4	Very pale brown fine to medium sand with no organics

According to Willey's (1949) pottery typology, the majority of vessels are indicative of the Weeden Island ceramic tradition. The most common identifiable type of pottery by vessel lot in this assemblage is Wakulla Check Stamped ($n = 12$), followed by Swift Creek Complicated-Stamped ($n = 4$), and Ruskin Dentate ($n = 3$). Plain vessels include two types: St. Johns Plain ($n = 4$), characterized by a spicule-tempered paste, and Pasco Plain ($n = 3$), which contains a limestone-tempered paste. There is one vessel lot each of Carabelle Punctate, St. Johns Simple-Stamped, and St. Johns Check-Stamped. Twenty-nine vessels were not assigned a specific culture-historical type and include sand-tempered plain ($n = 11$), burnished ($n = 4$), simple-stamped ($n = 6$), check-stamped ($n = 2$), limestone-tempered check-stamped ($n = 2$), cord-marked ($n = 1$), punctated ($n = 1$), and incised ($n = 2$).

Notable among the site's pottery assemblage is an advanced degree of diversity in temper and surface treatment that exists both within features and the general levels (Figure 7). Late Woodland pottery assemblages in the greater area are usually diverse in both residential and mortuary contexts, with an array of surface treatments and vessel forms classified within the Weeden Island tradition (e.g., Wallis et al. 2017). At Dan May, the short-term and spatially discrete nature of the settlement underscores that the diversity of pottery at the site is not simply a function of a coarse-grained occupational sequence, but is rather a real aspect of the site's pottery assemblage.

Other classes of material culture are sparse and limited to a small assemblage of chert flakes from TU1 ($n = 11$), two limestone abraders recovered from STP1, one piece of quartzite fire-cracked rock (FCR) from TU1, and a few limestone clasts or pebbles, quartz pebbles (identified as modern driveway gravel), and mudstone pebbles. No shell or bone artifacts were recovered.

Faunal Remains

A variety of invertebrate and vertebrate fauna was recovered from Dan May. The majority of the faunal remains deposited in the midden and the pit features are from saltwater or estuarine environments, although some freshwater species are present. Given the high density of shell in the middens and pit features at Dan May and other sites in the research area, the LSA has developed a sampling strategy in which all gastropods recovered during general excavation are kept and

all bivalves, with the exception of modified or unique shells, are left at the site as part of the unit backfill. Bulk samples are collected from shell-rich deposits and features in order to characterize the invertebrate assemblage without the bias of selective recovery methods.

Invertebrate Fauna

Carolina marsh clam (*Polymesoda caroliniana*), a primarily freshwater species, and Eastern oysters (*Crassostrea virginica*) comprise nearly the entire invertebrate assemblage in bulk samples from Dan May. In addition to Carolina marsh clam and Eastern oyster, other species of invertebrates present at Dan May include: crown conch (*Melongena corona*), quahog clam (*Mercenaria sp.*), marsh periwinkle (*Littorina irrorata*), lightning whelk (*Busycon sinistrum*), shark eye (*Neverita duplicata*), barnacle (*Balanidae*), and unidentifiable bivalves (*Bivalvia*) and gastropods (*Gastropoda*).

All invertebrates were counted and weighed, and further analysis was conducted on the Carolina marsh clam and Eastern oyster. The invertebrate fauna discussed below are from six bulk samples recovered from TU1: two bulk samples from the east wall of the unit, one each from two shell-rich deposits (Strata II and III), and from each of the four features, three pits (Features 1, 2A, 2C, and 3) and one post hole (Feature 4). There were no invertebrates recovered from Feature 2B.

Absolute frequencies of shell by taxa for both Carolina marsh clam and Eastern oyster are provided in Table 5. Shells were sorted by side (right versus left) when the diagnostic hinge elements were present, which allowed for determination of the minimum number of individuals (MNI). The invertebrate fauna was deposited differentially, with oyster as the dominant invertebrate species in midden deposits (Strata II and III), and Carolina marsh clam as the primary species in the pit features (Features 1–3). Carolina marsh clam is rarely the dominant species in a given context in the research area. One exception is the Weeden Island component of Cat Island (cal. A.D. 610–680) where there is a ratio of 3:2 Carolina marsh clams to oysters in the midden. A second is a shell midden strata at Little Bradford (8DI32), with a ratio of 2:1 Carolina marsh clam to oyster (Sassaman et al. 2011). It is likely that the high amount of Carolina marsh clam at Dan May is, at least in part, a product of the low salinity waters surrounding the island in which Carolina marsh clam thrive.

The oyster shells were further analyzed using methods

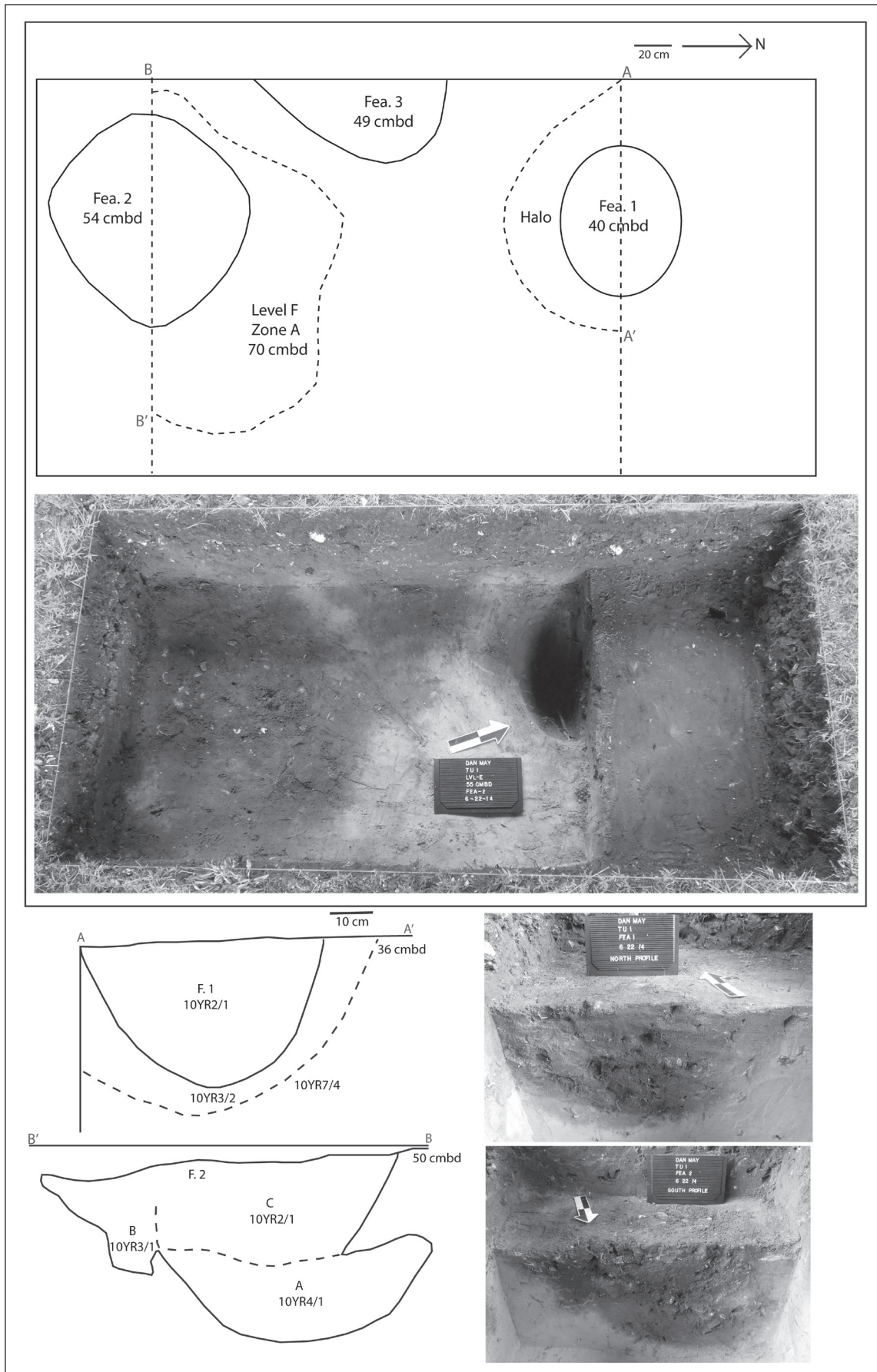


Figure 5. Plan and profile drawing and photograph of Features 1 and 2 in Test Unit 1, 8LV917.

Table 2. Radiocarbon Data for Dan May, 8LV917.

Provenience	Material	Beta Lab Number	Measured 14C Age BP	13C/12C Ratio	Conventional 14C Age BP	2-sigma Cal AD	2-sigma Cal BP
Dan May TU1-F.1	charcoal	421083	1090±30	25.3 o/oo	1090±30	890-1015	1060-935
Dan May TU1-F.2C	charcoal	458225	1020±30	23.6 o/oo	1040±30	970-1025	980-925
Dan May TU1-F.3	charcoal	458226	1070±30	25.6 o/oo	1060±30	900-925	1005-930

outlined in Jenkins (2017) to determine harvesting niche (intertidal versus subtidal) and to infer maricultural practices. All oyster shells were separated into left (cupped) and right (flat) valves. Both left and right valves were counted and weighed, and all whole left valves were further analyzed for evidence of resource niche and mariculture (Jenkins 2017). The attributes that were documented for each shell include: height, length, height-to-length ratio (HLR), presence or absence of attachment scar, presence or absence of boring sponge parasitism, and presence or absence of boring sponge parasitism on attachment scars (Table 6). The results indicate that most of the oysters deposited in the midden at Dan May were from intertidal waters where no mariculture was being practiced.

Intertidal oysters are typically small because they are cut off from their food supply when exposed at low tide, have attachment scars and are elongate because they grow together in tight clusters or burrs, and lack evidence of holes left behind from boring sponges, which are common on subtidal oyster shells, as boring sponges cannot live in intertidal waters. Furthermore, subtidal oyster reefs, including the Lone Cabbage, Half Moon, and Great Suwannee are located

near Dan May, but watercraft would be necessary to access and harvest these oysters. In contrast, intertidal oysters and Carolina marsh clams likely could have been collected at the water's edge. Evidence suggests that offshore reefs were harvested when the scale and intensity of oyster harvesting in the region heightened during Middle Woodland civic-ceremonialism, and intertidal oyster harvesting was more common when the demand for oysters was reduced and food production was downscaled and localized.

Since it appears that most of the oysters harvested and deposited at Dan May are intertidal, it is not surprising that there does not appear to be any evidence of mariculture. The two maricultural practices that have been inferred attending the ritual economy at Shell Mound include shelling, or returning dead shell to oyster reefs to encourage spat attachment and growth, and culling, or breaking apart oyster burrs and returning smaller or younger oysters back to the reefs to continue to grow and live through reproductive cycles. These maricultural practices are still in use today, and almost exclusively are used on subtidal reefs where oysters grow larger and faster. At Shell Mound, the uneven ratio of left to right oyster valves

is a possible indicator that right valves were being returned to reefs while left valves were being used in mound construction (Jenkins 2017). Also, a high percentage of oyster shells at Shell Mound with sponge parasitism on the attachment scar indicates that culling was likely being practiced, which would expose the attachment scar making that part of the shell more vulnerable to parasites. It is also possible that other predators or storms could be responsible for breaking apart oyster clusters. At Dan May, the ratio of left to right valves remains close to 50/50, and there are almost no instances of parasitism on attachment scars, with the exception of one shell.

Vertebrate Fauna

Meggan Blessing, zooarchaeologist at the LSA, created a species list of recovered vertebrate fauna from Dan May (see Jenkins et al. 2017 for the complete list). The majority of the vertebrate fauna from TU1 are saltwater and/or estuarine species, and the

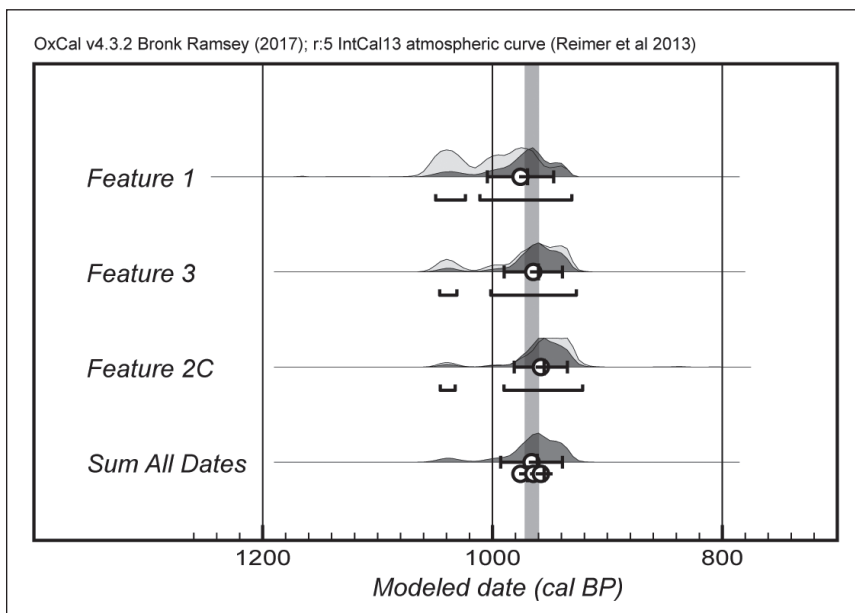


Figure 6. Probability distribution of three age estimates from Dan May. Highlighted is the highest probability of actual age.

Table 3. Absolute Frequency and Weight (g) of Pottery Sherds from 2014 Excavation of Dan May (8LV917), by Temper and Surface Treatment.

Temper	Plain		Stamped		Punctate		Other		Eroded/UID		Total	
	ct	wt(g)	ct	wt(g)	ct	wt(g)	ct	wt(g)	ct	wt(g)	ct	wt(g)
Sand												
Body	133.0	784.40	49.00	386.60	2.00	12.40	3.00	21.20	2.00	27.60	189.00	1,232.20
Rim	10.00	80.40	11.00	145.00							21.00	225.40
Base			1.00	24.00							1.00	24.00
Crumb											312.00	265.80
Subtotal	143.00	864.80	61.00	555.60	2.00	12.40	3.00	21.20	2.00	27.60	523.00	1,747.40
Limestone												
Body	42.00	176.60	30.00	315.60	12.00	29.20	3.00	39.30	1.00	14.00	88.00	574.70
Rim	1.00	3.10	2.00	16.60							3.00	19.70
Crumb											67.00	82.20
Subtotal	43.00	179.70	32.00	333.20	12.00	29.20	3.00	39.30	1.00	14.00	158.00	676.60
Spicule												
Body	18.00	113.40	1.00	4.00							19.00	117.40
Rim	1.00	3.70	2.00	29.30							3.00	33.00
Crumb											22.00	14.50
Subtotal	19.00	117.10	3.00	33.30							44.00	164.90
Assorted												
Body	7.00	55.10					1.00	8.30			8.00	63.40
Subtotal	7.00	55.10					1.00	8.30			8.00	63.40
Total	212.00	1,216.70	96.00	921.00	14.00	41.60	7.00	68.80	3.00	41.60	733.00	2,652.30

assemblage is dominated by fish. Saltwater and estuarine taxa include sheepshead (*Archosargus probatocephalus*), black drum (*Pogonias cromis*), red drum (*Sciaenops ocellatus*) and mullet (*Mugil sp.*), and freshwater taxa include the golden shiner (*Notemigonus crysoleucas*), freshwater catfish family (*Ictaluridae*), largemouth bass (*Micropterus salmoides*), shellcracker (*Lepomis microlophus*), other bream species (*Lepomis sp.*), river cooter (*Pseudemys sp.*), softshell turtle (*Apalone ferox*) and alligator (*Alligator mississippiensis*). The relatively low numbers of elements of freshwater species present in the assemblage could be a product of sampling, as those represented tend to be on the smaller side, with the exception of largemouth bass. Overall, the bone is well preserved, and there was little-to-no burning. There are two notable patterns regarding the vertebrate faunal remains: first,

Level B has a greater number of black drum individuals, which appear to be large, given the size of the otoliths, compared to the other levels; and second, Feature 1 is dominated by hardhead catfish, followed by black drum.

Discussion and Conclusion

A unique feature of Dan May Island is its “in-between” spatial and temporal dimensions. Dan May Island is privately-owned and located in the wetlands that extend southeast of the Suwannee River Delta, between saltwater and freshwater biomes. The island is positioned between two research tracts of the Lower Suwannee Archaeological Survey, some distance from known civic-ceremonial centers and other sites in the area. Moreover, Dan May is a single-component site dating

Table 4. Description of Vessel Lots from 2014 Excavation of Dan May (8LV917).

Vessel Lot	Provenience	Surface Treatment	Temper	Type	Orifice Diameter (cm)	Thickness (mm)
1	Lvl C, D, F; F.3	Simple-Stamped	Sand	Ruskin Dentate		8.4
2	F.2	Dentate	Sand			
3	Lvl C, E	Simple-Stamped	Sand			8.4
4	Lvl C, E	Simple-Stamped	Sand			
5	F.2	Simple-Stamped	Sand			
6	STP1	Simple-Stamped	Sand			
7	F.2	Simple-Stamped	Sand			
8	F.2	Complicated-Stamped	Sand	Swift Creek Complicated-Stamped		
9	F.2	Complicated-Stamped	Sand	Swift Creek Complicated-Stamped		
10	STP1	Check-Stamped	Sand		10	
11	Lvl B	Check-Stamped	Sand	Wakulla Check-Stamped		
12	STP1	Complicated-Stamped	Sand	Swift Creek Complicated-Stamped		
13	Lvl C	Check-Stamped	Sand	Wakulla Check-Stamped		
14	Lvl C	Check-Stamped	Sand	Wakulla Check-Stamped		
15	F.2	Punctate	Limestone	Carabelle Punctate		
16	Lvl B	Punctate	Sand			
17	Lvl C	Simple-Stamped	Spicule	St. Johns Simple-Stamped		
18	Lvl C, F.2	Check-Stamped	Sand			9.2
19	Lvl E; F.2; STP1	Plain	Spicule, Limestone	St. Johns Plain		
20	Lvl C, D	Plain	Sand			
21	Lvl B	Incised	Sand	Wakulla Check-Stamped		

Table 4. Description of Vessel Lots from 2014 Excavation of Dan May (8LV917). (cont'd)

Vessel Lot	Provenience	Surface Treatment	Temper	Type	Orifice Diameter (cm)	Thickness (mm)
22	Lvl E	Check-Stamped	Sand	Wakulla Check-Stamped		
23	Lvl E; F.2	Plain, Scraped Interior	Spicule, Limestone	St. Johns Plain		
24	Lvl E	Complicated-Stamped	Spicule	Swift Creek Complicated-Stamped		
25	STP1	Plain	Sand			
26	F.1	Plain	Sand		10	7.9
27	Lvl D	Plain	Sand			6.3
28	Lvl E; F.2	Cord-Marked	Limestone, Charcoal			
29	F.1	Check-Stamped	Limestone		18	9.0
30	Lvl C	Dentate	Limestone	Ruskin Dentate		
31	STP	Check-Stamped	Limestone			
32	Lvl B, C, D	Plain, Burnished	Sand			
33	F.2	Check-Stamped	Sand	Wakulla Check-Stamped		
34	Lvl C	Check-Stamped	Sand	Wakulla Check-Stamped	18	9.6
35	Lvl B	Check-Stamped	Spicule	St. Johns Check-Stamped	18	9.1
36	F.2	Plain Burnished	Limestone	Pasco Plain		
37	F.3	Plain	Sand			6.0
38	Lvl B	Check-Stamped	Sand	Wakulla Check-Stamped		
39	F.1; F.2	Dentate	Limestone	Ruskin Dentate		
40	Lvl A, B, C	Check-Stamped	Sand	Wakulla Check-Stamped	16	7.9
41	F.1	Plain	Sand			14
42	Lvl B	Plain	Sand			

Table 4. Description of Vessel Lots from 2014 Excavation of Dan May (8LV917). (cont'd)

Vessel Lot	Provenience	Surface Treatment	Temper	Type	Orifice Diameter (cm)	Thickness (mm)
43	Lvl B, C, D	Plain, Incised Rim	Sand			
44	Lvl A, C	Check-Stamped	Sand	Wakulla Check-Stamped		
45	F.2	Plain	Sand			
46	Lvl D; F.2	Plain, Burnished	Sand			
47	Lvl D, E	Check-Stamped	Sand	Wakulla Check-Stamped		
48	Lvl E	Plain	Limestone	Pasco Plain		
49	Lvl B, E; F.1; F.2	Plain	Spicule, Limestone, Shell	St. Johns Plain		
50	Lvl B	Check-Stamped	Sand	Wakulla Check-Stamped		
51	Lvl C	Plain, Burnished	Sand			
52	Lvl B, D	Check-Stamped	Sand	Wakulla Check-Stamped		
53	STP1	Plain, Burnished	Sand			
54	Lvl B; F.1	Plain	Sand			
55	Lvl B, C, D, E; F.2, STP1	Plain	Limestone	Pasco Plain		
56	Lvl A, C; F.1	Plain	Sand			
57	Lvl B	Plain	Spicule	St. Johns Plain		
58	Lvl F	Plain	Sand			

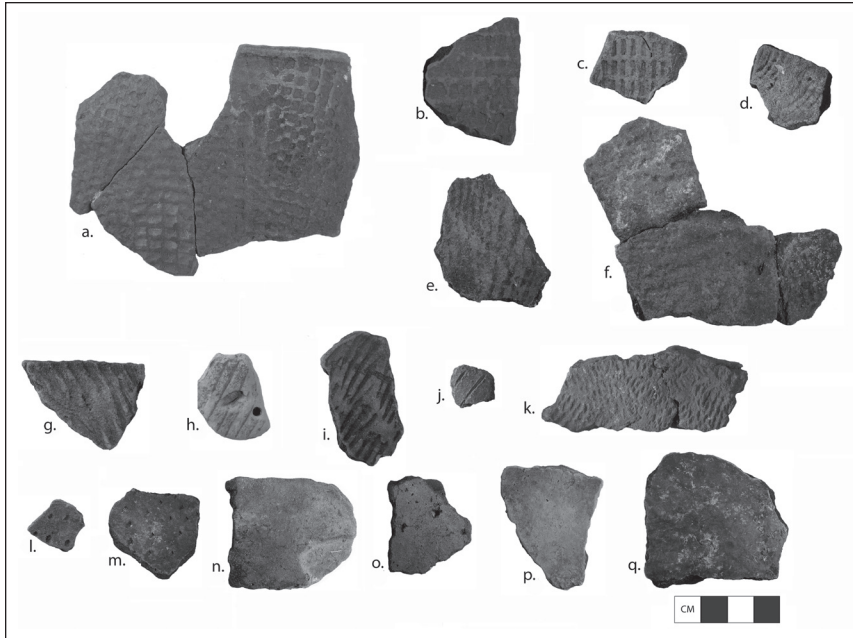


Figure 7. Representative sample of pottery sherds from Dan May. Limestone-tempered check-stamped (a), sand-tempered check-stamped (b–c), sand-tempered check-stamped (d), limestone-tempered Ruskin Dentate (e), sand-tempered Ruskin Dentate (f), sand-tempered simple-stamped (g, i), St. Johns simple-stamped (h), sand-tempered incised (j, n), limestone and charcoal tempered cord-marked (k), sand-tempered punctated (l), Carabella Punctated (m), Pasco Plain (o), St. Johns plain (p), sand-tempered plain burnished (q).

to the tenth century A.D., a period underrepresented in the study area and situated between two phases of aggregation and terraforming in the region.

Small-scale, dispersed settlements characterized the region after the decline of Middle Woodland civic-ceremonial centers. Although civic-ceremonial centers, such as Garden Patch and Shell Mound, were abandoned as residential centers post-A.D. 700, the sites maintained relevance on the landscape and likely influenced activities at places like Dan May. Perhaps the newly dispersed nature of settlement also influenced activity at the former Middle Woodland civic-ceremonial centers. For example, Donop (2017:224) suggests that the intensification of activity and the interment of extralocal pottery and effigy vessels at Palmetto Mound during the Weeden Island phase was a reflection of the site's deep ancestry and ability to periodically attract dispersed and diverse persons. Considering the reconfiguration of settlement patterns after the abandonment of civic-ceremonial centers as residential centers and the inclusion of extralocal pottery in the mound, Donop (2017:228) contends that the intensification of activity at Palmetto Mound may have been the, "material manifestation of rituals performed by dispersed communities to renew their social relations with the mound at periodic gatherings in a time of uncertainty."

The high diversity of pottery at Dan May is matched, if not exceeded, by the pottery deposited at Palmetto Mound during these centuries. Using Willey's 1949 typology, the

majority of the pottery excavated from Test Unit 1 is characteristic of the Weeden Island ceramic tradition. Sherds belonging to one vessel lot were frequently found across multiple contexts, including multiple pit features, confirming their contemporaneity. While the diversity of pottery types at Dan May could be viewed as simply a reflection of the immensely diverse pottery assemblage attributed to the Weeden Island tradition, it is remarkable for a small, short-term context, ruling out both time and ethnicity (multiple communities) as the causes for diversity. Little other material culture was recovered, with the exception of a small assemblage of chert flakes and two possible limestone abraders.

The assemblage of vertebrate fauna from Dan May is typical for the region, with a variety of mostly estuarine and saltwater species and some freshwater species. However, a unique feature of Dan May is the differential deposition of oyster shells and Carolina marsh clams, where there is a greater ratio of oysters in the midden and Carolina marsh clams in the pit features. Carolina marsh clams hardly dominate the invertebrate assemblage of any context at a given site in the research area, with the exception of Weeden Island components at Cat Island and Little Bradford, where Carolina marsh clams

naturally thrive given the low-salinity waters. It is possible that the dominance of Carolina marsh clam in the pit features rather than the midden at Dan May represents specific episodes of collecting and depositing these species.

The results of survey and test excavations reported here show the potential and need for additional archaeological investigations at Dan May. Further testing at Dan May would provide important information concerning a period of time that is not well understood in the research area. Likewise, continued identification and testing of contemporaneous sites in region would ultimately assist the goals of the LSAS to document the full range of variation in the distribution, timing, and content of archaeological sites in the study area (Sassaman et al. 2011). Following these recommendations would help clarify the post-abandonment period of civic-ceremonial centers (A.D. 700–1000) in the Lower Suwannee region.

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Table 5. Absolute Frequency, Weight, MNI, and Ratio of Taxa for Oysters and Carolina Marsh Clams by Bulk Sample.

Oyster	Right Valve		Left Valve		Fragment Total		MNI	MNI/ Liter	Ratio of Taxa
	ct	wt(g)	ct	wt(g)	ct	wt(g)			
II	90	551.9	64	838.2	713.9	2104.0	90	12	12:1
III	53	246.5	59	448.0	538.5	1233.0	59	9	9:1
F.1	28	142.6	35	361.7	316.5	820.8	35	3	1:2
F.2A	4	28.8	3	1.6	40.8	71.2	4	1	1:9
F.2C	16	107.1	15	76.2	145.5	328.8	16	2	1:9
F.3	3	17.1	3	5.5	30.0	52.1	3	<1	0:1
f.4	0	0	0	0	0.2	0.2	0	0	0:1
Total	194	1094.0	179	1730.7	1785.4	4610.1	207	4	1:3
Marsh Clam									
II	3	26.8	3	16.2	21.3	64.3	3	<1	1:12
III	2	2.9	2	10.8	11.0	24.7	2	<1	1:9
F.1	79	620.3	91	683.2	417.5	1721.0	91	7	2:1
F.2A	9	21.5	3	10.9	49.2	81.6	9	9	9:1
F.2C	151	1178.3	165	1424.0	212.2	2814.5	165	17	9:1
F.3	2	14.1	7	40.3	59.8	114.2	7	1	1:0
F.4	1	8.6	1	5.8	3.7	18.1	1	1	1:0
Total	247	1872.5	272	2191.2	774.7	4838.4	278	6	3:1

Table 6. Summary of Attributes Indicative of Resource Niche and Mariculture.

Sample	n	Right		Left		Mean	Mean	Mean	Scars		Parasitism		Parasitism on Scar	
		n	%	n	%	Height	Length	HLR	n	%	n	%	n	%
II	154	90	58	64	42	51.19	32.71	1.58	27	63	7	16	0	0
III	112	53	47	59	53	52.67	32.08	1.61	15	68	14	64	1	5
F.1	63	28	44	35	56	62.94	36.64	1.73	12	67	1	6	0	0
F.2A	7	4	57	3	43	21.64	12.48	1.74	1	50	0	0	0	0
F.2C	31	16	52	15	48	48.36	26.31	1.87	2	67	0	0	0	0
F.3	6	3	50	3	50									
Total	373	194	52	179	48	53.20	32.68	1.63	57	65	22	25	1	1

from Dan May. Access to Dan May Island was granted by the landowner, Mr. Allen Scott. I also acknowledge Joe Hipps, the island's caretaker, who provided logistical support for field investigations and back-filled TU1 with heavy equipment. Funding for the Dan May project was provided by the Hyatt and Cici Brown Endowment for Florida Archaeology.

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