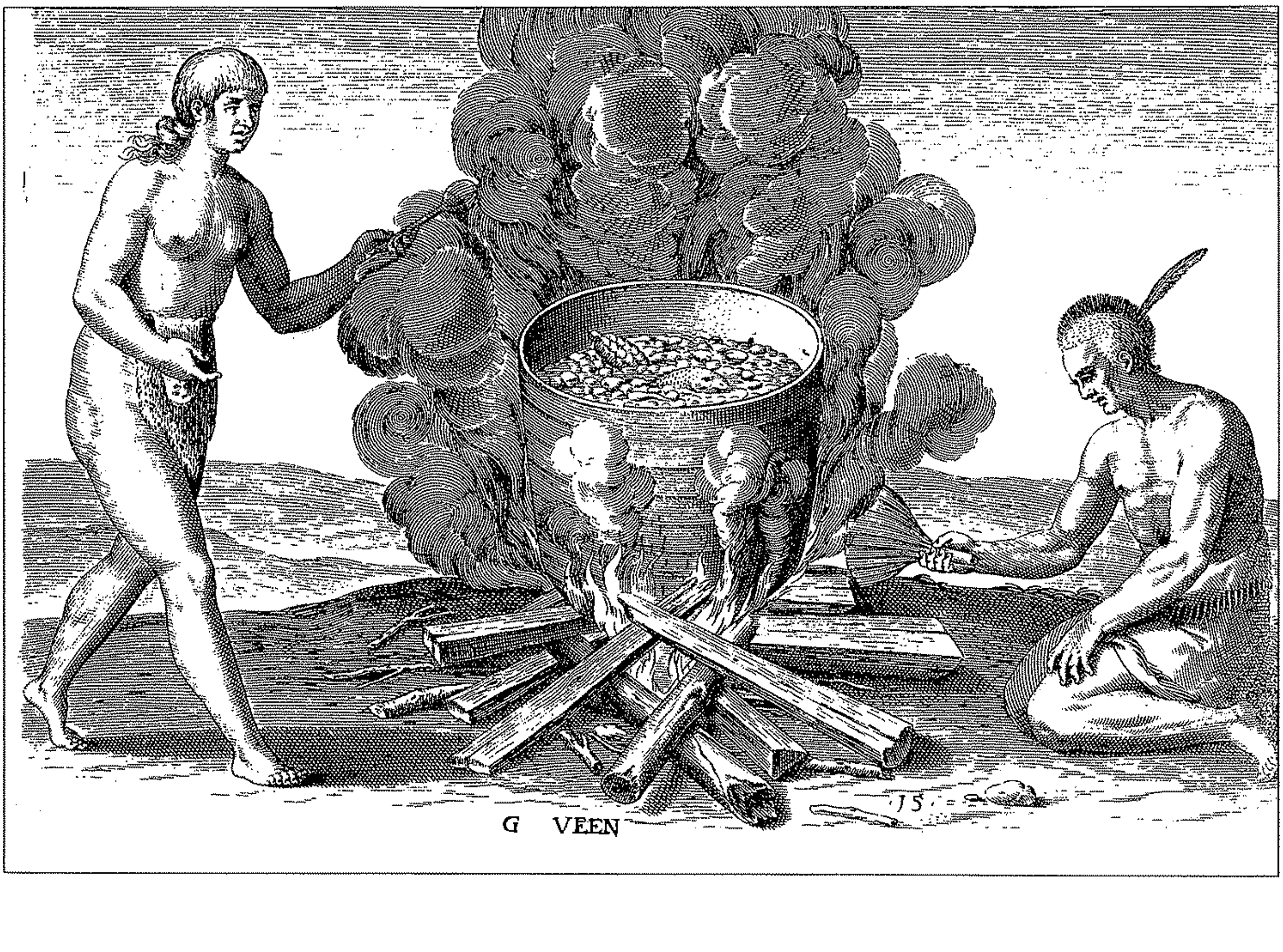
N. White

THE FLORIDA ANTHROPOLOGIST

Published by the FLORIDA ANTHROPOLOGICAL SOCIETY, INC.

VOLUME 56, NUMBER 2 **JUNE 2003**



Late Archaic in the Apalachicola/Lower Chattahoochee Valley, Northwest Florida, Southwest Georgia, and Southeast Alabama

Nancy Marie White

Department of Anthropology, University of South Florida, 4202 E. Fowler Ave. SOC107, Tampa, FL 33620
E-mail: nwhite@chuma1.cas.usf.edu

Research Background

This article summarizes tabulated information from 76 Late Archaic sites (mostly defined by the presence of fiber-tempered pottery) along the 175 river miles (280 km) of the Apalachicola-lower Chattahoochee River Valley system to examine commonalities within the region, traditional settlement models, and external connections. Ceramic attribute data also are presented for 198 fiber-tempered sherds from 23 sites, to show the lack of distinctiveness of this pottery, except for occasional simple-stamping. The usefulness of the confusing and poorly defined "Norwood" archaeological phase terminology sometimes used in this region is questioned.

The Apalachicola River, the largest river in Florida (greatest flow; Livingston 1984, Donoghue 1993), is formed by the confluence of the Flint and Chattahoochee rivers at a point on the Florida-Georgia border (today dammed up to make Lake Seminole) that is the farthest southwestern corner of Georgia. The Flint River originates near Atlanta; the great Chattahoochee begins in the Blue Ridge Mountains of north Georgia and flows southwest and south, making up the common border of Alabama and Georgia and then Florida and Georgia in its lowest reaches. From the confluence, the Apalachicola flows 107.4 navigation miles southward toward the Gulf of Mexico, crossing the entirety of the northwest Florida panhandle (Figure 1). This valley system was a major network of prehistoric communication and transportation, which was recognized early by archaeologists such as C.B. Moore (Willey 1949). Long before the glories of Middle Woodland mound building, prehistoric people here enjoyed the rich bounty of the natural environment and participated in extensive cultural interaction networks across the Southeast. During the ceramic Late Archaic, spanning the time period from nearly 3000-1000 B.C., there is evidence, both coastal and inland, of connections with the Mississippi Valley and the Atlantic coastal area, in terms of ceramics and Poverty Point-type artifacts.

Late Archaic sites are now known from the barrier islands all the way up the valley. They have been recorded by projects in many different northwest Florida environments of the Apalachicola (Henefield and White 1986; Miller et al. 1980; White 1994a, b; 1996; 1999; White and Estabrook 1994) and from (more limited) riverbank/reservoir shoreline surveys on the lower Chattahoochee up an additional 67 river miles into Georgia and Alabama (Belovich et al. 1982; Huscher 1959; White 1981). Figure 1 shows locations of these sites. Table 1 presents their data from south to north, as located all along one great river system (despite modern state boundaries). Locations are given in terms of total river (navigation) miles up from the mouth of the Apalachicola, adding 107 Apalachicola miles to the official navigation mile reading on the Chattahoochee, and listing sites on the bayshore at 0 and barrier island sites at negative miles since they are beyond the river mouth. For sites away from the main river channel, the mile indicator was found by reading due east or west to the river. To facilitate further research, distance and direction to nearest water and USGS quad map names are given for each site, and a note of the artifacts indicating Late Archaic cultural affiliation. Elevations are noted in feet to make comparison easier, since available quad maps for most of the research area are very old, with contour intervals of 5 or 10 feet. The table includes unpublished data from both the Florida Master Site File (FMSF) and the USF archaeology lab.

In this portion of the river system, from the Gulf up to Fort Gaines, Georgia, the documented 76 Late Archaic sites include several on the Chipola River, the largest tributary of the Apalachicola, and others on the Flint River and its tributaries up to Bainbridge, Georgia. Evidence varies for each site: a few have had extensive test excavation while others are known from a single fiber-tempered sherd picked up during surface collection. The number of sites in different valley segments obviously also corresponds with the amount of work done. The least amount of field survey has taken place above the common Florida, Georgia, and Alabama border, where only 7 sites are listed, those in Early County, Georgia, and Houston and Henry counties, Alabama. Survey here usually included only examination of the eroding riverbank face (Belovich et al. 1982). The lower Apalachicola Valley is so heavily alluviated that deeply buried sites are difficult to find, other than obvious white shell middens in the lowest river swamp, coastal, and estuarine environments. Despite these biases, some interesting patterns in the data may help interpret this crucial time in the human past, when the earliest ceramics appear and the first experiments with horticulture, mound building, and possibly complex society are supposed to be taking place elsewhere in the Southeast.

Settlement/Subsistence Models

The traditional view that Late Archaic settlement emphasized coastal wetlands, with less interior occupation (Milanich and Fairbanks 1980:61), is no longer accurate; Milanich

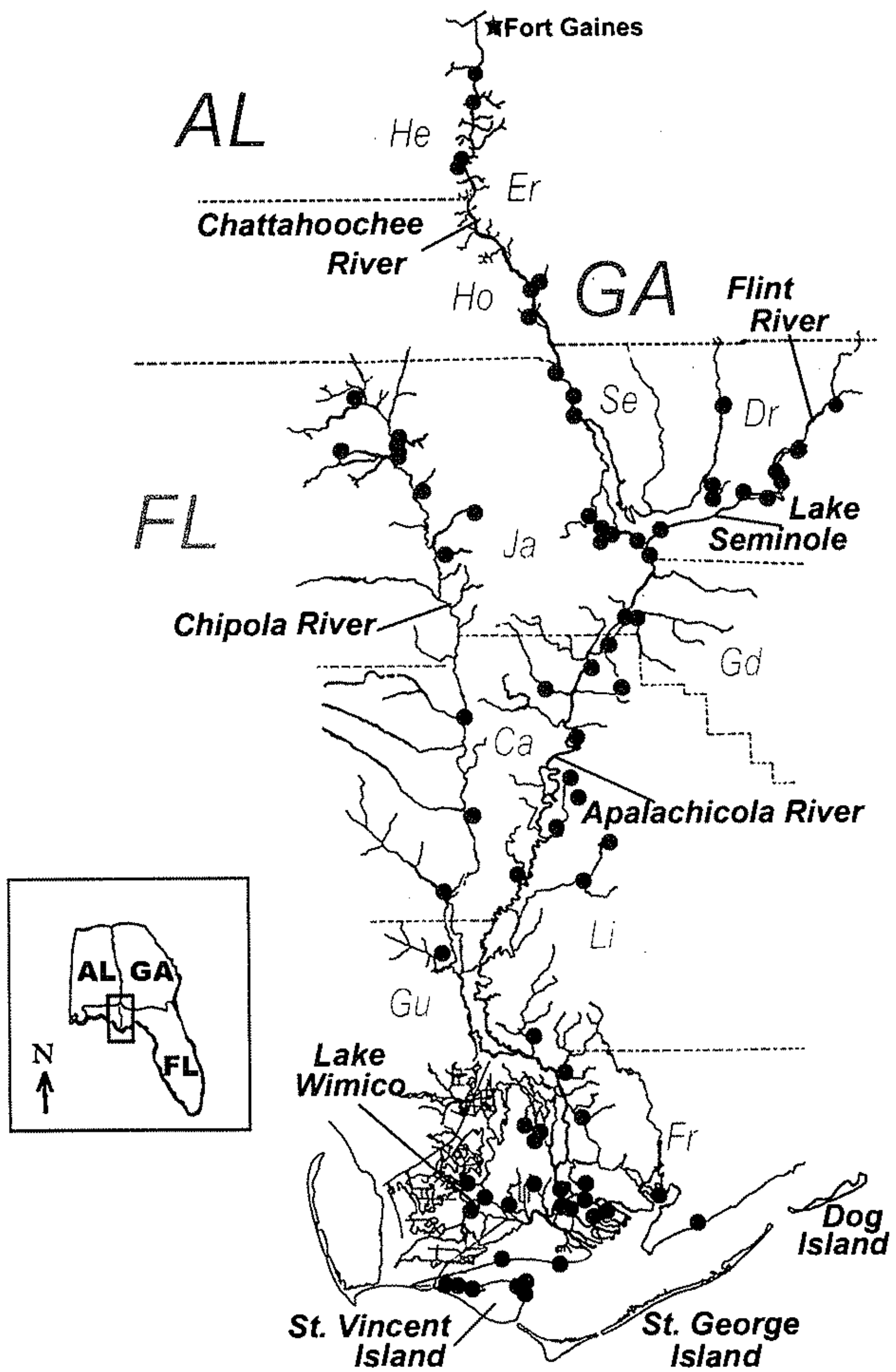


Figure 1. Map of the Apalachicola/Lower Chattahoochee Valley showing Late Archaic sites.

(1994:86) has noted that we find Late Archaic sites "in every wetland locale where extensive surveys or excavations are carried out." I expand this to state that they do not necessarily occur only in wetlands, but usually near a water source. Since more archaeology has been done along the coast because of greater modern development, it is no surprise that coastal sites have been better known. Furthermore, many interior sites have been hard to locate because they are so deeply buried, usually under later prehistoric components, along the banks of rivers, smaller streams, and former stream channels. Many lie on riverbanks under thick blankets of recent alluvium, since historic deforestation for agriculture has made for heavy soil runoff during annual flooding (White 1995, 1996). Worse, continual fluvial movement has meant constant reworking of riverine lowlands, so that earlier deposits, such as Late Archaic components, often may have been redeposited and remixed with later materials. All these factors have made the inland Late Archaic harder to see, especially in the Apalachicola-lower Chattahoochee basin, where the river has been continually moving eastward through time and potentially obliterating or burying an unknown amount of the ancient cultural record.

We are a long way from understanding subsistence and site function for most sites, but a simple classification is obvious: all those in coastal, estuarine, or very lowest river swamp locations are shell midden mounds. This includes the first 17 sites listed in Table 1, up to navigation mile 10. These are the sites at the lowest elevations and nearest the bays. Many of them are on or near Lake Wimico, on the lower west side, which is a widened section of old river channel whose banks also may be old bayshore. While Depot Creek and Clark Creek shell mounds seem to be at higher elevations (10 and 8 feet, respectively), this is because they are relatively high artificial mounds themselves. The original ground they were built/accumulated upon is estimated to have been about 2-5 feet above sea level, as with the other shell middens.

The first sites on Table 1 that are not shell middens, beginning with Firebreak Circle (8GU40), are on higher sandy ground, usually near small creeks. They may have been located above (north of) the oldest beach ridge and dune area (Donoghue and White 1994) recognized in the lower valley. While we do not know how long ago or for what period of prehistoric time the bayshores extended this far inland, it is clear that the current lower delta has been continually prograding, piling up alluvial deposits at its mouth and thus building the delta farther and farther out into the Gulf through time. Original locations of the shell middens relative to the bayshore may have changed radically since the Late Archaic.

The 5 sites on the south shore of the section of the bay known as St. Vincent Sound (the first 5 on the table, with negative numbers, as they are below the river mouth) are on the north shore of St. Vincent Island, the largest barrier island and the one closest to the mainland. The Apalachicola barrier islands form a string like a necklace around the lower delta. They are known to have formed only some 3000-4000 years ago, and all of them are rich in later prehistoric archaeological sites on their bay sides. St. Vincent Island, much wider and close enough to the mainland at its western end to make for a short boat ride, may have the extensive Late Archaic evidence because it offered resources such as fresh water, or perhaps because it was the easiest and/or earliest available for occupation. Though not shown on Table 1 because the location is technically in the next valley eastward (New River), probable Late Archaic deposits also exist deeply buried on Dog Island, at the eastern end of the string (Figure 1). Dog Island residents reported fiber-tempered sherds recovered from underlying peat deposits exposed by major storms (and quickly buried again by drifting sands; White et al. 1995).

Information from test excavations at several shell middens indicate Late Archaic people were making a fine living utilizing many aquatic animal species, especially fish and turtles, and a lesser number of terrestrial species (White 1994a, 1994b, 2003; White and Estabrook 1994). This is expected for dwellers of the coast and estuary, but interestingly, the data on freshwater compared with saltwater fauna also give us insights into the fluvial history of the lower river channel and mouth. The fresh water of the river is hypothesized to have been farther to the west before 4000 years ago, when it began moving eastward in conjunction with continuing sea level rise after the end of the Pleistocene (Donoghue and White 1994). Fish and shellfish collected by Late Archaic populations at Sam's Cutoff and Van Horn Creek shell middens, on the east side of the delta, included more oysters and other saltwater shellfish and fish species than did the Late Archaic occupations on the west side of the delta. (This interpretation does assume that the natives were eating mostly the species closest and thus easiest to procure). At Depot Creek and Clark Creek shell middens, on the west side, Late Archaic levels had the same predominance of *Rangia* clams and freshwater fish as did later Woodland and Fort Walton deposits, whereas at Van Horn Creek, the Late Archaic predominance of species from saltier environments gives way to more *Rangia* and freshwater animals during later Woodland and Fort Walton times. Sam's Cutoff is the only shell mound so far known to have no later prehistoric cultural deposits after the Late Archaic, perhaps because this eastward shift in the river brought so much water that it became too low, less attractive, and less visible to later populations. Today it is nearly inundated. It is the easternmost of the shell middens known and is nearly 100% of oyster (White 2003).

The typical acidic soils of the Gulf Coastal Plain have allowed little preservation of subsistence data from inland sites, nor has any of them been tested as extensively as the coastal shell middens. However, they are distributed on or very close to the main river or lesser waterways. This distribution of course also is partly a result of survey bias in favor of riverbanks, but we have also found a number of sites on old meanders and other locations far from present streams that may once have been closer until these streams also shifted (usually eastward; probably related to the main river shift). The Beanfield North site, 8GU91, is a good example, in northern Gulf County, some 2 km west of the Brothers River, a good-sized tributary (and probably former channel) of the Apalachicola. This site is one of the very few located in a

Table 1. Late Archaic Sites in the Apalachicola-Lower Chattahoochee-Lower Flint River Valley System, Northwest Florida, Southwest Georgia, Southeast Alabama.

Site Name	*Site No.*	*R* Mi*	*Nearest Water (Dist [m], Direction)*	*El (Ft)*	*USGS Quad***	*Fiber-t Sherds*	*Clay Ball*	*Micro-tool*	*Other*	*Reference*
St. Vincent 1	8FR 360	-4	0 N St. Vincent Sound	5	Indian Pass	4 plain, 2 simple-st	2			Miller et al. 1980
St. Vincent 2	8FR361	-4	0 N St. Vincent Sound	5	Indian Pass	5 plain, 3 simple-st				Miller et al. 1980
St. Vincent 4 (Pickalene Midden)	8FR363	-4	0 N St. Vincent Sound	5	Indian Pass	plain?			steatite sherds, jasper bead	Miller et al. 1980; USF lab
St. Vincent 6	8FR365	-4	0 N St. Vincent Sound	5	Indian Pass	1 plain				Miller et al. 1980
Paradise Point	8FR71	-4	0 N St. Vincent Sound	5	West Pass	2 plain?				Braley 1983
Nine Mile Point	8FrR9	0	0 S St. Vincent Sound	5	West Pass	2 plain				Willey 1949
Two Mile	8FR854	0	0 S Apalachicola Bay	5	West Pass	1 plain				White 1996
Porter's Bar	8FR1	0	0 S Apalachicola Bay	5	Greenpoint	none?	some	3 types		Jones 1993
Sam's Cutoff Shell Mound ★	8FR754	7	240 S Sam's Cutoff	2	Beverly	2 plain		15		White & Estabrook 1994
Sand Beach Hammock	8FR864	7	0 S East Bay	5	Beverly	1 plain	1 frag	1		Memory et al. 1998
Depot Creek Shell Mound	8GU56	7	200 N Depot Creek	10	Lake Wimico	23 simple-st				White 1994a
Van Horn Creek Shell Mound	8FR744	8	780 N East River	5	Beverly	69 plain	5	19 + cores		White 1994a, 1994b
Clark Creek Shell Mound	8GU60	8	300 W Double Bayou	8	Jackson River	53 plain, 1 simple-st	1 + frags	9		White 1994a
Six Palms Shell Mound	8GU54	8	0 S Lake Wimico	5	Lake Wimico	1 plain		4 or more		USF lab
Thank-you-ma'am Creek Shell Mound	8FR755	9	0 S East River	5	Beverly	8 plain, 7 simple-st	poss frags	micro-core	1 steatite, 1 sandstone sherd	Parker 1994, USF lab
Gardner's Landing Shell Mound	8FR806	10	0 W East River	5	Beverly	1 plain		1		USF lab
Yellow Houseboat Shell Mound	8GU55	10	0 SW Lake Wimico	2	Lake Wimico	none		100+		USF lab
Firebreak Circle	8GU40	10	300 E Saul Creek	8	Jackson River	1 plain				USF lab
Beanfield North	8GU91	14	2000 E Brothers River	5	Jackson River	3 plain				USF lab
Marge Martin	8GU46	16	1275 E Howard Creek	6	Forbes Island	1 plain			2 steatite sherds	Henefield & White 1986
MK Ranch Borrow Pit	8GU34	17	1620 NE small creek	5	Forbes Island	2 plain				Henefield & White 1986
Howard Creek Mound	8GU41	17	225 E Howard Creek	13	Forbes Island	several plain?				Henefield & White 1986
Roy Whitfield	8GU52	17	60 E Howard Creek	6	Forbes Island	some plain?				Henefield & White 1986

Table 1, continued. Late Archaic Sites in the Apalachicola-Lower Chattahoochee-Lower Flint River Valley System, Northwest Florida, Southwest Georgia, Southeast Alabama.

Site Name	*Site No.*	*R* Mi*	*Nearest Water (Dist [m], Direction)*	*El (Ft)*	*USGS Quad***	*Fiber-t Sherds*	*Clay Ball*	*Micro-tool*	*Other*	*Reference*
USFS #85-15 APA	8FR784	18	0 N Fort Gadsden Creek	5	Fort Gadsden	174 plain				Kimbrough 1990
USFS #82-24 APA	8FR372	23	0 W Owl Creek	7	Forbes Island	plain?				FMSF
USFS #83-9 Wakulla	8LI132	26	0 N small tributary	10	Kennedy Creek	plain?				FMSF
Black Bear Site	8GU62	44	60 SW small tributary	25	Dead Lake	1 plain				White & Trauner 1987
Neal Ramp ★	8CA195	58	0 W Chipola R.	10	Frink	1 plain				White 1999
Duncan McMillan	8CA193	58	0 E Iamonia Lake	27	Estiffanulga	13 plain				White 1999
Memery Island	8LI69	61	330 E Sand Branch	70	Woods	plain?				Kimbrough 1990
Brantley Mill	8LI197	66	30 W Outside Lake	50	Estiffanulga	1 plain				Henefield & White 1986
Strickland's Borrow Pits	8LI67	67	0 small pond	29	Bristol	plain?				FMSF
Twin Ponds	8LI182	75	0 Twin Ponds	105	Bristol	1 plain				Henefield & White 1986
Summers Site	8LI211	76	180 SE small pond	140	Bristol	1 simple-st				Henefield & White 1986
Garden of Eden	8LI56	83	60 SE Kelley Branch	150	Bristol	plain?				FMSF
Bateman Howell	8CA121	87	120 W Chipola River	40	Clarksville	many plain				White & Trauner 1987
Redd's Landing	8CA12	89	30 E Apalachicola River	50	Rock Bluff	2 Stallings Punctate				USF lab
Graves Creek	8CA34	89	30 N Graves Creek	50	Altha East	1 plain				USF lab
Four Branches	8LI15	90	60 S Ferrell Branch	80	Rock Bluff	4 plain				Jones 1974
Hill 226	8LI44	92	300 NE Apalachicola R	210	Rock Bluff	plain?				FMSF
Hill 191	8LI51	96	240 E small creek	180	Rock Bluff	plain?				FMSF
[no name]	8GD19	99	120 W Flat Creek	180	Sycamore, Chattahoochee	plain?				FMSF
Sassafras	8GD12	100	300 E Crooked Creek	200	Sneads	17 plain			steatite frags (3)	Scarry 1975
Sycamore	8GD13	100	570 W Apalachicola R	200	Sneads	146 plain, 5 Stallings Punctate		1	1 steatite sherd	Milanich 1974
Chattahoochee River 1	8JA8 (J-5)	108	0 E Chattahoochee R	30	Chattahoochee	185 plain, 1 incised?		poss 1	7 steatite sherds	Bullen 1958
Bridge Creek 1	8JA100	109	60 NW Bridge Creek	90	Oakdale	plain?				FMSF
Tan Vat (J-18)	8JA20	110	0 E pond, old meander	50	Sneads	8 plain				Bullen 1958
J-X Field	8JA62	110	0 E old meander	50	Sneads	3 plain				Bullen 1958
Three Rivers State Park (J-37)	8JA39	111	100 E old meander	70	Sneads	2 plain			1 steatite sherd	White 1981
Whaley's Mill	9SE10	112	0 S Flint R	55	Reynoldsville, GA	plain?				White 1981
West Ridge	8JA16	113	60 SE Bonnet Pond Slough	80	Fairchild	1 plain				White 1981
Bird Field	9SE13	114	0 W Chattahoochee R	80	Fairchild	plain				White 1981
KMCC's First Point	8JA408	114	840 NW Merritts Millpond	130	Marianna	plain?				FMSF

Table 1, continued. Late Archaic Sites in the Apalachicola-Lower Chattahoochee-Lower Flint River Valley System, Northwest Florida, Southwest Georgia, Southeast Alabama.

Site Name	*Site No.*	*R* Mi*	*Nearest Water (Dist [m], Direction)*	*El (Ft)*	*USGS Quad***	*Fiber-t Sherds*	*Clay Ball*	*Micro-tool*	*Other*	*Reference*
[no name]	8JA92	117	600 W Muddy Branch	100	Marianna	plain?				FMSF
Fort Scott	9DR8	117	0 S Flint R	80	Reynoldsville, GA	1 plain				White 1981
W of White Springs	9DR6	118	0? S Flint R.	70		plain				White 1981:49
Waddell's Mill Pond	8JA65	122	30 S Waddell's Mill Pond	100	Cottondale East	some plain			4 steatite sherds	Yates 2000, FMSF
Hays Branch 3	8JA135	122	60 NW Chipola River	100	Cottondale East	plain?				FMSF
Hays Spring Run Deptford	8JA1482	122	180 N Hays Spring Run	100	Sills	plain?				FMSF
15 Mile	9DR129	122	0 S Flint R	80	Faceville, GA	4 plain				White 1981
Butler's Ferry South ★	9SE87	125	300 W Chattahoochee R.	90	Fairchild	1 plain				White 1981
Munnerlyn's Landing Mound	9DR2	125	0 W Flint R.	80	Faceville, GA	1 plain				White 1981
Lambert's Island	9DR13	127	0 W Flint R	80	Faceville, GA	plain?				White 1981
Yates Spring	9DR20	127	0 W Spring Creek	80	Brinson, GA	plain?				White 1981:55
[no name]	8JA183	128	0 Daniel Springs	100	Sills	plain?				FMSF
Curtis Lee 2	8JA411	128	540 E Chattahoochee R	90	Steam Mill	1 plain				USF lab
Chason's Blue Springs	9DR3	131	0 W Flint R	80	Fowlstown, GA	plain				White 1981
Neal Site	8JA44	131	30 E Chattahoochee R.	100	Bascom	1 plain				Bullen 1958
M. E. King	1HO65	138	0 E Chattahoochee R.	100	Saffold, AL	1 plain				Belovich et al. 1982
[no name]	9ER141	141	0 W Chattahoochee R.	90	Saffold, AL	1 plain				Belovich et al. 1982
Tonge Factory	9DR16	142	0 W Flint R	90	Bainbridge	many lg plain				White 1981:53
[no name]	9ER140	142	0 W Chattahoochee R.	100	Saffold, AL	3 plain (2 rims)				Belovich et al. 1982
Bull Pen	1HO22	154	0 N Mounde Branch, 0 E Chattahoochee R.	110	Columbia, AL	Stallings Punctate			2 steatite sherds	Belovich et al. 1982
Seaborn Mound	1HO27	155	0 E Chattahoochee R.	110	Columbia, AL	plain?				Belovich et al. 1982
Abbie Creek Park	1HE8	166	0 N Abbie Creek, Chattahoochee R.	120	Columbia NE, AL	1 plain				Belovich et al. 1982
[no name]	1HE17	174	0 E Chattahoochee R.	130	Fort Gaines, GA	3 plain				Belovich et al. 1982

* River (or navigation) mile given as a general measure of S-->N and coastal-->inland location; mile 0 is at bridge over river mouth; negative numbers are on barrier island. For sites away from riverbank, mile is taken due E or W to river.
** All quad maps are Florida unless indicated
★ Probable single component sites
? uncertain data

plowed field, since there is little agriculture in the lower portion of the valley. Here on the southwest side the swamps were drained and canalized (accounting for the straight and right-angled waterways on the lower left portion of the map) for large agribusiness concerns. Much of this area has now been acquired by the State of Florida, whose survey archaeologists located the site, but found only later materials (Memory et al.1998). A later visit by USF archaeologists after more plowing and road grading turned up 3 fiber-tempered sherds from this site. Its great distance from the main river suggests radical landscape change over several millennia.

One Late Archaic site located some 108 river miles inland near the forks of the Chattahoochee-Flint-Apalachicola has produced subsistence data, possibly because of better preservation due to the presence of lenses of freshwater mussel shells that alleviated soil acidity. Before Lake Seminole was built, Ripley Bullen conducted large-scale excavations at Chattahoochee River 1, better known as J-5, though the state's renumbering system has now assigned it 8JA8. He opened some 300 square feet of his Zone 9, the pre-Deptford deposits, and recovered fiber-tempered pottery associated with terrestrial species such as nuts, deer, opossum, and lynx (bobcat?), but also aquatic animals including 7 mussel species, shellfish, turtles, beaver, and muskrat (Bullen 1958; the site is now underwater in the reservoir; the great depth of the deposits, well over 2 meters, under later components of the site, demonstrate the reasons for the difficulty of finding inland Late Archaic).

Though there is not yet sufficient information to offer major support for it, my hypothesis is that Late Archaic populations, from the coast all the way far inland, enjoyed a life based to a large extent on resources from the bountiful aquatic environments of this region. Such resources, plants and animals alike, were probably much easier to obtain than terrestrial species. People of all ages can harvest most of them, and often travel and sit in the boat to get them, as opposed to moving fast and long distances by foot with dangerous weapons for deer hunting, or carrying home heavy groceries afterwards. We underestimate the importance of obtaining aquatic resources also because artifacts such as nets, lines, woven bags, and canoes are not preserved (Kehoe 1990). Walker (2000) has noted how archaeological reconstructions continue to emphasize making a living by hunting terrestrial animals, even at coastal sites where the faunal assemblages obviously point to aquatic subsistence. I think even in environments far from coasts aquatic resources probably made up far more of the subsistence base than we ever imagine. Rising sea levels probably backed up the river and tributary streams, providing more surface water and expanding such environments.

As for seasonality, though there is no evidence for it as yet, even from extensively tested shell middens, it was probably a structuring principle of the Late Archaic adaptation, as it still is today (but to a far lesser extent) in this valley. Beyond the basic seasonal availability of many animal and plant species, there are various aspects of weather. Unlike in peninsular Florida, the rainy season in the panhandle and in south Georgia and Alabama is winter. By late winter not only rain but snowmelt farther north have swelled the lower Chattahoochee-Apalachicola enough so that it regularly rises up over its banks, as do smaller tributaries. People could still live there if they had stilt houses rising above the water, leaving the canoe tied up underneath and fishing out the front door. But obtaining plants, firewood, deer, and other resources may have required movement upland, if not just to stay dry.

On the coast additional seasonal phenomena would have contributed to the need to stay mobile with the seasons. Besides the rising winter waters, more spread out in the lower delta so perhaps less threatening to the household, there is hurricane season every summer and fall, when living on the shore, any shore, is not a good idea. Today we arrogantly establish permanent homes on the shores of bays and barrier islands (then use everyone's tax dollars to rebuild them when they get blown away!), so we may be less able to recognize the need for seasonal movement. A good-sized hurricane may remove a chunk of ground from one shoreline and deposit it somewhere else. National Oceanic and Atmospheric Administration data (NOAA 2003) indicate nearly 1.5 hurricanes or tropical storms per year affecting the Apalachicola Valley area (13 in the last 9 years, most of which I have witnessed). Winter flooding or storm action at any other time of year may shift stream flow to inundate one lowland and dry out another. The constant fluvial and shoreline shifting in the enormously dynamic environment of the coastal and estuarine wetlands probably meant that human populations would remain seasonal throughout prehistory (and much of historic time, until the late twentieth century). The summer rains (lesser than in winter but still considerable) that bring clouds of insects or the varying availability of some species by season may have contributed to seasonal mobility. While inland peoples developed settled agricultural village in the last millennium before contact, coastal fishers may have continued moving around in smaller groups, taking advautage of a way of life that was probably far less work than farming. Historic accounts suggest this continued well into the eighteenth century, when European shipwreck victims on the eastern Apalachicola barrier islands encountered a small Indian family temporarily camped to fish (Fabel 1990). Though the richness of the ecosystem may have favored year-round settlement, such as is seen in south Florida or northern Louisiana during the Late Archaic (e.g., Russo 1994a, 1994b; Saunders 1997), it seems unlikely especially in the region of constantly changing landforms that is the Apalachicola delta. (Even the cases in Louisiana and south Florida may not indicate permanent habitation but only seasonal occupation during all seasons over long time stretches).

Late Archaic Society, Networks, and Material Culture

Reconstruction of Late Archaic social systems is far more difficult than understanding subsistence, but the hypothesized necessary seasonal mobility may have worked against the development of larger, more sedentary, more complex social groups (though complexity is not necessarily associated with

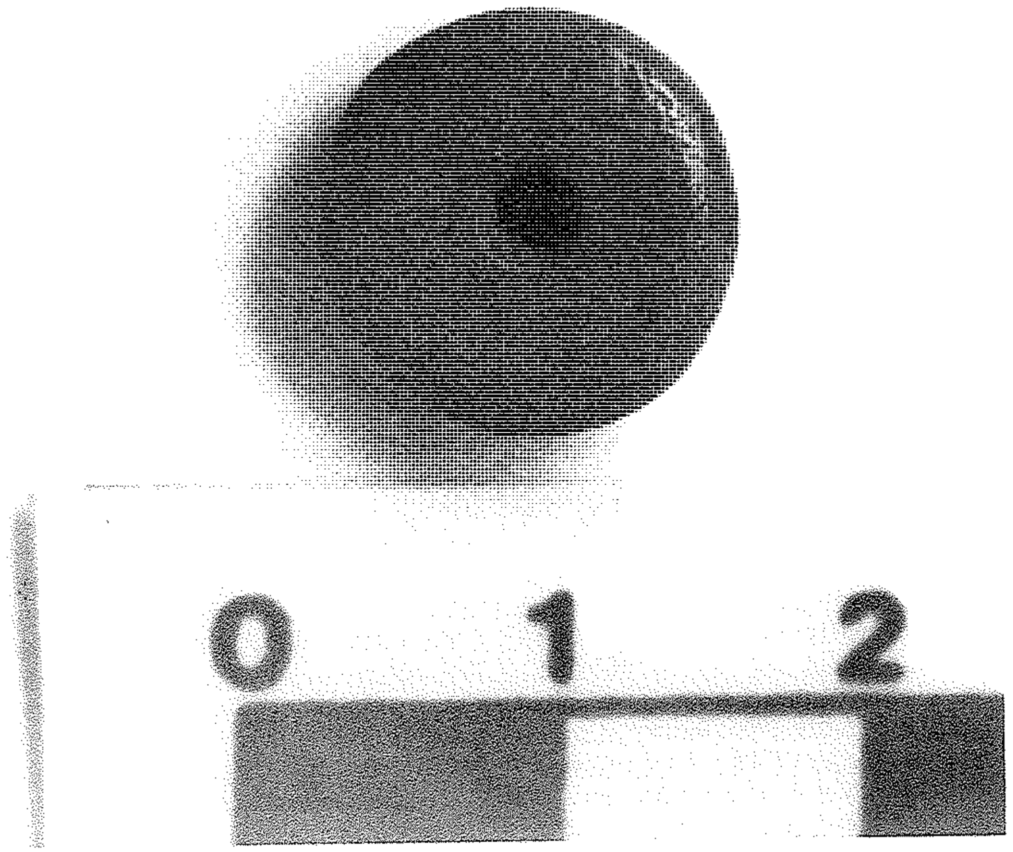


Figure 2. Poverty Point-type red jasper bead from St. Vincent Island.

sedentism). As documented in peninsular Florida and elsewhere in the Southeast, such as at Poverty Point and Watson Brake in northeast Louisiana (Gibson 2000; Russo 1994a, b; Saunders 1997), Late and even Middle Archaic people were building mounds and living year round in some probably particularly rich environments. Whether mound building requires social complexity and/or sedentism is a separate issue; it could just as easily have been a utilitarian response to wetland living (White n.d.). So far there is no trace of deliberate Archaic mound building in the Apalachicola-lower Chattahoochee Valley.

Likewise, there is very little information relating to social aspects of Late Archaic life here as well. Three single human burials are known in coastal shell middens. At Sam's Cutoff (8FR54) and Yellow Houseboat (8GU55) shell middens they were flexed, without grave goods, and stuck not very deeply into the top of the shell (White 1994a:88-114; White 1994b, 2003). Jones (1993) recovered a burial at Porter's Bar (8FR1), a coastal midden, associated with clay balls and microtools, that appears similar.

Beyond the individual burial or site, we can discuss socioeconomic interaction at the regional level based on specific artifacts besides fiber-tempered pottery that are diagnostic of the Late Archaic. The material culture of at least 9 shell middens in the lower portion of the valley is consistent with the range encompassed by the general Poverty Point Complex first defined in Louisiana and recognized all along the northern Gulf Coast, where it continues to be investigated (Broyles and Webb 1970; Byrd 1991; Gibson 2000; Webb 1968,1977; Webb and Gibson 1981). In Florida this material was long ago named the Elliott's Point Complex by William Lazarus, the separate name based apparently on its existence inside the modern Florida state line (Lazarus 1958, Thomas and Campbell 1991). Jones (1993) identified some 90 sites with Elliott's Point components across the Florida panhandle. The clay balls or other baked clay Poverty Point-type "objects" and chert microtools clearly relate the Apalachicola sites with other Elliott's Point/Poverty Point adaptations westward across the Gulf Coast and up the Mississippi Valley. But there is no typical Poverty Point lapidary work or other fancy items, with one exception: a reddish jasper disc bead (Figure 2) found by a collector at one of the sites on the bayshore of St. Vincent Island. This collector is familiar with Poverty Point artifacts, and also obtained from another St. Vincent Island site an irregularly-shaped, possible jasper pendant that also may be of Poverty Point affiliation (the latter artifact is not included in Table 1 because it does not look as certain as the bead). Both these items were found on the surface of multicomponent shell middens.

Some clay objects from the lower Apalachicola sites resemble classic Poverty Point clay balls (or PPOs, Poverty Point Objects; Gibson 2000); they are known so far from only

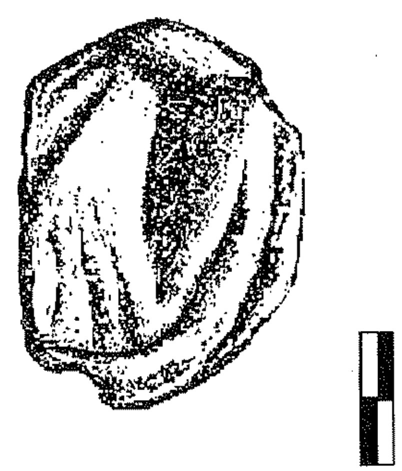


Figure 3. Poverty Point-type clay object, grooved, melon-shaped variety, from Clark Creek shell mound, 8Gu60 (drawing by M. Fitts).

6 sites (Table 1). Figure 3 shows the nicest-looking one, a grooved melon-shaped ball from Clark Creek shell mound (photograph published in White 1994a:135). Many more sites have large to small irregular chunks of fired clay that possibly served the same purpose, which has been suggested as dry-roasting various foods (Hunter 1975; Small 1966), steaming, or boiling (McGee 1995; Wheeler and McGee 1994). I think clay objects in Poverty Point-related sites throughout the Southeast probably also served as toys. Many have what appear to be small fingerprints, and wet clay is a fun and safe medium with which to keep children occupied and helping with domestic chores, away from fire and sharp knives. If some kids could only slop around the wet clay into irregular chunks, it was still fun and then it was time to use them for dinner; they work just as well as sculpted balls for retaining heat. (McGee [1995] determined, however, that different shapes had different thermal properties and may have had functional differences).

Chert microtools, also mostly from coastal sites, include various tiny scrapers, needles, and classic Jaketown perforators (White 1994a, 2003; White and Estabrook 1994) similar to those in the Mississippi Valley. Some of these are incredibly tiny, less than a centimeter long, and at least two of clear quartz are known (White and Estabrook 1994: 65). I have already noted my best hypothesis for function of these artifacts as woodworking tools, based on the availability of wood in the forest and utility of wooden artifacts in watery environments. There also is no reason why these, too, could not be toys, or smaller versions of parents' tools. Not only are they small and possibly better suited for tiny hands, but also they are not the sharp blades and knives that would be more dangerous for kids. They have scraping, engraving, and chiseling edges, for the most part. Much of children's play consists of imitating adult jobs. Perhaps Late Archaic people were bringing children along in daily resource procurement trips. Aquatic environments would be arguably safer and easier for kids to help in, whether in grabbing oysters, holding nets, or sitting safely in the boat, as opposed to deer-hunting trips, which would require quiet, stillness, sharp weapons, and stealth, all difficult to have with the kids along. (Of course there are large political as well as social implications in hypothesizing the Late Archaic as an early child-friendly society in Florida, but it is worth thinking about).

Lithic remains for Apalachicola-lower Chattahoochee Late Archaic sites other than microtools and associated microcores and debitage are poorly known. Bullen's J-5 excavations recovered several stemmed points and scrapers and a chipped stone adze. From the Duncan McMillan site (8CA193) in the middle Apalachicola valley, a corner-notched/stemmed point that remotely resembles a Hamilton or Leon (Bullen 1975:12; Cambron and Hulse 1969:51) was recovered with fiber-tempered sherds (White 1999:36, 65).

Steatite or soapstone vessel sherds are known from a few sites from the coast all the way inland. These are typically of large heavy vessels, perhaps 20-30 lbs. (Yates 2000:88), sometimes with a notched or ticked lip and external striations from manufacture. The soft, greenish-gray, sometimes glittery steatite had to have come from the north/west central Georgia or western North Carolina mountains, and would have been easily transportable downriver. The specimens from J-5 (JA8) were traced to Virginia, some 1000 km distant (Holland et al.1981:204). Yates's (2000:117) study of steatite in Florida suggests the Apalachicola-Chattahoochee system was a major pipeline for distribution of stone vessels from the interior to the coast and westward perhaps as far as Louisiana. Though the vessels were big and heavy, we now realize that they could still be part of the equipment of mobile fisher-hunter-gatherers, especially if they were going places by water. We do not know, however, if they are exactly contemporaneous with the earliest fiber-tempered pottery or later. The same is true of a sandstone piece recovered from the surface of Thank-you-ma'am Creek shell mound (8FR755) which appears to be a sherd of an open bowl that also may be Late Archaic.

Other hints at Late Archaic material culture are few. At least one engraved bone pin has come from a shell midden (Van Horn Creek), possibly from a preceramic level (White 1994a:46). A clay figurine fragment (or adorno) from Clark Creek shell mound, 8GU60, is reminiscent of Poverty Point figurines. It is a pointed human head with slit eyes (White 1994a:135). It was a surface find, however, and the site has a large Early Woodland component as well, though other Late Archaic materials are on the surface.

In sum, the Poverty Point-type clay balls, microtools, and occasional additional items suggest connections with similar adaptations along the Gulf Coast and up the Mississippi Valley, mostly exchange of ideas. The similarities may relate to similar site functions and subsistence activities in these coastal wetlands. While there might be some specific economic or ideological connection as well, it is far more difficult to see. There also are less specific connections with northeastern Florida and Atlantic coastal sites where such items as clay balls have been recovered (e.g., Jahn and Bullen 1978; Wheeler and McGee 1994).

Fiber-tempered Ceramics

By default, fiber-tempered ceramics, usually plain but sometimes simple-stamped, are the usual indicator of Late Archaic temporal assignment in the Apalachicola-lower Chattahoochee Valley, though other, possibly less certain diagnostics can be the clay balls and microtools, which may have originated earlier than pottery. Thus, the list in Table 1 may be biased toward sites later in the sequence, because so little is known about preceramic Late Archaic. Considering two of the very few sites with dates, fiber-tempered ceramics were extremely rare at Sam's Cutoff, arguably an earlier occupation, and more numerous in apparently later Late Archaic deposits at Van Horn Creek (see discussion of dates below). The limited data so far seem to indicate that preceramic Late Archaic looks exactly like what came later, except without the ceramics. Lithic and faunal remains do not show any change when ceramics are introduced, based on the small amount excavated below ceramic levels at coastal shell middens (White 1994a, 1994b, 2003). Life probably changed little at first with the introduction of ceramics except that there was something else to carry and break.

The role of fiber-tempered ceramics in Late Archaic and Poverty Point-related adaptations is still the subject of debate. A study on the Georgia-Carolina Atlantic coast documents their distribution in relation to the presence of soapstone. Slabs of soapstone used in cooking are hypothesized to have been displaced by the adoption of fired clay cooking pots; soapstone bowls appear later (Sassaman 1993). In the Apalachicola-Chattahoochee valley there are some steatite vessel sherds (but no cooking slabs), and so far they seem to be contemporaneous with the earliest ceramics. Fiber-tempered pottery emerged nearly 4000 years ago, developed slowly, and persisted well over a millennium.

The ultimate origin of fired earthenwares in the southeastern U.S. is far from being determined. There has been much confusion in the naming of these earliest ceramics in northwest Florida. The usually plain, thick, fiber-tempered pottery originally called St. Simons Plain or Orange ware (Bullen 1958, Willey 1949) was relabeled as "Norwood" by Phelps in 1965 for reasons that are unclear, but apparently unrelated to the amount of sand or other temper included with the fiber. There were two Norwood types, plain and simple-stamped, with some other provisional ones that were apparently later abandoned. Then the types were redefined by Bullen (1972:19) as containing both sand and fiber temper and occurring stratigraphically on the top of or above Orange period deposits. Norwood became a phase, implying but never manifesting other characteristic archaeological attributes. Orange was forgotten and all northwest Florida fiber-tempered sherds came to be called Norwood. The Apalachicola and lower Chattahoochee Valley as far north as Alabama was considered to have only Norwood Plain, according to Phelps's (1965:65-66) map, while in Alabama Huscher (1959) noted Stallings Island Punctate as well as Plain on the lower Chattahoochee.

Norwood is the most poorly defined of several taxa of fiber-tempered ceramics, yet the term has been used mostly without question for decades. Shannon (1987: 106, 156; 1986; 1979:30-43) suggested that all the fiber-tempered ceramic types in the Southeast are products of local inspection instead of the understanding of a whole tradition. He added that the concept of Norwood is especially in need of examination, since the pottery is indistinguishable from other fiber-tempered types in the South. Shannon noted that simple-stamped fiber-tempered sherds and semi-fiber-tempered sherds (sand as well as plant fiber), even if they are demonstrated to be more characteristic of what Norwood is supposed to be, have been found elsewhere in Florida and Georgia too, along Atlantic coastal drainages. His attribute analysis of sherds from all the major fiber-tempered ceramic series shows they all either overlap considerably or are indistinguishable from each other (Shannon 1986). His map (1987:9) of distributions of the different fiber-tempered types across the Southeast clearly shows more about which archaeologist was working/publishing where and when than about prehistoric cultural groups.

Sassaman's (1993:17, and book cover) map of major fiber-tempered pottery traditions has a gap for most of Florida, and for the entire Gulf Coast. His later summary (Sassaman 2002:400, 405-06) maps all the Florida Gulf Coast and does suggest that Norwood is a "catchall type" for the Florida panhandle area. Many still see the earliest ceramics in northwest Florida as "moving in" after having been developed as major traditions elsewhere. But the major traditions are often just those that have been described first and studied more. We cannot yet be certain that fiber-tempered ceramics in northwest Florida are necessarily later than they are elsewhere, and the region should not automatically be considered just a backwater area receiving cultural influences later than, say, the Mississippi or Savannah River valleys until there are sufficient data to demonstrate such relationships.

To examine the utility of the concept of the Norwood ceramic phase, attributes of fiber-tempered ceramic sherds were examined in microscopic detail in the University of South Florida archaeology lab. For all 23 Late Archaic sites investigated by the USF program (most of those in the Apalachicola valley on Table I), all 198 sherds available in the lab through 1999 were classified by temper, surface treatment, metrics, and descriptive data (Appendix). The results show little distinctiveness but, it is hoped, some useful information for future comparative work.

Smoothness or roughness of sherd surface varies enormously (though much of this is dependent upon amount of erosion of these ancient artifacts), as does amount of fiber included in the paste. This fiber is identified as Spanish moss (*Tillandsia usneoides*); sometimes (in at least 8 sherds) enough of it remains intact, unburned and undecayed in the sherd to allow for AMS radiocarbon dating (White and Estabrook 1994:69).

The sherds were inspected for inclusion of sand grains in the paste; grains were counted and averaged per cm as measured under the microscope. All but 7 sherds (or 96.5%) have at least 2 or 3 sand grains per cm^2, and a few of these have over 20. This is not really distinctive, as most fiber-tempered types have some sand (Shannon 1986, 1987), and were often originally defined that way. For example, Wheeler Plain in Alabama was defined as occasionally containing considerable amounts of sand in the paste (Heimlich 1952:8), and Milanich (1994:97) notes that some Orange fiber-tempered pottery also has sand. A few sherds in the lower and middle valley have reddish grog in the paste as well. Many sherds contain flecks of mica, which is naturally characteristic of clays in this valley (as I have seen during many excavations; for that matter, the sand temper may be naturally occurring in the clay too.) Sherd color varies from orange to tan to black, probably dependent upon the vagaries of microconditions within the pit kiln, oxidizing or reducing conditions during firing possibly depending upon how much burning brush was on top. Unless indicated, sherds are a dull tan color, within the light brown range (Munsell Color 10YR 7/3; some two dozen have black surfaces that may indicate soot deposits, which could also be dated). Sherd thickness (averaged from 2 or more measurements) generally ranges from about 0.5 to 1.5 cm, but can go as great as over 3 cm, as at the Curtis Lee 2 site (8JA411) on the lower Chattahoochee, the farthest upriver (128 miles from the Gulf) from which we had a sample. This sherd also had some probable grit in the temper (or perhaps they were just very large sand grains?), as does another from Black Bear (8GU62) site in the upper part of the lower valley.

Though no complete vessels from the region have been documented, the sherd measurements show the fiber-tempered pots were very thick-walled and hand-built, with straight vertical sides and flat bottoms. One of Bullen's (1958) sherds from J-5 (JA8) from a flat-bottomed vessel had a "heel" or flat, projecting flange adjoining the base. A half-vessel recovered from the Sopchoppy River Valley to the east of the Apalachicola indicates that a complete pot would have been large and weighed over 10 pounds (Kimbrough 1999).

Simple-stamping, covering the surface with parallel straight lines impressed with what appears to have been a straight rod, may relate to vessel function, perhaps increasing surface area for heating or cooling. This surface treatment has an unusual distribution, mostly on the coast/estuary/lower river swamp at selected sites. Of the 198 sherds examined, only 30 (15%) are simple-stamped, and these are from only four sites. In fact, 23 are from one coastal shell midden (Depot Creek, 8GU56), and are the only fiber-tempered sherds yet recovered there (in other words, there are no plain-surfaced sherds from this site). A single simple-stamped sherd is from another nearby coastal shell midden (Clark Creek, 8GU60), which also produced 48 plain fiber-tempered sherds. On this one sherd the simple parallel lines cross in areas of overstamping. Another 5 simple-stamped sherds came from Thank-you-ma'am Creek shell mound (FR755), which also produced 10 plain fiber-tempered sherds. The only other simple-stamped sherd is from the surface of the Summers site (8LI211), 76 miles upriver. Other simple-stamped fiber-tempered sherds (not examined in the present work) were recovered from barrier island sites out in the Gulf (Miller et al. 1980). Simple stamping is thus apparently mostly a coastal phenomenon, and is seen farther east and west along the Gulf as well (e.g., Kimbrough 1999). This distribution is not the same as originally hypothesized by Phelps (1965:Figure 1) in defining the Norwood phase; his map shows simple-stamped occurring far inland north of Tallahassee, to southwest Georgia, and down the Gulf Coast to nearly the Tampa Bay area, but not along the Apalachicola or Lake Wimico area at all.

While it has been thought that fiber-tempered pottery with simple-stamped surfaces may be later than that with plain surfaces, since it would be transitional to the sand-tempered simple-stamped wares of Early Woodland (Deptford) times, this is not supported by the data. Dates on Table 2 show that simple-stamped is at least contemporaneous with, if not earlier than plain-surfaced fiber-tempered wares. Similarly, there are no data indicating that sherds with sand in the paste are stratigraphically later, attractive as it may be to see adding sand as a logical transition to Early Woodland types, as hypothesized by Phelps (1965:66).

Very few sherds of fiber-tempered pottery known from the entire Apalachicola valley have incised and/or punctated surface treatment. Milanich (1974) noted in his ceramic tables that 5 of the 151 fiber-tempered sherds recovered from the mostly Late Woodland Sycamore site (8GD13), in the upper Apalachicola (now under Interstate 10), were incised and/or punctated (two are illustrated), and he called them Stallings Island-like. I saw one similar sherd in a private collection (site unknown, but from the Apalachicola Valley), and two others were donated to the USF lab in a collection from Redd's Landing, 8CA12, in the middle valley (I brought them to a SEAC meeting and consulted several Carolina archaeologists, who agreed they were Stallings Island). Finally, of the total 82 fiber-tempered sherds (weighing 533 g) excavated from Van Horn Creek shell mound, a single one (from TU6, L1) has some probable idiosyncratic incision/punctation or stamping, but it does not look like Stallings Island, as described in the sites mentioned above, and is probably a production flaw.

An easy interpretation is that these 8 Stallings Island sherds, among the estimated 800 known fiber-tempered sherds in the whole Apalachicola Valley, were brought in, not made there. This suggestion is supported by the few findings of what appear to be Stallings Island Punctate farther upstream (154 river miles), on the lower Chattahoochee in southeast Alabama, where Huscher (1959:15-16) excavated plain and incised fiber-tempered sherds from the Bull Pen site (1HO22). That these few Stallings Island sherds occur in the middle and upper Apalachicola Valley is interesting especially because the coastal sites have produced far more Late Archaic evidence, since they have been the most extensively tested. Clearly punctation and incision are not standard attributes in this valley. Atlantic coastal types may have actually "moved into" the valley from the north, where interaction with the peoples making Stallings Island pottery would have been easier and closer. The distribution and flow pattern of water across the landscape was probably the major structuring principle for

Late Archaic life, from subsistence to long distance socioeconomic interaction.

Meanwhile, given the lack of distinctive ceramic characteristics, not to mention any other evidence for a specific and distinguishable archaeological adaptation worthy of a phase name, I believe it is time to throw out the meaningless name of Norwood for sites and pottery in northwest Florida and in the Georgia-Alabama border region. The only distinctive attribute of fiber-tempered ceramics here is simple-stamping, and it occurs nearly always on the coast and only on a minority of sherds. It is better to use generic type names such as fiber-tempered plain or fiber-tempered simple-stamped, awkward as they may be (or even to go back to the original name Orange, as per scientific protocol), until there is justification for a specific and distinctive adaptation or even a ceramic series that merits its own phase name (there are too many phases all over the place anyway, established based on one site or one ceramic type and not at all connected with what the term *phase* was originally supposed to signify, which is something really new or different going on from what came before and/or after, or from what is adjacent in space).

Dating the Late Archaic

Radiocarbon dates from Apalachicola Valley Late Archaic sites are presented in Table 2. Van Horn Creek and Sam's Cutoff shell mounds, along with a couple others from the lower valley, are the first tied with the Elliott's Point/Poverty Point-type complex to be securely dated. Phelps (1966) described the Late Archaic component of the Tucker site, a coastal Middle Woodland burial mound complex in the next river drainage some 80 km to the east, but still on the edge of the Apalachicola delta. He recovered clay balls and fiber-tempered (plain?) sherds washing out of the site, and ground up the sherds to get a date on the fiber of 2962±120 years (now calibrated at 2 sigma to between 1287-1055 B.C.), which he regarded as rather late. Bullen's date from J-5 is also late (recalibrated to between 2027-806 B.C.) but his Late Archaic Zone 9 also had a handful of chalky-paste St. John's sherds that he thought derived from peninsular Florida near the time of the latest fiber-tempered wares. This could also be later materials mixed in with earlier sherds through reworking of alluvial deposits, though he noted that all of Zone 9 was about a meter below the Deptford stratum.

The range of dates (after calibration) for the whole valley, from slightly later than 1000 B.C. to perhaps 2500 B.C. or nearly 3000 B.C., indicates a long tradition of manufacturing fiber-tempered pottery. Dates for preceramic Late Archaic occupations are not yet known, though the early one from Clark Creek may be preceramic as it is from charcoal recovered 20 cm below the ceramics. One avenue of future research is to get more dates on the intact fiber in the sherds themselves (but those AMS dates are so expensive!).

Summary

Late Archaic in the lower Apalachicola Valley shows clear socioeconomic connections with contemporaneous adaptations three to four millennia ago across the northern Gulf Coast. This could have been in the form of long distance exchange, but other systems are more likely, and ideas move faster and more easily than artifacts. Similarities in lithic industries and clay ball cooking were probably those of general domestic, utilitarian tasks done in a similar way by people linked in, domino fashion from region to region, and by similar site functions in the coastal and estuarine area. In other words, a functional explanation seems best at present, rather than a sharing of larger-scale social, economic, or even ideological systems. The single Poverty Point-type jasper bead is not enough to postulate more than a distant connection of peoples from here westward along the Gulf and up the Mississippi Valley.

Late Archaic populations inland upriver on the Apalachicola and lower Chattahoochee, exploiting perhaps more terrestrial environments, did not use some distinctive coastal artifacts such as clay balls/objects and microtools, but they shared the same basic plain fiber-tempered pottery (though apparently not the simple-stamped version), steatite (soapstone) bowls, and possibly other items, and probably utilized aquatic resources more than we think. The inland water sources are different, faster flowing streams. Comparison of specific aquatic species available/utilized in the coast-estuary-river mouth zone as opposed to the inland streams will be an avenue for further research. Coastal shell middens are usually more of oyster; shell middens nearer the freshwater estuarine/river swamp are usually of *Rangia* clam; and inland riverine Late Archaic sites usually do not have biotic remains preserved, though J-5 (8JA8) had river shellfish and other aquatic species.

The soapstone vessels and the few Stallings Island-type fiber-tempered sherds ended up in the valley from more northerly sources, from people coming down the river. The best socioeconomic connections during all of prehistory follow waterways, the fastest, most efficient way to go places. Similarly, I think the best way to make a living was by utilizing watery environments, where fishing, shellfishing, even obtaining terrestrial species, was easier. This purely functional explanation can be expanded if we begin to think about the potential sacredness of life-giving water and relate it to belief systems known from later ethnographic evidence.

As for social complexity, I have elaborated elsewhere (White n.d.) on the reasons for thinking that Late Archaic foragers maintained an egalitarian system, even, or especially, in such a rich environment. Those reasons range from the lack of any contrary evidence to a belief that social leveling mechanisms (the group keeping one person from becoming more important than the rest) would have been far more prevalent and adaptive in prehistory than we think. During the Late Archaic in this valley system there is also so far no evidence for year-round occupation of single sites or mound building. Perhaps the dynamism of the coastal and estuarine

Table 2. Radiocarbon Dates for Fiber-tempered Ceramics in the Apalachicola Valley, Northwest Florida.

Site	*No.*	*Location*	*Raw Date**	*Cal Date***	*Material Dated*	*Associated Ceramics*	*Other Materials Associated*	*Reference*	*Provenience, Comments*
Chatta-hoochee River #1	8Ja8 (J-5)	river bank mile 106	reported only as1200 BC ± 250	2027 - 806 B.C.	charcoal	f-t plain, St. John"s (mixed deposits?)	river mollusc & other faunal remains, nuts	Bullen 1958	Zone 9 midden, 25 cm thick, 2.3 m deep, 1 m below Deptford, 1.3 m above preceramic
Tucker***	8Fr4	coast	2962 ± 120	1287-1055 B.C.	fiber in ground sherds	f-temp	clay balls?	Phelps 1966	Middle Woodland burial mound complex also
Depot Cr shell mound	8Gu56	estuary	2970 ±80 Beta-26899	1410 - 935 B.C.	1g pine charcoal	21 f-t simple-st sherds (871g)	*Rangia* clam, freshwater fauna	White 1994a	TUC L7= -88 to 106cm, 15 cm below Deptford level
Clark Cr shell mound	8Gu60	estuary	3970 ± 160 Beta-31785	2900-1980 B.C.	.3g pine, hickory shell charcoal	4 f-t plain, 4 simple-st, and 1 sand-t plain above it	*Rangia* clam, fresh- and saltwater fauna	White 1994a	TUB L11= -165 to 173cm; 20 cm below the ceramics (preceramic Late Archaic?)
Van Horn Cr shell mound	8Fr744	estuary	3170 ±60 Beta-73523	1597-1314 B.C.	charcoal	f-t plain	oyster, mostly saltwater fauna	White 2003	TU3 L10= -144cm; 70 cm below mixed Woodland+f-t sherds
Van Horn Cr shell mound	8Fr744	estuary	3150 ±50 Beta-119067	1520 - 1313 B.C.	pine charcoal	f-t plain above it (see prev. row)	same fauna; engraved bone pin	White 2003	TU3 L11= ca. -150 cm, below water table
Sam's Cutoff shell mound	8Fr754	estuary	3720 ±60 Beta-68513	2292-1942 B.C.	Spanish moss in sherd	f-t plain only from site	2 microtools, salt- and freshwater fauna, oyster	White & Estabrook 1994	TU 1 L3 = -42 cm; only 2 sherds from whole site

* $^{13}C/^{12}C$ fractionation estimated
** calibrated with CALIB 4 (M. Stuiver and P.J. Reimer 2000, available online); ranges for 2 sigma, 95% probability
*** actually outside (40 mi /65 km east of) the Apalachicola drainage system, on the coast, but within the general delta formation

environments, and even the constant eastward migration of the river channel, from inland to coast, kept people happily moving around the landscape for many thousands of years until they decided to begin or enlarge some gardens and then to include more of that really productive crop known as maize.

Acknowledgments

An earlier version of many of the data in this paper was presented at the annual meeting of the Southeastern Archaeological Conference in 1999 in Pensacola; I thank archaeologists Phil Carr of the University of South Alabama and Jon Gibson of the University of Louisiana who invited me to participate in their SEAC symposium and their later workshop at Poverty Point. The USF summer field school students and my earlier crews who did survey on the Apalachicola-Chattahoochee River system put up with flood, storm, busted or temperamental equipment, and lots of misery to record data on Late Archaic and other sites. Much of this work was supported by grants from the Florida Department of State, Division of Historical Resources, to whom I remain continually grateful. USF student Kelly Driscoll efficiently compiled metric data on the fiber-tempered sherds. Finally, I owe enormous thanks for the field support and sharing of collections and site information over the years by the wonderful people of Decatur, Seminole, and Early counties, Georgia; Houston and Henry counties, Alabama; and Jackson, Gadsden, Calhoun, Liberty, Gulf, and Franklin counties, Florida.

References Cited

Belovich, Stephanie J., David S. Brose, Russell M. Weisman, and Nancy Marie White
1982 *Archaeological Survey at George W. Andrews Lake and Chattahoochee River, Alabama and Georgia.* Report to the U.S. Army Corps of Engineers, Mobile District. Cleveland Museum of Natural History Archaeological Research Report No. 37.

Braley, Chad O.
1983 *Archaeological Testing and Evaluation of the Paradise Point Site (8Fr91), St. Vincent National Wildlife Refuge, Franklin County, Florida.* Southeast Wildlife Services, Inc., Athens, Georgia.

Broyles, Bettye J. and Clarence H. Webb (editors)
1970 The Poverty Point Culture. *Southeastern Archaeological Conference Bulletin* No. 12, Morgantown.

Bullen, Ripley P.
1958 Six Sites Near the Chattahoochee River in the Jim Woodruff Reservoir Area, Florida. *River Basin Surveys Papers* No. 14:316-358. *Bureau of American Ethnology Bulletin* 169. Smithsonian Institution, Washington, D.C.

1972 The Orange Period of Peninsular Florida. In *Fiber-Tempered Pottery in the Southeastern United States*, edited by R. Bullen and J. Stoltman, pp. 9-33. *Florida Anthropological Society Publication* No. 16

1975 *A Guide to the Identification of Florida Projectile Points.* Kendall Books, Gainesville.

Byrd, Kathleen M. (editor)
1991 *The Poverty Point Culture: Local Manifestations, Subsistence Practices, and Trade Networks.* Geoscience and Man 29. Louisiana State University, Baton Rouge.

Cambron, James W., and David C. Hulse
1969 *Handbook of Alabama Archaeology. Part 1, Point Types.* Alabama Archaeological Society, Moundville, Alabama.

Donoghue, Joseph F.
1993 Late Wisconsin Holocene Depositional History, Northeastern Gulf of Mexico. *Marine Geology* 112:185-205

Donoghue, Joseph F., and Nancy Marie White
1994 Late Holocene Sea Level Change and Delta Migration, Apalachicola River Region, Florida. *Journal of Coastal Research* 11(3):651-663.

Fabel, Robin A. (translator and editor)
1990 *Shipwreck and Adventures of Monsieur Pierre Viaud [Naufrage et aventures de M. Pierre Viaud, natif de Bordeaux, Capitaine de Navire....* originally published 1768 by P. Viaud, France]. University of West Florida Press, Pensacola.

Gibson, Jon L.
2000 *The Ancient Mounds of Poverty* Point. University Press of Florida, Gainesville.

Heimlich, Marion Dunlevy
1952 *Guntersville Basin Pottery.* Geological Survey of Alabama Museum Paper 32.

Henefield, Susan M., and Nancy Marie White
1986 Archaeological Survey in the Middle and Lower Apalachicola Valley, Northwest Florida, 1985. Report to the Division of Archives, History and Records Management, Tallahassee.

Holland, C. G., S. E. Pennell, and R. O. Allen
1981 Geographical Distribution of Soapstone Artifacts from Twenty-one Aboriginal Quarries in the Eastern United States. *Archaeological Society of Virginia* 35 (4):200-208.

Hunter, Donald G.
1975 Functional Analyses of Poverty Point Clay Objects. *The Florida Anthropologist* 28:58-71.

Huscher, Harold A.
1959 Appraisal of the Archaeological Resources of the Columbia Dam and Lock Area, Chattahoochee River, Alabama and Georgia. *River Basin Surveys*, Smithsonian Institution, Washington, D.C.

Jahn, Otto L., and Ripley P. Bullen
1978 The Tick Island Site, St. Johns River, Florida. *Florida Anthropological Society Publication* No. 10.

Jones, B. Calvin
1993 The Late Archaic Elliott's Point Complex in Northwest Florida. Paper presented at the Florida Anthropological Society Meeting, Clearwater, May 1993.

Jones, Mary Katherine
1974 Archaeological Survey and Excavation in the Upper Sweetwater Creek Drainage of Liberty County, Florida. Unpublished M.A. Thesis, Department of Anthropology, Florida State University.

Kehoe, Alice B.
1990 Points and Lines. In *Powers of Observation: Alternative Views in Archaeology*, edited by S. Nelson and A. Kehoe, pp. 23-38. Archaeological Papers of the American Anthropological Association No. 2.

Kimbrough, Rhonda Majors
1990 Norwood Period Sites in the Apalachicola National Forest, Florida. A Predictive Model. M.A. Thesis, Department of Anthropology, Florida State University, Tallahassee.

1999 A Norwood Simple Stamped Vessel from the Apalachicola National Forest, Florida. Paper presented at the Florida Anthropological Society meeting, 24 April, Fort Walton Beach.

Lazarus, William C.
1958 A Poverty Point Complex in Florida. *The Florida Anthropologist* 11: 23-32.

Livingston, Robert J.
1984 *The Ecology of the Apalachicola Bay System: An Estuarine Profile.* Report to the Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. Department of Biological Science, Florida State University, Tallahassee.

McGee, Ray M.
1995 Fired-Clay Objects: Cooking Technology from the Florida Shell Mound Archaic at Groves Orange Midden (8-V)-2601), Florida. Unpublished M.A. Thesis, Department of Anthropology, University of Florida, Gainesville.

Memory, Melissa, Christine Newman, Jonathan Lammers, and William Stanton
1998 An Inventory and Assessment of Historical Resources within the Apalachicola River Wildlife and Environmental Area, Franklin and Gulf Counties, Florida. C.A.R.L. Archaeological Survey, Florida Division of Historical Resources, Tallahassee.

Milanich, Jerald T.
1974 Life in a 9th Century Indian Household: A Weeden Island Fall-Winter Site on the Upper Apalachicola River, Florida. *Bureau of Historic Sites and Properties Bulletin* No. 4:1-44. Florida Department of State, Tallahassee.

1994 *Archaeology of Precolumbian Florida.* University Press of Florida, Gainesville.

Milanich, Jerald T., and Charles H. Fairbanks
1980 Florida Archaeology. Academic Press, New York.

Miller, James J., John W. Griffin and Mildred L. Fryman
1980 Archaeological and Historical Survey of St. Vincent National Wildlife Refuge, Florida. Cultural Resource Management, Incorporated, Tallahassee.

NOAA
2003 Hurricane and tropical storm data. National Climatic Data Center, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Washington, D.C., online at http://www.ncdc.noaa.gov/oa/ncdc.html.

Parker, Brian Thomas
1994 Archaeological Investigations of the Thank You Ma'am Creek Site, Northwest Florida. Unpublished M.A. thesis, Department of Anthropology, University of South Florida, Tampa.

Phelps, David S.
1965 The Norwood Series of Fiber-tempered Ceramics. *Southeastern Archaeological Conference Bulletin* 2: 65-69.

1966 Early and Late Components of the Tucker Site. *The Florida Anthropologist* 19:11-38.

Russo, Michael
1994a A Brief Introduction to the Study of Archaic Mounds in the Southeast. *Southeastern Archaeology* 13:89-93.

1994b Why We Don't Believe in Archaic Ceremonial Mounds and Why We Should: The Case from Florida. *Southeastern Archaeology* 13:93-108.

Sassaman, Kenneth E.
2002 Woodland Ceramic Beginnings. In *The Woodland Southeast*, edited by D. Anderson and R. Mainfort, Jr., pp. 398-420. University of Alabama Press, Tuscaloosa.

1993 *Early Pottery in the Southeast, Tradition and Innovation in Cooking Technology.* University of Alabama Press, Tuscaloosa.

Scarry, John F.
1975 The Sassafras Site (8Gd12), Gadsden County, Florida. A Multicomponent Site on the Apalachicola River. Report to the Florida Division of Archives, History, and Records Management (now Division of Historical Resources), Tallahassee.

Saunders, Joe W., Rolfe D. Mandel, Roger T. Saucier, E. Thurman Allen, C.T. Hallmark, Jay K. Johnson, Edwin H. Jackson, Charles M. Allen, Gary L. Stringer, Douglas S. Frink, James K. Feathers, Stephen Williams, Kristen J. Gremillion, Malcolm F. Vidrine, and Reca Jones
1997 A Mound Complex in Louisiana at 5400-5000 Years Before the Present. *Science* 277:1796-99.

Shannon, George Ward, Jr.
1979 Ceramic Transitions on the Gulf Coastal Plain in the Early Centuries of the Christian Era. Unpublished M.A. thesis, Department of Anthropology, Florida Atlantic University, Boca Raton.

1986 The Southeastern Fiber-tempered Ceramic Tradition Reconsidered. In *Papers in Ceramic Analysis*, edited by P. Rice, pp. 47-80. *Ceramic Notes* No.3. Occasional Publications of the Ceramic Technology Laboratory, Florida State Museum (now Florida Museum of Natural History), Gainesville.

1987 A Reconsideration of Formative Cultural Development in the Southeastern United States. Ph.D. dissertation, Department of Anthropology, Michigan State University. University Microfilms International, Ann Arbor.

Small, James F.
1966 Additional Information on Poverty Point Baked Clay Objects. *The Florida Anthropologist* 19:65-76.

Thomas, Prentice M., and L. Janice Campbell
1991 The Elliott's Point Complex: New Data Regarding the Localized Poverty Point Expression on the Northwest Florida Gulf Coast, 200 B.C.-500 B.C. In *The Poverty Point Culture, Local Manifestations, Subsistence Practices, and Trade Networks*, edited by K. Byrd, pp.103-120. Geoscience and Man 29. Louisiana State University, Baton Rouge.

Walker, Karen J.
2000 The Material Culture of Precolumbian Fishing: Artifacts and Fish Remains from Coastal Southwest Florida. *Southeastern Archaeology* 19:24-45.

Webb, Clarence H.
1977 *The Poverty Point Culture*. Geoscience and Man 18. Louisiana State University, Baton Rouge.

1968 Extent and Content of Poverty Point Culture. *American Antiquity* 33:297-331.

Webb, Clarence H., and Jon L. Gibson
1991 Studies of the Microflint Industry at Poverty Point Site. *Geoscience and Man* 22:85-101. Louisiana State University, Baton Rouge.

Wheeler, Ryan J., and Ray M. McGee
1994 Technology of Mount Taylor Period Occupation, Groves' Orange Midden (8VO2601), Volusia County, Florida. *The Florida Anthropologist* 47: 350-379.

White, Nancy Marie
n.d. Late Archaic Fisher-foragers in the Apalachicola-lower Chattahoochee Valley, Northwest Florida-South Georgia/Alabama. In *Big Mounds, Big Power: The Rise of Cultural Complexity in the Southeast*, edited by P. Carr and J. Gibson. University of Alabama Press, Tuscaloosa. In press.

2003 Testing Partially Submerged Shell Middens in the Apalachicola Estuarine Wetlands, Franklin County, Florida. *The Florida Anthropologist* 56:15-45

1999 Apalachicola Valley Remote Areas Archaeological Survey, Northwest Florida, Volume 1: The Survey and Sites Located. Report to the Florida Division of Historical Resources, Tallahassee.

1996 Archaeological Investigations of the 1994 Record Flood Impacts in the Apalachicola Valley, Northwest Florida. Report to the Florida Division of Historical Resources, Tallahassee.

1995 Buried Under Alluvium. Paper presented at the annual meeting of the Florida Anthropological Society, Sebring.

1994a *Archaeological Investigations at Six Sites in the Apalachicola River Valley.* National Oceanic and Atmospheric Administration Technical Memorandum NOS SRD 26. Department of Commerce, Washington, D.C.

1994b Apalachicola Shell Mound Excavations. Report to the Division of Historical Resources, Florida Department of State, Tallahassee. Department of Anthropology, University of South Florida, Tampa.

1981 *Archaeological Survey at Lake Seminole, Jackson and Gadsden Counties, Florida, Seminole and Decatur Counties, Georgia.* Report to the U.S. Army Corps of Engineers, Mobile District. Cleveland Museum of Natural History Archaeological Research Report No. 29.

White, Nancy Marie, and Richard W. Estabrook
1994 Sam's Cutoff Shell Mound and the Late Archaic Elliott's Point Complex in the Apalachicola Delta, Northwest Florida. *The Florida Anthropologist* 47:61-78.

White, Nancy Marie, Keith D. Ryder, Scott M. Grammar, and Karen L. Mayo
1995 Archaeological Survey of Dog Island, Franklin County, Florida. Report to the Barrier Island Trust, Tallahassee. Department of Anthropology, University of South Florida, Tampa.

White, Nancy Marie, and Audrey Trauner
1987 Archaeological Survey of the Chipola River Valley, Northwest Florida. Report to the Florida Division of Historical Resources, Tallahassee. Department of Anthropology, University of South Florida, Tampa.

Willey, Gordon R.
1949 *Archeology of the Florida Gulf Coast.* Smithsonian Miscellaneous Collections 113. Washington, D.C. Reprinted 1999 by University Press of Florida, Gainesville.

Yates, William Brian
2000 Implications to Late Archaic Exchange Networks in the Southeast as Indicated by the Archaeological Evidence of Prehistoric Soapstone Vessels Throughout Florida. Unpublished M.A. thesis, Department of Anthropology, Florida State University, Tallahassee.

Appendix: Attributes of Apalachicola Valley Fiber-Tempered Potsherds in the USF Archaeology Lab.

Site Name	*Site/Cat # and Provenience of Sherd*	*Riv Mi**	*Wt (g)*	*Thickness (cm)*	*Min W (cm)*	*Max L (cm)*	*Sand grains / cm²*	*Sim-ple-st?*	*Comments***
Two Mile	Fr854-2, surface of dredged materials	0	4.0	.84	1.95	2.12	0		reddish gray on both sides
Depot Creek shell mound	Gu56-95-1 TUC L7	7	32.5	1.40	3.87	4.93	3	X	intact fiber, gray on exterior
	Gu56-95-2 TUC L7		31.7	1.51	4.06	4.86	2	X	gray on exterior
	Gu56-95-3 TUC L7		79.6	1.65	4.01	9.99	2	X	gray on exterior
	Gu56-95-4 TUC L7		29.2	1.20	1.77	6.19	2	X	gray on exterior
	Gu56-95-5 TUC L7		39.2	1.38	3.40	5.56	2	X	gray on exterior
	Gu56-95-6 TUC L7		14.9	1.39	1.02	4.12	2	X	gray on exterior
	Gu56-95-7 TUC L7.		15.1	1.73	1.04	4.33	2	X	gray on exterior
	Gu56-95-8 TUC L7.		13.8	1.12	1.23	4.85	2	X	gray on exterior, interior very broken away
	Gu56-95-9 TUC L7.		8.6	0.97	0.52	6.05	2	X	
	Gu56-95-10 TUC L7.		6.9	0.78	1.14	4.20	3	X	
	Gu56-95-11 TUC L7.		5.4	1.15	0.74	3.44	2	X	
	Gu56-95-12 TUC L7.		228.1	1.71	8.71	12.00	2	X	gray on exterior
	Gu56-95-13 TUC L7.		9.5	1.47	1.23	3.51	1	X	gray on exterior
	Gu56-95-14 TUC L7.		2.0	1.23	0.99	1.65	2	X	gray on exterior
	Gu56-95-15 TUC L7.		5.5	1.17	0.81	2.93	2	X	exterior worn off
	Gu56-95-16 TUC L7.		5.4	1.03	0.85	3.18	2	X	
	Gu56-95-17 TUC L7.		15.4	1.58	2.20	14.03	4	X	gray on exterior (two sherds glued)
	Gu56-95-18 TUC L7.		2.9	1.04	0.98	2.21	2	X	
	Gu56-95-19 TUC L7.		1.8	0.48	0.79	2.72	2	X	exterior very eroded, interior smooth
	Gu56-95-20 TUC L7.		2.1	0.73	0.61	2.40	3	X	exterior smooth
	Gu56-95-21 TUC L7.		1.4	0.55	0.76	1.82	3	X	exterior eroded, interior smooth
	Gu56-95-23 TUC L7.		0.6	0.52	0.65	1.50	1	X	exterior eroded, interior smooth
	Gu56-95-24 TUC L7.		0.5	0.41	0.45	1.61	2	X	exterior eroded, interior smooth
Sam's Cutoff shell mound	Fr54-31-1 TU1 L3	7	39.8	1.41	2.17	7.16	5		rim, very smooth on one side, sand grains small
	Fr754-109-2 TU?? L1		11.1	1.21	1.21	4.78	3		pinkish-orange color, many fiber holes, very rough
Sand Beach Hammock	Fr864 shovel test 2, -45cm	7	29.7	1.27	4.94	7.48	40		very sandy; tan-orange surfaces, black core
Six Palms shell mound	Gu54-1 surface	8	2.7	0.57	0.35	2.42	4		very eroded
Van Horn Creek shell mound	Fr744-32-1 TU1 L6	8	28.1	1.86	1.97	6.14	6		sand grains small
	Fr744-45-2 TU2 L4		2.9	1.03	1.06	2.09	1		little sand, fairly large grains
	Fr744-46-3 TU2 L4		8.5	0.91	0.84	5.27	1		little sand, fairly large grains
	Fr744-62-4 TU3 L5		52.0	1.16	5.03	7.17	1		smooth on 1 side with few fiber holes
	Fr744-67-5 TU3 L10		7.2	1.10	1.20	3.79	10		very fine sand grains
	Fr744-69-6 TU4 L1		3.2	0.84	0.89	2.20	10		very fine sand grains.
	Fr744-72-7 TU4 L2		1.1	0.00	0.78	0.52	6		very fine sand grains.
	Fr744-74-8 TU4 L3		0.6	0.65	0.59	1.27	4		very fine sand grains.
	Fr744-109-9 TU5 CW L1		15.1	1.42	1.48	4.05	3		exterior possibly reddish, eroded?
	Fr744-109-10 TU5 CW L1		11.1	1.11	0.80	4.08	3		intact fiber, thinner sherd
	Fr744-178-11 TU5 CW L2		40.3	1.34	3.40	6.61	3		intact fiber, red exterior (?) originally, very rough
	Fr744-178-12 TU5 CW L2		2.2	0.77	0.81	2.07	3		exterior is orange, rough,
	Fr744-178-13 TU5 CW L2		0.4	0.43	0.26	1.69	2		small, rough
	Fr744-178-14 TU5 CW L2		0.3	0.49	0.46	1.12	2		small, rough
	Fr744-152-15 TU5 CW L3		1.9	0.82	0.54	2.49	2		lighter color than other sherds, light gray-orange exterior, rough
	Fr744-216-16 TU5 SW L10		2.4	0.98	0.90	1.92	3		orange exterior, not as rough, ridge on exterior

Site Name	Site/Cat # and Provenience of Sherd	Riv Mi*	Wt (g)	Thickness (cm)	Min W (cm)	Max L (cm)	Sand grains / cm²	Sim-ple-st?	Comments**
	Fr744-226-17 TU5 SW L11		1.0	0.69	0.70	1.58	2		darker color
	Fr744-243-18 TU5 SW L10		14.5	1.09	1.47	4.51	2		exterior orangish (?)
	Fr744-124-19 TU5 SW L2		0.8	0.49	0.30	1.92	3		smooth on one side
	Fr744-137-20 TU5 SW L2		0.6	0.35	0.43	0.56	3		smooth on one side
	Fr744-175-21 TU5 SW L3		1.2	0.73	0.33	2.30	1		lighter tan color
	Fr744-108-22 TU5 NW L2		4.1	1.28	0.77	2.37	2		chunky shape, rough on one side, flat, smooth,orange on the other
	Fr744-126-23 TU5 NW L2		2.2	1.23	0.58	1.98	2		orange on one side, slightly orange on the other
	Fr744-126-24 TU5 NW L2		0.8	0.56	0.65	1.39	2		orangish on 1 side
	Fr744-182-25 TU5 NW L3		1.2	0.64	0.39	2.25	2		orangish color on both sides
	Fr744-133-26 TU5 NE L2		1.1	0.58	0.83	1.72	2		smooth on 1 side,
	Fr744-134-27 TU5 NE L3		140.0	3.03	3.32	12.33	2		very large piece with intact fiber, orange color to varying degree, smoother on one side
	Fr744-195-28 TU5 NE L3		2.8	1.25	0.61	1.81	2		very smooth & orange on exterior
	Fr744-195-29 TU5 NE L3		3.4	0.92	0.63	2.15	2		uniform shape
	Fr744-195-30 TU5 NE L3		1.0	0.67	0.94	1.62	2		orange & smooth on one side, folded over, looks like a small rim
	Fr744-195-30 TU5 NE L3		1.2	0.54	0.70	1.89	2		very rough, slightly orange
	Fr744-195-32 TU5 NE L3		2.5	0.95	0.79	2.25	2		orange on 1 side, rounded edges, flat on bottom
	Fr744-202-33 TU5 NE L4		11.8	0.96	1.05	3.91	3		rim , feels heavier than other sherds, very smooth on both sides, uniform thickness
	Fr744-199-34 TU5 CE L3		12.9	0.92	1.41	5.26	2		blocks of orange on 1 side, rough
	Fr744-199-35 TU5 CE L3		4.6	0.95	0.74	2.41	2		exterior eroded away, the little that is left is orange, interior smooth, dips down, feels finger-shaped
	Fr744-239-36 TU5 CE L4		0.8	0.60	0.52	1.60	2		light orange on top, otherwise very dark
	Fr744-135-37 TU5 CC L2		10.3	1.17	0.81	4.23	3		smooth on both sides
	Fr744-135-38 TU5 CC L2		2.1	0.93	0.86	1.84	2		smoother on one side than the other
	Fr744-135-39 TU5 CC L2		0.8	0.48	0.70	1.56	2		small, thin, smooth, orange
	Fr744-135-40 TU5 CC L2		1.3	0.79	0.59	1.54	2		smooth on both sides
	Fr744-135-41 TU5 CC L2		2.7	0.74	1.24	2.23	2		smooth on bottom, orange on top
	Fr744-135-42 TU5 CC L2		2.0	0.76	1.06	1.88	2		orange & rough on both sides
	Fr744-176-43 TU5 CC L3		8.0	1.26	1.45	3.30	2		gray, orange, & flat on one side, smooth on both sides
	Fr744-176-44 TU5 CC L4		5.7	1.15	1.03	3.03	2		gray, orange, & flat on both sides
	Fr744-196-45 TU5 CC L4		1.5	0.79	0.30	1.86	2		gray, smooth on one side; rough, black on the other; grog in temper
	Fr744-196-46 TU5 CC L4		1.0	0.60	0.54	1.49	2		very rough
	Fr744-196-47 TU5 CC L4		0.6	0.79	0.51	1.15	1		very rough, small
	Fr744-116A-48 TU5 NC L1		3.4	0.93	0.62	2.70	2		orange & rough on one side, black & smooth on the other
	Fr744-116A-49 TU5 NC L1		4.3	0.81	0.85	2.82	2		orange & rough on one side, black & smooth on the other
	Fr744-116A-50 TU5 NC L1		3.1	0.49	1.02	2.58	3		intact fiber, rounded rim, smooth on both sides
	Fr744-116A-51 TU5 NC L1		1.1	0.52	0.58	1.86	2		very rough on both sides
	Fr744-181-52 TU5 NC L2		10.7	0.93	1.09	4.45	2		orange color on interior, tan on exterior, smooth on both sides
	Fr744-181-53 TU5 NC L2		2.8	0.82	0.78	2.45	2		orange on one side, eroded & tan on the other, grog? in temper, smooth
	Fr744-193-54 TU5 NC L2		2.2	0.81	0.91	1.99	2		smooth on interior, rough on exterior
	Fr744-193-55 TU5 NC L2		0.7	0.40	0.81	1.37	3		smooth on one side, eroded & rough on the other, dark color
	Fr744-191-56 TU5 NC L4		0.3	0.40	0.71	0.94	2		very small, eroded, rough
	Fr744-165-57 TU5 west wall cleanup, to -60 cm		1.2	0.97	0.61	1.77	2		eroded, rough

Site Name	Site/Cat # and Provenience of Sherd	Riv Mi*	Wt (g)	Thickness (cm)	Min W (cm)	Max L (cm)	Sand grains / cm²	Sim-ple-st?	Comments**
	Fr744-167-58 FC CW L4		8.2	0.96	1.26	3.88	3		orangish color on exterior, smooth & black on the interior.
	Fr744-129-59 TU6 L1		2.2	0.81	0.52	2.36	2		grog in temper, dark color
	Fr744-139-60 TU6 L1		10.5	0.87	1.33	4.25	2	?	small round & large linear shapes, either punctations & incisions or poss stamping; orange on both sides
	Fr744-139-61 TU6 L1		4.2	0.77	1.26	3.03	2		very smooth on one side, tan to red, some fiber intact
	Fr744-157-62 TU6 L2		2.9	0.49	0.94	3.36	2		very eroded on one side, smoother on other, intact fiber
	Fr744-132-63 TU6 L3		5.0	1.03	1.25	2.80	3		smooth & gray on one side, orange & eroded on the other
	Fr744-162-64 TU6 L5		3.1	0.68	0.72	2.94	4		very smooth & orange on both sides, some gray too
	Fr744-212-65 TU6 L8		6.6	0.94	0.99	4.25	2		bright orange on 1 side, blackish-grey, smooth on the other side
	Fr744-212-66 TU6 L1		2.3	0.72	0.84	2.29	2		bright orange on 1 side, gray on other, smooth on both sides.
	Fr744-212-67 TU6 L1		1.1	0.73	0.93	1.58	2		bright orange & smooth on one side, eroded & black on the other
	Fr744-212-68 TU6 L1		0.4	0.44	0.65	1.50	2		eroded on both sides, uniform black-gray color, smooth on 1 side
	Fr744-221-69 TU6 L1		4.4	0.95	1.03	2.94	3		smooth on both sides, lighter gray on one side, darker black-gray on the other
Clark Creek shell mound	Gu60-18-1 TUA L4	8	2.0	0.83	0.71	2.21	4		smooth, orange on one side; rough, slightly orange, eroded on the other
	Gu60-47-2 TUB L3		2.6	1.18	0.80	1.75	3		very smooth & orangish-gray on one side, smooth & black on the other
	Gu60-66-3 Wall bag 50-128cm		7.2	0.75	1.36	3.22	2		smooth, bright orange on both sides.
	Gu60-66-4 Wall bag 50-128cm		2.8	0.75	0.67	2.30	2		dark brown all over, smooth on both sides
	Gu60-67-5 TUB L10		8.3	1.09	1.75	3.85	3		smoother on one side than the other, bright orange on that side, darker orange on the other side
	Gu60-67-6 TUB L10		4.0	1.08	1.19	2.78	2		orange & flat on one side, rounded on the other side
	Gu60-67-7 TUB L10		0.7	0.68	0.45	1.72	2		flat tan exterior, rest eroded away
	Gu60-67-8 TUB L10		0.7	0.61	0.23	1.60	2		orangish-gray exterior (?), other side eroded away
	Gu60-69-9 TUB L11 *in situ*		1.4	0.99	0.51	1.55	2		smooth on both sides, gray on one side, orange on the other
	Gu60-87-10 TUC L1		5.1	1.12	1.03	2.83	3		intact fiber, smooth on both sides, orange & black, v. small sand grains
	Gu60-88-11 TUC L2.		24.1	1.19	1.34	5.15	2		smooth & orange, gray on both sides
	Gu60-88-12 TUC L2.		4.1	0.92	0.81	2.83	2		rough, dark orange exterior; smooth, orange-gray interior
	Gu60-88-13 TUC L2.		2.8	1.06	0.83	2.18	2		rough, dark orange exterior; smooth, orange-gray interior
	Gu60-89-14 TUC L2.		5.2	0.80	0.77	3.55	2		gray, smooth on interior; gray, rough on exterior
	Gu60-89-15 TUC L2.		4.8	0.98	0.83	2.71	4		black, smooth on one side; light orange, mottled black on the other
	Gu60-89-16 TUC L2.		3.7	1.15	0.65	2.20	2		light orange on one side, light gray on the other
	Gu60-89-17 TUC L2.		2.6	0.75	0.60	2.31	2		orange & rough on both sides
	Gu60-89-18 TUC L2.		1.8	0.40	1.08	2.40	2		flat, orange-tan surface, interior very eroded
	Gu60-89-19 TUC L2.		1.3	0.84	0.71	1.72	1		intact fiber, orange & black on the exterior, tan interior
	Gu60-89-20 TUC L2.		1.6	0.99	0.69	2.05	1		fiber still present; orange, rough exterior; gray, rough interior
	Gu60-89-21 TUC L2.		1.0	0.72	0.53	1.67	2		tan exterior, gray interior.

Site Name	*Site/Cat # and Provenience of Sherd*	*Riv Mi**	*Wt (g)*	*Thickness (cm)*	*Min W (cm)*	*Max L (cm)*	*Sand grains / cm²*	*Sim-ple-st?*	*Comments***
	Gu60-89-22 TUC L2.		1.2	0.82	0.59	1.88	1		bright orange exterior, tan, rough interior
	Gu60-89-23 TUC L2.		0.6	0.61	0.49	1.27	1		tan-orange exterior, eroded interior
	Gu60-89-24 TUC L2.		0.4	0.45	0.45	1.32	1		tan- bright orange exterior, eroded interior
	Gu60-92-26 TUC L2.		21.1	1.22	2.00	5.01	1	X	simple stamp is much finer lines than at Depot Creek, at least 1 cross-stamped, tan interior, tan-orange exterior
	Gu60-92-27 TUC L3		5.7	1.14	1.24	3.05	1		intact fiber, orange exterior, tan interior
	Gu60-92-28 TUC L3		2.4	0.73	0.81	2.42	1		bright orange exterior, tannish-gray interior, rough on both sides.
	Gu60-92-29 TUC L3		1.9	0.66	0.53	2.26	1		orange exterior; gray, smooth interior
	Gu60-93-30 TUC L3		13.8	0.86	1.31	5.48	3		smooth on both sides, orangish-gray on one side, gray on the other
	Gu60-93-31 TUC L3		17.6	1.24	1.19	4.61	2		orange-gray mottled exterior, tan, rough interior
	Gu60-93-32 TUC L3		7.5	1.04	1.19	3.50	3		orange-gray mottled exterior; tan, rough interior, cross-stamped in acute angles
	Gu60-93-33 TUC L3		4.9	1.03	0.53	3.01	2		orange, very rough exterior, very eroded interior
	Gu60-93-34 TUC L3		2.8	0.90	0.99	2.34	2		smooth on both sides, orange exterior, tan interior
	Gu60-93-35 TUC L3		7.0	1.40	0.73	3.23	2		smooth, orangish-grey on both sides
	Gu60-93-36 TUC L3		2.4	0.95	1.18	2.06	2		rough,orange exterior, smooth, gray interior
	Gu60-93-37 TUC L3		2.8	1.14	0.48	2.24	1		orange, rough exterior, partially eroded; smooth, tan interior
	Gu60-93-39 TUC L3		3.2	0.96	0.69	2.07	2		very smooth & orangish-gray on both sides
	Gu60-93-40 TUC L3		2.4	1.11	0.72	2.42	2		orange, rough exterior; tan, smooth interior
	Gu60-93-41 TUC L3		1.5	0.44	0.47	2.10	2		orange, roughexterior, eroded interior
	Gu60-93-42 TUC L3		0.8	0.55	0.54	1.52	3		orange exterior, eroded interior
	Gu60-93-43 TUC L3		0.8	0.59	0.75	1.32	2		tan with orange mottling on exterior, eroded interior
	Gu60-95-44 TUC L4		3.0	1.13	0.83	2.21	2		orange & rough on both sides
	Gu60-96-45 TUC L4		13.8	1.48	1.79	4.60	1		very rough orange exterior, tan interior
	Gu60-101-46 TUC L6		3.2	1.28	0.78	2.80	3		tan, rough exterior; very rough, eroded interior
	Gu60-101-47 TUC L6		1.5	0.81	0.66	2.20	2		orange, rough exterior, very eroded, rough interior
	Gu60-86-48 TUC surface		5.0	1.35	0.83	2.63	4		tan & eroded on one side, smooth & black on the other
	Gu60-85-49 surface near TUC		9.4	1.14	1.41	4.32	1		tan & rough on one side, eroded on the other, looks like rim
	Gu60-85-50 surface near TUC		2.1	0.85	0.71	2.26	1		tan, smooth, partially eroded on 1 side, black & eroded on other
	Gu60-83-51 surface		7.3	0.83	0.53	3.80	3		bright orange, rough exterior; tan, rough interior
Thank-you-ma'am Creek shell mound	Fr755-8 surface	9	41.2	2.18	3.34	5.34	3		red & white clay marbled; mica in paste
	Fr755-50 surface		2.0	.67	1.66	2.11	2		mica in paste
	Fr755-80 TU 3 L 1		3.3	.72	2.0	2.77	2		red grog in paste; intact fiber; 1 surface eroded
	Fr755-80 TU 3 L 1		1.4	.77	.91	1.42	0		
	Fr755-90 TU 3 L1		1.0	.59	1.1	2.1	12		both surfaces eroded, mica in paste
	Fr755-90 TU 3 L1		1.0	.82	.96	1.29	15		1 surface eroded, mica in paste
	Fr755-90 TU 3 L1		.3	.7	.71	1.1	4		1 surface eroded, mica in paste
	Fr755-68 TU 3 L2		3.9	.93	2.5	3.57	1		1 surface eroded
	Fr755-68 TU 3 L2		8.3	.96	1.84	4.58	30	X	black interior

Site Name	*Site/Cat # and Provenience of Sherd*	*Riv Mi**	*Wt (g)*	*Thickness (cm)*	*Min W (cm)*	*Max L (cm)*	*Sand grains / cm²*	*Sim-ple-st?*	*Comments***
	Fr755-68 TU 3 L2		16.7	1.12	3.26	5.21	8	X	black interior, mica in paste
	Fr755-68 TU 3 L2		1.3	.75	1.16	1.97	15		both surfaces eroded; mica in paste
	Fr755-69 TU 3 L3 E ½		5.5	1.64	1.27	2.83	15	X	most of sherd=black; mica in paste
	Fr755-82 TU 3 L3		9.3	.99	2.48	4.39	20		black interior
	Fr755-70 TU 3 L4		5.0	.97	1.82	3.4	8	X	looks like interior & exterior stamping
	Fr755-70 TU 3 L4		3.1	.84	1.85	2.34	15	X	mica in paste
Gardner's Landing shell midden	Fr806-2 surface	10	19.3	1.15	1.51	5.42	0		has mica, one irregularly shaped poss punctation
Firebreak Circle	Gu40 surface	10	13.5	1.05	2.26	3.89	1		fewer fiber canals than usual
Beanfield North	Gu91-99 1surface	14	28.4	1.33	3.34	6.12	2		
	Gu91-99-1 surface		20.1	1.38	2.68	5.25	1		
	Gu91-99-1 surface		1.3	.85	1.0	1.85	0		
Marge Martin	Gu46-2 surface	16	9.2	1.22	0.80	3.97	2		smoother on exterior than interior, reddish-orange exterior
MK Ranch Borrow Pit	Gu34-2-1 surface 120 m E to levee	17	12.8	0.75	1.03	5.1	0		intact fiber (?).
	Gu34-2-2		2.0	0.69	0.63	2.37	3		v small sand grains, smooth on 1 side.
Black Bear	Gu62 surface	44	27.3	0.90	1.03	7.60	2		dark tan exterior, light tan interior, grit & grog in temper, grit:.4mm-1.5mm.
Neal Ramp SW	Ca195-98-1, shovel test, -98cm	58	12.2	.79	3.82	5.59	11		black on interior, tan on exterior
Duncan McMillan	Ca193-98-3, shovel test 1, -40 to -60 cm	58	.6	.52	.85	1.44	20+		mica, some grit in paste
	Ca193-98-4, shovel test 1, -80 to -90 cm		14.5	1.04	3.47	4.66	20+		extremely fine sand
	Ca193-98-8, shovel test 2, -54 to -108 cm		12.0	1.05	3.2	4.66	1		interior eroded; lots of mica, some grog, intact fiber
	Ca193-98-8, shovel test 2, -54 to -108 cm		5.8	.99	3.45	3.52	2		interior eroded; lots of mica, some grog, intact fiber
	Ca193-98-8, shovel test 2, -54 to -108 cm		4.6	.81	2.0	3.59	1		rim (2 sherds); interior eroded; lots of mica, some grog, intact fiber
	Ca193-98-8, shovel test 2, -54 to -108 cm		7.0	1.23	2.2	3.29	10.		black, smooth on one side; gray, rough on the other; mica, grog in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		5.7	1.35	1.5	3.62	15		black, smooth on one side; gray, rough on the other; mica, grog in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		4.5	1.0	1.83	2.68	8		black, smooth on one side; gray, rough on the other; mica, grog in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		4.3	1.17	1.97	2.48	5		black, smooth on one side; gray, rough on the other; mica, grog in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		.7	.67	.85	1.6	2		1 surface eroded; mica in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		.7	.93	.67	1.65	2		mica, grog in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		.1	.22	.66	.92	2		mica, grog in paste
	Ca193-98-8, shovel test 2, -54 to -108 cm		.1	.28	.52	.89	2		mica, grog in paste
	Ca193-99-2, shovel test 1, 0 -100 cm		1.5	.69	1.25	1.64	1		
	Ca193-99-2, shovel test 1, 0 -100 cm		1.4	.92	1.22	1.47	1		
	Ca193-99-2, shovel test 1, 0 -100 cm		.3	.41	.72	1.08	3		mica in paste
	Ca193-99-2, shovel test 1, 0 -100 cm		.3	.38	.42	1.49	2		grog in paste
	Ca193-99-2, shovel test 1, 0 -100 cm		.1	.32	.43	1.01	1		grog in paste
	Ca193-99-2, shovel test 1, 0 -100 cm		.2	.32	.55	1.05	2		grog in paste
	Ca193-99-4, shovel test 1, east wall stratum 2		2.1	1.05	1.12	2.17	4		mica, grog in paste
Brantley Mill	Li 197 surface	66	6.6	1.01	0.68	2.99	5		fine grains of sand, light tan-orange.

Site Name	*Site/Cat # and Provenience of Sherd*	*Riv Mi**	*Wt (g)*	*Thickness (cm)*	*Min W (cm)*	*Max L (cm)*	*Sand grains / cm²*	*Sim-ple-st?*	*Comments***
Twin Ponds	Li182 surface	75	11.9	0.90	0.75	5.07	5		orange, smooth on top; rougher,black on bottom, very fine sand grains, very sandy feel.
Summers	Li 211 surface	76	15.7	0.88	0.87	4.88	7	X	very sandy, bright orange all over
Bateman Howell	Ca121 surface	87	6.5	1.31	1.93	3.03	0		mica in paste
Graves Creek	Ca34-1 surface	89	7.1	1.48	1.40	2.83	2		one surface has sand grains, the other doesn't
Redd's Landing	Ca12, surface, donated by collector J. W. Yon	90	38.9	1.36	1.83	6.27	4		Stallings Island Punctate rim; thick, lots of fiber, large punctations
Curtis Lee 2	Ja 411, shovel test G-1, -90 to -105 cm	128	70.2	3.33	1.03	7.59	0		light brown color, extremely thick, heavy, rough, shiny exterior, grit in paste; this site is on lower Chattahoochee (same river)