Cultural Resource Assessment of Okefenokee National Wildlife Refuge Following the 2007 Wildfires
Final Report

Submitted to:

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ABSTRACT

This report describes a pedestrian, non-collection, archaeological reconnaissance of the Okefenokee National Wildlife Refuge performed by Southeastern Horizons, Inc., between June 18, and July 13, 2007. The project area included any part of the Okefenokee National Wildlife Refuge that burned during the 2007 wildfires. The post-burn assessment consisted of the following four tasks: (1) to document cultural resources impacted by the construction of new firebreaks and staging areas, (2) to ascertain post-burn conditions and the presence of cultural materials on accessible hammocks, (3) to visit seven recorded sites on interior upland hammocks and Trail Ridge to ascertain post-burn conditions and, (4) to assess the efficacy of the fire team's measures to protect the National Register listed Hebard Cabin on Floyds Island and the National Register eligible Chesser Homestead on Chesser Island. The reconnaissance covered 39.4 kilometers (24.5 miles) of new firebreaks and staging areas with a total pedestrian investigation of 80.5 person-kilometers (50 person-miles).

During the firebreak-staging area aspect of the survey eight unrecorded sites and 25 isolated finds were discovered and documented. An investigation of three island hammocks revealed that the fire's effects on most of the cultural resources were minimal. However, the fire denuded slopes of a railroad tram through the Floyds Island Southwest Mound were found to be in need of stabilization. Three of the seven recorded archaeological sites were found to be unaffected by the fire. A fourth site, the Hebard Cypress Logging Camp on Billys Island, had suffered significant fire damage. A post-burn mitigation plan needs to be developed and implemented while the ground there is still bare. In spite of intensive searches, the other three selected sites were not found. Finally, the fire team's measures taken to protect the National Register listed Hebard Cabin on Floyds Island and the National Register eligible Chesser Homestead on Chesser Island were effective, but the removal of the protective wrap on these structures was incomplete and needs to be corrected.

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As always, the completion of this report involved more than just the authors listed on the cover page. In this section we acknowledge and express our gratitude to those who helped.

John R. Cook was our able field technician and he endured all of the miles of firebreaks along with the authors. He also suffered with us the gnats, ticks, mosquitoes, mud, and heat associated with a summer project in the Okefenokee Swamp. He bore it all with no complaints. Rosanne Moore assisted in the final editing of this document.

Chris Trowell, who probably knows more about the culture history of the Okefenokee Swamp than anyone alive, was our constant companion throughout this project. In fact, so much of his work is in this document that he rightfully should be listed as a contributing author. However, he gracefully declined the offer. He provided an immense body of documents, maps, excerpts, newspaper articles, and other references. This report would not have been possible without his input.

A host of Fish and Wildlife Service (FWS) people need to be recognized. First and foremost is Southeast Region Fire Ecologist, Sue Grace. Sue directed the Burned Area Emergency Response team and, on Chris Trowell's recommendation, had the foresight to hire us to complete this project. Her leadership and patience was admirable. Richard Kanaski, the Regional Archaeologist, provided the framework that guided the survey. Refuge Manager, George Constantino, and Assistant Refuge Manager, Maury Bedford, provided valuable information and councel when needed. Dartha Campbell helped us with all of the financial aspects of the project. Volunteer Debbie Todd and Office Assistant Judy Drury are both descendents of early swamp settlers. They provided family histories and photographs that helped us identify the Robert Allen Chesser, Sr., homestead. Ron Phernetton, retired from the FWS, shared his knowledge about cultural resources in the Refuge and guided us to the McLeod's Sawmill ruins.

All of these people gave freely of their time and knowledge and, to whatever degree, helped bring this project to fruition. Their assistance will always be remembered with gratitude.

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CHAPTER 1

INTRODUCTION

SUMMARY

This report documents a reconnaissance survey conducted by Southeastern Horizons, Inc., for the U.S. Fish and Wildlife Service (FWS) following the 2007 wildfires that affected the Okefenokee National Wildlife Refuge (Okefenokee NWR). Its purpose was to ascertain the effect of the wildfire on the Refuge's cultural resources. The reconnaissance was restricted to the new firebreaks, the staging zones, and the burned-over areas inside the boundaries of the Refuge (Figure 1.01). Two historic structures were also evaluated for impact resulting from fire protection efforts, although the wildfires never reached their locations.

The field work was conducted over a four-week period between June 18, and July 13, 2007, by a crew of from two to three individuals under the supervision of the Principal Investigator, S. Dwight Kirkland, R.P.A. and/or the Field Director, Fred C. Cook, R.P.A. John R. Cook served as the archaeological field technician. Eight previously unrecorded archaeological sites were identified, delineated, and reported to the Georgia Archaeological Site File (GASF). Descriptions of these are recorded on official GASF forms and copies are included in this report as Appendix I. Twenty-five isolated finds were encountered and recorded on field forms and topographic maps.

For this reconnaissance, FWS's Southeast Regional Historic Preservation Officer (RHPO) defined sites as spatially discrete clusters of four or more artifacts in an area of 100 square meters. Any fewer were considered to be isolated finds. Sites discovered during the study ranged from 0.02 ha (0.04 ac) to 1.24 ha (3.06 ac) in size. This was a surface inspection, non-collection, survey in which the detected artifacts were analyzed on site and left. Samples were photographed *in situ* and/or against a one-centimeter grid background and essential diagnostic data recorded on field forms. Sites were precisely located using a Garmin eTrex Legend hand-held Global Positioning System receiver capable of accuracy within 4.6 meters (m) [15 feet (ft)]. Whenever possible, soil cores were obtained at a site and the color and texture of the strata described.

This report is organized in eight chapters. Chapters Two and Three are discussions on the environmental setting and paleoecology of the Okefenokee Swamp, respectively. Chapter Four provides a cultural history of the Okefenokee NWR. Chapter Five reviews the previous archaeological research done in the Okefenokee Swamp. Chapter Six presents the field and analysis methods employed in this study that were mandated by the FWS Regional Historic Preservation Officer, Richard Kanaski. Chapter Seven relates the results of the reconnaissance. And, Chapter Eight is a summary of the survey and our management recommendations.

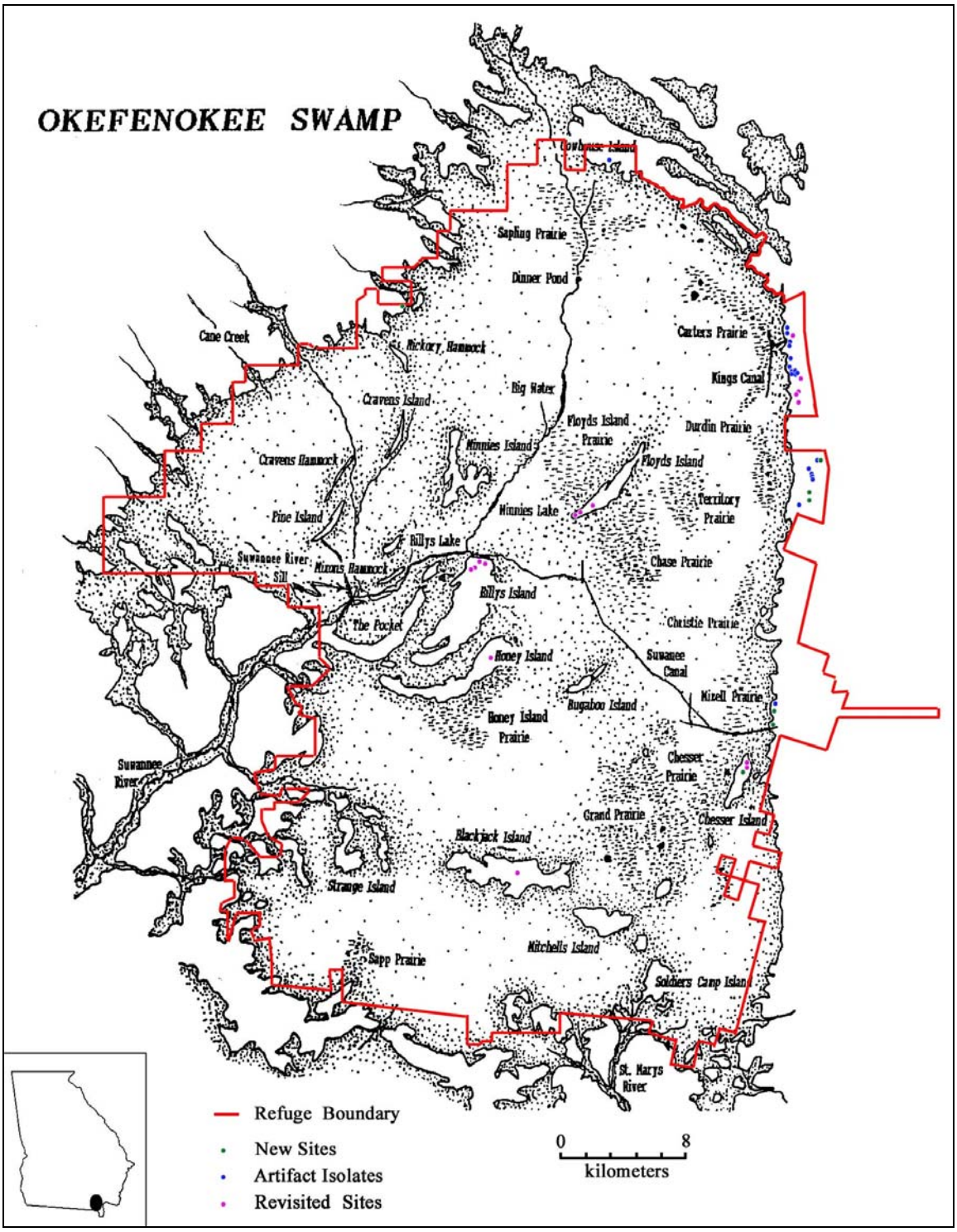


Figure 1.01. Map of the Okefenokee Swamp (Modified and used with the permission of Chris Trowell)**. [Okefenokee NWR, GA]**

FIRE IN THE OKEFENOKEE SWAMP

The fires that burned in and around the Okefenokee Swamp between April and July 2007 followed six months of extreme drought conditions over southeastern Georgia and northeastern Florida. The combination of the Sweat Farm Road, the Big Turnaround, the Bugaboo Scrub, the Bugaboo Scrub II, and the Florida Bugaboo fires scorched over 222,585 hectares (550,000 acres) of land. Although no fatalities or major injuries to people were reported as a result of these fires, significant damage was done to property. The Sweat Farm Road, the Big Turnaround, the Bugaboo Scrub, the Bugaboo Scrub II fires were classified as Disaster Designation and were thus eligible for Federal Emergency Management Agency (FEMA) funding. Repairs to the landscape damaged by fire suppression activities were initiated soon after the fires were contained and they continue at this writing. This cultural resource reconnaissance was funded through FEMA as part of the Big Turnaround Rehabilitation Plan.

Fire is an ancient phenomenon in the Okefenokee Swamp. Peat core research reveals that fires have burned over its terrain for thousands of years. It is a dominant influence in swamp ecology and is responsible for the maintenance of prairies, lakes, and waterways and for successional retardation (Cypert 1961:488; Izlar 1984:71; Komarek 1969; Lofton 1998:761; Patten 1977). During times of drought, fire burns away the highly combustible upper layers of peat which subsequently forms the prairies, lakes, and waterways. Without fire, the swamp would become a climax forest (Izlar 1984:73). Severe fires occurred between 1844 and today on roughly 25 year intervals (Izlar 1972). Years in which widespread fires were recorded include 1844, 1860, 1910, 1932, 1954-55, and now, in 2007. Except for a few species that are ill-adapted such as the box turtle, wildlife is little affected by these fires. In fact, the quick rebound of plant life with its flush of growth, leads to an improved food supply and a time of plenty for wildlife.

Although about ten percent of the fires occurring each year in America are caused naturally by lightning, most cannot be understood apart from human history (Pyne 1982:5). Fire has been used as a tool for manipulating the environment probably since the first *Homo erectus* learned to capture it to cook food and warm his/her surroundings. By the time people crossed into the New World the knowledge and ability to use fire as a tool was well established. Once a settlement was located, broadcast fire was used to clear the surrounding terrain of underbrush in order to quickly detect an approaching hostile force (Lofton, 1998:762; McGuire 2001:44; Pyne 1982:73; Williams 2002:2-33). Indians knew that the new flush growth of plants following a fire quickly attracted grazers and provided a better chance of a successful hunt. Indians used fire to drive animals such as deer into ambush situations and set snare traps in burned-over areas to passively secure food (Pyne 1982:74; Wright and Wright 1932:191). They used fire to maintain their villages and settlements, to keep the undergrowth down and control biting and blood-sucking parasites. Evidence for prehistoric anthropogenic burning in southeastern Georgia comes from the Chatterton Spring site (9CF7) in Coffee County (Kirkland 1994:108; Seielstad 1994). There macro-charcoal sediment layers present in peat cores suggests that the landscape surrounding the spring (and the adjacent archaeological site) was intermittently burned. The dominant vegetation in these Indian fire-managed landscapes was grasslands and open forest savannah (Crofton 2001:69-77; Pyne 1982:75-76).

At European contact, vast stretches of longleaf pine-grassland savannah (Longleaf Pine Ecosystem) covered most of the Southeastern Coastal Plain. This habitat resulted from millennia of fire management by Indians and non-anthropogenic fires started by lightning strikes. It is one of the planet's most diverse ecosystems and supports thousands of fire-adapted plants and animals (Crofton 2001:69). The longleaf pines grow tall and straight and have open crowns that seldom touch one another. They are relatively widely spaced so sunlight penetrates to the forest floor and nurtures at least three dozen grass species, the dominant of which is wiregrass. Other flora includes legumes, orchids, and insectivorous plants (Crofton 2001:69-77; Engstrom et al. 2001: 6-7). The ground cover is kept low and relatively thick by the periodic fires. The result is open grassland underneath the pine overstory where the line of sight can extend for up to a mile (Engstrom et al. 2001: 6-7). Faunal species adapted to the longleaf pine forest include gopher tortoise, red-cockaded woodpecker, fox squirrel, bobwhite quail, pocket gopher, Eastern indigo snake, Eastern diamondback rattlesnake, flatwoods salamander, white-tailed deer and many others (Crofton 2001:69-77). The Longleaf Pine Ecosystem would not exist in the absence of fire. Without frequent burning, it would climax as a closed-canopy mixed hardwood-pine forest.

When broadcast fire was suppressed by early Europeans, the land spontaneously reverted to forest (Pyne 1982:76). In the Okefenokee Swamp, the first settlers, often referred to as "Swampers," burned the landscape to enhance the ground for pasturage, to keep down the brush, to improve the land for hunting, to make traveling easier, and to clear the land for sustainable agriculture. In an interview in 1912, the Lees of Billys Island related that they burned the island terrain, "to improve the growth of grass and to keep the undergrowth down" (Wright and Wright 1932:191). The Chessers burned Chesser Island each year, usually in March. Many places in and around the swamp were burned annually. The Swamper's slash and burn agriculture was more similar to the aboriginal's use of fire than that practiced by other European-Americans.

CHAPTER 2

ENVIRONMENTAL SETTING

OKEFENOKEE SWAMP

The Okefenokee Swamp is a huge peat-filled bay-lake (167,000 ha [412,657 ac]) that is 95 percent wetland and five percent upland. It is drained primarily to the southwest by the Suwannee River and, to a lesser extent, to the east by the St. Marys River. It receives 70 to 90 percent of its water from direct precipitation and loses from 1 to 3 percent to deep groundwater (Rykiel 1984:212). The overall residence time of swamp water is about 190 days (Rykiel 1984:212). Since the sheet flow water is renewed approximately every six months, the view of it as a great stagnant bog is inappropriate.

In 1937, the majority of the swamp was purchased by the federal government and the Okefenokee National Wildlife Refuge established. Today, the Refuge encompasses 162,641 ha (401,880 ac) of land. An additional 2752 ha (6800 ac) was added in 2005 through a donation from the Conservation Fund. However, the timber and recreational management of that tract will remain under the control of International Paper Company for another 74 years (Constantino et al. 2006:3).

Habitats

Several researchers have described the various habitats in the Okefenokee Swamp. Francis Harper (1927) lists thirteen in his work, *Mammals of the Okefinokee Swamp*. Included are: pine barrens; hammocks; Floyd's Island 'sand scrub;' river hammocks and bluffs; cypress bays; cypress ponds; sphagnous bogs; prairie 'heads;' branch, creek, and river swamps; prairies; watercourses; cultivated land, roadsides, yards and waste places; and buildings. Wharton (1987) recognizes four major environmental zones: island habitats, bog habitats, prairies, and lakes, with microenvironments in each of these categories. Regardless of the differences in categorizing these environmental zones, only two are important in terms of cultural resources: hammocks and their related "old fields" and pine barrens.

Hammocks

Hammocks occur on islands in the swamp, along the river drainages, and on Trail Ridge. Early visitors to the swamp recognized them as important land forms. Wright and Wright (1932:173-176) quote several early visitors in their list of seventeen hammock descriptions. The following three descriptions are presented as representative examples.

1741. "Oak and Hickory, or Mixt Land. There is the usual proportion of this sort, as in the neighboring provinces. It is not so high as the pine-barren, nor so low as the swamps. It takes the name of oak and hickory from the great number of those trees growing on it, not but there is a variety of others among them. It has a clay bottom, which in hot countries is esteemed the best, as it keeps the roots of trees, etc., cool. It is covered with a fine mould; is light and works easy, and most things, which are planted on it, answer very well even in the first year . . ." (An Impartial Inquiry . . . Georgia, 1741, Colls. Ga. Hist. Soc., 1840, I: 158)

1769 "That which is called hammocky ground is generally full of large evergreen and water-oaks, mixed with red-bay and magnolia, and in many places the great palmetto or cabbage-tree . . .the hammocks of live-oaks and palmettos are generally surrounded either with swamp or marsh." (John Bartram in Stork, 1769 pp. 7, 39)

1802 "Fertile veins of land, upon a clayey or Marley foundation, occasionally intersect these [pine] barrens: producing white oak, chestnut oak, red oak, shortleaved pine, gum, hickory, dogwood, elm, beech, walnut, maple, and many other trees and shrubs, indicative of generous soils." (Drayton, 1802:7) "Their soil is a mixture of sand, clay and gravel; producing woods of oak and hickory, and a profusion of underwood" (p.10)

One of the best descriptions of hammocks is by Harper (1927:218-223). He describes them as habitats that are found on either the most elevated portions of the islands or on the gentle slopes between the pine barrens and cypress bays. They are composed of mostly evergreen trees and shrubs of fairly dense growth that significantly reduces the amount of sunlight that reaches the hammock floor. The overstory is composed mainly of live oaks, magnolia, water oaks, loblolly bay, red bay, sweet gum, and holly. The branches and leaves of these species overlap to form an almost closed canopy. Consequently, the growth of herbs and shrubs below the overstory is limited. Often, the understory has expanses of grasses and low shrubs that give the area an open appearance.

Wharton (1978:87) categorizes the vegetation of hammocks as lowland broadleaf evergreen forests that are found on the higher ground of islands, usually near the edges. In comparison to the surrounding inhospitable terrain, these are exotic, almost subtropical environments. They are satisfying and offer park-like settings that have attracted animals and people through time (Wharton 1978:188). Even today, visitors, campers, and researchers, find hammocks esthetically pleasing and they make the best places to camp, hike, or rest.

Because hammocks burn less frequently, humus has accumulated to a greater extent than in other swamp habitats. As a result, early settlers preferred these areas over the pine barrens for settlement and cultivation. They built their homesteads in hammocks and planted subsistence crops of sweet potatoes, field peas, grapes, tomatoes, watermelons, peaches, potatoes, sugar cane, peanuts, corn (maize), tobacco, cotton, and chufas. Rice was also sometimes cultivated in a nearby cypress pond (Harper 1927:254, Trowell 1998c). Many hammocks were cultivated early in the history of the swamp and then abandoned. These were often referred to as "old fields."

Even before the coming of Europeans and Americans, Indians found hammocks desirable places to live (Harper 1927:219; Wright and Wright 1932:178). The vast majority of aboriginal

archaeological sites in the Okefenokee NWR are found in hammocks or "old fields" (Harper 1927: 219; Wright and Wright 1932:178; Trowell 1998b). Indeed, it is a rare occasion not to find aboriginal pottery, chert flakes, or earthworks in hammocks.

The "old fields" are relatively recent products of American cultivation practices. However, some may be the result of Native American horticulture. Most no longer exist because they were over-planted in commercial pines around the rim of the swamp and volunteer pine forests have covered those on the islands in the Okefenokee Swamp since the establishment of the Okefenokee NWR.

John Bartram in 1767 referred to "cleared old fields" and Smyth stated in 1784 that persimmons grow "in old fields, as they term such places where the timber has been cut down, the land worn out, impoverished, or tired with culture, and young trees had not sprung up." In 1798 and 1799 Hawkins observed that "the Indians have lately moved out and settled in villages and the town will soon be an *old field*." There are also references during the Seminole War to the "abandoned fields" of the Indians (Wright and Wright 1932:184). After the Revolution, European-Americans began to settle the islands and along the edges of the swamp. They cultivated fields of crops as described earlier. After exhausting the land it was abandoned leaving behind depleted soil. Many years passed before the original hammock vegetation returned, if at all. These "old fields" often have exotic species that were planted as ornamentals, for food, or for shade by settlers. These species included orange, pecan, chinaberry, and sycamore, trees and domesticated grapes, also known as scuppernogs. The depleted soil retarded the return of the former hammock species. Consequently, these areas were held in the early stage of succession. Thus the land was dominated by stands of broom sedge and crab grass with a variety of low growing shrubs, grasses, sedges, and herbs (Harper 1927:254; Wright and Wright 1932:183-188).

Pine Barrens

Pine barrens occupy most of the upland areas of the swamp both around the rim and on the interior islands. This habitat is more xeric than hammocks and is covered with a dominant longleaf, slash, and loblolly pine overstory sheltering an understory of saw palmetto and gallberry. Fires that are started naturally and by humans frequently burn across the pine barrens keeping the understory growth low and thin. Early chroniclers described this habitat as one of "flat sandy land covered with pine-forest" or "poor pine land with cypress ponds and bay galls" (Wright and Wright 1932:188).

The few references to the Indians' use of the pine barrens suggest that they were frequently burned to increase visibility and to enhance the growth of succulent plants that attracted game animals. Presumably, the increased visibility would also aid in the detection of an approaching foe. Aboriginal artifacts are less common in the pine barrens than in hammocks and most of those found are projectile points that were probably lost during hunting. Although the pine barrens were not commonly used for camp sites or villages, they were undoubtedly important to the Indians that lived in the nearby hammocks. The same is true of the later European-American

settlers. These people used the pine barrens to raise range cattle and pigs. They also hunted deer, turkey, squirrels, quail, and other small game that frequented this habitat.

Faunal Community

The bogs, prairies, and lakes in the Okefenokee Swamp have sufficient water to support a large aquatic community of vertebrates and invertebrates. Other than freshwater shellfish and crustaceans (primarily crawfish), the most important resource for humans in the swamp are vertebrates.

The list of humanly exploitable fish is extensive, but the most important species include Florida gar, bowfin, American eel, redfin pickerel, chain pickerel, yellow bullhead, brown bullhead, channel catfish, pirate perch, mud sunfish, flier, black-banded sunfish, blue-spotted sunfish, banded sunfish, warmouth, bluegill, dollar sunfish, spotted sunfish, largemouth bass, and black crappie.

Exploitable reptiles besides the alligator include the larger species of turtles and snakes. A few amphibians such as bullfrog, siren, and amphiuma were perhaps also exploited.

At least 220 species of birds have been identified in the swamp and surrounding uplands. The most important of these, from the human exploitation standpoint, include herons and wading birds, storks and ibises, ducks and geese, rails and plovers, doves, quail, and turkey. Although other birds such as woodpeckers, flycatchers and swallows, crows and jays, songbirds, and raptors inhabited the swamp, there is little archaeological evidence for their subsistence.

The most important mammal for human consumption living in the swamp is the white-tailed deer. Other significant mammals include Virginia opossum, marsh rabbit, Eastern cottontail rabbit, gray squirrel, fox squirrel, beaver, round-tailed muskrat, red wolf, gray fox, black bear, raccoon, long-tailed weasel, mink, striped skunk, river otter, cougar, and bobcat (Laerm et al. 1984:682-700).

TRAIL RIDGE

Trail Ridge is an elongated sand feature stretching from near Glenville, in southeast Georgia, southward to the Interlachen Karstic Highland in Clay County of north-central Florida. Its total length is about 209km (130mi) and it varies in width from about 1km to 3km (0.6mi to 1.9mi). West of the central portion of the ridge and extending 25km (15.5mi) north and south of that point, is the Okefenokee Swamp. Trail Ridge effectively contains the swamp and, according to some, is the cause of its existence. The ridge rises to between 45m and 60m (148ft and 197ft) above mean sea level (amsl) at the southern limit, but loses elevation northward where it lies between 43m and 46m (141ft and 151ft) amsl just north of the Satilla River. It is discontinuous at several points where major streams, such as the St. Marys, Satilla, and Little Satilla Rivers,

have crosscut and eroded its sediments (Pirkle and Pirkle 1984:613). The sands comprising Trail Ridge are relatively coarse and very uniform in grade-size distribution. About 50 to 70 percent falls into the medium sand (0.5mm to 0.25 mm [0.02in to 0.01in]) fraction and from 20 to 40 percent falls into the fine sand (0.25mm to 0.125 mm [0.01in to 0.005in]) fraction (Pirkle and Yoho 1970).

While some workers favor a theory that Trail Ridge originated as a spit in which sediments were deposited by current-wave action, Pirkle (1984) has effectively shown that the sands of Trail Ridge were deposited in a wind-wave dominated environment. This supports a consensus by most researchers that it formed as a dune-beach ridge at the cresting of an eroding, transgressing sea (Pirkle and Pirkle 1984:619), probably during the Yarmouth Interglacial between 215 and 500 thousand years ago (Parrish and Rykiel 1979). Fossil shells found in well borings prove that late Pliocene or Pleistocene seas were present in areas of southeast Georgia and northeast Florida that are now between 40m and 49m (131ft and 161ft) amsl (Pirkle and Pirkle 1984:617). The geographic orientation of Trail Ridge is parallel to younger shoreline features to the east that presumably formed during periods of sea stasis as the Atlantic Ocean receded to its present position. These shorelines are defined, largely on the basis of elevation, and designated as the Silver Bluff (youngest and bordering the Atlantic), the Princess Ann, the Pamlico, the Talbot, the Penholoway, and the Wicomico (Trail Ridge). According to this theory, Trail Ridge was at one time a barrier island facing the Atlantic Ocean.

Currently no soil survey is available for Charlton County, Georgia. Therefore, the following description of Trail Ridge soils are derived from adjacent areas of Camden County to the east and from published descriptions of the ridge soils in Florida. Except for the wetland areas, the soils of Trail Ridge are sandy throughout. They are classified as spodosols and are dominated by nearly level, somewhat poorly to poorly-drained sandy soils with dark sandy subsoil layers. Spodosols have a spodic horizon (hardpan), a subsurface zone in which organic matter in combination with aluminum and/or iron has accumulated due to downward leaching. Soil textures are sandy, except that an argillic horizon (a zone of accumulation of clay-size particles) may occur beneath the spodic horizon (Brown et al. 1990). The better drained soils of Trail Ridge are similar to Mandarin fine sand in Camden County which is found on slight ridges and broad flats in the Atlantic Coast Flatwoods. This is a somewhat poorly drained soil that is rapidly permeable in the thick upper sandy layers and moderately permeable in the organic hardpan and is low in natural fertility and organic matter (Rigdon and Green 1980:18). Wetland soils resemble the Brookman series described for wetland areas of Camden County. These nearly level soils are in broad shallow depressions of the Pamlico Shoreline Complex and consist of deep, very poorly drained, slowly permeable soils that formed in thick clayey marine sediment. The water table is less than 30 cm (12in) below the surface from fall until late in spring. This soil is medium in natural fertility and organic matter content but its potential for agriculture is poor because of flooding (Rigdon and Green 1980:16).

Habitats

A variety of environmental zones are found on Trail Ridge, most of which have experienced some form of human manipulation. Pine barrens occupy the vast majority of the terrain and hammocks occur with some frequency. Both of these were previously described in the section on the Okefenokee Swamp and will not be repeated here. Instead the focus will be on the differing habitats of bay swamps, cypress domes/ponds, and gum ponds found on Trail Ridge.

Bay Swamps

Bay Swamps are wet-floored evergreen forests located at the heads and along the course of branches draining the east and west slopes of Trail Ridge. They also occur as depressions on the ridge where heavy groundwater seepage from adjacent slopes saturates the soil. There is usually a surface layer of peat where considerable disintegration of organic matter occurs and mixes with the inorganic soil. Plant species are usually evergreen varieties including loblolly bay, sweet bay, and swamp red bay, pond pine, wax myrtle, Virginia willow, muscadine, and two species of ferns. Vertebrate species, exclusive of fish and birds, common to these habitats include a variety of frogs, salamanders, snakes, turtles, and lizards. Mammals frequenting this habitat include raccoons, squirrels, bobcat, fox, rabbits, skunks, and white-tailed deer. On rare occasions alligator and bear have also been observed in these areas (Wharton 1978:83-85).

Cypress Domes/Ponds

Cypress domes/ponds are hydric systems found in topographic lows along Trail Ridge. Cypress domes are generally round structures with the tallest trees in the center and tree size diminishing towards the edge. They may or may not have a stream to drain excess moisture. Cypress ponds are irregular features with trees at a more uniform height and always having a well defined drain. Both have similar floral communities which include such species as: pond cypress, slash pine, swamp black gum, red maple, fetter bush, wax myrtle, button bush, Virginia chain fern, poison ivy, bamboo brier, and Virginia willow. The same faunal species that frequent the bay swamps described above would be expected to utilize these features as well. Since these ponds fluctuate between standing water and dry, depending on rainfall, there is little fish life. However, a variety of freshwater crustaceans, the largest of which is the crayfish, are commonly found in these habitats (Wharton 1978:75-77).

Gum Ponds

Gum ponds are ponds lacking cypress and dominated by swamp black gum. They occur more infrequently than cypress domes/ponds and are believed to be underlain by an impervious clay layer. Because of this characteristic, water fluctuation may be less severe than in cypress domes/ponds. Floral and faunal species found in these features are similar to those in cypress domes/ponds (Wharton 1978:78-79).

CHAPTER 3

GEOLOGY AND PALEOECOLOGY

OKEFENOKEE BASIN

Introduction

The Okefenokee Swamp is a relatively modern geographical feature. Currently, there are two major theories on its formation, the Pleistocene Marine Origin Theory and the Holocene Freshwater Origin Theory (Hamilton 1982).

The Pleistocene Marine Origin Theory is based on the idea that the Okefenokee Swamp formed on a Pliocene marine terrace about one million years ago when the sea became trapped behind Trail Ridge which was a barrier island at that time. As sea level dropped the impounded salt water was gradually replaced by freshwater through precipitation and run-off. By about 6,000 ^{14}C BP, the freshwater lagoon behind Trail Ridge had developed into the current Okefenokee swamp-marsh complex (Cohen et al. 1984:504).

The Holocene Freshwater Origin Theory suggests that the swamp formed much later, perhaps no more than 7,000 ^{14}C BP (Cohen et al. 1984:510), when a climatic change from drier to wetter conditions created a stand of water in the Okefenokee Basin. This process was enhanced by a rise in sea level, which created a slower flow in the rivers that drain the swamp. Furthermore, the poorly permeable clays below the basin and a rise in the groundwater level also contributed to the retention of water in the swamp.

Most of the current evidence supports the Holocene Freshwater Origin Theory. Regardless of which theory is more accurate, both schools agree that the peat found in the modern swamp began its formation no earlier than about 6,700 ^{14}C BP.

For archaeology, the formation of the Okefenokee Swamp at around 7,000 ^{14}C BP has profound implications in understanding human behavior in the basin and its surrounding uplands. Since Paleoindians are known to have inhabited regions of northern Florida and south-central Georgia, their presence in the Okefenokee area is likely. Likewise, Early and Middle Archaic cultures were also in these same regions as well as to the west of the Swamp. The development of the Okefenokee Swamp during the Middle Archaic Period must have had a marked effect on the lifeways of the aboriginal inhabitants of southeastern Georgia and northeastern Florida. Such a dramatic change in the environment should be reflected in the archaeological record. To interpret that change, an understanding of how the swamp formed and the climatological conditions prior to its formation is essential.

Pliocene Marine Terrace Formation

During the late Pliocene, the sea covered much of Florida and southern Georgia. As sea level receded, a series of old shorelines with their barrier islands were left behind in the form of stair-like terraces with their long axes oriented parallel to the present Atlantic coastline. These have been described by a number of workers since the early 1900s and classified based on elevation intervals (Hamilton 1982). The youngest are the beaches and northernmost tips of the current barrier islands which began forming during the early Holocene and continue to build today (Rigdon and Green 1980). From these beaches westward are the Silver Bluff, Princess Ann, Pamlico, Talbot, Penholoway, Wicomico, Okefenokee, Waycross, Argyle, Claxton, Pearson, and Hazelhurst terraces which are successively older (Huddlestun 1988:150). The Okefenokee Swamp lies on the Okefenokee Terrace behind Trail Ridge which is the Wicomico shoreline.

Fossils found beneath Trail Ridge prove that it was formed during the late Pliocene or early Pleistocene. Since it truncates the Waycross Ridge to the north and the Lake City Ridge to the south it is believed to be younger than both of these features (Pirkle and Pirkle 1984). Parrish and Rykeil (1979) believe that it formed during the Yarmouth Interglacial, perhaps between 215 and 500 thousand years ago. Because of the extended amount of time between this formation and the oldest basal dates for the modern peat deposits, it is possible that earlier periods of peat formation and subsequent oxidation and erosion may have occurred (Hamilton 1982). Freshwater sponge spicules and charcoal found in the basal peats of the swamp by Cohen (1974) may be evidence of these earlier formed peats.

Late Pleistocene-Early Holocene Model

While there is little geological evidence in the Okefenokee Basin for the formational processes that transpired prior to the onset of peat formation at approximately 6,700 ^{14}C BP, Cohen et al. (1984) argue that the marine sedimentary base for the swamp bears evidence of stream channels and depressions that were apparently hydrologically active on the terrace before the swamp formed. Using this and topographic data from the wetland areas of the basin, a model of the late Pleistocene landscape in and around the Okefenokee Basin can be constructed, if the work on regional paleoclimate and sea level is integrated with research from the swamp.

It was during the late Pleistocene when humans first inhabited North America and present day Georgia and Florida. Through work at several sites in Florida and southern Georgia, Watts (1969, 1971, and 1992) has constructed a regional model of the paleoclimate in which these early people lived. His model and other supporting evidence argues that the late Pleistocene-early Holocene landscape was much drier than that of today. Apparently after 12,000 ^{14}C BP northeast Florida and southeast Georgia had more xeric flora with some prairie development and low lake levels (those which are perhaps 20 m deep today [Watts et al. 1996]) with many dried out lake basins (Brooks et al. 1989; Watts 1971, 1992; Watts et al. 1996). In southern Florida, the water table was as much as 18m (59ft) below its present level around 12,000 ^{14}C BP and these climatic conditions were apparently of general occurrence across the region (Watts 1980,

1992; Watts and Hansen 1988). Lake Louise, just a few kilometers west of the Okefenokee was dry before 8,500 ^{14}C BP and so were Goshen Springs in southern Alabama and Mud Lake in north-central Florida (Delcourt 1980; Watts 1969, 1983). The presence of a Holocene oak forest at Lake Louise (8,500 to 5,000 ^{14}C BP) indicates that substantially less precipitation fell at that time. Watts (1971:686) estimates that the water table may have been as much as 12m (39ft) lower at the beginning of this period. At Camel Lake in northwest Florida a hiatus also exists in the pollen record from about 10,000 to 7700 ^{14}C BP, suggesting that this was the driest interval of the Holocene (Watts 1992:1064).

Contrasting the Watts model is that of Paul and Hazel Delcourt. As a result of their work in northern Alabama and Tennessee, they interpret the conditions of warmth and summer drought as being inadequate to transform the landscape into a semi-prairie environment. They believe that the conditions favored an oak-hickory-southern pine forest from 26,000 ^{14}C BP through the full and late glacial periods until the mid-Holocene transition to pine dominated forests, about 5,000 ^{14}C BP. However, the Delcourt model includes a major vegetational ecotone that extended across central Alabama and Georgia during the full glacial period. This boundary separated northern boreal-like forests of spruce and jack pine from the warm-temperate oak-hickory-southern pine forests of the Gulf Coastal Plain (Delcourt 1980:371). While later research modified this model into a constant floral composition south of 33° N latitude over the past 20,000 years, they still recognized an ecotone between 33° and 34° N latitude (Delcourt and Delcourt 1983:267).

The Watts model is well supported by other research in the Southeast. Investigations of underwater and wet site sediments deposited at archaeological sites since the last glacial maximum at ~18,500 ^{14}C BP have provided critical evidence-related to the climate of the Late Pleistocene through the Early Holocene. All of these are in Florida and include Little Salt Spring, Warm Mineral Springs, Windover Pond, and Page-Ladson (Clausen et al. 1975; Dickel and Doran 2002; Dunbar et al. 1988, 1989; Faught and Carter 1998; Purdy, 1991; Webb 2006). In particular the Windover Pond site was crucial in providing paleoenvironmental data for the Holocene (Dickel and Doran 2002).

Windover is a small, peat-filled pond in Brevard County, Florida about five miles west of Cape Canaveral. At the Pleistocene-Holocene boundary, Windover pond was likely dry or only seasonally or intermittently inundated because of the lower water table. Then between 11,000-10,000 ^{14}C BP, Windover began to hold enough ponded water to provide a habitat for aquatic plants such as water lilies. Their remains accumulated in the lowest levels of the peat deposit. The influx of regional pollen rain, captured and preserved in the peat, suggests a drier environment than at present, with savannah-like conditions prevailing prior to 10,000 ^{14}C BP. Pine pollen dominates in the lowest sediments and then it decreases at the expense of oak. There is also evidence of a lowering of the water level and a decrease in the area of the pond after 9000 ^{14}C BP. An increase in the pollen of several species of open terrain grasses also indicates that drying occurred at this time. Other lines of evidence also indicate a dry period that is consistent with the accepted boundaries of the Hypsithermal period in the southeastern United States. Over that span, the Windover record indicates that floating aquatic vegetation was eliminated and

shallow aquatic and/or emergent vegetation developed. Fresh water snails requiring still water environments were present and the pollen record is heavily dominated by grasses common to salt flats. At the height of the Hypsithermal, the snails disappear from the record and there is little evidence of standing water. Then, around 5000 ^{14}C BP, the drying trend eases and wetter conditions ensue. A hardwood swamp community developed and there was an increase in arboreal cover in the surrounding landscape. Sometime later, the hardwood swamp community declined and a sedge-grass community developed and continued until the site was discovered in 1982 (Holloway 2002:211-226; Stout and Spackman 2002:227-235).

At Little Salt Spring just south of Tampa on the Gulf Coast, evidence was found that the water level in the cenote was about 11m to 12m (36ft to 39ft) below the present surface at about 10,000 ^{14}C BP (Clausen et al. 1979:610). Pollen studies of the sediments in the spring also suggested that the surrounding landscape was dry (Clausen et al. 1979:611). The water level began to rise around 5200 ^{14}C BP, a time commonly recognized as the beginning of the modern climate. Brooks and others (1989) have concluded that sea level and regional climatic change are interrelated. They believe that sea level served as a base-level control acting upon the freshwater hydrologic region in lowland, coastal areas. According to their fluctuation curves for the South Carolina coast, sea level was about 9m (30ft) lower than at present about 10,000 ^{14}C BP and was presumably lower still at 12,000 ^{14}C BP. It rose rapidly after the close of the Pleistocene and by 4,200 ^{14}C BP, or slightly earlier, was within 3m to 4m (10ft to 13ft) of its present level (Brooks et al. 1989:92).

The Delcourt and Watts models may not be in conflict if an ecotone can be confirmed to have separated the oak-hickory-southern pine forest to the north from the sclerophyllous oak forest-scrub/savanna-prairie to the south. If such an ecotone did extend across Georgia between 33° and 34° N latitude until the mid Holocene, it is likely that most of the Okefenokee Basin and the surrounding uplands was a dry and inhospitable place from the time that the first humans arrived in the area until near the close of the Middle Archaic Period. The Okefenokee Swamp is shallow, with a maximum depth of only about three meters (10ft) and prior to 8,000 ^{14}C BP the low water table and drier climate probably induced the prairie-like landscape that Watts describes (Watts 1971:676). Such a landscape likely supported grazing animals, if waterholes were present. If nomadic hunters were also present prior to 8,000 ^{14}C BP, their cultural remains probably now lie submerged in those areas of the swamp where deep springs or pre-swamp perennial streams existed. The carrying capacity of the landscape surrounding the basin and most, if not all, of the basin itself was dramatically reduced. With the onset of more moist conditions and the regional rise in the water table at around 5,000 ^{14}C BP, the climate began its amelioration toward the modern environment. As the swamp formed and the water level rose, any human activity shifted outward as the swamp edge expanded. Sometime between 5,000 and 3,000 ^{14}C BP, floral conditions reached their present state, which, presumably, signals the attainment of modern conditions (Watts 1971:688).

The primordial swamp is interpreted as being different from the swamp of today. After 7,000 ^{14}C BP, when the climate became wetter, most of the basin changed to a mesic forest of oaks, pines, and various other hardwoods (Fearn and Cohen 1984:433). Peat began forming shortly

thereafter in wetland areas on the topographic lows of the old marine terrace. These were apparently freshwater marshes located in the modern day prairies (Cohen et al. 1984:510). The higher ridges were probably covered with dry prairie and/or scrub vegetation. As the regional water table rose, the peat-forming wetlands expanded outward from these marshes to inundate other features of the Okefenokee Basin (Rich 1984:415). Cypress bay/forests became established sometime after 4,500 ^{14}C BP and the oak-dominated forest diminished as southern pine increased at around 2,900 ^{14}C BP (Fearn and Cohen 1984:430).

CHAPTER 4

CULTURE HISTORY OF THE OKEFENOKEE BASIN

The following culture history of the Okefenokee Basin is derived primarily from the writings of Chris Trowell. Beginning in the 1970s and continuing today, he has conducted a volunteer historical and archaeological study of the Okefenokee Basin. His method has included field trips, personal interviews, and document research. The result of his efforts is a body of work that is unsurpassed in its scope. In addition, some of the information presented here comes from an archaeological reconnaissance of Trail Ridge conducted by Southern Research for the Du Pont Corporation in 1997. The primary documents referenced are Trowell (1998a, 1998b, 1998c) and Weisman et al. (1998).

The earliest evidence for human occupation of the Okefenokee Basin dates to around 2500 B.C. Since the modern swamp did not develop until sometime between 5000 B.C. and 2000 B.C., evidence of earlier occupations may lie buried beneath the basin's peat. The earliest pottery, fiber- tempered, is found around the edge of the swamp and on the interior islands. At the Martha Dowling North site it was recovered from below the shallow water table and in contact with the upper surface of a layer of brown hardpan. The vast majority of the fiber-tempered pottery recovered from the Martha Dowling North site is the thick, plain variety commonly found on the Georgia coast and referred to as St. Simons. Only one fragment of Orange fiber-tempered pottery that is prevalent in northeastern coastal Florida has been found. These Late Archaic sites are located in live oak hammocks which provided more desirable living spaces that were richer in nuts, berries, small game, and shade than the surrounding pine forest. Hammocks were preferred by all of the swamp's human inhabitants (Trowell 1998b).

The Early Woodland ceramic types Satilla Plain and Satilla Simple Stamped occur with some frequency along Trail Ridge. Satilla phase pottery is found primarily in the Satilla River drainage and the headwaters of the Alapaha River. It is also common along the lower Satilla River and southward to the St. Marys River estuary. Check-stamped pottery of the Satilla phase (Willacoochee Check-Stamped) has not yet been found in the Okefenokee Basin. This type appears to be restricted to the interior Coastal Plain north and west of the Okefenokee (Kirkland 1979, 2003; Trowell 1998b).

Pottery of the succeeding Deptford phase is found throughout the Okefenokee Basin. Most of the Deptford wares are simple-stamped although a few are check-stamped. While the Deptford people occupied the same lush hammocks as their predecessors, their sites yield only a few pottery sherds and chert flakes. The evidence suggests that their presence was minimal, perhaps only a few families used the area on a seasonal basis. The archaeological remains of a house and several large shell middens, found on Cumberland Island, suggest a somewhat more permanent Deptford occupation to the east on the lower Georgia coast. Deptford people from the coast may

have visited the Okefenokee area at certain times of the year to exploit resources that were only available in the swamp (Kirkland 1979, 2003; Trowell 1998b).

Strangely, the following Swift Creek phase, which is so widespread north and east of the Okefenokee Basin, is poorly represented there. Only one site on Trail Ridge has produced significant quantities of Swift Creek pottery (Trowell 1998a). Although no radiocarbon date has been obtained for this site, recent studies demonstrate that Swift Creek people were living along the Georgia coast only 50km (31mi) east of the Okefenokee as late as A.D. 850 (Kirkland 2003:40).

The presence of larger sites with conical sand mounds dating to around A.D. 500 suggests an increase in population in the Okefenokee Basin during the Middle Woodland period. Occupation at these sites is attributed to the Weeden Island people. Weeden Island Incised, Weeden Island Punctated, Weeden Island Plain, Carabelle Incised, Carabelle Punctated, Keith Incised, Tucker Ridge-Pinched, and Wakulla Check-Stamped are found at a number of sites both on Trail Ridge and on islands in the interior swamp. Weeden Island people also preferred oak hammocks for their villages and almost every large island in the swamp has at least one conical sand mound probably dating to the Weeden Island phase. Since no significant disturbances that bring artifacts to the surface have occurred at these sites, the assertion that villages were present is somewhat speculative. However, mounds are indicative of villages, which in turn suggest larger populations than the small sites of the previous cultures. The geographical concentration of Weeden Island culture lies to the southwest of the Okefenokee Swamp (Kirkland 1979, 2003; Trowell 1998b).

About A.D. 1000, cord-marked pottery appeared in the Okefenokee Basin. It is commonly found along the eastern rim and on Floyds Island, Billys Island, Jones Island, Hickory Hammock, and Mixons Hammock. The cultural affinity of the cord-marked pottery in the Okefenokee is uncertain. Some of these sherds resemble Prairie Cord Marked from north-central Florida while others are similar to Ocmulgee Cord Marked of south-central Georgia and Savannah Cord Marked from the northern Georgia coast. Despite this, several sites in the swamp are interpreted as producing only Savannah phase ceramics (Trowell 1998b). Savannah Complicated Stamped, a type associated with the Savannah II phase on the northern Georgia coast, occurs in Black Hammock northwest of the Okefenokee NWR (Chris Trowell, personal communication 2007).

Sites on Cowhouse Island, Bugaboo Island, and others along the eastern rim of the swamp have yielded aboriginal pottery dating to the Lamar phase. Lamar is a Mississippian period ceramic tradition that spans all of Georgia and parts of Tennessee, South Carolina, Florida, and Alabama (Williams and Shapiro 1990). Pottery of this phase is quite common north and northeast of the Okefenokee but is generally lacking toward the east, the southeast, and the south. In all of his experience, Chris Trowell has seen only two pottery fragments of the coastal Georgia variant Irene phase in the Okefenokee Swamp (Trowell 1998b). Irene pottery is associated with the historic Guale Indians that lived north of the Satilla River on the coast. The lack of Irene pottery in the Okefenokee Basin can be explained by the fact that Timucua Indians who made San Pedro

pottery and spoke a different language from the Guales occupied the region south of the Satilla River and the Okefenokee Swamp at that time.

At the time of European contact, the eastern side of the Okefenokee Swamp and Trail Ridge was under the control of two Timucuan-speaking aboriginal chiefdoms. These two chiefdoms, Ibihica and Oconi, were later assimilated into the expanding mission system of Spanish Florida. Based on Spanish records, Oconi was in or adjacent to the Okefenokee Swamp. It is described as being on an island between lakes and/or swamps. Linguistic derivation of the Timucua word Ibihica suggests that this chiefdom was adjacent to water. It was composed of five towns and, given all of the clues, was likely located on Trail Ridge. The missions of San Lorenzo de Ibihica and Santiago de Oconi were established at these towns sometime during the 1620s (Weisman et al. 1998:44-46). They operated until 1656 when, after imprisoning the chief of Oconi in the fort at St. Augustine, Spanish soldiers burned the towns of both chiefdoms. These missions were never re-established and the Indians never returned to their homes (Weisman et al. 1998:44-50).

Missions were built at the principal town of a group of settlements that comprised a chiefdom. Each town likely had a mission compound surrounded by a larger Timucuan village. The compound was composed of a single church, an adjacent friary or convent, and perhaps a separate kitchen structure and barrel-well. A single friar lived at the mission and ministered to the Indians (Weisman et al. 1998:44-50). In 1998, an archaeological survey of Trail Ridge recovered Spanish artifacts in the space between two of the sand mounds at the Martha Dowling North site (9CR34). One of the artifacts was a fragment of San Luis Blue on White majolica, a ceramic type that was closely associated with the activities of the friars (Weisman et al. 1998:48-50). The Spanish artifacts at this site may point to the presence of a mission. After the evacuation of the missions in the late 1600s, few permanent settlements are recorded in the Okefenokee Basin for the next century. Historical accounts indicate that Creek Indians usually avoided the swamp and no diagnostic artifacts dating to this period have been found (Trowell 1998b).

In order to avoid involvement in the American Revolution, a Creek chief named Hopoithle Tustunnuggee Thlucco moved his family into the Okefenokee Swamp and settled on a “ridge” on the north side of the Suwanee River. This “ridge” was likely present day Mixons Hammock. He only lived there a short time, abandoning the island because “the bears and tigers” were eating his stock.” A well-liked old hunter referred to as “Indian Billy from Ware County,” lived on Billys Island during the 1820s and the island is probably named for him. He was murdered around 1828. A band of Seminoles, fleeing the war in Florida, sought refuge on Billys and Floyds Islands in early 1838. Later that same year, General Charles R. Floyd led federal troops and the state militia into the Okefenokee Swamp and found the abandoned villages on the two islands. These were the last known Indian settlements in the swamp (Trowell 1998b:2).

During the early 1800s, the Okefenokee Swamp was part of the larger region that lay between English Georgia and Spanish Florida. The English-Spanish boundary was ill defined and laws were poorly enforced. Consequently, the swamp became a haven for bands of Indians and white renegades who rustled cattle, perpetrated revenge raids, and smuggled slaves from the St. Marys

River to Alabama. Thus, several forts and blockhouses were built and intermittently manned between 1812 and 1842, particularly in the mid-1830s when Florida's Second Seminole War encroached into southern Georgia. The main forts included Fort Argyle on the Ogeechee River, Fort Henderson and then Fort Jackson at Trader's Hill south of Folkston, Fort Floyd near Waycross, Fort Gilmer near Fargo, and Fort Moniac in Florida near the headwaters of the St. Marys River. These forts were manned by Georgia militia and U.S. troops and used as bases to patrol the surrounding areas and to squelch Indian raids. Wildcat and Tiger-tail were prominent Seminole leaders who probably led many of the raiding parties. Although the resulting guerrilla war lasted from 1814 to 1842, probably fewer than 50 people died from murder and/or combat in and around the swamp (Trowell 1998b:2-3).

After the Indian Wars of the 1830s subsided, more families moved into the Okefenokee Basin. Many of their surnames are found on modern maps of the Okefenokee area. Early settler's names include Altman, Barber, Burnsed, Canaday, Crews, Cox, Davis, Dial, Harper, Hodges, Johns, Miller, Mizell, Rawlinson, Roddenberry, Sweat, Thrift, and Tracy. The Lees and Chessers came two decades later and settled on islands in the Swamp. These early settlers were subsistence farmers. They herded cattle, raised hogs, cultivated small corn fields and gardens, and hunted and fished. They built log houses that were surrounded by several out-buildings for storing grain, supplies, or for special operations such as sugar production. The Lees contacted the outside world only occasionally, perhaps once or twice each year to trade their hides, jerky, and pelts for essential supplies such as ammunition and salt. This self-sufficient life-way of the early pioneers continued until well into the twentieth century (Harper and Presley 1981; Trowell 1998c).

Unlike the Great Dismal Swamp in North Carolina and Virginia where between 1630 and 1865 thousands of maroons, runaway slaves, and disenfranchised Indians sought refuge and formed communities that were connected through a dynamic swamp-wide political economy (Sayers et al. 2006:1), there is no evidence that the same situation occurred in the Okefenokee Swamp (Chris Trowell, personal communication 2007). In the Great Dismal Swamp maroons and slaves came from nearby plantations in a region with a much higher population density. There were no plantations close to the Okefenokee Swamp and except for a few scattered homesteads the area around the swamp was largely unsettled. However, several rice plantations were present along the lower St. Marys and Satilla Rivers a few miles to the east during the Antebellum period and it cannot be ruled out that occasionally a runaway slave sought refuge in the Okefenokee Swamp.

By the Civil War, the Atlantic and Gulf Railroad, which ran from Savannah to Valdosta, passed a few miles north of the Okefenokee Swamp. Another line built between Waycross and Jacksonville, Florida in 1881 passed within a mile of the northern and eastern edges of the swamp. By the early 1890s, the Okefenokee Swamp was surrounded by a system of railroads.

In 1891 the Georgia Legislature sold the Okefenokee Swamp to the Suwanee Canal Company, a group of former Confederate officers and wealthy investors. Beginning in 1891 this enterprise attempted to drain the Okefenokee by digging a ditch from the swamp through Trail Ridge to the St. Marys River. Their goal was to create land suitable for planting rice, sugar cane, and cotton.

They built a saw mill and harvested logs using steamboats and steam-powered logging equipment to raise money for the venture. Before the enterprise failed in 1897, they had dug over twenty miles of canal (Trowell 1998a).

In the early twentieth century, the extension of the railroads allowed the construction of sawmills, turpentine stills, and exploitation of the swamp's forests. It also brought an influx of people to fill the jobs created by these industries (Trowell 1998a).

After several transactions, the property owned by the former Suwanee Canal Company ended up in the possession of Charles Hebard of Philadelphia in 1901. Hebard owned extensive lumber interests in Michigan and Pennsylvania. After his death in 1901, his sons took over the business and in 1904 they organized the Hebard Lumber Company of Thomas County, Georgia. This company then leased the Okefenokee property to a subsidiary, the Hebard Cypress Company of West Virginia. Between 1909 and 1927, they harvested cypress timber in the Okefenokee. This company built a large saw mill west of Waycross where they manufactured lumber and shingles. The settlement that grew up around the mill became known as Hebardville. The Waycross and Southern rail line was completed from Hebardville to the northwestern rim of the swamp in 1909-1910. From that point they systematically built railroads into the swamp and logged cypress trees in the northern and western portion of the basin (Figures 4.01, 4.02, and 4.03). Other smaller companies also logged in the swamp. Logging camps were established on Billys Island (Figure 4.04), The Pocket, and Jones Island in 1918. By the mid-1920s, the old growth stands of cypress were depleted and the larger companies shut down. The last cypress and pine logging operations ceased in 1942. By that time, the magnificent cypress and longleaf pine forests in and surrounding the Okefenokee Swamp had become a massive field of stumps (Trowell 1998a).

In 1925, before the railroad was removed, the Hebards' built a small cabin on Floyds Island (Figure 4.05). The Hebard family and their friends used it as a private hunting and fishing resort until the middle 1930s. Still standing and in good repair, it is now used by campers and researchers (Trowell 1998a). This cabin was recommended and subsequently listed on the National Register of Historic Places (Kanaski and Trowell 1999). As early as 1902, the plant geographer Roland M. Harper called for the preservation of the Okefenokee Swamp. His younger brother Francis Harper and scientists from Cornell University who began researching the Okefenokee in 1912, supported his proposal. As publicity extolling the beauty and uniqueness of the Okefenokee increased during the first quarter of the twentieth century, more and more people began to urge that the swamp be preserved as a wildlife refuge. In 1919 the Okefenokee Society was organized in Waycross with the stated purpose to "obtain a national preservation of the Okefinokee Swamp or such portions of its area as [would] best serve the public use in conserving and preserving the rare, unique, and varied scenic and scientific attractions which [the Okefenokee] offers." However, two years later the society's benefactor, Dr. J.F. Wilson, died and the organization died with him. Then in 1929, a group of Emory University professors and Atlanta businessmen-naturalists organized the Georgia Society of Naturalists. They lobbied the Georgia legislators and in 1929 the legislature acted to provide an

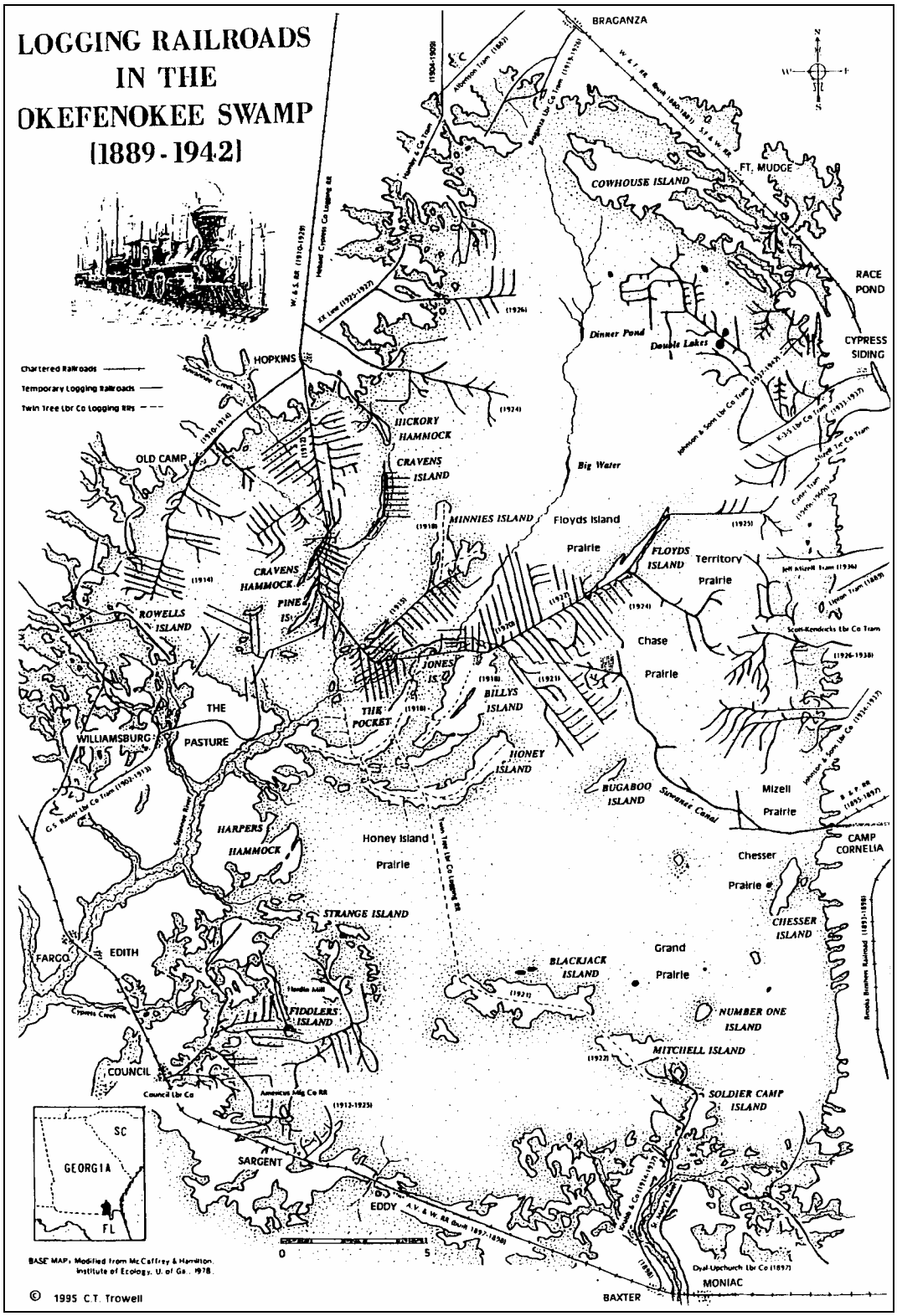


Figure 4.01 Logging railroads in the Okefenokee Swamp, 1889-1942 (courtesy Chris Trowell)

Figure 4.02 Logging operations in the Okefenokee Swamp (Francis Harper's photographs: Delma Presley South Georgia History and Culture Collection, Georgia Southern University).

Figure 4.03 Logging Operations in the Okefenokee Swamp (Francis Harper's photographs: Delma Presley South Georgia History and Culture Collection, Georgia Southern University).

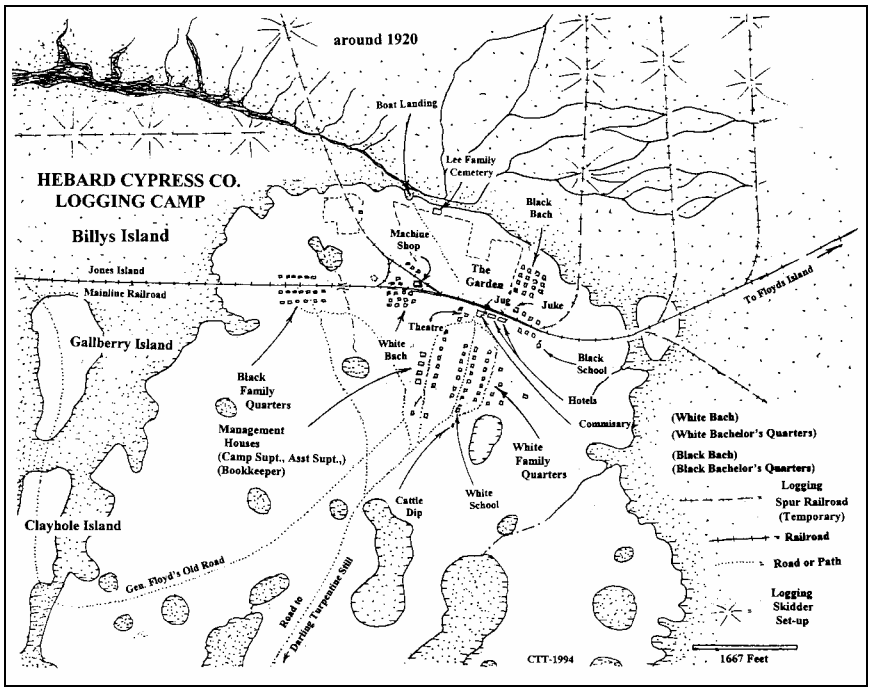


Figure 4.04 **Map of the Hebard Cypress Company Logging Camp on Billys Island** (courtesy Chris Trowell)

Figure 4.05 **Hebard Cabin photographed about 1929** (from a 1929 article entitled "Okefenokee" by Walter C. Hill that appeared in *Inspection News*, newsletter of the Retail Credit Company).

avenue for the federal government to purchase the property. Several Georgian politicians introduced congressional bills to preserve the swamp, but their attempts failed due to the lack of coordination. Several organizations promoted schemes to build a boat canal and a scenic highway across the swamp. Promoters in Florida advocated the purchase of the swamp by the federal government and the construction of a dam on the upper St. Marys River to create a large water reservoir for the city of Jacksonville. None of these plans came to fruition (Trowell 1998a).

After several feasibility studies, the federal government acquired an option to purchase 292,979 acres owned by Hebard Lumber Company in 1936. President Roosevelt issued Executive Order 7593 creating the Okefenokee National Wildlife Refuge (ONWR) on March 30, 1937. It was established primarily as a breeding ground for migratory birds and other wildlife. Two Civilian Conservation Corps camps were established and an all-black unit assigned to develop the facilities in the Refuge between 1938 and 1941. The Okefenokee Swamp Park was opened on Cowhouse Island in 1946 as a non-profit organization to serve the growing number of automobile tourists. In 1947, Okefenokee Recreation, Inc., of Homerville was granted a concession to build and operate a camp on Jones Island which they named Camp Stephen Foster. The camp was sold to the state of Georgia in 1954 and developed into Stephen C. Foster State Park. Also in 1947, the Okefenokee Sportsman's Club of Folkston opened a concession at Camp Cornelia to rent boats. A fire destroyed the camp structures in 1954. This concession did not prosper until tourist facilities were developed with federal funding around 1965. This entrance to the swamp was renamed the Suwannee Canal Recreation Area in 1967 (Trowell 1998a).

The Okefenokee NWR became a part of the National Wilderness System in 1974 and a Wilderness Canoe Trail system was constructed throughout the swamp. In 1986, the Okefenokee Swamp was recognized as a Wetland of International Importance by the Ramsar Convention. The Ramsar Convention is an intergovernmental treaty that provides a framework for national action and international cooperation for the conservation of wise use of wetlands and their resources (Trowell 1998a).

Since the original purchase, the Okefenokee NWR has increased to 371,000 acres. It has been managed by the U.S. Fish and Wildlife Service for the Department of the Interior since 1937. Their focus is on managing the habitat for wildlife and protecting endangered and threatened wildlife species. Since the creation of the Okefenokee NWR, public recreation and use of the swamp has increased dramatically (Trowell 1998a).

CHAPTER 5

PREVIOUS ARCHAEOLOGICAL RESEARCH

INTRODUCTION

Relating the history of prior archaeological research in the Okefenokee Swamp is presented in two parts: first, the history before 1930 and second, the history after 1930. This is because before the 1930s, information about cultural resources was largely ad hoc. Observations were addendums to the work of researchers in non-anthropological disciplines. Information on the pre-1930 research comes largely from a paper presented by Chris Trowell (2003) at the 2003 Symposium of Southeastern Coastal Plain Archaeology. His sources for this paper included books, newspapers, diaries, maps, and archaeological survey reports. The summary of post-1930 archaeological history comes from a variety of papers, research reports, and cultural resource management documents.

Okefenokee Archaeology Before 1930

Most of the earliest descriptions of people in the Okefenokee Swamp could be considered ethnographic references since they were observations made of living Indians. Benjamin Hawkins recorded the interviews of Creek Indians about the Okefenokee. David Glenn included comments in his 1805 surveying notes about Indians. He encountered Indians camped in the Georgia Bend and noted the location of "Inca Indian Mounds' on the east side of the upper St. Marys River.

During military campaigns against the Indians in 1838-39, General Charles R. Floyd recovered artifacts from several of the mounds. Some of these were ultimately displayed at the Savannah Science Museum in the 1980s.

Mansfield Torrance, another surveyor, depicted two houses on a map showing Mitchells Island and labeled them as an "Indian Town." Miller B. Grant, a surveyor with the Richard Hunter Survey of the Okefenokee Swamp in 1856-57, noted the location of Indian relics on Billys and Floyds Islands. He also noted the crumbling remains of old Fort Walker on Billys Island, the ruins of Fort Tatnall at the end of the Pocket, and Fort Tompkins near the entrance to Chesser Island.

Late in the nineteenth century, Charles R. Pendleton, editor of the *Valdosta Times*, and George W. Haines, editor of the *Jesup Georgian*, noted the locations of Indian mounds and Civil War period structures in the Okefenokee Swamp. Haines actually excavated in the mound on Billys Island and recovered artifacts. They also acknowledged deserter camps of Civil War soldiers on Blackjack and Honey Islands.

Howell Cobb Jackson (a member of the boundary survey between Florida and Georgia that was sponsored by the Suwannee Canal Company) recorded interviews with the Chessers and others in 1890. In his notes are references to the locations of Indian mounds and first-hand accounts of Indian activities in the swamp. Roland M. Harper noted the locations of Indian mounds on Bugaboo Island following his visit in 1902.

Albert H. Wright and Sherman Bishop were members of the Cornell Biological Exploring Expedition in 1912. Wright commented on the location and condition of archaeological sites in several of his later published papers and Bishop kept a daily diary. Bishop and several other students examined the mounds on Billys Island and also excavated in the mound on Mixons Hammock where they found several human skeletons. Bishop was among the first to make photographs of this work.

Francis Harper was a junior member of the Cornell Team in 1912. He returned to study in the Okefenokee Swamp in 1916, 1921-22, 1929, and 1932 and amassed 37 field notebooks over that time. Although his purpose was to study swamp fauna, he became fascinated with the swamp's "Okefinokee folk" and recorded notes and made photographs that portrayed their way of life. These ethnographic observations are among his best work. Besides his observations of the swamp fauna and indigenous people, entries in his notebooks also refer to Indian mounds, especially on Billys, Floyds, Bugaboo, and Chesser Islands (Figures 5.01 and 5.02). Harper photographed several of these prior to their damage and/or destruction during logging operations that began in earnest around 1915 (Harper and Presley 1981).

The Georgia Surveyor General, S.W. McCallie and J.E. Brantley, visited the Okefenokee Swamp twice in 1915. McCallie photographed Indian mounds on Billys Island (Figuer 5.03), Floyds Island (Figure 5.04), Mixons Hammock, and Honey Island. Brantley prepared a report on one of the trips wherein he gave the precise locations of the mounds on Billys Island. In 1921, while cutting a railroad tramway through the southwest Indian mound on Floyds Island, members of the Hebard Cypress Company exposed and photographed an extended burial.

In 1929, Margaret Ashley was just beginning a statewide archaeological survey. As part of that survey, she, Deloris Colquitt, and Marmaduke Floyd visited Number One, Bugaboo, and Floyds Islands. Colquitt, affiliated with the Georgia Historical Society, kept a diary (curated at the Georgia Historical Society in Savannah) of the trip and noted the presence of mounds on each of the islands.

Okefenokee Archaeology After 1930

The Yale Archaeological Survey excavated in mounds on Floyds and Bugaboo Islands in 1933. The artifacts recovered during this expedition are housed at the Peabody Museum on the campus of Yale University. A.R. Kelly (1935) published an article in *Scientific American* in 1935 that included information on the Okefenokee Swamp. Kelly's article was apparently based on data derived from the Ashley and Yale surveys of 1929 and 1933, respectively.

Figure 5.01 Indian Mound in a cornfield on Chesser Island (Francis Harper's photographs: Delma Presley South Georgia History and Culture Collection, Georgia Southern University).

Figure 5.02 Indian mound on Floyds Island (Francis Harper's photographs: Delma Presley South Georgia History and Culture Collection, Georgia Southern University).

Figure 5.03 **Indian mound on Billys Island, photographed in 1915** (S.W. McCallie photographs, Georgia Geological Survey County Photographs, Charlton County).

Figure 5.04 **Indian mound on Floyds Island, photographed in 1915** (S.W. McCallie photographs, Georgia Geological Survey County Photographs, Charlton County).

A map prepared in 1937 of the newly established Okefenokee National Wildlife Refuge includes the locations of Indian mounds that were known at that time. John M. Hopkins published his memoirs in 1947. Included in it are notes and references to Indian mounds and Indian trails in the Okefenokee Swamp.

During a short visit to Blackjack Island in 1954, Roy Moore (Okefenokee NWR manager) recorded the precise location, size, and shape of the Indian mound on its east end.

Joseph Caldwell made an excursion into the Okefenokee Swamp while conducting a survey of southern Georgia for the Smithsonian Institution in 1956. He had intended to examine the mounds on Billys Island but was unable to do so. Instead, he investigated those on Chesser Island. Unfortunately, no record of his observations has so far been found.

From the mid-1970s until the present, Chris Trowell (1978a, 1978b, 1979, 1989, 1998a, 1998b, 1998c, 1999, 2003) has conducted an archaeological and historical reconnaissance of the Okefenokee Basin and surrounding areas. His volunteer work has produced the largest body of information about the human activities in the Okefenokee Swamp. Trowell was the first to publish a comprehensive cultural historical sequence for the swamp.

In 1977-78, Newell Wright conducted a cultural resources survey prior to construction of the Camp Cornelia Subheadquarters, the Suwannee Canal Recreation Area, and areas near the Swamp Walk Boardwalk. Aboriginal artifacts were recovered at both the Camp Cornelia Subheadquarters and the Suwannee Canal Recreation Area. However, these were out of cultural context and insufficient to merit further investigation. Moreover, insufficient cultural resources were recovered to warrant their designations as sites.

During the late winter and spring of 1980, Greg Paulk conducted a field survey in the west central portion of the swamp near the effluence of the Suwannee River (Paulk 1980). More specifically, it included the swamp and river perimeter west of the egress to Steedly Bay (locally known as “the Pasture”), The Pocket, Jones Island, Mixons Hammock, and the Suwannee River Sill Road east and north of the river’s egress. Using a definition that any occurrence of cultural material was considered a site, he found 277 sites through pedestrian reconnaissance and post hole testing.

Elizabeth Reitz and Chester DePratter (1984) investigated two archaeological sites on Mixons Hammock in 1983 as part of a survey of that island plus Jones Island, the Pocket, and the edge of the Superior Pine Products Company Pasture. Ten posthole tests and a one meter square test pit were excavated at one site and five posthole tests at another. Artifacts recovered indicate that the two sites were occupied between A.D. 1200 and 1325. Recovery of fiber-tempered and Deptford phase ceramics attests to an earlier component at one of the sites. Faunal preservation was excellent and samples were obtained for zooarchaeological analysis. These were later analyzed and reported by Carder (1989).

Between 1991 and 1993, Newell Wright (1994) of Archaeological Research Associates directed a survey of the proposed Swamp Edge Break boundary. The survey was restricted to the area along the edge of the swamp where the U.S. Fish and Wildlife Service planned to construct a circumnavigating firebreak. Eighteen previously unrecorded sites were discovered that dated to the Archaic, Woodland, and Historic periods.

An intensive Phase I archaeological survey was conducted on portions of Trail Ridge by Southern Research in 1997 (Weisman et al. 1998). At the time, the Du Pont Company owned several tracts adjacent to the Okefenokee Swamp and planned to mine the ridge for titanium ore. Because of failure to obtain the necessary permits, this land was sold to the Conservation Fund who ultimately donated it to the Okefenokee National Wildlife Refuge. The survey resulted in the delineation of 23 unrecorded archaeological sites and ten artifact isolates. These date between the Late Archaic and Historic periods. One of the most exciting findings of this survey was the discovery of Spanish Mission period artifacts at the Martha Dowling North site (9CR34) that may indicate it was the location of the San Lorenzo de Ibihica mission.

Despite the long history of exploration, settlement, industrial exploitation, and conservation, remarkably little professional archaeology has been done in the Okefenokee Swamp. The current management policies of the U.S. Fish and Wildlife Service focus on the protection of wildlife species and management of their habitat. It is only when activities associated with wildlife management impinge on the cultural resources in the Okefenokee NWR that any archaeological investigation occurs.

CHAPTER 6

METHODOLOGY

INTRODUCTION

The 2007 wildfires that swept through the Okefenokee National Wildlife Refuge resulted from either lightning strikes or unplanned human causes. Fire suppression activities were emergency responses and not planned "undertakings" by federal, state, or local governmental agencies or private enterprises. Since this was an emergency event, these activities did not fall under the federal mandate of Section 106 of the National Historic Preservation Act of 1966 (as amended through 1992). Therefore, guidelines for the post-burn archaeological assessment were written by the Regional Historic Preservation Officer of the U.S. Fish and Wildlife Service. These guidelines were issued in the form of a Scope of Work (Appendix II) entitled, "Post-Wildfire Cultural Resource Assessment, Okefenokee National Wildlife Refuge, Charlton, Clinch, and Ware Counties, Georgia and Baker County, Florida." The specific aspects of the cultural resource assessment are described under "Description of Services to be Performed," and require the contractor to:

1) Conduct a non-collection pedestrian walkover of new firebreaks and staging areas.

2) Visit accessible hammocks to ascertain post-burn conditions and the presence of observable cultural materials.

3) Conduct a non-collection pedestrian walkover survey of seven selected recorded archaeological sites to ascertain post-burn conditions.

4) Document and assess the efficacy of the fire team's steps to protect the Floyds Island Cabin and the Chesser Island Homestead.

The methods used to execute each of these objectives are discussed below.

Field Investigation

Reconnaissance of New Firebreaks and Staging Areas

This aspect involved walking over bulldozer-cut and tractor-plowed firebreaks and the staging areas where firefighters focused their operations. The bulldozer firebreaks were as wide as 30m to 50m (98ft to 164ft) in places and were usually composed of a bare area closest to the fire front and an area where the uprooted trees were deposited (Figure 6.01). The tractor-plowed firebreaks were smaller, probably no more than 10m (33ft) wide and consisted of a bare furrow with a berm on either side (Figure 6.02).

Figure 6.01 View of bulldozer firebreak. [Okefenokee NWR, GA]

Figure 6.02 View of a tractor plowed firebreak. [Okefenokee NWR, GA]

Sites were defined as occurrences of at least five artifacts found in a 100 square meters (1076 square ft) area. Concentrations of less than five artifacts were classified as isolated finds. All or representative samples of artifacts at a site were photographed either *in situ* or against a one square centimeter background grid. An artifact analysis was conducted in the field and recorded on a form designed specifically for this survey (Appendix III). Since this was a non-collection survey, no artifacts were retained.

Documentation consisted of completing the form that included a field code, state site number (if previously recorded), date, site name, recorder, Global Positioning System coordinates (UTM), environment/physiography description, site description, soil characteristics (when possible), landscape/artifact photographic record, and a sketch map. Site dimensions were obtained by pacing and converting to metric units. GPS coordinates were determined using a Garmin eTrex Legend which has a precision of ± 4.5m (15ft). Soil cores were obtained using an Oakfield Model H tube-type soil sampler that can extract sediments to a depth of about 40cm (15.7in). Soil colors were described using a Munsell Soil Color chart and soil textures determined using a United States Department of Agriculture Soil Texturing Field Flow chart.

A major problem encountered in this aspect of the project was that many of the bulldozer firebreaks were inundated (Figure 6.03). This condition made them practically impossible to examine. In most cases they followed the Swamp Edge Break. The Swamp Edge Break is a routinely maintained firebreak that circumnavigates the entire Okefenokee Swamp along the

Figure 6.03 View of inundated bulldozer firebreak at the Okefenokee Swamp Edge Break. [Okefenokee NWR, GA]

distinct elevation contour between upland and wetland. Because of the wildfires, this firebreak was enlarged using bulldozers. At times, the route of the firebreak was actually inside the wetland areas of the swamp. As a consequence, most of these firebreaks were in low probability zones for the occurrence of archaeological sites. The number of sites and isolated finds encountered in these areas was extremely low as compared to the more elevated and better drained zones. This was recognized early in the project and the inundated areas or those portions of the bulldozer firebreaks that were clearly in the wetland areas of the swamp were not surveyed. Instead, our examination focused on the areas where firebreaks crossed upland elevations, especially along Trail Ridge.

Another problem was that early in the survey many of the bulldozer firebreaks were covered in uprooted trees or stumps which made navigating and examining them extremely difficult. Some were also freshly harrowed (repaired) and insufficient rain had fallen to expose any artifacts. These firebreaks had to be marked for revisit and examined later when better conditions for the detection of artifacts prevailed.

At the time of the project most of the sand roads along the perimeter of the swamp were in poor condition. On the east side along Trail Ridge this was due mainly to the constant traversing of logging trucks transporting fire damaged logs to the market. Their heavy loads led to deep rutting and gouging for distances of up to a quarter mile in the road's soft sandy areas. Some had to be avoided entirely because they were simply impassible for smaller vehicles. On the west side of the swamp the same was true. However, because the slope there is more gradual, the heavy rains at the time of our investigation had turned the roads into a quagmire. Fortunately, the length of new firebreaks in the Okefenokee NWR on its west side was very short. We managed to reach most of these with some effort.

Examination of Interior Hammocks

The Scope of Work called for the examination of accessible interior hammocks to ascertain post-burn conditions and assess any adverse impacts to known cultural resources and to record any unknown sites. This aspect of the field work received the least attention. This was because some of the interior islands could only be accessed by boat or helicopter. Such visits were limited by the location of landing spots and the weather. Furthermore, the visibility necessary for survey depended on whether or not the fire had burned away the underbrush. The scrub on the north end of Floyds Island had not burned and visibility was limited to only a few yards. Since three of the seven known sites to be visited under aspect three above were in hammocks on the swamp's interior islands, the examination of hammocks was done as part of that investigation. Hammocks on Billys Island, Chesser Island, and Floyds Island were visited and examined according to the Scope of Work guidelines.

Assessment of Seven Known Sites

As directed in the Scope of Work, seven previously recorded archaeological sites were sought to determine the effects of the wildfires. These included the Martha Dowling North site (9CR34), the old Grooms Field Mounds (9CR31 and 9CR32), 9WE47 on Blackjack Island, 9WE49 on Honey Island, 9CR78 on Floyds Island, and the Lee family cemetery and Hebard Logging Camp, both on Billys Island. Despite an extended search, 9WE47, 9WE49, and 9CR78 were not found. The methods used to evaluate those visited included examining each and recording whether or not fire reached the site, recording any adverse effects and other pertinent data, and photographing the site to record the state of the terrain at the time of our visit.

Efficacy of Fire Protection Measures

While the wildfires burned across the Okefenokee NWR, the fire suppression team used computer simulations to predict the course and severity of the fires. These computer programs enabled the team to predict where and when a fire front would move. As a result, they were able to take protective measures to reduce the risk to the National Register listed Hebard Cabin on Floyds Island and the National Register eligible Chesser Homestead on Chesser Island. All of the exposed wood of these structures was wrapped with heat resistant fabric. None were ultimately threatened by wildfire, although the fire front came to within 50m (164ft) at the Hebard Cabin and 30m (98ft) at the Chesser Homestead. While the absolute effectiveness of the wrap was not tested, it is likely that it prevented airborne embers from reaching combustible surfaces at both locations. Examination of these structures also included an evaluation of their restoration to pre-fire conditions.

Field Analysis

Since this was a non-collection pedestrian reconnaissance, artifact analysis was done in the field and from photographs taken at the time of discovery. No collecting, cataloging, or curation of artifacts was done. Prehistoric artifacts encountered included chert debitage, a single chert projectile point, and a variety of aboriginal pottery. Glass, glazed ceramics, bricks, and an assortment of metal objects comprised the historic artifacts found. All were categorized according to the criteria outlined in the Southeastern Horizons, Inc. Laboratory Manual (Kirkland and Rock 2004) and included in this report as Appendix IV.

CHAPTER 7

SURVEY RESULTS

INTRODUCTION

As described in the methodology chapter, the Scope of Work issued by the FWS required Southeastern Horizons, Inc. to:

1) Conduct a non-collection pedestrian walkover of new firebreaks and staging areas.

2) Visit accessible hammocks to ascertain post-burn conditions and the presence of observable cultural materials.

3) Conduct a non-collection pedestrian walkover survey of seven selected recorded archaeological sites to ascertain post-burn conditions.

4) Document and assess the efficacy of the fire team's steps to protect the Floyds Island Cabin and the Chesser island Homestead.

In order to maximize the efficiency of our survey efforts, items 2, 3, and 4 above were sometimes done during the same visit to a particular location. Accordingly, those aspects of the results are presented by geographical area rather than by the structure outlined in the Scope of Work.

Results of the Non-Collection Pedestrian Walkover of New Firebreaks and Staging Areas

The new firebreak/staging area reconnaissance aspect of the project began on June 18, 2007, and continued through the last day in the field on July 13. The total length of firebreaks walked was approximately 39.4 km (24.5 mi). However, since most of the firebreaks examined required at least two transects to adequately cover the exposed soil, the actual distance walked, in person kilometers, was near 80.5 km (50 mi). Because of the vast size of the Okefenokee Swamp, accessing the firebreaks required driving 2240 km (1392 mi). Figures 7.01 through 7.18 are sections of U.S. Geological Survey topographic maps that show (1) the paths surveyed (depicted in red), (2) newly discovered sites (labeled in blue official site numbers), (3) isolated finds (labeled in black field codes) and, (4) previously recorded sites (labeled in black official site numbers).

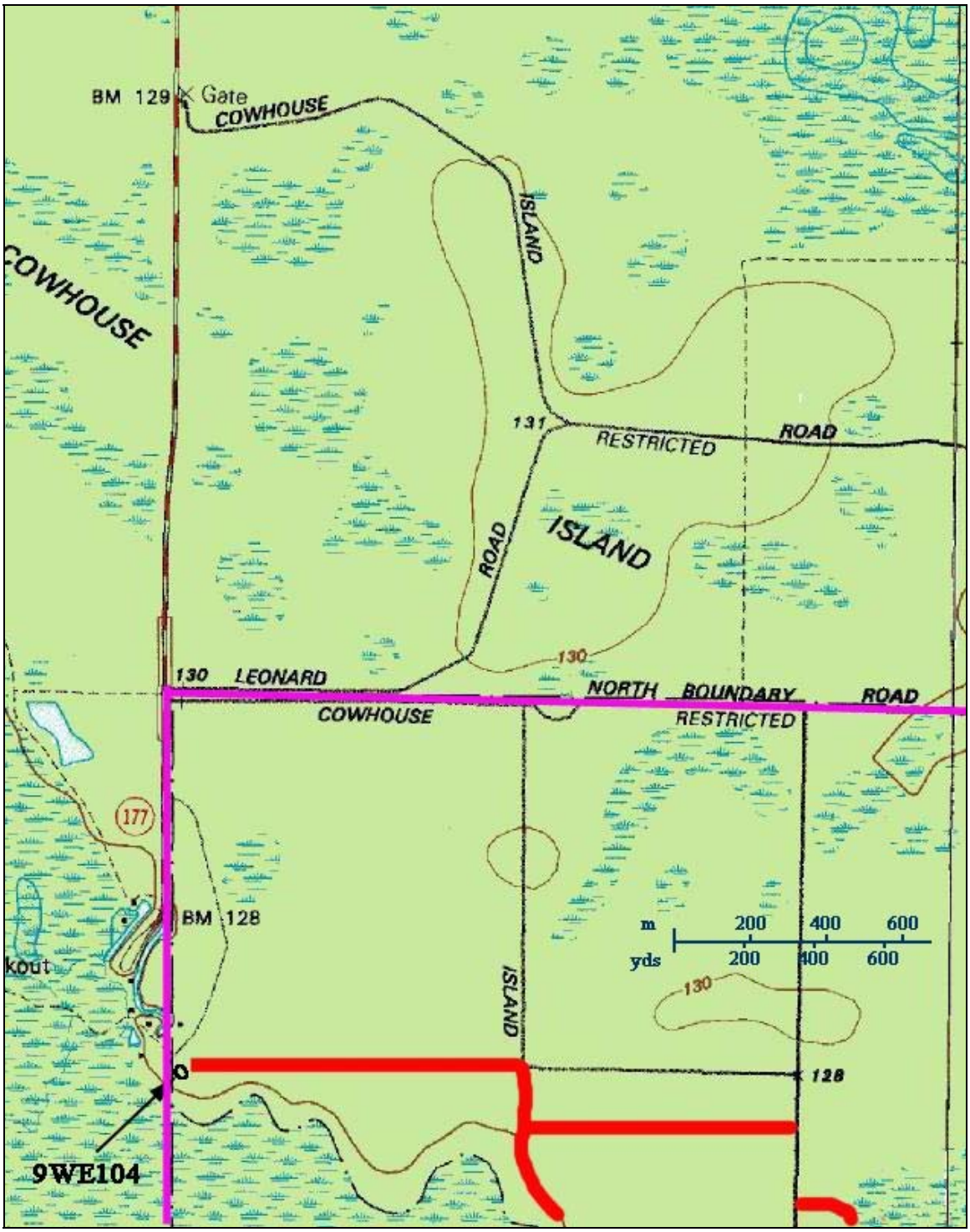


Figure 7.01 Section of the Waycross SE, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Okefenokee Swamp Park (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

Figure 7.02 Section of the Waycross SE, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Cowhouse Island NW (entire map area is inside the Okefenokee NWR). [Okefenokee NWR, GA]

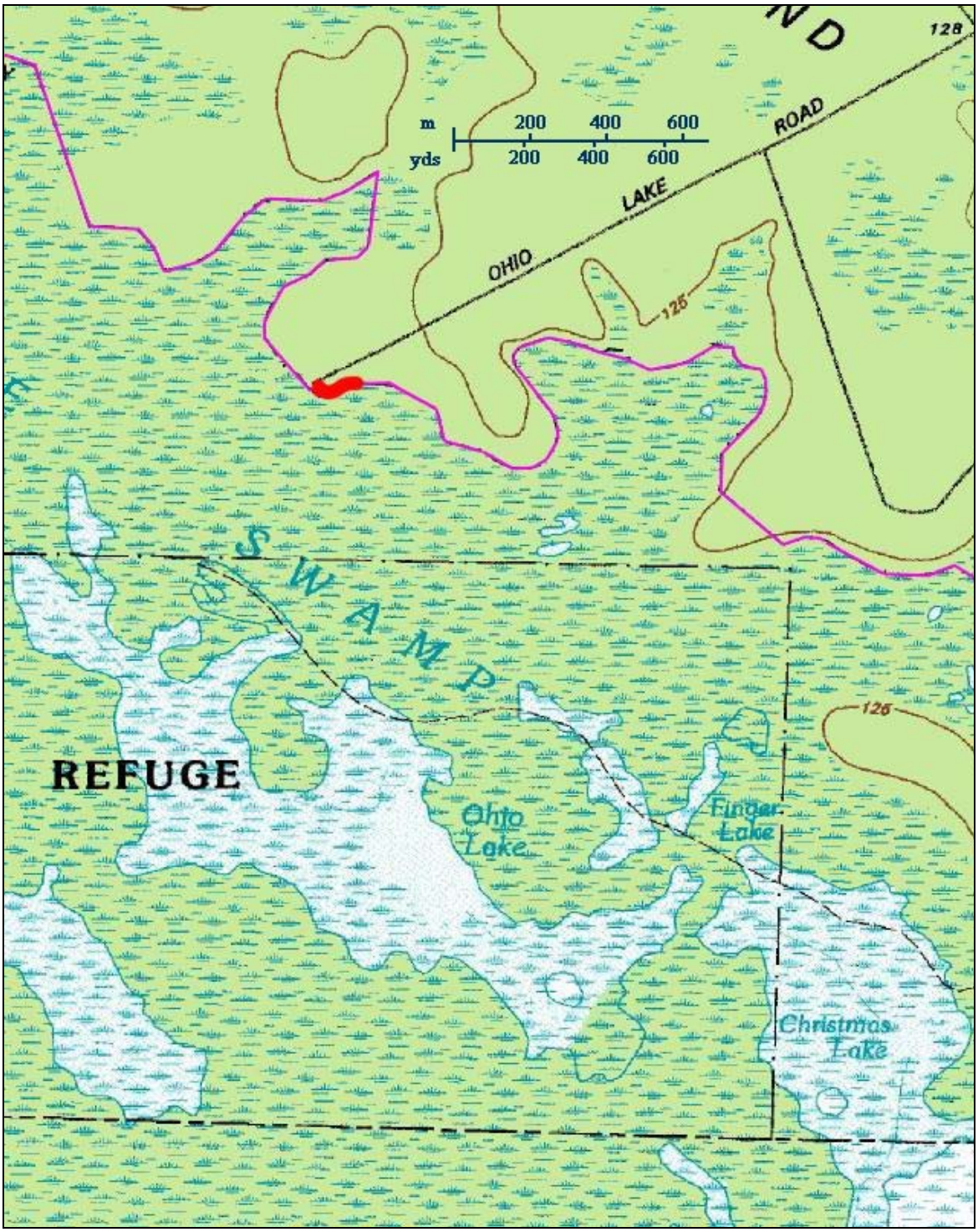


Figure 7.03 Section of the Fort Mudge, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Ohio Lake Road (Okefenokee NWR boundary in purple) [Okefenokee NWR, GA]

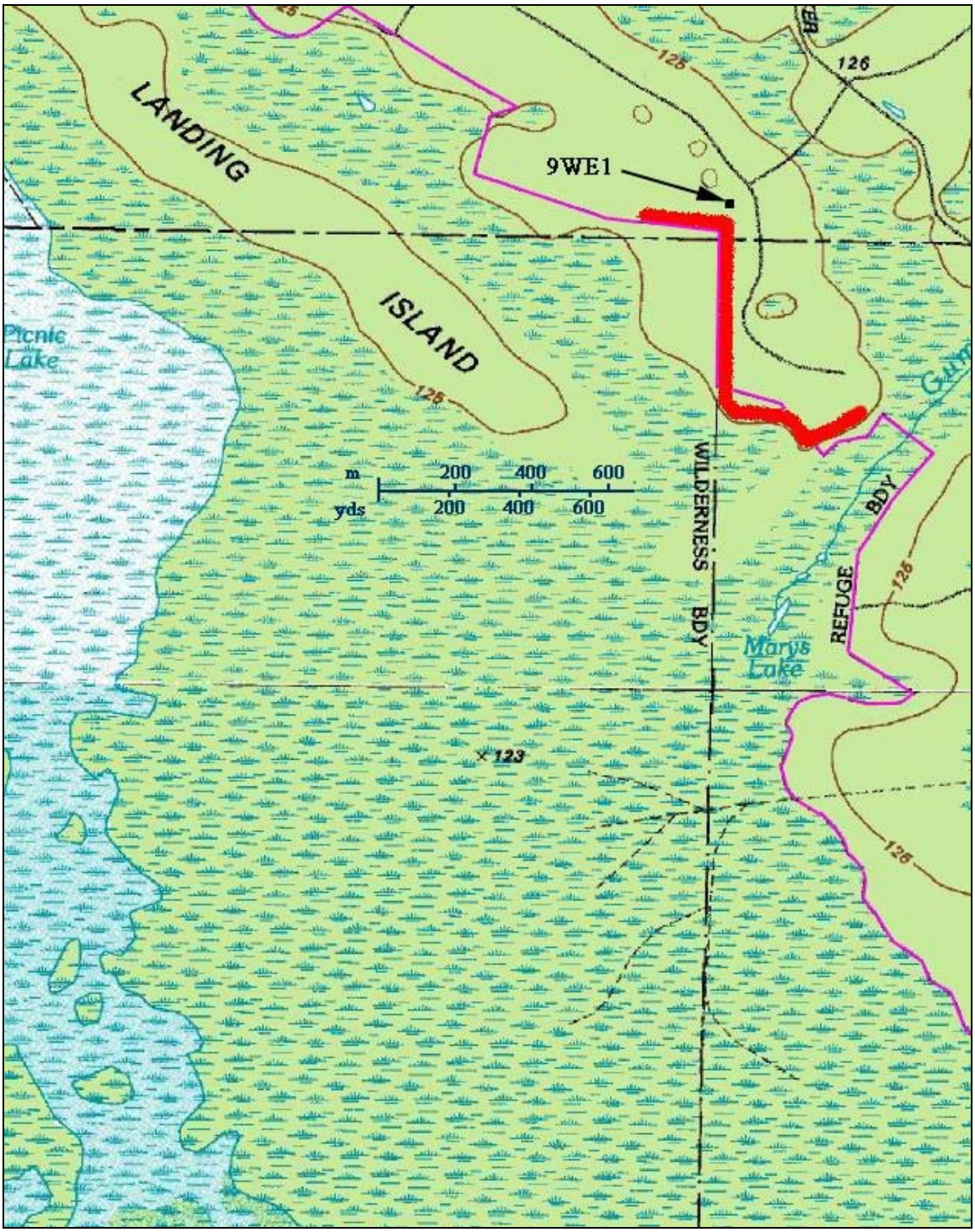


Figure 7.04 Section of the Fort Mudge, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Cowhouse Island SE (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

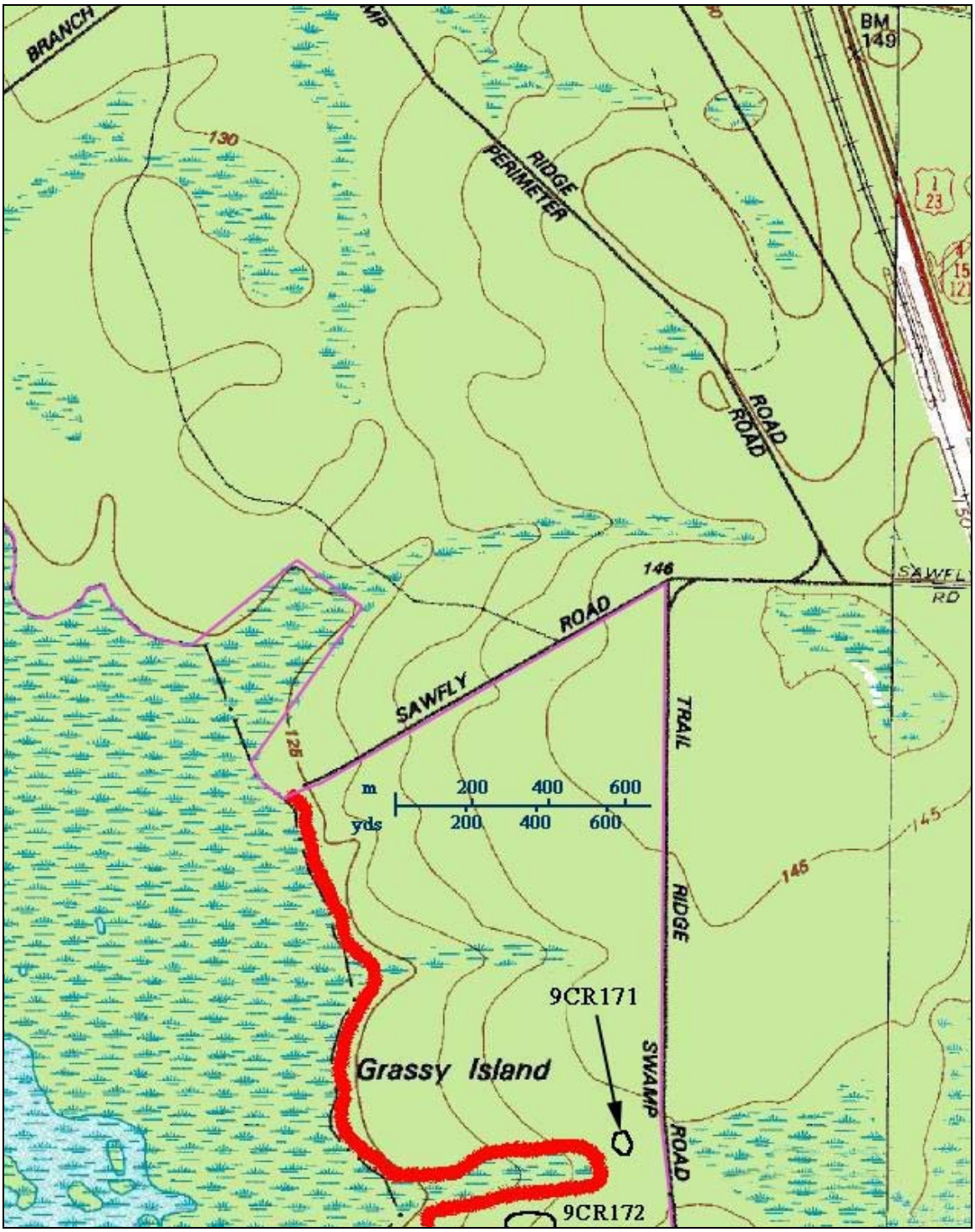


Figure 7.05 Section of the Double Lakes, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Sawfly Road (Okefenokee NWR Boundary in purple). [Okefenokee NWR, GA]

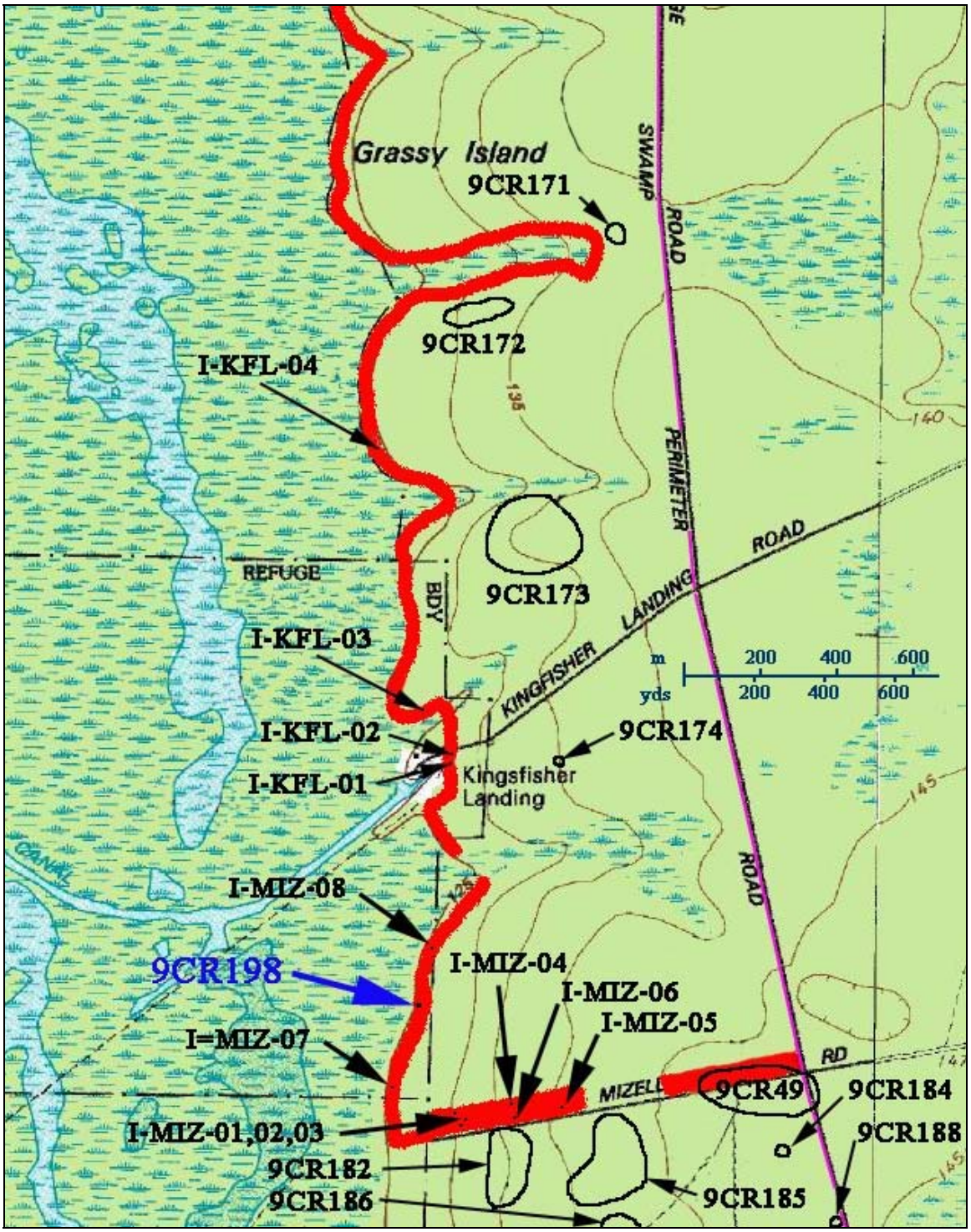


Figure 7.06 Section of the Double Lakes, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map Name: Kingfisher Landing Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

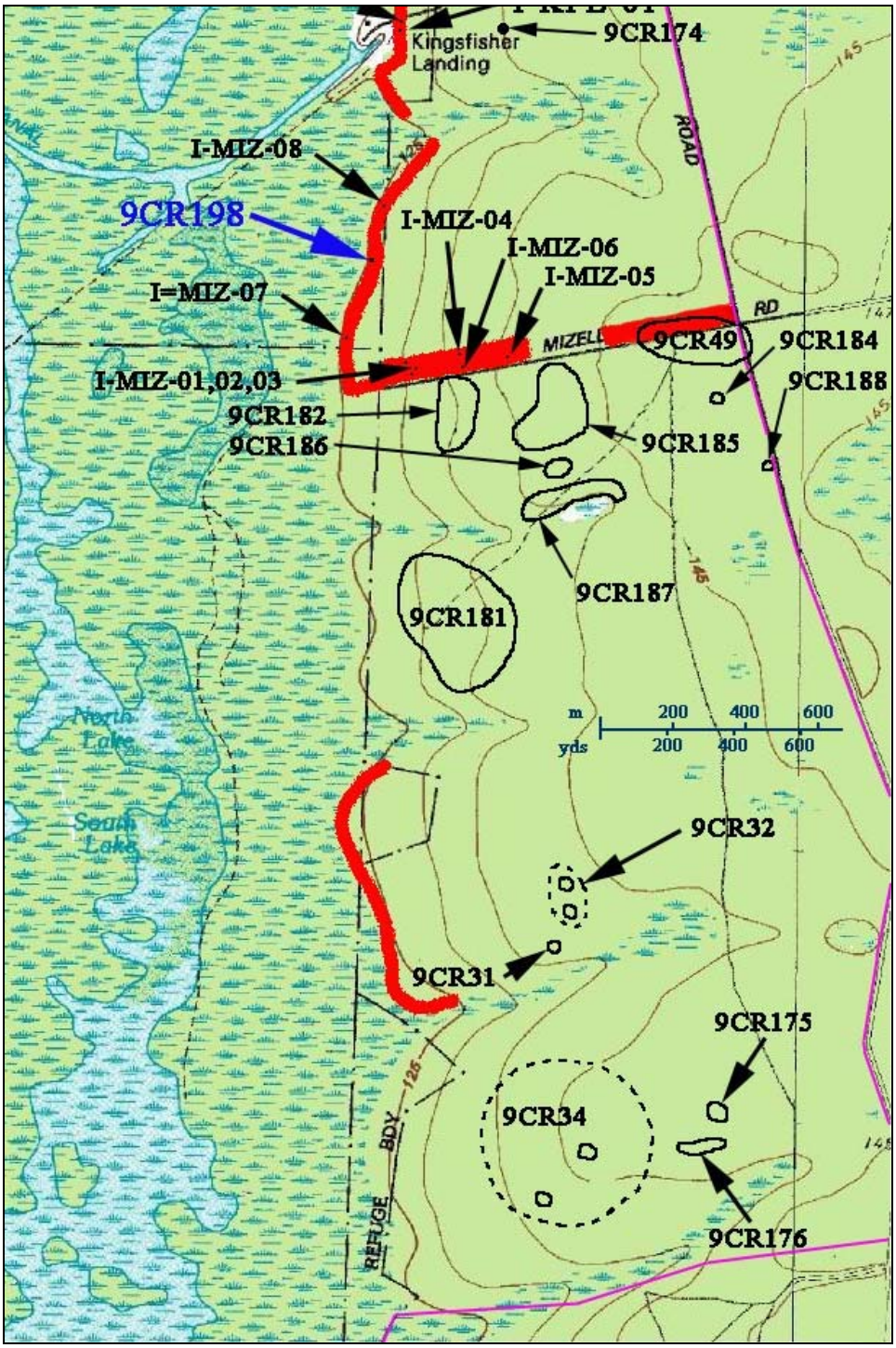


Figure 7.07 Section of the Double Lakes, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Martha Dowling (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

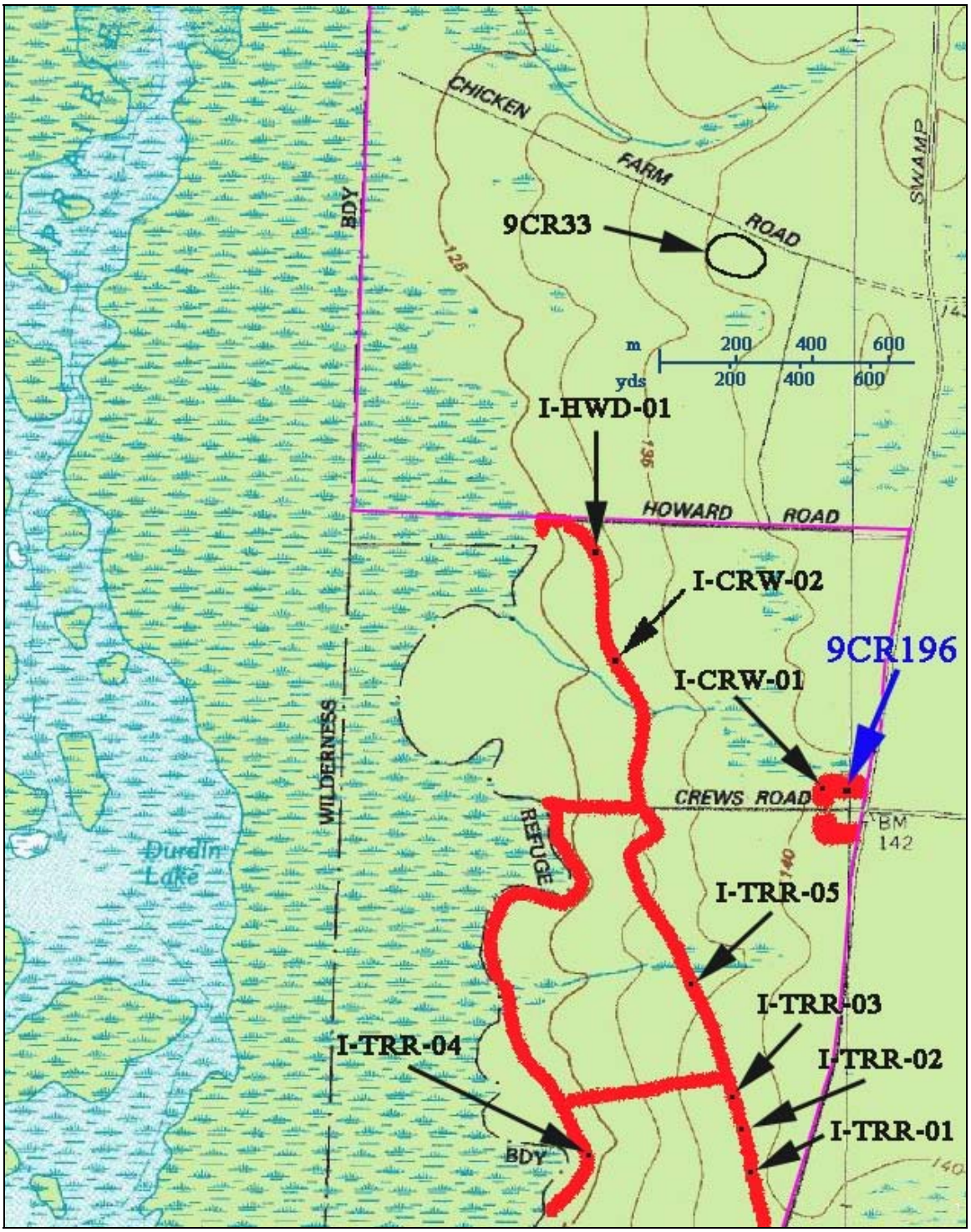


Figure 7.08 Section of the Double Lakes, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Crews Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

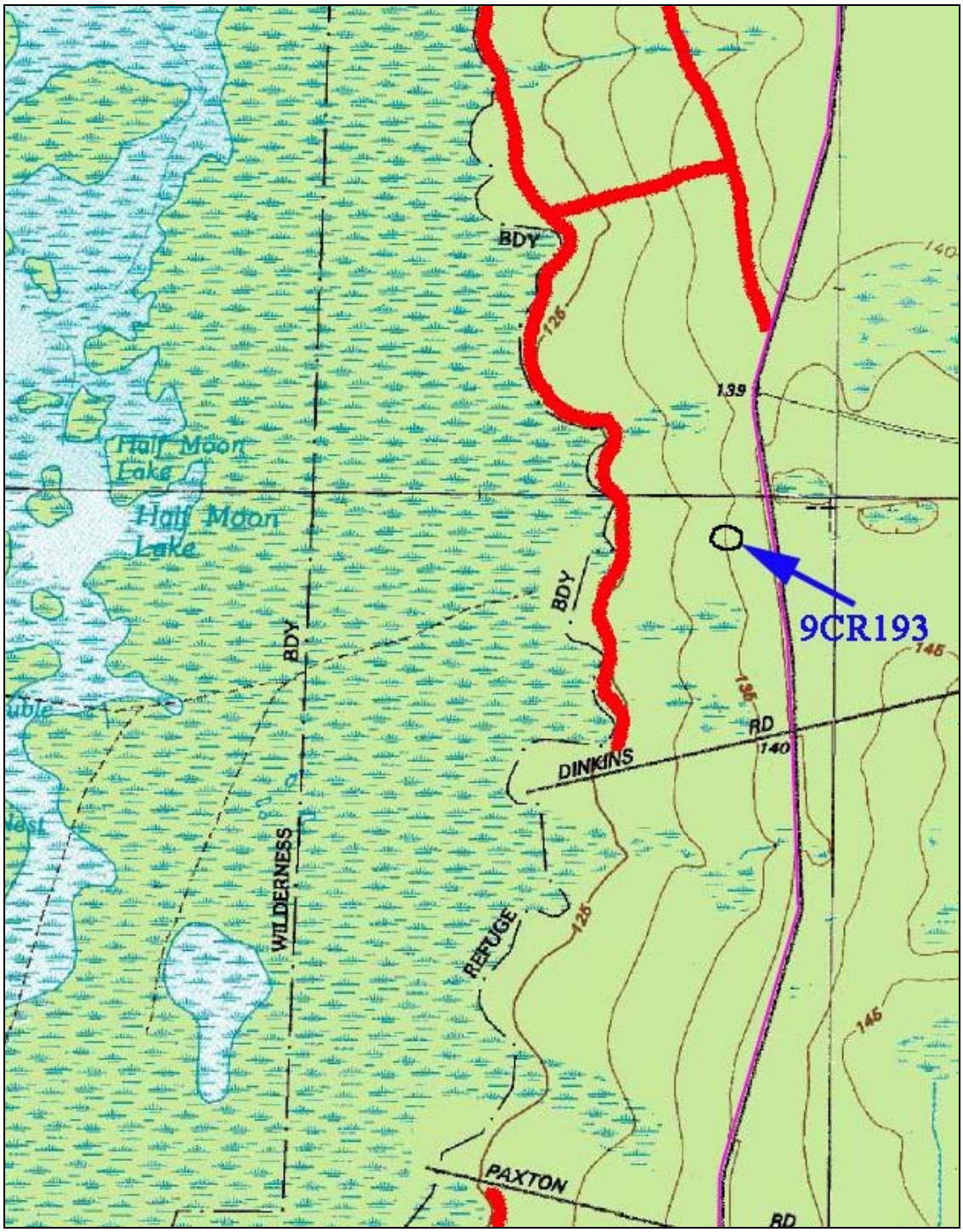


Figure 7.09 Section of the Chase Prairie, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Dinkins Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

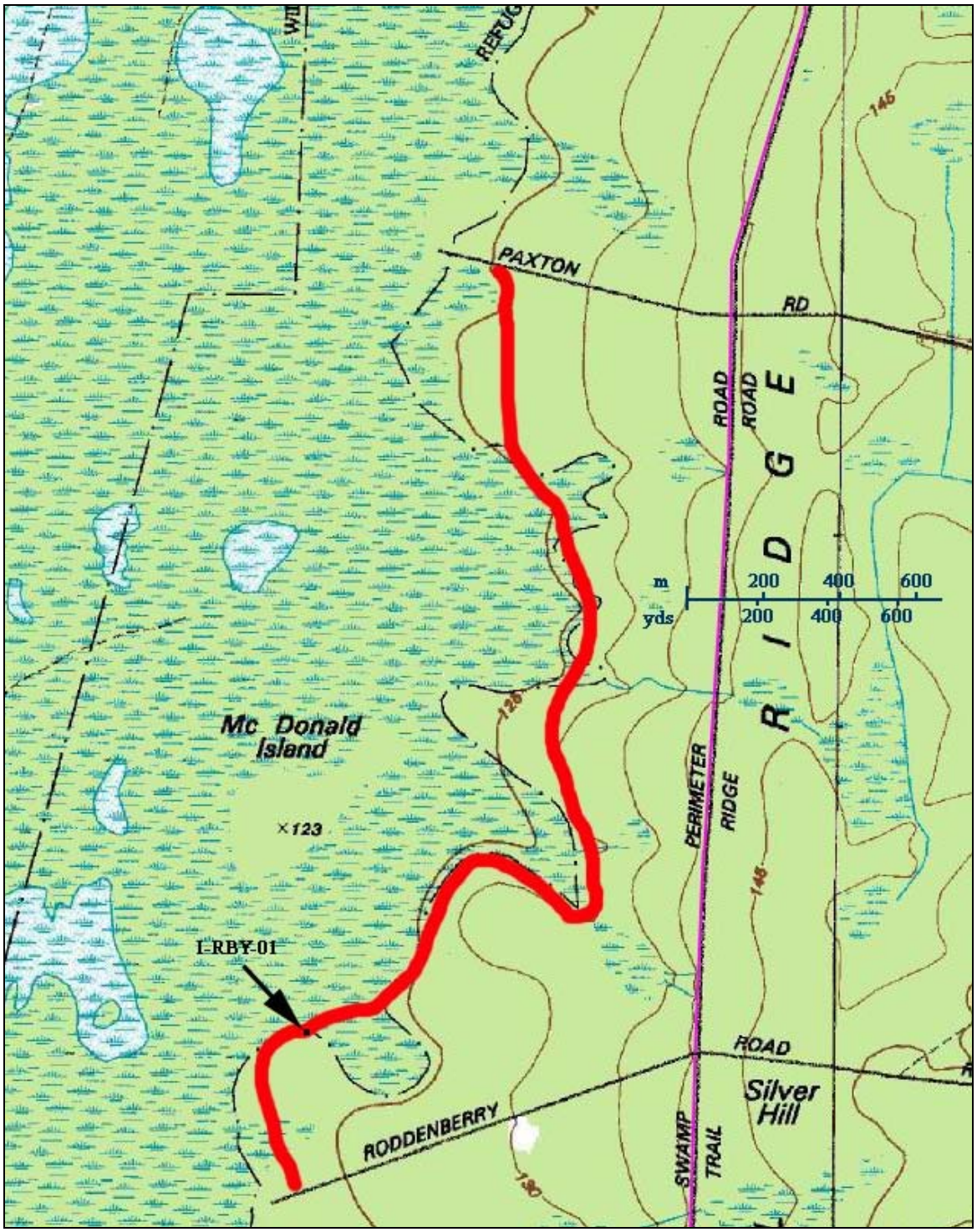


Figure 7.10 Section of the Chase Prairie, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Paxton Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

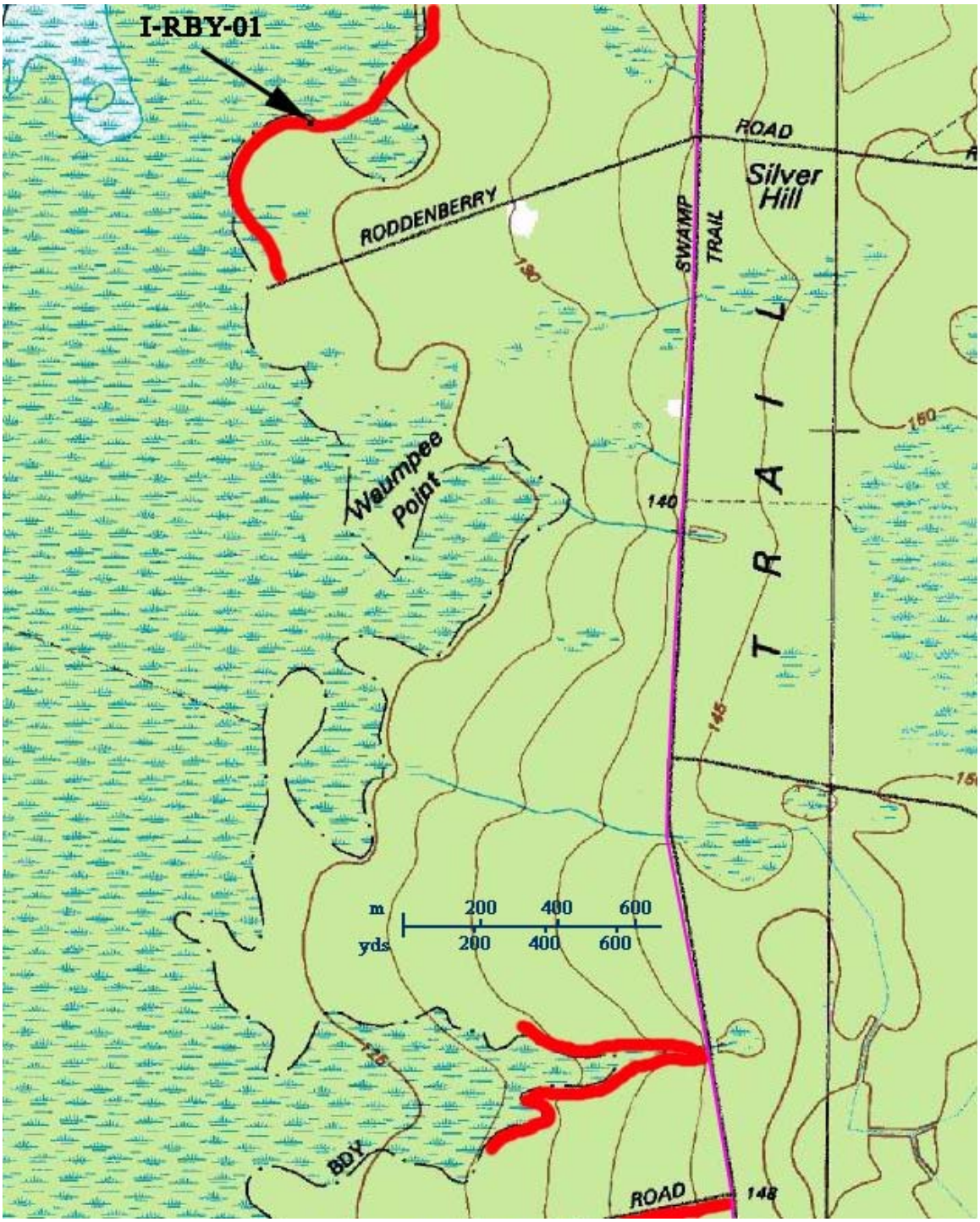


Figure 7.11 Section of the Chase Prairie, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Roddenberry Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

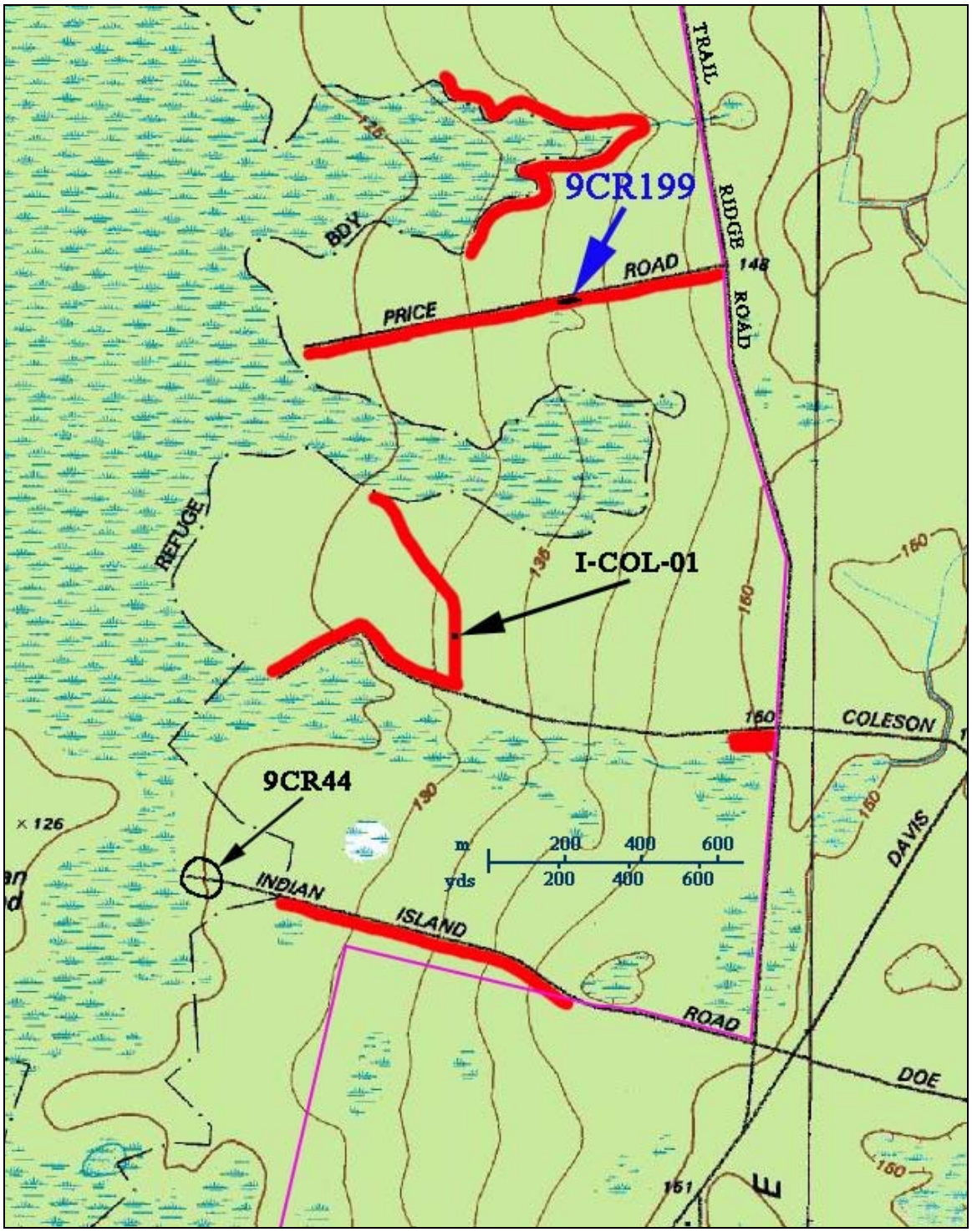


Figure 7.12 Section of the Chase Prairie, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Price Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

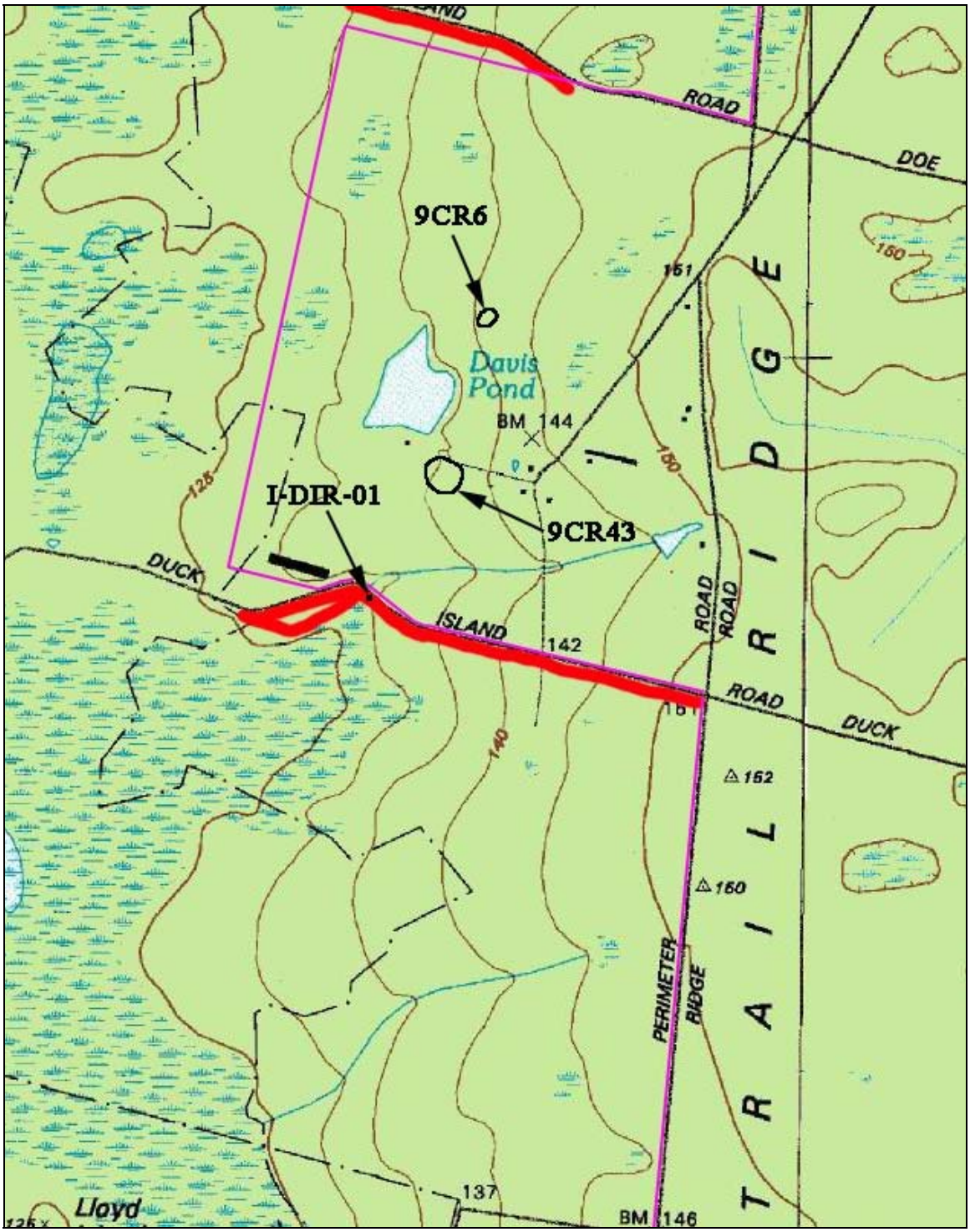


Figure 7.13 Section of the Chase Prairie, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Duck Island Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

Figure 7.14 Section of the Chase Prairie, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Rogers Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

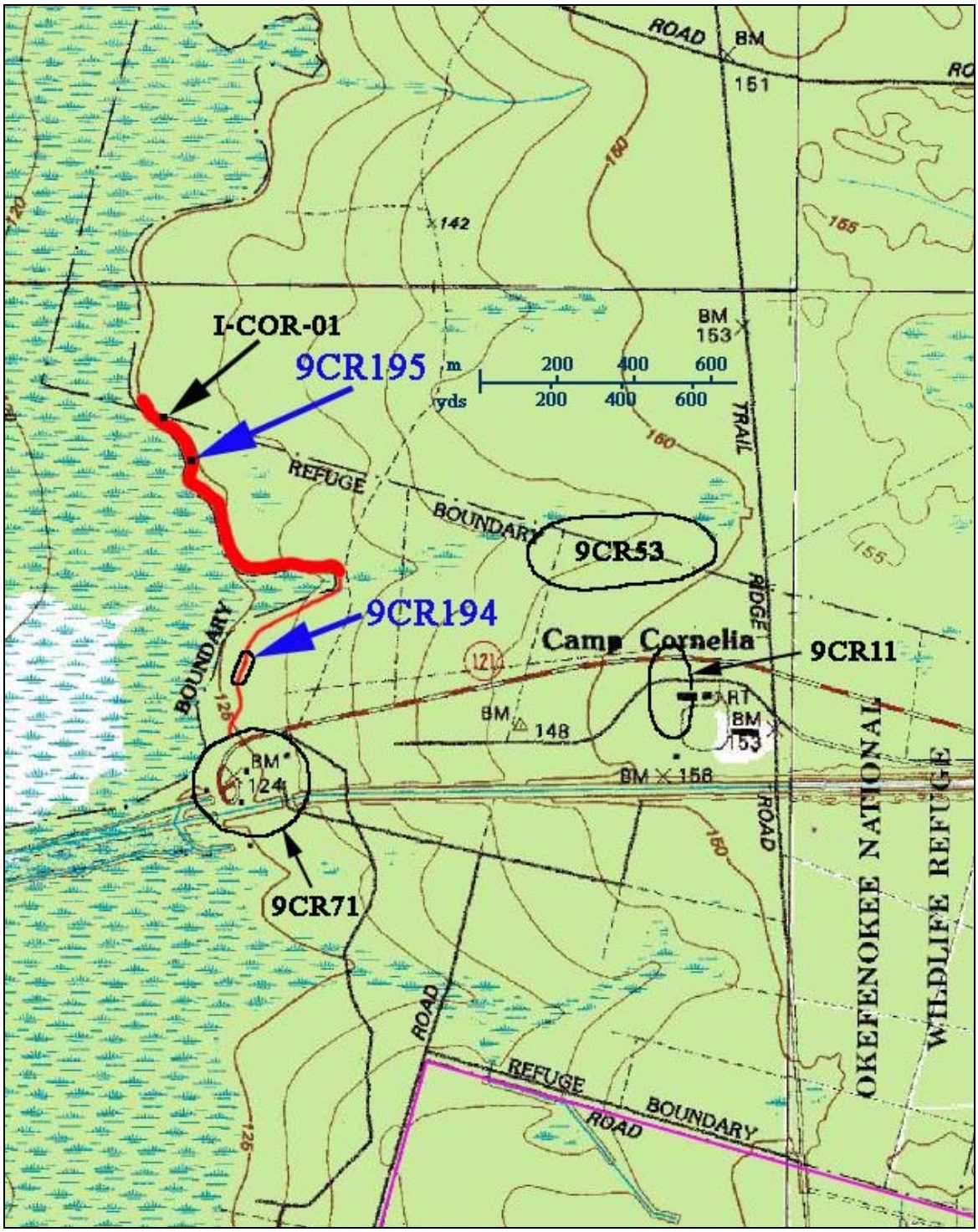


Figure 7.15 Section of the Chesser Island, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Camp Cornelia (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

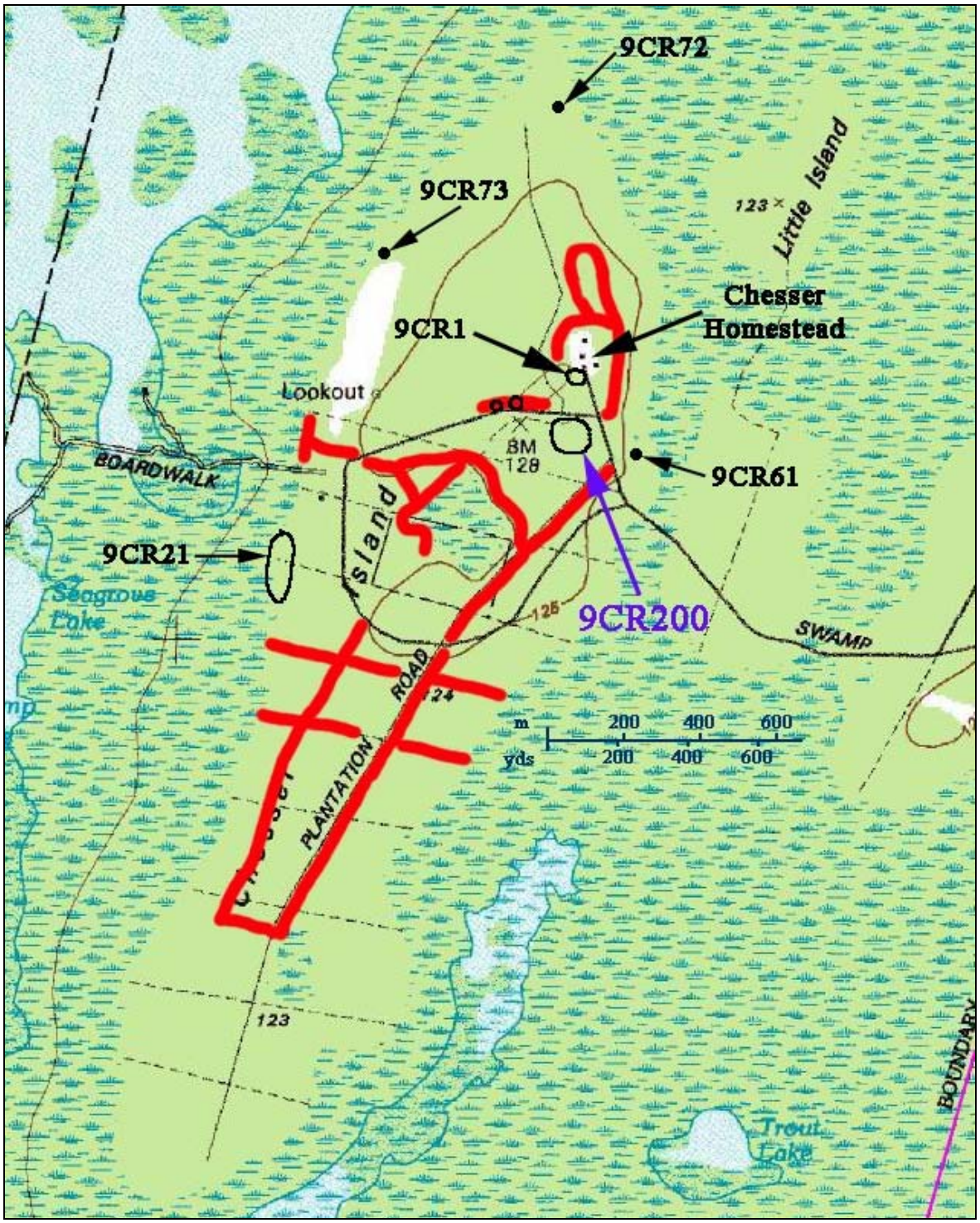


Figure 7.16 Section of the Chesser Island, GA, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: Chesser Island (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

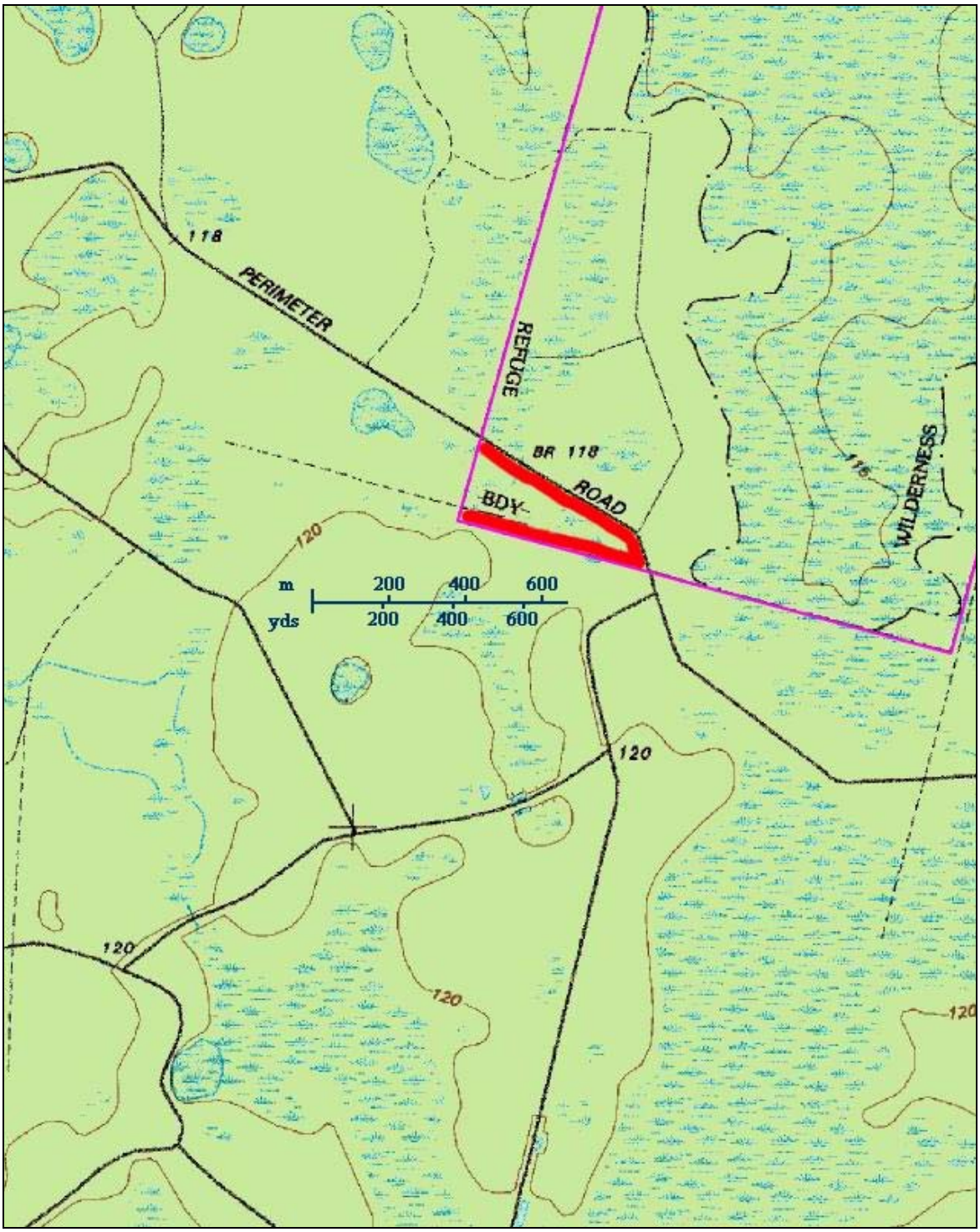


Figure 7.17 Section of the Moniac, GA--FL, USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: South Perimeter Road (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

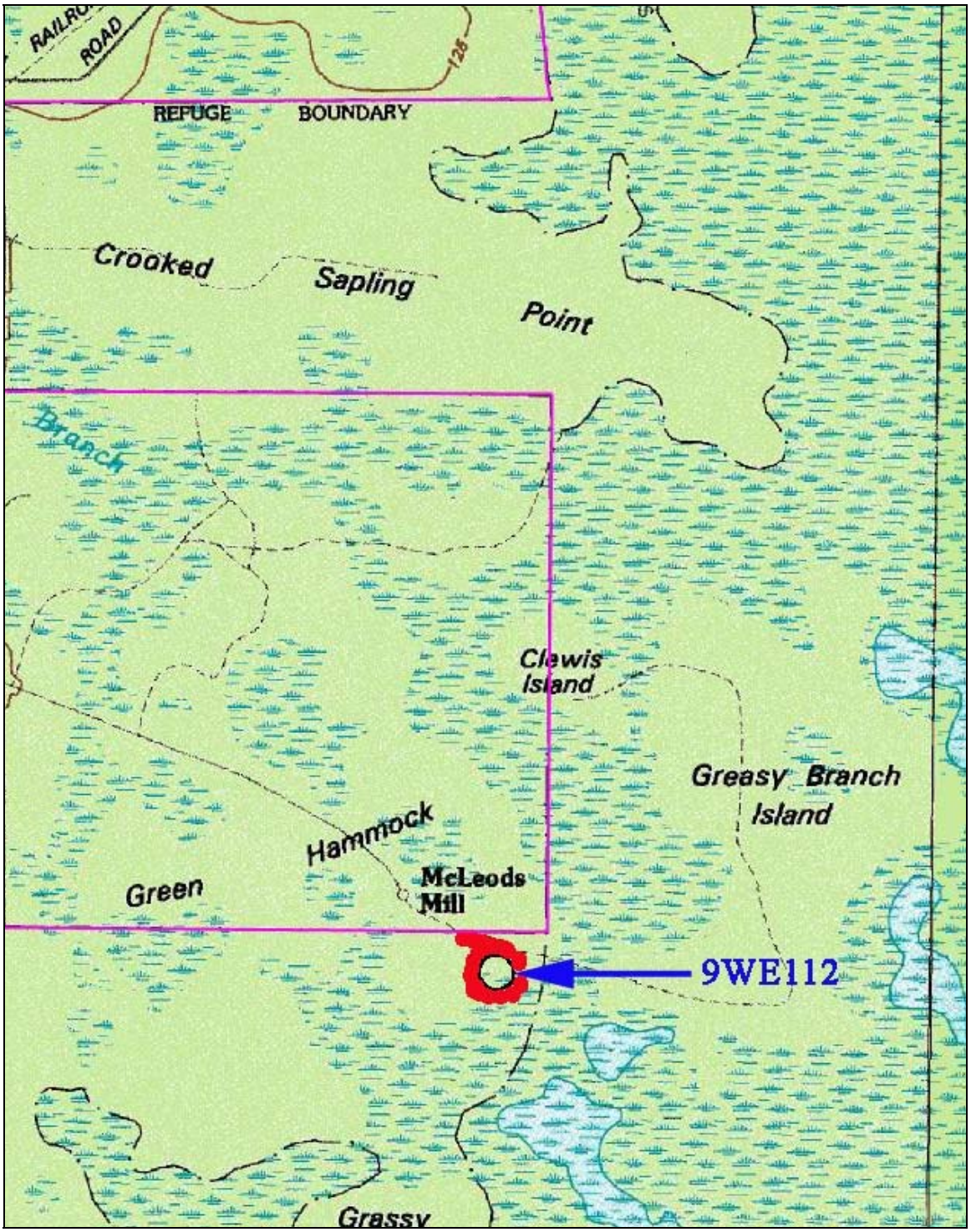


Figure 7.18 Section of the Cravens Island, GA USGS topographic map showing area surveyed (red). Previously recorded sites (black), new sites (blue [official numbers]), and isolated finds (black [field codes]). Map name: McLeods Mill (Okefenokee NWR boundary in purple). [Okefenokee NWR, GA]

Table 7.01 Field data recorded for 9CR193

9CR193	
Field Code:	**S-TRR-01**
Name:	**Trail Ridge Road Historic Site**
USGS 7.5' Quadrangle Name:	**Chase Prairie, GA**
UTM Coordinates:	**E: 392129 N: 3416014**
Approximate Area:	**0.46 ha (1.14 ac)**
Elevation AMSL:	**39.6-41.1 m (130-135 ft)**
Landform:	**Sand ridge**
Habitat:	**Pine barrens**
Current Vegetation	**None—clear-cut**
Site Type:	**Historic**
Components:	**Early 20thCentury**
Artifacts Observed:	**Whiteware, clear glass, aqua glass, bricks**
Extent of Disturbance	**>50%**
Soil Description:	**00-03 cm: 10YR 2/1 burned organics**
	03-15 cm: 10YR 5/1 sand
	15-40+ cm: 10YR 3/1 sand
Reconnaissance Map Name/Figure Number	**Dinkins Road/7.09**

This site was discovered as we walked to reach a bulldozer firebreak along the Swamp Edge Break. It was found west of Trail Ridge Road in a recently clear-cut area where a stand of slash pines had burned during the wildfires (Figure 7.19). Not only was the site disturbed by recent logging activities but also presumably when the trees were planted around eight to ten years ago, judging from the size of the stumps. It consists of a scatter of historic artifacts including pieces of whiteware, clear glass, aqua glass, and bricks (Figure 7.20). No metal artifacts were found.

While the bricks were loose and no window glass or nails were seen, the surface visibility was only about twenty percent. Thus, the presence of a structure on the site cannot be ruled out.

Figure 7.19 Landscape of 9CR193 looking west. [Okefenokee NWR, GA]

Figure 7.20 Selected *in situ* artifacts at 9CR193. [Okefenokee NWR, GA]

Table 7.02 Field data recorded for 9CR194

9CR194	
Field Code:	**S-COR-01**
Name:	**Camp Cornelia Trash Dump**
USGS 7.5' Quadrangle Name:	**Chesser Island, GA**
UTM Coordinates:	**E: 390891 N: 3401280**
Approximate Area:	**0.09 ha (0.25 ac)**
Elevation AMSL:	**38.1-39.6 m (125-130 ft)**
Landform:	**Swamp edge**
Habitat:	**Pine barrens**
Current Vegetation	**Overstory: volunteer longleaf pine Understory: saw palmetto, gallberry, bracken fern, and grasses**
Site Type:	**Historic**
Components:	**Middle 20thCentury**
Artifacts Observed:	**Bricks, gallon glass jars, mustard jars, Redi-Aid bottles, miscellaneous glass containers, milk glass jar lid liners, rubber shoe soles**
Extent of Disturbance	**>50%**
Soil Description:	**00-05 cm: 10YR 2/1 burned organics/sand**
	05-15 cm: 10YR 3/1 sand
	15-38+ cm: 10YR 3/2 sand
Reconnaissance Map Name/Figure Number	**Camp Cornelia/7.15**

This site is north of the parking lot for the visitor's center at the Suwannee Canal Recreation Area. It lies about 150m (492ft) distant across Spur Highway 121 in and on either side of a tractor-plowed firebreak (Figure 7.21). It consists of a scatter of bricks, bottle glass, milk glass jar lid liners, and old shoe soles. Three concentrations of mostly whole or recently fire cracked machine-made mustard jars, large gallon jars, Redi-Aid bottles, liquor bottles and other unidentified glass containers were found east and west of the firebreak (Figure 7.22).

Since the firebreak was plowed along the path of an old road, it is likely that these artifact concentrations are the result of dumping activities. This is further supported by the lack of any glass or ceramics associated with culinary activities or window glass and nails to suggest the presence of a structure. The brick fragments present on the site were loose and could easily have been a component of the dumped debris.

Since none of the bottles or any other artifacts were made of plastic, it is likely that they were deposited at the site before the widespread use of this material to manufacture containers. Based on our collective experience, that would place the timing of the dumping events prior to around 1970. Redi-Aid, a forerunner of Kool Aid, was sold in the distinctive small bottles found on-site. This product was also discontinued sometime in the mid-1960s. Thus, the dumping had to have occurred no later than around 1970.

The routine plowing of this firebreak should not damage the site further. We recommend no further work at this site.

Figure 7.21 Landscape of 9CR194 facing northeast. [Okefenokee NWR, GA]

Figure 7.22 Selected *in situ* artifacts at 9CR194. [Okefenokee NWR, GA]

Table 7.03 Field data recorded for 9CR195

9CR195	
Field Code:	**S-COR-02**
Name:	**Camp Cornelia Edge Break Prehistoric**
USGS 7.5' Quadrangle Name:	**Chesser Island, GA**
UTM Coordinates:	**E: 390912 N: 3401806**
Approximate Area:	**0.02 ha (0.04 ac)**
Elevation AMSL:	**38.1-39.6 m (125-130 ft)**
Landform:	**Swamp edge**
Habitat:	**Pine barrens**
Current Vegetation	**Overstory: volunteer longleaf pine Understory: saw palmetto, gallberry, bracken fern, and grasses**
Site Type:	**Prehistoric**
Components:	**Unkown**
Artifacts Observed:	**Twelve tertiary decortication flakes**
Extent of Disturbance	**>50%**
Soil Description:	**00-05 cm: 10YR 2/2 roots, leaf litter/sand**
	05-16 cm: 10YR 2/1 sand
	16-29+ cm: 10YR 4/1 sand
Reconnaissance Map Name/Figure Number	**Camp Cornelia/7.15**

This site consists of a fairly dense scatter of 12 chert decortication flakes found in the center of the bulldozer-cut Swamp Edge Break (Figure 7.23). The low rise where the artifacts were found is only about 10-15 cm (4-5 in) above the surrounding terrain but its soil color is distinctively lighter. We had detected this lighter-colored soil from the helicopter as we returned from a sortie into the swamp. The contrast in soil color is striking and all of the chert flakes were found within the confines of this lighter-colored soil. Figure 7.24 shows all of the chert flakes recovered.

The artifact assemblage includes one secondary decortication flake and eleven tertiary decortication flakes. None remotely resemble resharpening flakes. At least two of the twelve are heat-treated.

By the time we discovered this site, repairs had already been made to the firebreak. It is assumed any future disturbance of the soil strata will not penetrate below that already done. Since the artifact density is very low and there is not much potential for this site to yield any significant research data, we recommend that no further work or attention be given to this site.

Figure 7.23 Landscape of 9CR195 facing north. [Okefenokee NWR, GA]

Figure 7.24 Artifacts from 9CR195 photographed on a one centimeter grid. [Okefenokee NWR, GA]

Table 7.04 Field data recorded for 9CR196

9CR196	
Field Code:	**S-CRW-01**
Name:	**Crews Road Hunting Camp**
USGS 7.5' Quadrangle Name:	**Double Lakes, GA**
UTM Coordinates:	**E: 392430 N: 3417718**
Approximate Area:	**0.13 ha (0.33 ac)**
Elevation AMSL:	**42.7-43.3 m (140-142 ft)**
Landform:	**Sand ridge**
Habitat:	**Pine barrens**
Current Vegetation	**None: clear-cut and scalped**
Site Type:	**Prehistoric**
Components:	**Deptford**
Artifacts Observed:	**Aboriginal pottery: Deptford Simple Stamped (5), plain sand-tempered (8)** **Chert flakes: Tertiary decortication (5)**
Extent of Disturbance	**>50%**
Soil Description:	**00-03 cm: 10YR 5/1 roots, leaf litter/sand**
	03-30 cm: 10YR 6/6 sand
	30-40+ cm: 10YR 7/3 sand
Reconnaissance Map Name/Figure Number	**Crews Road/7.08**

9CR196 was discovered in a bulldozer-cleared area that surrounds a small hunting camp just west of the intersection of Crews Road and Trail Ridge Road. It consists of aboriginal pottery and chert flakes scattered over a small sandy area of Trail Ridge (Figure 7.25).

The aboriginal pottery includes five body sherds of Deptford Simple Stamped that are all from the same vessel. In addition, eight pieces of sand-tempered plain pottery, including two rim fragments were found (Figure 7.26). Five tertiary chert flakes were observed in the same area as the pottery, one of which is heat-treated. Two additional chert flakes were found approximately 100 m to the west of 9CR196 but were too far away to be included in the site boundary.

The soil disturbance caused by bulldozing the firebreak was extensive, perhaps as much as 20cm to 30cm (8in to 12in) in depth. Piles of soil that may contain artifacts are mixed with fallen trees in the middle of the firebreak. Recent rainfall uncovered these artifacts and more could lie *in situ* below the present ground surface. It is recommended that any further work at this site be restricted to only removing the uprooted trees and surface debris. No further disturbance below the present ground surface should be allowed.

Figure 7.25 Landscape of 9CR196 facing west. [Okefenokee NWR, GA]

Figure 7.26 Selected artifacts from 9CR196. Clockwise from upper left: Deptford Simple Stamped pottery, heat-treated tertiary decortication chert flake, tertiary decortication chert flake, sand-tempered plain pottery (rim). [Okefenokee NWR, GA]

Table 7.05 Field data recorded for 9CR197

9CR197	
Field Code:	**S-GBR-01**
Name:	**McLeods Mill**
USGS 7.5' Quadrangle Name:	**Cravens Island, GA**
UTM Coordinates:	**E: 367559 N: 3426810**
Approximate Area:	**0.28 ha (0.70 ac)**
Elevation AMSL:	**37 m (120 ft)**
Landform:	**Upland plain**
Habitat:	**Pine barrens**
Current Vegetation	**Overstory: longleaf pine with mixed hardwoods**
Site Type:	**Historic**
Components:	
Artifacts Observed:	**Displaced and articulated bricks; large cast-iron parts; railroad rails; spikes; metal cables; glass jars, whiteware, glass bottles; burned timbers and wooden posts with embedded spikes, nails, bolts**
Extent of Disturbance	**>50%**
Reconnaissance Map Name/Figure Number	**McLeods Mill/7.18**

A retired FWS employee reported the existence and location of this site along the northwest edge of the swamp. Based on our literature research and information provided by Chris Trowell, it was determined that it is likely part of the early twentieth century McLeod's Mill. A tractor-plowed firebreak was recently cut along its northern edge and perhaps bisects the site. However, the surface evidence indicates that most of it lies south of the firebreak. In that area we found loose and mortared blocks of brick, several scattered railroad rails, an area of linear crosstie molds, several large cast-iron metal parts, a large open wooden-cased well or cistern, and scattered nails, railroad spikes, metal cable fragments, and bolts Figures (7.27, 7.28 and 7.29). Several charred standing and fallen wooden posts with embedded spikes, nails and bolts indicate the presence of structures. North of the firebreak only fragments of whiteware, broken glass, and a few whole bottles were observed.

Approximately half of the area investigated was heavily disturbed by either the firebreak or what appeared to be bulldozer grading. The grading had caused considerable damage to the cultural deposits. The piles of bricks, in particular, suggested that before this recent disturbance they were part of a masonry structure (Figure 7.29 upper right).

This site is in danger of further degradation if fire burns across it again. Most of the wooden posts, whether displaced or *in situ*, will not likely survive another wildfire. The whole glass bottles and jars will also likely be damaged. The open well/cistern is a safety hazard and should be either covered or fenced to protect the public.

Because this site has a high potential to yield important research data, it should be accurately mapped, thoroughly photographed, and a representative sample of its artifacts collected and properly curated.

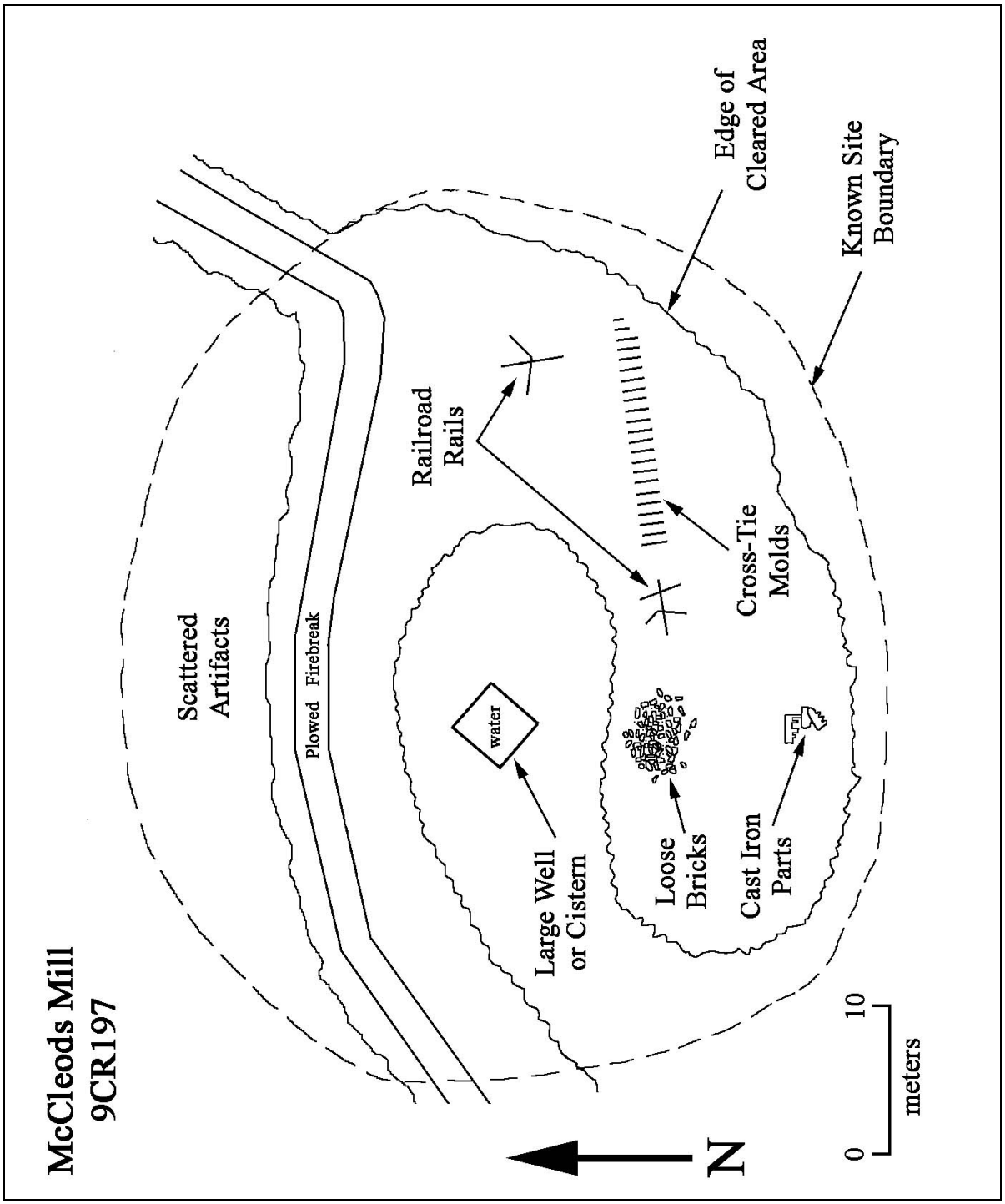


Figure 7.27 Sketch map of 9CR197. [Okefenokee NWR, GA]

Figure 7.28 **Selected scenes/artifacts from 9CR197. Clockwise from upper left: medicine bottle, crosstie molds, well/cistern, metal artifacts. [Okefenokee NWR, GA]**

Figure 7.29 **Selected scenes from 9CR197. Clockwise from upper left: burned posts, brick scatter, railroad rails, cast-iron parts. [Okefenokee NWR, GA]**

Table 7.06 Field data recorded for 9CR198

9CR198	
Field Code:	**S-MIZ-02**
Name:	**Mizell Road North**
USGS 7.5' Quadrangle Name:	**Double Lakes, GA**
UTM Coordinates:	**E: 391384 N: 3424292**
Approximate Area:	**25 m^2**
Elevation AMSL:	**38.1-39.6 m (125-130 ft)**
Landform:	**Swamp edge**
Habitat:	**Pine barrens**
Current Vegetation	**Overstory: longleaf pine, bay, oak** **Understory: saw palmetto, gallberry, wax myrtle**
Site Type:	**Prehistoric**
Components:	**Unknown**
Artifacts Observed:	**Chert flakes**
Extent of Disturbance	**>50%**
Soil Description:	**00-04 cm 10YR 2/1 charcoal and sand**
	04-12 cm 10YR 2/2 sand
	12-22 cm 10YR 3/1 sand (water saturated)
	22-34+ cm 10YR 4/1 sand (water saturated)
Reconnaissance Map Name/Figure Number	**Kingfisher Landing Road/7.06**

This site was discovered at the east rim of the Okefenokee Swamp in the harrowed portion of the bulldozer firebreak along the Swamp Edge Break between Kingfisher Landing Road and Mizell Road (Figure 7.30). Swamp vegetation to the west of the break is burned-over.

The artifact inventory of this prehistoric site includes five chert decortication flakes (Figure 7.31). Three of these are white or translucent and are tertiary examples. Two others were probably white or translucent before heat-treatment. One of the heat-treated flakes is a secondary flake, with approximately 10 percent cortex adhering to one surface.

As mentioned above, the site was found in that portion of the firebreak zone that was harrowed (repaired). Little further damage is likely to occur as a result of routine harrowing. Also, since the low artifact density suggests the site would probably not yield significant research data, we recommend that no further work be conducted at this site.

Figure 7.30 Landscape of 9CR198 facing north. [Okefenokee NWR, GA]

Figure 7.31 Selected Artifacts 9CR198 photographed on a one centimeter grid. [Okefenokee NWR, GA]

Table 7.07 Field data recorded for 9CR199

9CR199	
Field Code:	**S-PRC-01**
Name:	**Price Road**
USGS 7.5' Quadrangle Name:	**Chase Prairie, GA**
UTM Coordinates:	**E: 391654 N: 3409416**
Approximate Area:	**0.06 ha (0.15 ac)**
Elevation AMSL:	**41.1 m (135 ft)**
Landform:	**Sand ridge**
Habitat:	**Pine barrens**
Current Vegetation	**None. Clear-cut and bulldozed**
Site Type:	**Prehistoric**
Components:	**Satilla**
Artifacts Observed:	**Satilla Simple Stamperd pottery (2), Chert flakes (6)**
Extent of Disturbance	**>50%**
Soil Description:	**00-10 cm 10YR 3/1 humus and sand**
	10-20 cm 10YR 3/2 sand
	20-40+ cm 10YR 4/4 sand
Reconnaissance Map Name/Figure Number	**Price Road/7.12**

A scatter of aboriginal pottery and chert flakes found in a bulldozer-cut firebreak along the southern edge of Price Road defined 9CR199 (Figure 7.32). It is located about 0.46 km (0.28 mi) west of the intersection of Price Road and Trail Ridge Road. The terrain on either side of the bulldozer firebreak is covered in a 10-15 years old stand of planted pines. The artifacts were found scattered parallel to Price Road in or adjacent to areas that were penetrated deepest by the bulldozer.

The artifacts include two body fragments of Satilla Simple Stamped pottery and six chert flakes (Figure 7.33). The pottery bears the usual simple-stamped design on a semi-fiber-tempered paste. All of the chert debitage is composed of tertiary decortication flakes.

Since there is a possibility that this site was not significantly impacted by the fire break construction, we recommend that any further repair work in the area be restricted to only removing the uprooted trees and surface debris. No further disturbance of the soil below the present ground surface should occur.

Figure 7.32 Landscape of 9CR199 facing east. [Okefenokee NWR, GA]

Figure 7.33 Selected artifacts from 9CR199. [Okefenokee NWR, GA]

Table 7.08 Field data recorded for 9CR200

9CR200	
Field Code:	**S-RAC-01**
Name:	**Robert Allen Chesser, Sr. Homestead**
USGS 7.5' Quadrangle Name:	**Chesser Island, GA**
UTM Coordinates:	**E: 389286 N: 3398219**
Approximate Area:	**1.24 ha (3.06 ac)**
Elevation AMSL:	**38.1-39.0 m (125-128 ft)**
Landform:	**Island**
Habitat:	**Pine barrens (formerly a hammock)**
Current Vegetation	**Overstory: volunteer longleaf pine** **Understory: saw palmetto, gallberry, scrub oak**
Site Type:	**Historic**
Components:	**Early 20th Century**
Artifacts Observed:	**Historic ceramics, glass bottles, glass jars, window glass, metal containers, nails, bricks, remnant structures, galvanized pipe w/pump head.**
Extent of Disturbance	**Unknown**
Soil Description:	**00-07 cm 10YR 4/2 sand**
	07-38+ cm 10YR 2/2 sand
Reconnaissance Map Name/Figure Number	**Chesser Island/7.16**

9CR200 is the Robert Allen Chesser, Sr., late nineteenth-early twentieth century homestead. It lies just south of the visitor's parking area for the Tom Chesser Homestead. The site consists of an assortment of surface artifacts and structural remnants exposed by the wildfire. A photograph made in 1921 shows the main house, three outbuildings, and a grape arbor surrounded by a hammock (Figure 7.34). In the late 1940s the house was dismantled and the lumber used to construct a new house on Little Phoebe Church Road in the southern part of Folkston. That house still stands today. Currently, the former hammock is covered in a volunteer longleaf pine forest.

Based on the archaeological evidence, there were at least five structures associated with the homestead. This was determined from several groups of charred timbers that lay in structural order (Figure 7.35). These were probably either floor joists or rafters that had fallen. We also found a group of upright posts that were likely roof supports (Figure 7.35 upper right). According to a Chesser family descendent, the latter structure was a syrup production shed. These buildings typically housed an iron boiler that reduced sugar cane juice to cane syrup. The syrup was used directly as a sweetner or crystallized and dried to produce brown sugar. North of the syrup shed is a standing galvanized pipe topped with a pitcher pump base (Figure 7.35 lower left). The informant also pointed out that two mortared brick pads east of the syrup shed were bases for the front and rear entrance steps to the main house. Another small ruin was identified as an outhouse and another as a corn crib. The uses for the remaining structures are unknown.

Figure 7.34 **The home of R.A. Chesser, July 21, 1921.** *Photo courtesy of Delma Presley South Georgia History & Culture Collection, Georgia Southern University.* **[Okefenokee NWR, GA]**

Figure 7.35 **Structural remnants at 9CR200. [Okefenokee NWR, GA]**

Artifacts that were exposed on the surface include mustard jars, mason jars, liquor bottles, brown beer bottles, unidentified bottles and jars, 1.5 volt dry cell batteries, window glass, Herty cup fragments, metal barrel straps, metal drum fragments, loose bricks, loose mortar, and the masonry brick pads (Figure 7.36). Many of the glass bottles and jars were broken, cracked, and/or crazed by exposure to the fire's heat. A particularly dense concentration of bottles, jars, historic ceramic fragments, and metal containers was found along the southwest edge of the site. It is likely a trash dump associated with the homestead.

This site is in need of immediate attention. The exposed artifacts and features are in a rapid state of deterioration. The site of the homestead is located in part of the prescribed burn program area practiced by the FWS. If controlled burning is allowed to continue at this site, it will degrade the existing cultural resources at an accelerated rate. Many of the wooden features will probably be completely destroyed by the next fire. The glass and iron artifacts on the surface would also be seriously damaged.

Because of the risk from further fires and the high potential for this site to yield significant research data, we recommend that an accurate map of it be prepared. Minimally, the mapping should record the location of surviving structural members and the surface artifacts. In addition, a representative sample of artifacts should be collected and properly curated.

Figure 7.36 Surface artifacts at 9CR200. [Okefenokee NWR, GA]

Isolated Finds

Information recorded from the discovery of 25 isolated finds is given in Table 7.09. Out of a total of 32 artifacts found as isolates, 25 are chert flakes, two are brick fragments, two are aboriginal pottery sherds, and one each is metal and whiteware. A single small Mississippian triangular point was also found as an isolate in the bulldozer firebreak along the Swamp Edge Break.

Table 7.09 Field data recorded for Isolated Finds

Field Code	UTM East	UTM North	Elevation (m/ft)	Landform	Habitat	Artifact Type	Count	Figure Number
I-CIR-01	380590	3435601	38.4/126	upland plain	pine barrens	chert flake	1	7.02
I-KFL-01	391525	3424928	39.6/130	swamp edge	pine barrens	chert flake	1	7.06
I-KFL-02	391539	3425065	39.6/130	swamp edge	pine barrens	chert flake	1	7.06
I-KFL-03	391449	3425310	39.6/130	swamp edge	pine barrens	chert flake	1	7.06
I-KFL-04	391389	3425526	38.9/128	swamp edge	pine barrens	chert flake	1	7.06
I-MIZ-01	391463	3424058	39.6/130	sand ridge	pine barrens	chert flake	1	7.07
I-MIZ-02	391455	3424051	39.6/130	sand ridge	pine barrens	chert flake	1	7.07
I-MIZ-03	391446	3424069	39.6/130	sand ridge	pine barrens	chert flake	1	7.07
I-MIZ-04	391539	3424081	41.1/135	sand ridge	pine barrens	chert flake	4	7.07
I-MIZ-05	391673	3424082	42.7/140	sand ridge	pine barrens	brick fragment	1	7.07
I-MIZ-06	391576	3424059	41.1/135	sand ridge	pine barrens	metal strip	1	7.07
I-MIZ-07	391387	3424162	38.1/125	swamp edge	pine barrens	chert flake	1	7.07
I-MIZ-08	391398	3424463	39.6/130	swamp edge	pine barrens	chert flake	1	7.07
I-CRW-01	392343	3417723	42.7/140	sand ridge	pine barrens	chert flake	2	7.08
I-CRW-02	391906	3418085	38.7/127	sand ridge	pine barrens	chert flake	3	7.08
I-HWD-01	391849	3418295	39.0/128	sand ridge	pine barrens	chert flake	3	7.08
I-TRR-01	392200	3416707	42.1/138	sand ridge	pine barrens	chert flake	1	7.08
I-TRR-02	392153	3416828	41.5/136	sand ridge	pine barrens	plain pottery	1	7.08

Table 7.09 Field data recorded for Isolated Finds (continued)

Field Code	UTM East	UTM North	Elevation (m/ft)	Landform	Habitat	Artifact Type	Count	Figure Number
I-TRR-03	392140	3417013	41.1/135	sand ridge	pine barrens	brick fragment	1	7.08
I-TRR-04	391848	3416740	37.5/123	swamp edge	pine barrens	chert flake	1	7.08
I-TRR-05	392028	3417174	40.2/132	sand ridge	pine barrens	chert flake	1	7.08
I-RBY-01	391113	3412267	38.1/125	swamp edge	pine barrens	Miss. point	1	7.10
I-COL-01	391370	3408710	40.2/132	sand ridge	pine barrens	cord-marked	1	7.12
I-DIR-01	391199	3406242	37.5/123	swamp edge	pine barrens	whiteware	1	7.13
I-COR-01	390728	3401924	37.2/122	swamp edge	pine barrens	chert flake	1	7.15

Examination of Interior Hammocks, Assessment of Known Sites, and Structural Fire Protection Evaluation

Billys Island

We traveled to Billys Island by boat on June 26, and landed at the edge of a hammock on the island's extreme northern end (Figure 7.37). While the hammock overstory was unaffected by fire, patchy areas of the understory had burned. South of the hammock are pine barrens which the fire had completely burned over. Even so, both habitats were quickly rebounding. A flush of plant growth was already beginning to fill the gaps created by the fire.

One of the known sites selected for assessment was the Lee Family Cemetery located on the northeastern side of the hammock. It was found to be unburned. The wildfire had burned to within just a few meters of its eastern side, but had stopped short of the chain link fence that surrounds the cemetery (Figure 7.38).

The Hebard Cypress Company's Logging Camp, also on the north end of Billy's Island, was the second known archaeological site to be evaluated for fire damage. Surface visibility at this site was good since brush, palmettos, and leaf litter had burned away. A number of fallen brick chimneys and chimney bases were found that marked the locations of dwellings and other structures (Figure 7.39). The leaf litter on the surface of abandoned railroad trams that filled the old crosstie molds had burned away leaving distinct impressions of the ties (Figure 7.39). Several rectangular areas of ash marked the previous locations of small wooden structures (Figure 7.40). Both of the Indian mounds in the logging camp area were well exposed. The

Figure 7.37 Hammock on the northern end of Billys Island. [Okefenokee NWR, GA]

Figure 7.38 Lee Family Cemetery on Billys Island. [Okefenokee NWR, GA]

Figure 7.39 Remnants of the Hebard Cypress Company logging camp. Left, articulated bricks marking the location of a structure—Right, burned out railroad crosstie molds. [Okefenokee NWR, GA]

larger of the two was elliptical and measured about 33m by 37m (108ft by 121ft) across and 1.5m (5ft) high (Figure 7.40). A smaller mound about 15m (49ft) in diameter and 0.5m (1.6ft) high was noted a short distance north of the larger mound (Figure 7.41). The previously recorded McCallie Mound, was found in the burned-over pine barrens south of the hammock. This mound measured about 21m by 23m (69ft by 75 ft) across and about 0.2m (0.6ft) high (Figure 7.41).

Figure 7.40 Remnants of the Hebard Cypress Company logging camp. Left, structural remnants and metal artifacts—Right, the larger of two Indian mounds. [Okefenokee NWR, GA]

Figure 7.41 Indian mounds on Billys Island. Left, smaller of two Indian mounds in the hammock—Right, the McCallie Mound in the pine barrens south of the hammock. [Okefenokee NWR, GA]

Floyds Island

After landing on Floyds Island by helicopter on July 3, we hiked to the Floyds Island Hammock located on the southwestern end of the island. We found that much of the underbrush and leaf litter had burned, but the overstory was unaffected. We examined the Floyds Island Southwest Mound (9CR2) that is in the hammock south of the Hebard Hunting Cabin. Wildfire had burned over its entirety and denuded the surface in places, particularly the steep slopes formed by a railroad tramway cut through the mound's northern edge (Figure 7.42). The mound measured 50m by 96m (164ft by 315ft) across and about 2m (6.6ft) high. We observed erosion on the slopes of the tram cut where the mineral soil was exposed (Figure 7.42). In the eroded areas we found several pieces of aboriginal pottery, most of which was sand-tempered plain. However, one sherd was decorated with hollow reed punctations applied to a smoothed-over rim strip. This rim decoration is common on Lamar and Irene phase jars. We also noted a smaller, lower mound a few meters north of the Floyds Island Southwest Mound. It may be the remains of a habitation site, although no artifacts were found in its vicinity.

After documenting the Floyds Island Southwest Mound, our attention shifted to the Hebard Cabin that was to be evaluated for fire damage and the efficacy of the fire team's protection measures. Prior to the wildfire's approach, it had been wrapped with a fire resistant, aluminized glass fabric (marketed as Firezat Fire Shield) to protect it from radiant heat and glowing embers (Figure 7.42). The fire did not reach the cabin, although it came as close as 50m (164ft) to the southeast. Therefore, the fire suppression wrapping was not put to the full test as in a complete conflagration. We detected no fire damage to the structure. However, some of the protective fabric and metal staples still remained on the edges of the rafters. In order to preserve the integrity of the historic cabin, all of the fire protection materials need to be removed.

Figure 7.42 Views of the Floyds Island Southwest Mound. Left, railroad tramway cut—Right, Eroding slope of the railroad tramway cut through the mound. [Okefenokee NWR, GA]

Figure 7.43 The Hebard Cabin wrapped in fire resistant fabric. *Photo courtesy of the U.S. Fish and Wildlife Service and Mark Jamieson.* **[Okefenokee NWR, GA]**

After completing the assessment of the Hebard Cabin, we went northwest searching for 9CR78. That area of the hammock had burned more cleanly than at the Floyds Island Southwest Mound. We found no artifacts to confirm the location of the site.

Later, we walked northeast along the nature trail to the Nuss Mound (Figure 7.44). This mound is smaller than the Floyds Island Southwest Mound. It is about 0.5m to 0.75m (1.6ft to 2.5ft) high and measures about 20m (66ft) north-south by 30m (98ft) east-west. The fire did not burn across this area of the hammock so it sustained no adverse effects.

The balance of the day was spent searching for two mounds in the middle of the island. That area was unburned and because of the dense oak and continuous saw palmetto, we did not find these features.

Figure 7.44 The Nuss Mound facing north. [Okefenokee NWR, GA]

Chesser Island

The hammock on Chesser Island was so completely modified by early settlers that it is barely recognizable today. Only a small remnant of the once large hammock remains. Most of it was converted into farmland in the nineteenth and early twentieth centuries. Today, the National Register eligible Tom Chesser Homestead is nestled under the few old-growth live oaks that remain. Because of a concerted effort by the fire fighters, the wildfire only reached the

artifacts associated with the homestead. As on Floyds Island, the Tom Chesser Homestead structures were wrapped with the same fire retardant fabric to protect them from radiant heat and embers (Figure 7.45). Conventional firebreaks kept the fire about 50m (164ft) away from the homestead structures. No visible damage was observed to the Chesser home or any of the outbuildings. The wrapping certainly reduced the amount of radiant heat that reached the wooden frame buildings and prevented ignition from airborne embers. Our inspection revealed that several small slivers of the wrapping material were adhering to the exposed rafters and fascia boards of the main house (Figure 7.46). And, again as at the Hebard Cabin, not all of the staples used to secure the wrapping were removed (Figure 7.46). Both of these deficiencies need to be corrected in order to bring the homestead structure back to its condition before the fires.

Figure 7.45 Tom Chesser Homestead wrapped in fire resistant fabric. *Photo courtesy of the U.S. Fish and Wildlife Service.* **[Okefenokee NWR, GA]**

Figure 7.46 Tom Chesser Homestead showing incomplete removal of the fire resistant fabric and staples. [Okefenokee NWR, GA]

Three Deptford Simple Stamped aboriginal pottery sherds, a single chert flake, and one historic whiteware fragment were found in a fire fighter's staging area directly south of the Tom Chesser Homestead house. They were exposed during the fire fighting operations. This area is about 50m (164ft) east of a large Indian mound that flanks the homestead on its southwest side (Figure 7.47). The aboriginal pottery is likely associated with that previously recorded site (9CR1) and the historic ceramic fragment with the Chesser homestead.

Figure 7.47 Indian mound southwest of Tom Chesser homestead facing southwest. [Okefenokee NWR, GA]

Two small Indian mounds a few meters north of Wildlife Drive and west of the Tom Chesser Homestead parking area were examined for fire effects. A head fire had burned across this landscape causing little damage to the overstory but clearing away the underbrush. Both features are so broad and low that they may be habitation sites rather than burial or ceremonial mounds. The eastern and larger of the two was about 25m by 30m (82ft by 98ft) across and less than 0.5m (1.6ft) high (Figure 7.48). About a dozen small sherds of aboriginal pottery were found on the mound (Figure 7.48). At no more than 20cm (8in) in elevation and 30m (98ft) in diameter, the smaller mound was almost indistinguishable from the surrounding landscape. No artifacts were found on or around this mound.

Figure 7.48 Elongated Indian Mound on Chesser Island. Left, facing north—Right, Aboriginal pottery lying on the surface of the (east) elongated mound. [Okefenokee NWR, GA]

Using the recorded GPS coordinates, we searched for a fourth Indian mound that was reported to be north of the Tom Chesser homestead. At the proper coordinates we found a nature trail that cut across several low ridges, but no mound was evident. Likewise, two other recorded site locations, 9CR21 and 9CR40, were investigated with the assistance of the hand-held GPS receiver. However, no cultural remains were observed after reaching their recorded UTM coordinates. These sites were documented two decades ago when the area was clear (Chris Trowell, personal communication 2007). Since they were not exposed during our visit, we were not able to confirm their location.

Blackjack and Honey Islands

On Thursday, July 12, we flew to Blackjack and Honey Islands. The purpose of our visit was to check 9WE47 on Blackjack Island and 9WE49 on Honey Island for fire damage. Using a topographic map showing the location of 9WE47 and a hand-held GPS receiver we searched for the site. During the excursion we observed that the fire had swept through the pine barrens,

burning away almost all of the ground cover, which was mostly scrub palmetto. With the exception of a few trees, which fell when their heartwood burned, the longleaf pine forest was in good condition. The bark on the trees was scorched to about three meters above the ground surface. Since the fire event, gallberry, saw palmetto, and other plants had grown to about 50 cm (20in) above the ground surface. Visibility under the canopy was excellent, perhaps 1 km or more. When we arrived at the UTM coordinates for 9WE47 we did not see a mound (Figure 7.49). We flagged a group of nearby trees and began a search outward from that point in all directions. No cultural materials or surface features were found. It is estimated that our search extended over an area with a radius of about 500m (1640ft). We called off the investigation after about an hour.

We then flew to Honey Island and began searching for site 9WE49, the ruins of a historic cabin. The ground conditions on Honey Island were similar to those observed on Blackjack Island, except that the longleaf pines were scorched slightly higher. Unfortunately, we found no cultural materials at the UTM coordinates for 9WE49 (Figure 7.49). We flagged the closest tree and began a search around that point. A single modified metal barrel was encountered about 200m (656ft) north of the coordinates. It appears that the barrel was used recently as a make-shift stove by campers or hunters. We continued the search to a distance of about 500m (1640ft) in all directions from the 9WE49 coordinates, but found no other cultural materials.

Figure 7.49 Views of Blackjack and Honey Islands. Left, Terrain of Blackjack Island at the GPS coordinates of 9WE47, facing southeast—Right, Terrain of Honey Island at the GPS coordinates of 9WE49, facing northwest. [Okefenokee NWR, GA]

Grooms Field North Mounds, Grooms Field South Mound, and Martha Dowling North Mounds

A series of Indian mounds along the eastern side of the Okefenokee NWR were visited while we were in the area surveying new firebreaks and staging areas. These included the Grooms Field North Mounds (9CR32), the Grooms Field South Mound (9CR31), and the Martha Dowling

North Mounds (9CR34). All are located on the high ground of Trail Ridge and east of the Swamp Edge Break. Since this firebreak effectively stopped the fire's eastern progress, none of the mounds were affected. Therefore, the following descriptions are provided as a status report on their condition at the time of our visit. Unfortunately, looters' holes were observed in all of the mounds.

Although the Grooms Field North Mounds and the Grooms Field South Mound are recorded as separate sites, in reality they are probably elements of the same site. These were recorded in the 1970s by Chris Trowell when the north mounds were exposed by logging operations. The south mound is much lower and was recorded later, after the terrain around it was cleared. At the time of our investigation both of the north mounds (9CR32) were heavily overgrown (Figure 7.50). The northernmost measured about 49m by 56m (160ft by 184ft) across, and 1.5m (5ft) high, while the southernmost was 28m by 34m (92ft by 112ft) across and about 1m (3.3ft) high. No artifacts were observed on either mound. The Grooms Field South Mound (9CR31) measured 20m by 28m across (6ft x 92ft) and was no more than 30cm (12in) higher than the surrounding terrain (Figure 7.51).

Figure 7.50 Views of Grooms Field North Mounds (9CR32). Left, northernmost mound facing southeast—Right, southernmost mound facing east. [Okefenokee NWR, GA]

Figure 7.51 Grooms Field South Mound (9CR31) facing southeast. [Okefenokee NWR, GA]

Two mounds in the complex known as the Martha Dowling North Mounds (9CR34) were also visited on June 21. Again, they were both heavily overgrown. Measurements revealed the north mound to be the smaller in volume of the two. It was 34m by 37m (112ft by 121ft) horizontally and about 1m (3.3ft) high (Figure 7.52). The southern mound measured 27m by 40m (89ft by 131ft) and was at least 1.5m (5ft) in elevation at its apex (Figure 7.52).

Figure 7.52 Views of Martha Dowling North Mounds (9CR34). Left, northern mound facing southwest—Right, southern mound facing west. [Okefenokee NWR, GA]

CHAPTER 8

SUMMARY AND RECOMMENDATIONS

Between June 18 and July 13, 2007, Southeastern Horizons, Inc., conducted a post-burn non-collection archaeological assessment of the firebreaks and staging areas in the Okefenokee NWR. These firebreaks resulted from fire suppression activities related to the 2007 wildfires. A total of 80.5 person-kilometers (50 miles) were surveyed over 39.4 km (24.5) of actual firebreaks and staging areas. Eight unrecorded sites and 25 isolated finds were discovered and documented.

Accessible hammocks were examined to determine the fire effects and to search for cultural resources. This aspect of the project suffered from accessibility due to low water conditions in the swamp, bad weather, and the high expense of reaching the interior hammocks by helicopter. An investigation of three island hammocks revealed that the fire's effects on most of the cultural resources in these habitats were minimal. However, the fire denuded slopes of a railroad tram through the Floyds Island Southwest Mound were found to be in need of stabilization.

Attempts were made to visit seven previously known sites in order to ascertain the extent of direct fire damage and indirect damage such as increased erosion due to plant cover loss. Three of the sites were little affected, but the Hebard Cypress Logging Camp on Billys Island suffered significant damage. Exposed metal artifacts were burned which will undoubtedly lead to an accelerated rate of corrosion. Furthermore, the rotted remains of wooden structures and railroad crossties had completely burned, leaving recognizable features that will soon weather away. Similar conditions were found at the McLeods Sawmill site and the Robert Allen Chesser homestead. A search for the southwest boat landing site on Floyds Island (9CR78) was mounted, but it was not found. An extensive three person search was executed for the other two sites, 9WE49 on Honey Island, and 9WE 47 on Blackjack Island. In spite of good visibility, neither of these were found.

Finally, the fire protection measures taken to prevent damage to the National Register listed Hebard Cabin on Floyds Island and the National Register eligible Chesser Homestead on Chesser Island were effective in resisting radiant heat and airborne embers. However, it is likely that the well-placed firebreaks were primarily responsible for their protection.

Results of the firebreaks and staging areas aspect of the project revealed that most of the unrecorded sites were found upslope of the swamp. Only two of the eight unrecorded sites were encountered in the bulldozer line that follows the Swamp Edge Break. One of these met exactly the minimum definition of a site (five artifacts within 100 square meters) and the other exceeded it by only one artifact. The routine harrowing of the Swamp Edge Break firebreak will cause little, if any, additional damage to these small sites. Further, since the artifact density is very low at both sites and few if any diagnostics occur, their research potential is minimal at best. In contrast, sites discovered on higher ground, particularly along Trail Ridge, were larger and had

diagnostic artifacts. Thus, adverse impact to sites was minimal along the Swamp Edge Break but more pronounced at sites on Trail Ridge.

Although some short-term erosion has occurred due to the loss of ground cover at sites in the burned areas of the Okefenokee NWR, the environment is repairing itself quickly. The current conditions provide an excellent opportunity to accurately record the exposed cultural resources at the Hebard Cypress Logging Camp on Billys Island, the Robert Allen Chesser, Sr., homestead on Chesser Island, and the McLeods Sawmill on the northwest rim of the swamp. At the least, topographic maps should be prepared of these sites documenting recognizable features and the spatial distribution of artifacts. Representative samples of the artifacts should be collected and curated. In addition, a comprehensive program of high resolution photography should be conducted to precisely record the present condition of these sites.

The erosion on the slopes of the railroad tramway through the Floyds Island Southwest mound should be abated. Protective covering should be applied that will lessen the erosion and stabilize the tram cut to prevent the exposure of artifacts. Re-seeding the area with native grasses was suggested. However, this option is not favored by the FWS since it could introduce nonnative species to the island. An alternative might be to cover the denuded areas with leaf litter brought from elsewhere on the island. This would protect the surface soil until the extant vegetation can recover. Perhaps the best alternative is to do nothing since the hammock is quickly rebounding from the wildfire.

After reviewing the pertinent literature and visiting a number of Indian mounds in the Okefenokee NWR, it is our opinion that one of the greatest cultural resource management needs is to properly record the mounds. These features are slowly succumbing to the ravages of time and not one is suitably documented. Many have been damaged or destroyed by silvicultural practices since the mid-1950s. Not only are they subject to the normal weathering processes, they have also been looted over the past 150 years. They are the more visible constituents of many prehistoric sites in the Okefenokee NWR and that makes them particularly susceptible to looting. Neglecting to record these features as they are today will allow an important part of the archaeological record to further degrade or to be lost entirely. We feel that all of the Indian mounds in the Okefenokee NWR should be topographically mapped as soon as possible. Although such a program may not be eligible for funding under the Disaster Designation of FEMA, we feel an ethical responsibility to bring attention to this potential loss of important cultural resources.

To summarize, the following recommendations are explicitly stated:

1) Document the Robert Allen Chesser, Sr., homestead by preparing a topographic map of the site that documents exposed features and artifacts. A representative sample of the artifacts should be collected, cataloged, and properly curated according to the Federal standards published in 36 CFR Part 79: *Curation of Federally-Owned and Administered Archaeological Collections.*

2) Document the McLeod's steam saw mill/tram head site by topographically mapping the exposed surface features and artifacts. The open well/cistern should be fenced or covered to protect the public. Artifacts should be mapped and a representative sample collected, cataloged, and properly curated according to the Federal standards published in 36 CFR Part 79: *Curation of Federally-Owned and Administered Archaeological Collections.*

3) Document the Hebard Cypress Logging Camp by preparing a topographic map of features and artifacts. The currently exposed railroad tramway crosstie features and possible wooden structures will degrade rapidly and soon become unrecognizable. For this reason, the mapping should be done as soon as possible. A representative sample of artifacts should be collected, cataloged and curated according to the federal standards published in 36 CFR Part 79: *Curation of Federally-Owned and Administered Archaeological Collections.*

4) Stabilize the railroad tram trench that cuts through the Floyds Island Southwest Mound by covering the denuded areas with leaf litter or some other appropriate material until the native vegetation can recover and protect the cultural resources in the mound.

5) Remove the remnant fire resistant fabric and all of the metal staples used to secure it to the Hebard Cabin and the Chesser Homestead structures.

6) Initiate a program to map all of the Indian mounds in the Okefenokee NWR.

REFERENCES CITED

Brooks, Mark J., Peter A. Stone, Donald J. Colqhoun, and Janice G. Brown
1989 Sea Level Change, Estuarine Development, and Temporal Variability in Woodland Period Subsistence-Settlement Patterning in the Lower Coastal Plain of South Carolina. In *Studies in South Carolina Archaeology in Honor of Robert L. Stephenson*, edited by A.C. Goodyear and G.T. Hanson, pp. 91-100. Anthropological Studies 9. South Carolina Institute of Archeology and Anthropology, University of South Carolina, Columbia.

Brown, Randall B., Earl L. Stone, and Victor W. Carlisle
1990 Soils. In *Ecosystems of Florida*, edited by Ronald L. Myers and John J. Ewel, pp. 35-69. University of Central Florida Press, Orlando.

Carder, Nanny
1989 Faunal Remains from Mixons Hammock, Okefenokee Swamp. *Southeastern Archaeology* 8(1):19-30.

Clausen, C.J., H.K. Brooks, and A.B. Wesolowsky
1975 The Early Man Site at Warm Mineral Springs, Florida. *Journal of Field Archaeology*, 2(3)191-213

Clausen, C.J., A.D. Cohen, Cesare Emiliani, J.A. Holman, and J.J. Stipp
1979 Little Salt Spring: A Unique Underwater Site. *Science* 203:609-614

Cohen, Arthur D.
1974 Petrography and Paleoecology of Holocene Peats from the Okefenokee Swamp-Marsh Complex of Georgia. *Journal of Sedimentary Petrology*, 44:716-726.

Cohen, A.D., M.J. Andrejko, Willam Spackman, and Dorothy Corvinis
1984 Peat Deposits of the Okefenokee Swamp. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 493-553. Wetland Surveys, Los Alamos.

Constantino, George, Pete Jerome, Jon Andrew, and Sam Hamilton
2006 *Okefenokee Nation Wildlife Refuge Comprehensive Conservation Plan*. U.S. Department of the Interior, Fish and Wildlife Service, Southeast Region, Atlanta, Georgia.

Crofton, Elizabeth W.
2001 Flora and Fauna of the Longleaf Pine-Grassland Ecosystem. *Georgia Wildlife* 8(2)69-77.

Cypert, Eugene
1961 The Effects of Fires in the Okefenokee Swamp in 1954 and 1955. The Americal Midland Naturalist 66(2):485-503

Delcourt, Paul A.
1980 Goshen Springs: Late Quaternary Vegetation Record for Southern Alabama. *Quaternary Research* 19:265-271

Delcourt, Paul A., and Hazel R. Delcourt
1983 Late-Quaternary Vegetation Dynamics and Community Stability Reconsidered. Quaternary Research 19:265-271.

Dickel, David N., and Glen H. Doran
2002 An Environmental and Chronological Overview of the Region. In *Windover: Multidisciplinary Investigations of an Early Archaic Florida Cemetery*, edited by Glen H. Doran, pp. 39-58, University Press of Florida, Gainesville.

Dunbar, James S., S. David Webb, and Dan Cring
1989 Culturally and Naturally Modified Bones from a Paleoindian Site in the Aucilla River, North Florida. In *First International Bone Modification Conference*, edited by R. Bonnichsen, pp. 473-497. Orono Center for the Study of the First Americans, University of Maine, Orono.

Dunbar, James S., S. David Webb, and Michael K. Faught
1988 Page/Ladson (8JE591): An Underwater Paleoindian Site in Northwestern Florida. *Florida Anthropologis*t, 41(4)442-452.

Engstrom, Todd R., Katherine Kirkman, and Robert J. Mitchell
2001 The Natural History of the Fire Forest. *Georgia Wildlife* 8(2)43-50.

Faught, Michael K., and Brinnen Carter
1998 Early Human Occupation and Environmental Change in Northwestern Florida. *Quaternary International* 49-50:167-176.

Fearn, Lawrence B., and Arthur D. Cohen
1984 Palynologic Investigations of Six Sites in the Okefenokee Swamp. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 423-443. Wetland Surveys, Los Alamos.

Hamilton, David B.
1982 Plant Succession and the Influence of Disturbance in the Okefenokee Swamp, Georgia. *Okefenokee Systems Investigations*, No. 19, Athens, Georgia.

Harper, Francis
1927 The Mammals of the Okefinokee Swamp Region of Georgia. *Proceedings of the Boston Society of Natural History*, Vol. 38, No. 7. Boston Society of Natural History.

Harper, Francis and Delma E. Presley
1981 *Okefinokee Album*. University of Georgia Press, Athens.

Holloway, Richard G.
2002 Pollen Analysis of Holocene Sediments. In *Windover: Multidisciplinary Investigations of an Early Archaic Florida Cemetery*, pp. 211-226, edited by Glen H. Doran, University Press of Florida, Gainesville.

Huddlestun, Paul F.
1988 *A Revision of the Lithostratigraphic Units of the Coastal Plain of Georgia*. Georgia Department of Natural Resources, Bulletin 104, Atlanta.

Izlar, Robert L.
1972 *The Hebard Lumber Company in the Okefenokee Swamp: Thirty-Six Years of Southern Logging History*. Unpublished Master's thesis, Department of Forest Resources, University of Georgia, Athens
1984 Some Comments on Fire and Climate in the Okefenokee Swamp-Marsh Complex. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 70-85. Wetland Surveys, Los Alamos.

Kanaski, Richard S. and Chris T. Trowell
1999 *Floyds Hammock Cabin, National Register of Historic Places, Registration Form*. On file at the U.S. Fish and Wildlife Service, Southeast Region, Office of the Regional Archaeologist, Savannah, Georgia.

Kelly, A.R.
1935 Exploring Prehistoric Georgia. *Scientific American* 152(3):117-120, (4):185-187, (5):244-246.

Kirkland, S. Dwight
1979 Preliminary Archaeological Investigations on Floyd Creek, Camden County, Georgia. *Early Georgia* 7(2):1-25.
1994 *Ten Millennia of Human Land Use on the Interior Coastal Plain of Georgia.* Unpublished Master's thesis, Department of Anthropology, University of Georgia, Athens.
2003 Human Prehistory at the Sadlers Landing Site Camden County, Georgia. *Early Georgia* 31(2).

Komarek, E.V., Sr.
1969 Fire and Man in the Southeast. *Journal of Arizona Academy of Science*, Proceedings of the Symposium on Fire Ecology and the Control and Use of Fire in Wild Land Management, pp. 3-22.

Laerm, Joshua, Byron J. Freeman, Laurie J. Vitt, and Lloyd E. Logan
1984 Appendix A: Checklist of Vertebrates of the Okefenokee Swamp. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 682-701. Wetland Surveys, Los Alamos.

Lofton, Cynthia S.
1998 *Assessing Patterns and Processes of Landscape Change in Okefenokee Swamp, Georgia*. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Florida, Gainesville.

McGuire, John P.
2001 Living on Longleaf: How Humans Shaped the Piney Woods Ecosystem. *Georgia Wildlife* 8(2)43-50.

Paulk, Greg
1980 Okefenokee Swamp Survey: Clinch, Charlton, and Ware Counties, Georgia. Manuscript No. 394, Georgia Archaeological Site Files, Athens.

Parrish, F.K., and E.J. Rykiel
1979 Okefenokee Swamp Origin: Review and Reconsideration. *Journal of the Elisha Mitichell Science Society* 95:17-31

Patten, B.C.
1977 University of Georgia Swamp Ecosystem Studies: Annual Report to Okefenokee Wildlife Refuge. Ms. on file, Department of Zoology and Institute of Ecology, University of Georgia, Athens.

Pirkle, Fredric L.
1984 Environment of Deposition of the Florida Peninsular. *Florida Bureau of Geology Bulletin* 51:146

Pirkle, William A., and E.C. Pirkle
1984 Physiographic Features and Field Relations of Trail Ridge in Northern Florida and Southeastern Georgia. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 613-628. Wetland Surveys, Los Alamos.

Pirkle, E. C., and W.H. Yoho
1970 The Heavy-Mineral Ore Body of Trail Ridge, Florida. *Economic Geology* 65:17-30.

Purdy, Barbara
1991 *The Art and Archaeology of Florida's Wetlands*. CRC Press, Boca Raton, FL.

Pyne, Stephen J.
1982 *Fire in America: A Cultural History of Wildland and Rural Fire*. Princeton University Press, Princeton, New Jersey.

Reitz, Elizabeth J., and Chester B. DePratter
1984 Mixon's Hammock Test Excavation Report. Ms. on file, Department of Anthropology, University of Georgia, Athens.

Rich, Fredrick J.
1984 An Ancient Flora of the Eastern Okefenokee Swamp as Determined by Palynology. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 410-416. Wetland Surveys, Los Alamos.

Rigdon, Thomas A., and Alfred J. Green
1980 *Soil Survey of Camden and Glynn Counties, Georgia*. U.S. Department of Agriculture Soil Conservation Service.

Rykiel, Edward J., Jr.
1984 General Hydrology and Mineral Budgets for Okefenokee Swamp: Ecological Significance. In *The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry*, edited by A.D. Cohen, D.J. Casagrande, M.J. Andrejko, and G.R. Best, pp. 212-228. Wetland Surveys, Los Alamos.

Sayers, Daniel O., P. Brendan Burke, and Aaron M. Henry
2006 The Political Economy of Exile in the Great Dismal Swamp. *International Journal of Historical Archaeology*.

Seielstad, Carl A.
1994 *Holocene Environmental History at Chatterton Springs on the Southern Coastal Plain of Georgia.* Unpublished Master's thesis, Department of Geography, University of Georgia, Athens.

Stout, Scott A. and William Spackman
2002 Paleoecology Interpreted by Peat Petrology and Chemistry. In *Windover: Multidisciplinary Investigations of an Early Archaic Florida Cemetery*, pp. 227-235, edited by Glen H. Doran, University Press of Florida, Gainesville.

Trowell, Chris T.

1978a *A Preliminary Survey of Archaeological Site 9WE1, Cowhouse Island, Ware County, Georgia.* Okefenokee Area Survey, Working Paper #1, Division of Social and Behavioral Sciences, South Georgia College, Douglas, Georgia.

1978b Okefenokee Weeden Island Site Dated A. D. 995 ± 105. *The Profile*, Newsletter of the Society for Georgia Archaeology 20.

1979 *A Reconnaissance of Aboriginal Okefenokee: An Outline of the Prehistoric Geography of the Okefenokee Swamp and an Inventory of Prehistoric Archaeological Sites in the Okefenokee National Wildlife Refuge, Part 1.* Okefenokee Area Survey, Working Paper #1, Division of Social and Behavioral Sciences, South Georgia College, Douglas, Georgia.

1989 Exploring the Okefenokee: The Mansfield Torrance Survey of 1850. Ms. on file at the author's residence, 1302 Old Bell Lake Road, Douglas, Georgia.

1998a *Okefenokee: Profiles of the Past.* Special Publication No. 1, Okefenokee Wildlife League, Inc., Route 2, Box 3330, Folkston, Georgia 31537.

1998b *Indians in the Okefenokee: Their History and Prehistory*. Special Publication No. 2, Okefenokee Wildlife League, Inc., Route 2, Box 3330, Folkston, Georgia 31537.

1998c *Life on the Okefenokee Frontier*. Special Publication No. 2, Okefenokee Wildlife League, Inc., Route 2, Box 3330, Folkston, Georgia 31537.

1999 *Okefenokee: In A Page*. Ms. on file at the author's residence, 1302 Old Bell Lake Road, Douglas, Georgia.

2003 A Review of Aboriginal Okefenokee. Paper presented at the 2003 Symposium on Southeastern Coastal Plain Archaeology, South Georgia College, Douglas, Georgia.

2007 *Human History of the Okefenokee Swamp*. New Georgia Encyclopedia. http://www.georgiaencyclopedia.org/nge/Article.jsp?id=h-691&hl=y

Watts, W.A.

1969 A Pollen Diagram from Mud Lake, Marion County, North-Central Florida. *Geological Society of America Bulletin*, 80:631-642.

1971 Postglacial and Interglacial Vegetation History of Southern Georgia and Central Florida. *Ecology* 52(4):676-690

1980 The Late-Quaternary Vegetation History of the Southeastern United States. *Annual Review of Ecology and Systematics* 11:387-409.

1983 Vegetational History of the Eastern United States 25,000 to 10,000 Years Ago. In *Late-Quaternary Environments of the United States. The Late Pleistocene*, vol. 1, edited by H.E. Wright and S.C. Porter, pp. 294-310. University of Minnesota Press,

1992 Camel Lake: A 40,000 Year Record of Vegetational and Forest History from Northwest Florida. Ecology 73(3):1056-1066.

Watts, W.A., Eric C. Grimm, and T.C. Hussey

1996 Mid-Holocene Forest History of Florida and the Coastal Plain of Georgia and South Carolina. In *Archaeology of the Mid-Holocene Southeast*, edited by Kenneth E. Sassaman and David G. Anderson, pp. 28-38. University Presses of Florida, Gainesville.

Watts, W.A., and B.C.S. Hansen
1988 Environments of Florida in the Late Wisconsin and Holocene. In *Wet Site Archaeology*, edited by B.A Purdy, pp. 307-323. Telford, West Caldwell, New Jersey.

Webb, David S. (editor)
2006 *First Floridians and Last Mastodons: The Page-Ladson Site in the Aucilla River*. Springer Press, Dordrecht, The Netherlands

Weisman, Russell, Dwight Kirkland, and John Worth
1998 *An Archaeological Reconnaissance of Trail Ridge Charlton County, Georgia*. Submitted to Golder and Associates, Inc., Atlanta, Georgia. Copy available at the Georgia Archaeological Site File, Athens.

Wharton, C.H.
1978 *The Natural Environments of Georgia.* Georgia Department of Natural Resources, Atlanta.

Williams, Gerald W.
2002 Aboriginal Use of Fire: Are There Any "Natural" Plant Communities? In *Wilderness and Political Ecology: Aboriginal Land Management—Myths and Reality*, edited by Charles E. Kay and Randy T. Simmons, University of Utah Press, Logan.

Williams, Mark and Gary Shapiro
1990 *Lamar Archaeology: Mississippian Chiefdoms in the Deep South*. University of Alabama Press, Tuscaloosa.

Wright, A.H. and A.A. Wright
1932 Vegetation of Okefinokee Swamp. *Ecological Monographs*, Vol II, No. 2

Wright, Newell O., Jr.
1994 *Archaeological Reconnaissance of the Swamp Edge Break Project Okefenokee National Wildlife, Georgia*. Submitted to the National Park Service, Southeast Region, Atlanta.

APPENDIX I

GEORGIA ARCHAEOLOGICAL SITE FORMS

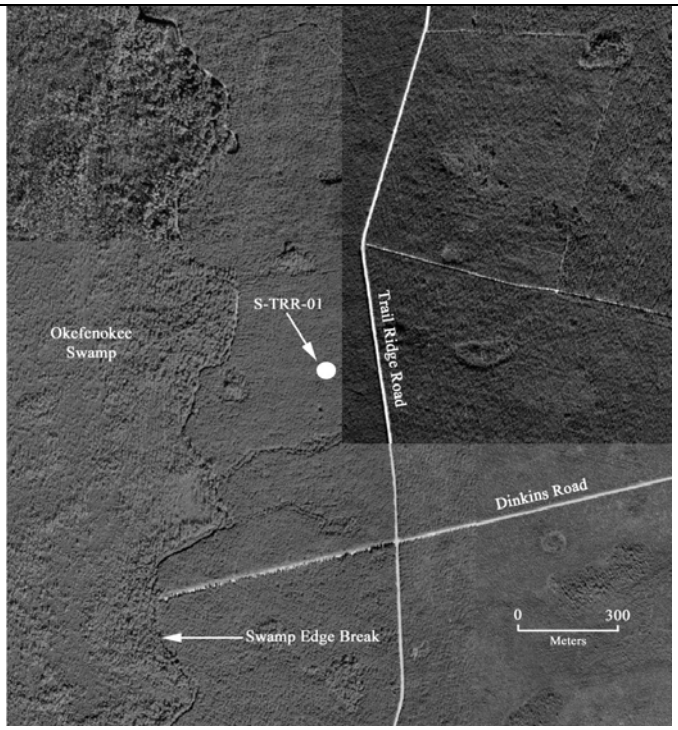
GEORGIA ARCHAEOLOGICAL SITE FORM
1990
Official Site Number: 9CR193

Institutional Site Number: S-TRR-01 **Site Name:** Trail Ridge Road Historic Site
County: Charlton **Map Name:** Chase Prairie, 1:24,000 **USGS** or USNOAA
UTM Zone: 17 **UTM East:** 392129 **UTM North:** 3416014
Owner: U.S. Government **Address:** Okefenokee National Wildlife Refuge
Site Length: 115 meters **Width:** 40 meters **Elevation:** 40-41 meters
Orientation: 1. N-S **2. E-W** 3. NE-SW 4. NW-SE 5. Round 6. Unknown
Kind of Investigation: **1. Survey** 2. Testing 3. Excavation 4. Documentary 5. Hearsay 6. Unknown 7. Amateur
Standing Architecture: 1. Present **2. Absent**
Site Nature: 1. Plowzone 2. Subsurface 3. Both **4. Only Surface Known** 5. Unknown 6. Underwater
Midden: 1. Present 2. Absent **3. Unknown** **Features:** 1. Present 2. Absent **3. Unknown**
Percent Disturbance: 1. None **2. Greater than 50** 3. Less than 50 4. Unknown
Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): historic artifact scatter

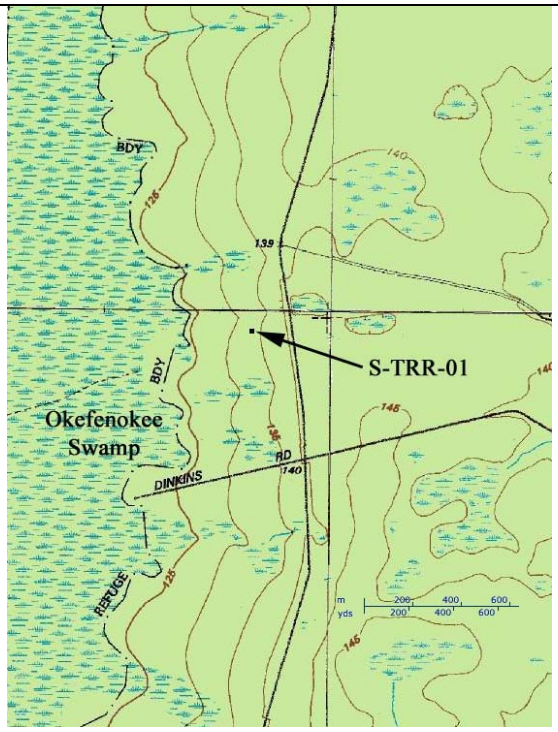
Topography (Ridge, Terrace, etc.): sand ridge (Trail Ridge)

Current Vegetation (Woods, Pasture, etc.): clear-cut pine plantation

Additional Information: This site consists of a scatter of historic artifacts in a burned-over, clear-cut, area. Pieces of whiteware, clear glass, aqua glass, and bricks were observed on the surface but not collected. These were exposed by logging operations following the wildfires of 2007



SKETCH MAP
(Include sites, roads, streams, landmarks)



OFFICIAL MAP
(Xerox of proper map)

State Site Number: 9CR193 **Institutional Site Number:** S-TRR-01

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed **6. Unknown** 7. Removed

National Register Level of Significance: 1. Local 2. State 3. National

Preservation State (Select up to Two): 1. Undisturbed **2. Cultivated** 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded 10. Razed

Preservation Prospects: 1. Safe 2. Endangered by: Continuing silvaculture operations
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: S. Dwight Kirkland **Affiliation:** Southeastern Horizons, Inc. **Date:** 2007.06.25
Report Title: Cultural Resource Reconnaissance of Okefenokee National Wildlife Refuge Following the 2007 Wildfires.

Other Reports:

Artifacts Collected: None. This project was a non-collection reconnaissance survey. Artifacts were photographed *in situ* and against a grid and left in place.

Location of Collections:
Location of Field Notes:
Private Collections:

Name: **Address:**

CULTURAL AFFINITY

Cultural Periods: Early 20th Century

Phases:

FORM PREPARATION AND REVISION

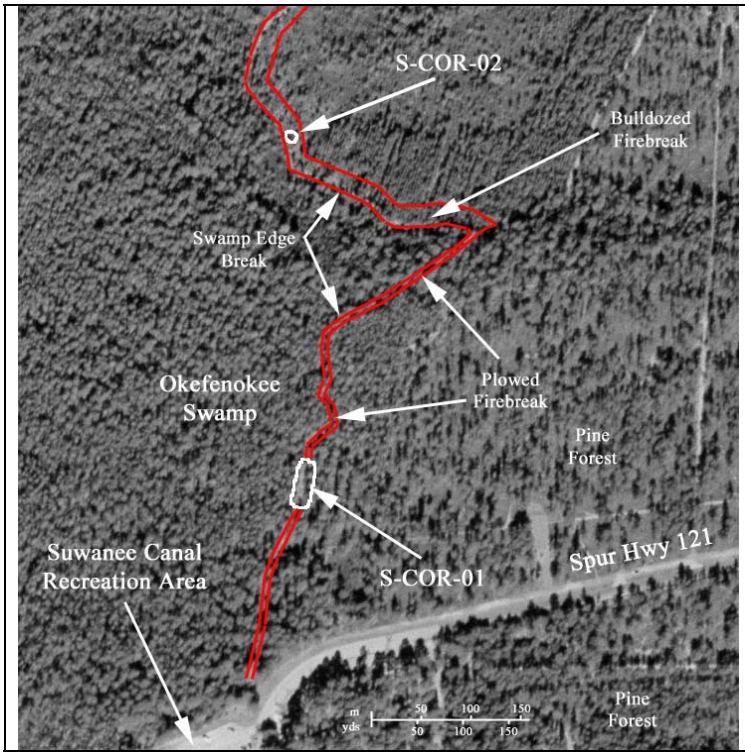
Date	Name	Institutional Affiliation
2007.07.26	S. Dwight Kirkland	Southeastern Horizons, Inc.

GEORGIA ARCHAEOLOGICAL SITE FORM
1990
Official Site Number: 9CR194

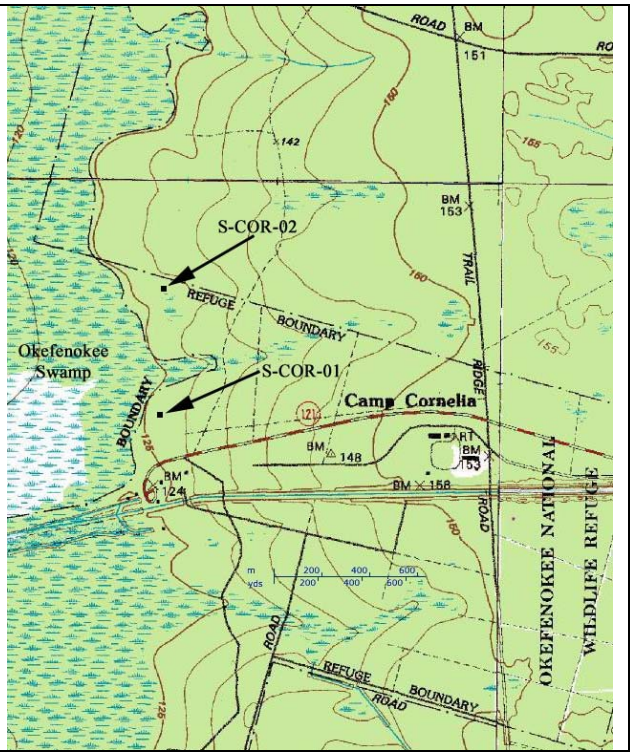
Institutional Site Number: S-COR-01 **Site Name:** Camp Cornelia Trash Dump
County: Charlton **Map Name:** Chesser Island, 1:24,000 **USGS** or USNOAA
UTM Zone: 17 **UTM East:** 390891 **UTM North:** 3401280
Owner: U.S. Government **Address:** Okefenokee National Wildlife Refuge
Site Length: 24 meters **Width:** 17 meters **Elevation:** 38-40 meters
Orientation: 1. N-S 2. E-W **3. NE-SW** 4. NW-SE 5. Round 6. Unknown
Kind of Investigation: **1. Survey** 2. Testing 3. Excavation 4. Documentary 5. Hearsay 6. Unknown 7. Amateur
Standing Architecture: 1. Present **2. Absent**
Site Nature: 1. Plowzone 2. Subsurface 3. Both **4. Only Surface Known** 5. Unknown 6. Underwater
Midden: 1. Present **2. Absent** 3. Unknown **Features:** 1. Present 2. Absent **3. Unknown**
Percent Disturbance: 1. None **2. Greater than 50** 3. Less than 50 4. Unknown
Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): scatter of modern artifacts

Topography (Ridge, Terrace, etc.): swamp edge

Current Vegetation (Woods, Pasture, etc.): Overstory: volunteer longleaf pines; Understory: saw palmetto, gallberry, bracken fern, and grasses.
Additional Information: Consists of a scatter of bricks, bottle glass, milk glass jar lid liners, and old shoe soles. At least three concentrations of bottles consisting of mustard jars, large gallon jugs, kool-aid bottles, and miscellaneous glass containers (no plastic containers or debris). Some burn damage is evident from a recent fire. In an old road bed/firebreak. Probably a garbage dump site.



SKETCH MAP
(Include sites, roads, streams, landmarks)



OFFICIAL MAP
(Xerox of proper map)

State Site Number: 9CR194 **Institutional Site Number:** S-COR-01

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed **6. Unknown** 7. Removed

National Register Level of Significance: 1. Local 2. State 3. National

Preservation State (Select up to Two): 1. Undisturbed **2. Cultivated** 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded 10. Razed

Preservation Prospects: 1. Safe 2. Endangered by: Continued plowing of firebreak
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: S. Dwight Kirkland **Affiliation:** Southeastern Horizons, Inc. **Date:** 2007.07.04
Report Title: Cultural Resource Reconnaissance of Okefenokee National Wildlife Refuge Following the 2007 Wildfires.

Other Reports:

Artifacts Collected: None. This project was a non-collection reconnaissance survey. Artifacts were photographed *in situ* and left in place.

Location of Collections:
Location of Field Notes:
Private Collections:

Name: **Address:**

CULTURAL AFFINITY

Cultural Periods: Modern: pre-1965 (no plastics)

Phases:

FORM PREPARATION AND REVISION

Date	Name	Institutional Affiliation
2007.07.27	S. Dwight Kirkland	Southeastern Horizons, Inc.

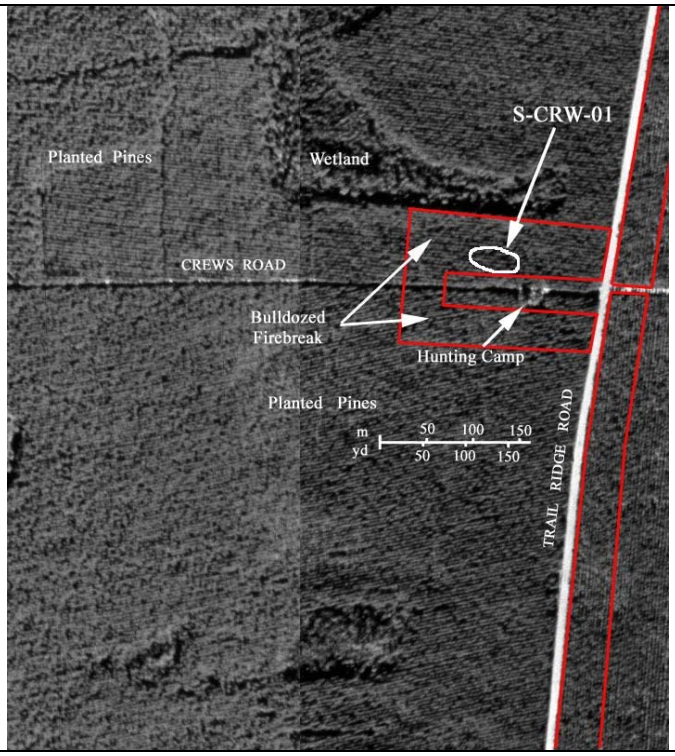
GEORGIA ARCHAEOLOGICAL SITE FORM
1990
Official Site Number: 9CR196

Institutional Site Number: S-CRW-01 **Site Name:** Crews Road Hunting Camp
County: Charlton **Map Name:** Double Lakes, 1:24,000 **USGS** or USNOAA
UTM Zone: 17 **UTM East:** 392430 **UTM North:** 3417718
Owner: U.S. Government **Address:** Okefenokee National Wildlife Reguge
Site Length: 49 meters **Width:** 27 meters **Elevation:** 43 meters
Orientation: 1. N-S **2. E-W** 3. NE-SW 4. NW-SE 5. Round 6. Unknown
Kind of Investigation: **1. Survey** 2. Testing 3. Excavation 4. Documentary 5. Hearsay 6. Unknown 7. Amateur
Standing Architecture: 1. Present **2. Absent**
Site Nature: **1. Plowzone** 2. Subsurface 3. Both 4. Only Surface Known 5. Unknown 6. Underwater
Midden: 1. Present **2. Absent** 3. Unknown **Features:** 1. Present **2. Absent** 3. Unknown
Percent Disturbance: 1. None **2. Greater than 50** 3. Less than 50 4. Unknown
Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): aboriginal lithic and pottery scatter

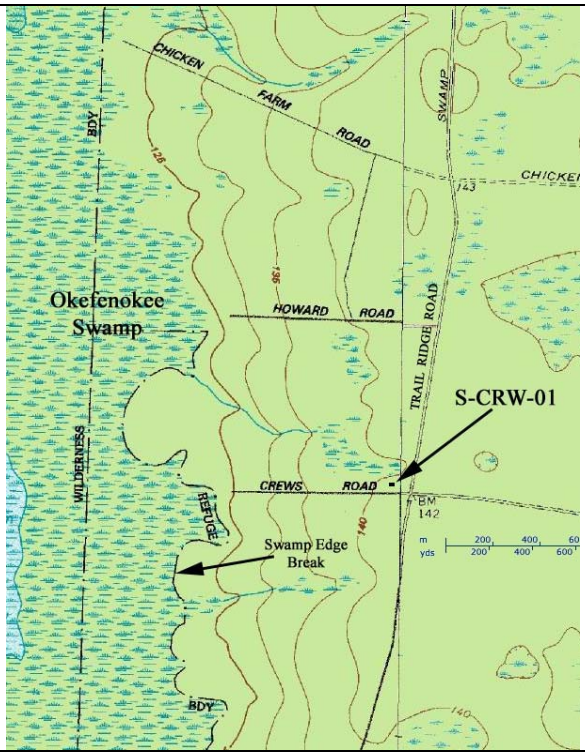
Topography (Ridge, Terrace, etc.): sand ridge (Trail Ridge)

Current Vegetation (Woods, Pasture, etc.): None. Clear-cut and bulldozed

Additional Information: This is a small aboriginal pottery and lithic scatter exposed in a bulldozer firebreak. A total of 18 artifacts were observed on the surface but not collected. These were exposed by the fire suppression activities during the wildfires of 2007.



SKETCH MAP
(Include sites, roads, streams, landmarks)



OFFICIAL MAP
(Xerox of proper map)

State Site Number: 9CR196 **Institutional Site Number:** S-CRW-01

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed **6. Unknown** 7. Removed

National Register Level of Significance: 1. Local 2. State 3. National

Preservation State (Select up to Two): 1. Undisturbed 2. Cultivated 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded 10. Razed

Preservation Prospects: 1. Safe **2. Endangered by:** Continued silviculture operations
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: S. Dwight Kirkland **Affiliation:** Southeastern Horizons, Inc. **Date:** 2007.06.27
Report Title: Cultural Resource Reconnaissance of Okefenokee National Wildlife Refuge Following the 2007 Wildfires

Other Reports:

Artifacts Collected: None. This project was a non-collection reconnaissance survey. Artifacts were photographed *in situ* and against a grid then left at the site. The observed artifact assemblage included Deptford Simple Stamped (5), plain sand-tempered (8: 2 rims), chert tertiary flakes (5).

Location of Collections:
Location of Field Notes:
Private Collections:

Name: **Address:**

CULTURAL AFFINITY

Cultural Periods: Deptford

Phases:

FORM PREPARATION AND REVISION

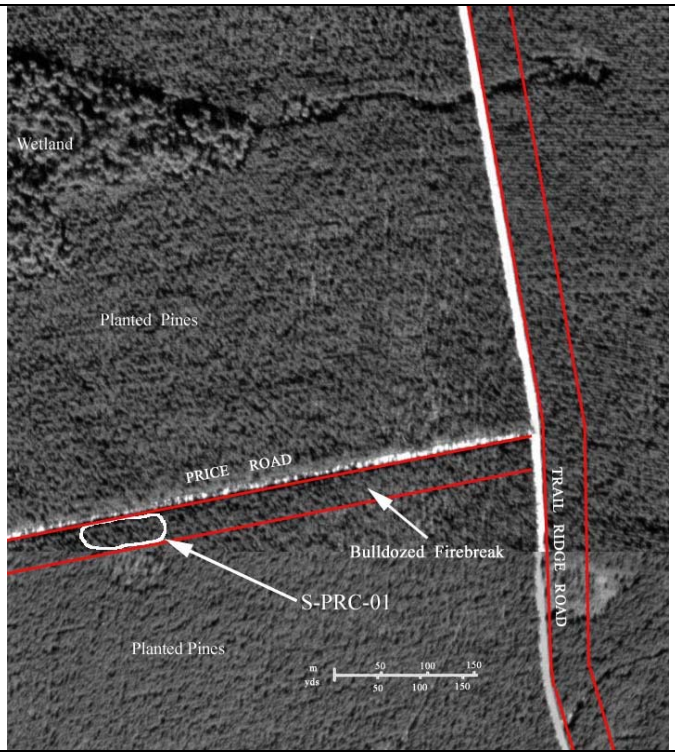
Date	Name	Institutional Affiliation
2007.07.26	S. Dwight Kirkland	Southeastern Horizons, Inc.

GEORGIA ARCHAEOLOGICAL SITE FORM
1990
Official Site Number: 9CR199

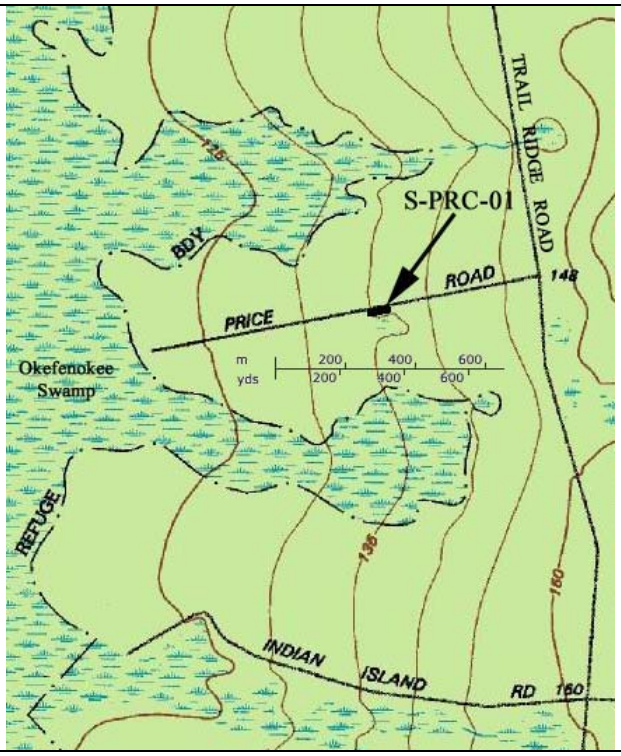
Institutional Site Number: S-PRC-01 **Site Name:** Price Road
County: Charlton **Map Name:** Chase Prairie **USGS** or USNOAA
UTM Zone: 17 **UTM East:** 391654 **UTM North:** 3409416
Owner: U.S. Government **Address:** Okefenokee Wildlife Refuge
Site Length: 55 meters **Width:** 11 meters **Elevation:** 40 meters
Orientation: 1. N-S **2. E-W** 3. NE-SW 4. NW-SE 5. Round 6. Unknown
Kind of Investigation: **1. Survey** 2. Testing 3. Excavation 4. Documentary 5. Hearsay 6. Unknown 7. Amateur
Standing Architecture: 1. Present **2. Absent**
Site Nature: **1. Plowzone** 2. Subsurface 3. Both 4. Only Surface Known 5. Unknown 6. Underwater
Midden: 1. Present **2. Absent** 3. Unknown **Features:** 1. Present **2. Absent** 3. Unknown
Percent Disturbance: 1. None **2. Greater than 50** 3. Less than 50 4. Unknown
Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): Aboriginal pottery and lithic scatter

Topography (Ridge, Terrace, etc.): sand ridge (Trail Ridge)

Current Vegetation (Woods, Pasture, etc.): Area of site is bulldozed. Adjacent terrain is covered in a forest of 10-15 years old planted pints.
Additional Information: A lithic/pottery scatter that runs parallel to Price Road on its south side. The artifacts were found scattered along the deepest area of penetration by the bulldozer and grader for maintaining the ditches along the road.



SKETCH MAP
(Include sites, roads, streams, landmarks)



OFFICIAL MAP
(Xerox of proper map)

State Site Number: 9CR199 **Institutional Site Number:** S-PRC-01

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed **6. Unknown** 7. Removed

National Register Level of Significance: 1. Local 2. State 3. National

Preservation State (Select up to Two): 1. Undisturbed 2. Cultivated 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded **10. Razed**

Preservation Prospects: 1. Safe 2. Endangered by: Continuing silviculture operations/road maintenance
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: S. Dwight Kirkland **Affiliation:** Southeastern Horizons, Inc. **Date:** 2007.06.27
Report Title: Cultural Resource Reconnaissance of Okefenokee National Wildlife Refuge Following the 2007 Wildfires

Other Reports:

Artifacts Collected: None. This project was a non-collection reconnaissance survey. Artifacts were photographed *in situ* and against a grid and left in place. The assemblage observed included: Satilla Simple Stamped (2), chert teriary decortication flakes (6).

Location of Collections:
Location of Field Notes:
Private Collections:

Name: **Address:**

CULTURAL AFFINITY

Cultural Periods: Early Woodland

Phases: Satilla

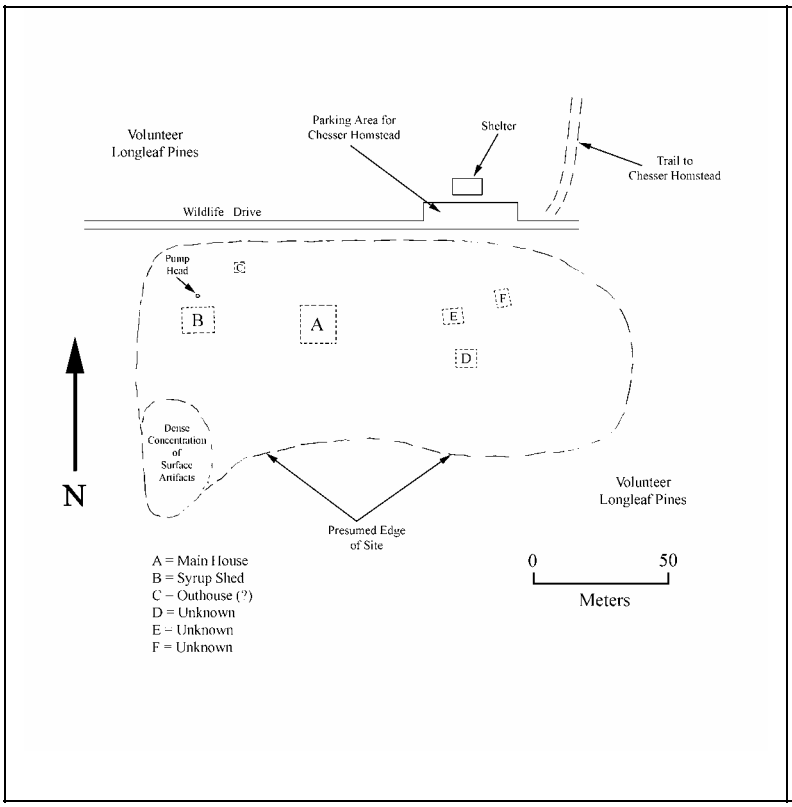
FORM PREPARATION AND REVISION

Date	Name	Institutional Affiliation
2007.07.27	S. Dwight Kirkland	Southeastern Horizons, Inc.

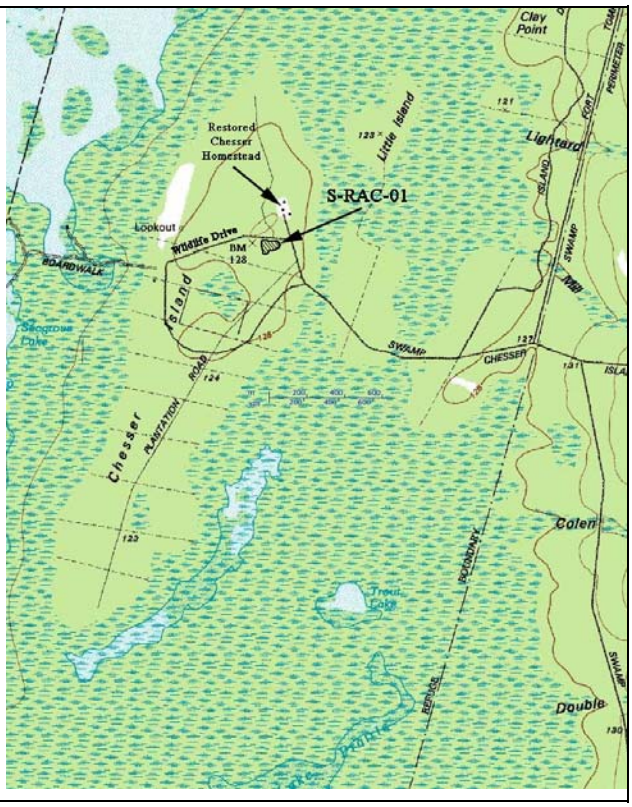
GEORGIA ARCHAEOLOGICAL SITE FORM
1990
Official Site Number: 9CR200

Institutional Site Number: S-RAC-01 **Site Name:** Robert Allen Chesser, Sr. Homestead
County: Charlton **Map Name:** Chesser Island; 1:24,000 **USGS** or USNOAA
UTM Zone: 17 **UTM East:** 389286 **UTM North:** 3398219
Owner: U.S. Government **Address:** Okefenokee National Wildlife Refuge
Site Length: 185 meters **Width:** 67 meters **Elevation:** 38-39 meters
Orientation: 1. N-S **2. E-W** 3. NE-SW 4. NW-SE 5. Round 6. Unknown
Kind of Investigation: **1. Survey** 2. Testing 3. Excavation 4. Documentary 5. Hearsay 6. Unknown 7. Amateur
Standing Architecture: **1. Present** 2. Absent
Site Nature: 1. Plowzone 2. Subsurface 3. Both **4. Only Surface Known** 5. Unknown 6. Underwater
Midden: 1. Present 2. Absent **3. Unknown** **Features:** 1. Present 2. Absent **3. Unknown**
Percent Disturbance: 1. None 2. Greater than 50 3. Less than 50 **4. Unknown**
Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): family homestead

Topography (Ridge, Terrace, etc.): island
Current Vegetation (Woods, Pasture, etc.): Overstory: volunteer longleaf pine; Undestory: saw palmetto gallberry, bracken fern, grasses; recently burned-over and new flush growth emerging.
Additional Information: This site is a scatter of cultural materials that lie south of the restored Chesser Homestead. The observed artifacts include historic ceramics, glass jars, glass bottles, metal containers, old batteries, window glass, loose and in situ bricks, standing posts, fallen charred posts, and a pitcher pump head (no pump). There are remnants of several burned structures in the burned-over area.



SKETCH MAP
(Include sites, roads, streams, landmarks)



OFFICIAL MAP
(Xerox of proper map)

State Site Number: 9CR200 **Institutional Site Number:** S-RAC-01

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed **6. Unknown** 7. Removed

National Register Level of Significance: 1. Local **2. State** 3. National

Preservation State (Select up to Two): 1. Undisturbed **2. Cultivated** 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded 10. Razed

Preservation Prospects: 1. Safe 2. Endangered by: continued prescribed burning
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: S. Dwight Kirkland **Affiliation:** Southeastern Horizons, Inc. **Date:** 2007.06.28
Report Title: Cultural Resource Reconnaissance of Okefenokee National Wildlife Refuge Following the 2007 Wildfires.

Other Reports:

Artifacts Collected: None. This project was a non-collection reconnaissance survey. Artifacts were photographed *in situ* and left in place.

Location of Collections:
Location of Field Notes:
Private Collections:

Name: **Address:**

CULTURAL AFFINITY

Cultural Periods: Early 20th Century

Phases:

FORM PREPARATION AND REVISION

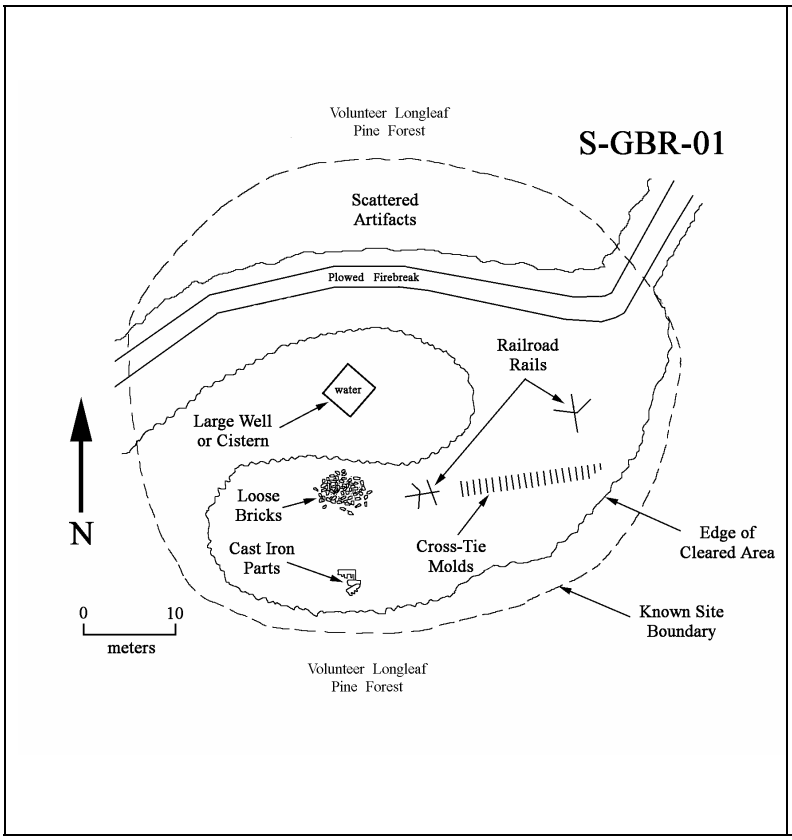
Date	Name	Institutional Affiliation
2007.07.27	S. Dwight Kirkland	Southeastern Horizons, Inc.

GEORGIA ARCHAEOLOGICAL SITE FORM
1990
Official Site Number: 9CR197

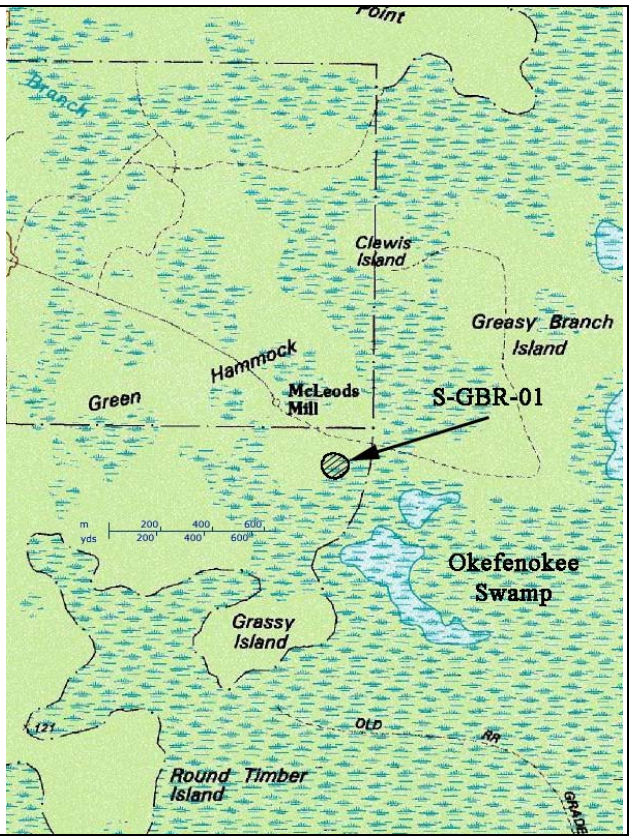
Institutional Site Number: S-GBR-01 **Site Name:** McLeods Mill
County: Charlton **Map Name:** Cravens Island, 1:24,000 **USGS** or USNOAA
UTM Zone: 17 **UTM East:** 367559 **UTM North:** 3426810
Owner: U.S. Government **Address:** Okefenokee National Wildlife Refuge
Site Length: 60 meters **Width:** 60 meters **Elevation:** 37 meters
Orientation: 1. N-S 2. E-W 3. NE-SW 4. NW-SE **5. Round** 6. Unknown
Kind of Investigation: **1. Survey** 2. Testing 3. Excavation 4. Documentary 5. Hearsay 6. Unknown 7. Amateur
Standing Architecture: **1. Present** 2. Absent
Site Nature: 1. Plowzone 2. Subsurface 3. Both **4. Only Surface Known** 5. Unknown 6. Underwater
Midden: 1. Present 2. Absent **3. Unknown** **Features:** **1. Present** 2. Absent 3. Unknown
Percent Disturbance: 1. None 2. Greater than 50 3. Less than 50 4. Unknown
Type of Site (Mill, Mound, Quarry, Lithic Scatter, etc.): Sawmill

Topography (Ridge, Terrace, etc.): Swamp edge

Current Vegetation (Woods, Pasture, etc.): Volunteer longleaf pine forest
Additional Information: This site is composed of a scattering of historic artifacts and features. These include a large open pit (filled with water), a large scatter of disassociated bricks, several large cast-iron parts, rusted metal cables, glass jars, burned timbers and posts with embedded nails/spikes



SKETCH MAP
(Include sites, roads, streams, landmarks)



OFFICIAL MAP
(Xerox of proper map)

State Site Number: 9CR197 **Institutional Site Number:** S-GBR-01

Public Status: 1. National Historic Landmark 2. National Natural Landmark
3. Georgia Register 4. Georgia Historic Trust 5. HABS 6. HAER

National Register Standing: 1. Determined Eligible 2. Recommended Ineligible
3. Recommended Eligible 4. Nominated 5. Listed **6. Unknown** 7. Removed

National Register Level of Significance: 1. Local 2. State 3. National

Preservation State (Select up to Two): 1. Undisturbed 2. Cultivated 3. Eroded
4. Submerged 5. Lake Flooded 6. Vandalized 7. Destroyed 8. Redeposited
9. Graded 10. Razed

Preservation Prospects: 1. Safe 2. Endangered by: wildfires and continued firebreak plowing
3. Unknown

RECORD OF INVESTIGATIONS

Supervisor: S. Dwight Kirkland **Affiliation:** Southeastern Horizons, Inc. **Date:** 2007.07.13
Report Title: Cultural Resource Reconnaissance of Okefenokee National Wildlife Refuge Following the 2007 Wildfires.

Other Reports:

Artifacts Collected: None. This project was a non-collection reconnaissance survey. Artifacts were photographed *in situ* left in place.

Location of Collections:
Location of Field Notes:
Private Collections:

Name: **Address:**

CULTURAL AFFINITY

Cultural Periods: Early 20th Century

Phases:

FORM PREPARATION AND REVISION

Date	Name	Institutional Affiliation
2007.07.28	S. Dwight Kirkland	Southeastern Horizons, Inc.

APPENDIX II

SCOPE OF WORK
POST-WILDFIRE CULTURAL RESOURCE ASSESSMENT, OKEFENOKEE NATIONAL WILDLIFE REFUGE, CHARLTON, CLINCH, AND WARE COUNTIES, GEORGIA, AND BAKER COUNTY, FLORIDA

SCOPE OF WORK
POST-WILDFIRE CULTURAL RESOURCE ASSESSMENT, OKEFENOKEE NATIONAL WILDLIFE REFUGE, CHARLTON, CLINCH, AND WARE COUNTIES, GEORGIA, AND BAKER COUNTY, FLORIDA

A. INTRODUCTION

Two devastating wildfires – the Big Turnaround Swamp Complex and the Bugaboo Scrub Fires – burned approximately [insert no.] acres on Okefeneokee National Wildlife Refuge between [insert dates] (Fig. 1). The Refuge, in its recently revised Fire Management Plan, identified a number of strategies to protect recorded archaeological sites and historic structures during such events. Assessing a wildfire's impacts to cultural resources, as well as the efficacy of protective techniques, are integral components of the post-fire rehabilitation efforts. The post-fire cultural resource assessment provides crucial and timely information as the Refuge begins its rehabilitation of damaged habitats. The contractor shall conduct an archaeological reconnaissance, using a non-collection strategy, along newly created firebreaks, as well as on upland hammocks or island located within the boundaries of the wildfires, assess the wildfires' impacts on a selected number of archaeological sites, and assess the efficacy of the Refuge's strategies to protect the National Register-listed Hebard Cabin and the National Register-eligible Chesser Island Homestead (Fig. 2).

The contractor's final report serves several functions. It will the Refuge in satisfying the cultural resource elements identified in the Fire Management Plan, as well as aiding the Service to meet their responsibilities to preserve and protect cultural resources on the Refuge. It shall also be a comprehensive, scholarly document that not only fulfills the mandated legal requirements, but serves as a scientific reference for future professional studies as well.

The contractor shall utilize a systematic, interdisciplinary approach to conducting the study. Specialized knowledge and skills will be used during the course of the study to include expertise in the disciplines of archaeology, history, geology, paleoecology, and other disciplines as required. Techniques and methods used for the study shall be representative of the state of current professional knowledge and development.

B. BACKGROUND INFORMATION

Okefenokee National Wildlife Refuge was established in 1937 under Executive Order 7593 primarily to serve "as a refuge and breeding ground for migratory birds and other wildlife…" Additional lands have since been acquired under the Migratory Bird Conservation Act, as amended [16 U.S.C. 715-715r] and the Endangered Species Act of 1973, as amended [16 U.S.C.

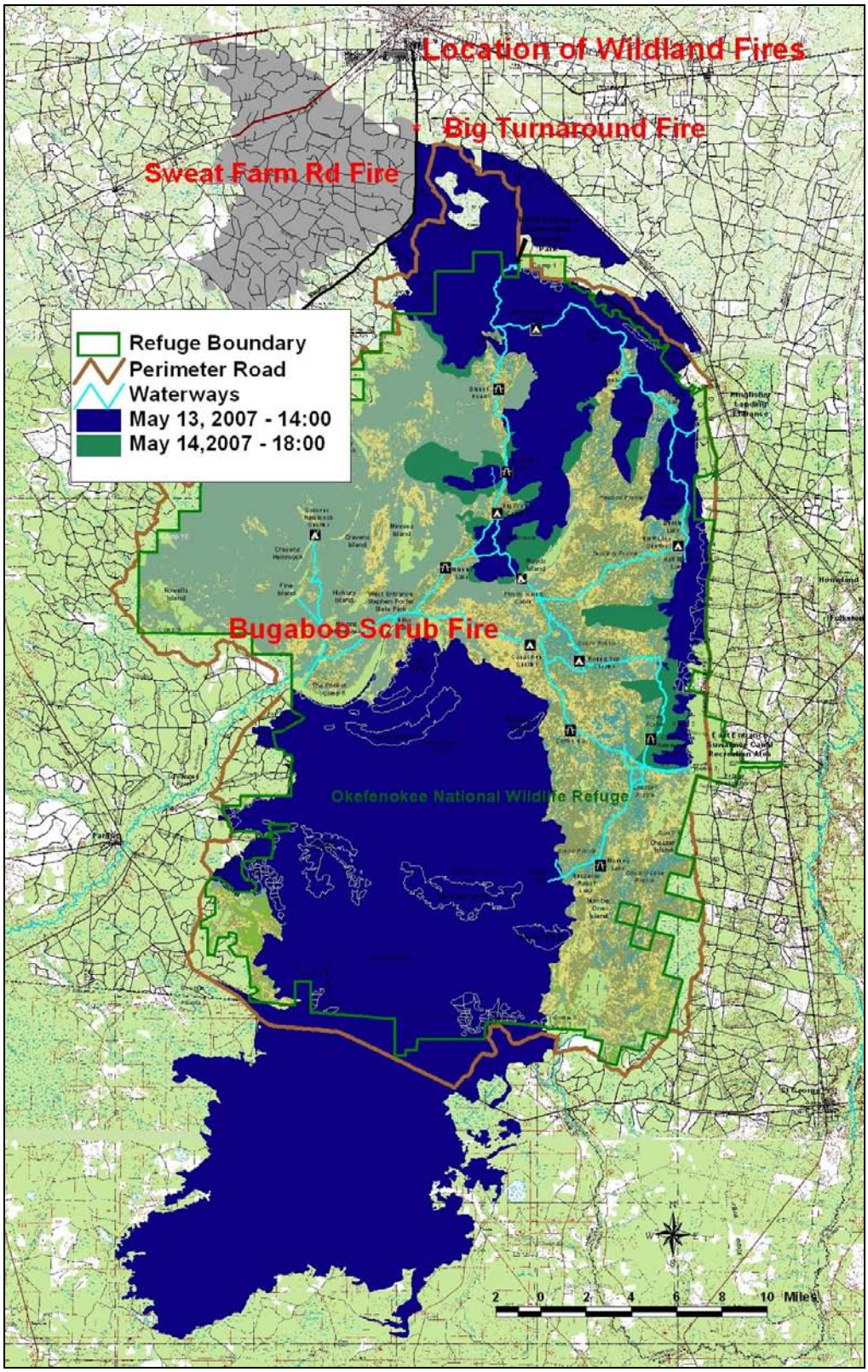


Figure 1. The Big Turnaround Swamp Complex and the Bugaboo Scrub Fires, May 2007.

Figure 2. Measures taken to protect the Chesser Island Homestead.

1531-1543]. Approximately 353,981 acres of the Refuge's wetlands were designated as wilderness by the Okefenokee Wilderness Act of 1974, which made it the third largest National Wilderness Area east of the Mississippi River. The Wetlands Convention designated the Refuge as a Wetland of International Importance in 1986. The Refuge's primary mission to preserve the unique ecological qualities of the Okefenokee Swamp that provides critical habitats for threatened and endangered species, such as the red-cockaded woodpecker, wood storks, and indigo snakes.

RECORDED ARCHAEOLOGICAL SITES. There are currently 124 recorded historic properties on Okefenokee National Wildlife Refuge, including two historic structures listed on the National Register of Historic Places. A number of archaeological, historic, and ecological investigations have been conducted on the Refuge and the Okefenokee Swamp since the 1930s. A partial list, primarily those reports available at the Office of the Regional Archaeologist, is provided below in Table 1.

Table 1. Technical Reports on file at the Office of the Regional Archaeologist, Savannah Coastal Refuges.

Author	Year	Title	Publisher
Carder, N.	1989	Faunal Remains from Mixons Hammock, Okefenokee Swamp.	***Southeastern Archaeology*** 8: 18-30
Cohen, A.D., D. J. Casagrande, M.J. Andrejko, and G. R. Best (Editors)	1984	***The Okefenokee Swamp: Its Natural History, Geology, and Geochemistry.***	Wetland Surveys, Los Alamos, New Mexico
Cypert, Eugene	1961	The Effects of Fire in the Okefenokee Swamp in 1954 and 1955.	***American Midland Naturalist*** 66(2): 485-503.
DePratter, Chester B.	1980	Report of an Archeological Reconnaissance of Portions of Okefenokee National Wildlife Refuge, Charlton and Ware Counties, Georgia. University of Georgia, Athens.	Antiquities Act Permit No. 80-G-026
Ehrenhard, John E.	1988	A Cultural Resource Survey of Two Project Areas at Okefenokee National Wildlife Refuge, Charlton County, Georgia.	National Park Service, Interagency Archeological Service, Atlanta. Submitted to U.S. Fish and Wildlife Service, Southeast Region, Atlanta.
Hopkins, John M.	1945	Okefenokee from 1900 to 1945.	Manuscript on file at U.S. Fish and Wildlife Service – Southeast Region, Office of the Regional Archaeologist, Savannah Coastal Refuges, Savannah, Georgia.
Kanaski, Richard S., and Trowell Chris T.	1999	***Floyds Island Hammock – National Register of Historic Places, Registration Form***.	
Kent, W.C.	1982	***John M. Hopkins' Cabin [Quarters #12/Guest Cabin] – National Register of Historic Places Registration Form***	
McQueen, A. S., and Hamp Mizell	1992	***History of Okefenokee Swamp*** [Reprint of the 1926 edition].	Charlton County Historical Society, Folkston, Georgia.
Paulk, Greg	1980	Archaeological Survey of the Okefenokee Wildlife Refuge.	***University of Georgia Laboratory of Archaeology, Manuscript*** 394. Athens.
Potter, Douglas	1992	Progress Report on Fireline Survey, Okefenokee National Wildlife Refuge, Folkston, Georgia.	National Park Service, Interagency Archeological Service, Atlanta. Submitted to U.S. Fish and Wildlife Service, Southeast Region, Atlanta.
Reitz, Elizabeth J., and Chester B. DePratter	1984	Mixons Hammock Test Excavation Report.	University of Georgia, Athens. Submitted to U.S. Fish and Wildlife Service, Southeast Region, Atlanta.
Reitz, Elizabeth J., and Jeffrey M. Mitchem	1985	Testing at 9Cr131, Mixons Hammock, Okefenokee National Wildlife Refuge.	University of Georgia, Athens. Submitted to U.S. Fish and Wildlife Service, Southeast Region, Atlanta.
Trowell, Chris T.	1978	A Preliminary Survey of Archeological Site – 9We1, Cowhouse Island, Ware County, Georgia.	***University of Georgia Laboratory of Archaeology, Manuscript*** 93. Athens.
Trowell, Chris T.	1979	A Reconnaissance of Aboriginal Okefenokee.	***University of Georgia Laboratory of Archaeology, Manuscript*** 255. Athens.

Trowell, Chris T.	1984	The Suwanee Canal Company in the Okefenokee Swamp.	***Occasional Paper from South Georgia No.*** 5. South Georgia College, Douglas, Georgia.
Trowell, Chris T.	1988a	Exploring the Okefenokee: The Richard L. Hunter Survey of the Okefenokee Swamp, 1856-57.	***Research Paper No.*** 1. South Georgia College, Douglas, Georgia.
Trowell, Chris T.	1988b	Exploring the Okefenokee: Roland M. Harper in the Okefenokee Swamp, 1902 & 1919.	***Research Paper No.*** 2. South Georgia College, Douglas, Georgia.
Trowell, Chris T. (Compiler & Editor)	1989a	Exploring the Okefenokee: Letters from the Expeditions in 1875.	***Research Paper No.*** 4. South Georgia College, Douglas, Georgia.
Trowell, Chris T.	1989b	***Exploring the Okefenokee: The Mansfield Torrance of 1850***.	South Georgia College, Douglas, Georgia.
Trowell, Chris T.	1991	Some Notes on Buildings Okefenokee National Wildlife Refuge	
Trowell, Chris T.	1993	Mapping the Old Logging Camp on Billys Island: A Reconnaissance of Cultural Resources in a Post-Prescribed Fire Environment.	Special Use Permit No. 35650, Okefenokee National Wildlife Refuge, Folkston, Georgia.
Trowell, Chris T.	1994	Some Notes on Mapping Cultural Resources on Billys Island – Darling Turpentine Camp, Okefenokee National Wildlife Refuge.	Special Use Permit No. 35682, Okefenokee National Wildlife Refuge, Folkston, Georgia.
Trowell, Chris T.	1995	An Introduction to Narrative Reports of the Refuge Manager, Okefenokee National Wildlife Refuge (1937-1994).	
Trowell, Chris T.	1996	General Charles R. Floyd and the Second Seminole War in the Okefenokee Swamp.	***Huxford Genealogical Society, Inc. Magazine*** 23(3): 189-192.
Trowell, Chris T.	1998a	Okefenokee: Profiles of the Past.	***Okefenokee Wildlife League, Special Publication No.*** 1.
Trowell, Chris T.	1998b	Indians in the Okefenokee: Their History and Prehistory.	***Okefenokee Wildlife League, Special Publication No.*** 2.
Trowell, Chris T.	1998c	Life on the Okefenokee Frontier – "there does not exist, a more open-hearted or hospitable people in the world."	***Okefenokee Wildlife League, Special Publication No.*** 3.
Trowell, Chris T.	1998d	Okefenokee – The Suwanee Canal Company.	***Okefenokee Wildlife League, Special Publication No.*** 4.
Trowell, Chris T.	1998e	Okefenokee – The Hebard Lumber Company.	***Okefenokee Wildlife League, Special Publication No.*** 5.
Trowell, Chris T.	1998f	Seeking A Sanctuary: A Chronicle of Efforts to Preserve the Okefenokee.	***Okefenokee Wildlife League, Special Publication No.*** 6.
Trowell, Chris T.	1999	"I'm greatly impressed with the fine job being done there." C.C.C. Company 1433 and the Development of the Okefenokee National Wildlife Refuge [Draft].	

Trowell, Chris T.	2002	Okefenokee Folk: "A kinder, or more hospitable people do not live" [Draft].	
Trowell, Chris T., and Lorraine Fussell	1998	Exploring the Okefenokee: Railroads of the Okefenokee Realm.	***Occasional Paper from South Georgia No.*** 8. South Georgia College, Douglas, Georgia.
Weisman, Russell, Dwight Kirkland, and John Worth	1998	***An Archaeological Reconnaissance of Trail Ridge, Charlton County, Georgia***	Southern Research, Ellersie, Georgia
Wood, W. Dean	1985	***A Cultural Resources Reconnaissance of Portions of the Okefenokee National Wildlife Refuge, Georgia.***	Southeastern Archeological Services, Athens, Georgia, Contract No. 14-16-004-84-064.
Wright, A. H., and A.A. Wright	1932	The Habitats and Composition of the Vegetation of Okefinokee Swamp, Georgia	***Ecological Monographs*** 2(2)
Wright, Newell O., Jr.	1978	Management Summary for the Okefenokee National Wildlife Refuge.	Valdosta State College, Department of Sociology/Anthropology, Valdosta, Georgia.
Wright, Newell O., Jr.	1978	***The Okefenokee National Wildlife Refuge: A Cultural Resources Survey*** (Two Volumes).	New World Research, Report of Investigations No. 5 and University of Georgia, Laboratory of Archaeology, Manuscript 243. Athens.
Wright, Newell O., Jr.	1994	***Archaeological Reconnaissance of the Swamp Edge Break Project, Okefenokee National Wildlife Refuge, Georgia.***	Archaeological Research Associates, Report of Investigations 30.

Fire plays an important role in the Swamp's ecology, particularly in the creation and maintenance of prairie lakes and prairies. Cypert (1962: 487) noted that co-occurrence of droughts and fires in 1844, 1860, 1910, 1932, 1954, and 1955. He tracked the recovery of woody and herbaceous growth on three areas severely burned in 1954 and 1955. The first area was between Billy's Lake, Minnie's Island, and Hickory Island; the second area was north and west of Soldier Camp Island; the last area was north of the Suwannee Canal and between Camp Cornelia and Mizell Prairie. In cypress and blackgum bays where the peat burned out to a depth of two to three feet, the majority of the trees were killed. Where the fire swept through rapidly, the surface duff and smaller underbrush or shrubby species burned. The larger trees suffered minor to no damage. [Expand upon]

Systematic investigations of fire impacts to archaeological and historic sites have been limited to the western United States primarily by the Bureau of Land Management, the U.S. Forest Service, and the National Park Service (Andrews 2004; Buenger 2003; Hanes 2001; and Winthrop 2004). In its Rainbow Series, the Forest Service has published several research reports detailing the effects of fire on fauna, flora, soil, and water (Brown and Smith 2000; Neary, Ryan, and DeBano 2005; and Smith 2000). Unfortunately, the publication of the report dealing with cultural resources has been delayed. Table 2 provides a list of the pertinent reports that are available at the Office of the Regional Archaeologist.

Table 2. Reports dealing with fire impacts available at the Office of the Regional Archaeologist

Author	***Year***	***Title***	***Publisher***
Andrews, Bradford	2004	**Vegetative Treatments and Their Potential Effects to Cultural Resources**	Alpine Archaeological Services, Montrose, Colorado
Brown, James K., and Smith, Jane K. (Editors)	2000	**Wildland Fire in Ecosystems: Effects on Flora**	RMRS-GTR-42-Volume 2. U.S. Forest Service, Rocky Mountain Research Station, Odgen, Utah
Buenger, Brent	2003	**The Impact of Wildland and Prescribed Fires on Archaeological Resources**	Dissertation submitted to the Department of Anthropology, University of Kansas
Hanes, Richard C.	2001	Cultural Resources, in **Fire Effects Guide**	Fire Use Team, National Wildlife Coordinating Group, Boise, Idaho
Neary, Daniel G., Kevin C. Ryan, and Leonard F. DeBano (Editors)	2005	**Wildland Fire in Ecosystems: Effects on Soils and Water**	RMRS-GTR-42-Volume 4. U.S. Forest Service, Rocky Mountain Research Station, Odgen, Utah
Smith, Jane K (Editor)	2000	**Wildland Fire in Ecosystems: Effects on Fauna**	RMRS-GTR-42-Volume 1. U.S. Forest Service, Rocky Mountain Research Station, Odgen, Utah
Winthrop, Kate	2003	**Bare Bones Guide to Fire Effects on Cultural Resources for Cultural Resource Specialists**	Bureau of Land Management

Irregardless of the lack of post-burn cultural assessments in the southeastern United States, we can break down fire impacts on historic properties into three general categories.

1. Pre-fire impacts, e.g., construction and maintenance of fire breaks;
2. Burn and suppression impacts, e.g., destruction of wood frame structures, vitrification of surface bottle dumps, heavy equipment disturbance of shallow cultural deposits; and
3. Post-fire activities, e.g., increased erosion due to loss of vegetative cover, habitat restoration activities, and looting or illicit collecting due to increased surface visibility.

Heavy equipment use is a common variable in all of the categories. Several factors must be taken into account. These include, but are not limited to, prior land use, presence of existing breaks, and soil conditions. Prior land use activities, such as agriculture and timber harvest, have already disturbed the upper soil horizons and created a plowzone, a mixed surficial horizon often consisting of two or more soil horizons, organic matter, and occasionally cultural materials. The presence of an artifact scatter may point to the existence of intact cultural deposits beneath the plowzone. However, firebreak construction whose impacts lay completely in the plowzone does not constitute a threat. In areas not impacted by previous agricultural or timber operations, the use of heavy equipment does threaten the integrity of historic properties. Post-fire activities, such as firebreak rehabilitation, re-contouring the landscape, and salvage timber harvest, can also substantially impact historic properties.

Soil conditions, such as the presence of water at or near the surface, can hamper heavy equipment use. Such conditions can promote severe ground disturbance through rutting and miring. Surface features, such as wells, cisterns, foundations, tramways, and cattle troughs, can be destroyed or damaged by heavy equipment. Such features also pose a risk to the operator as well as the equipment. Soil conditions can aid or hamper both fire suppression and the protection of historic properties. Organic soils, such as peat, can burn subsurfacially for many days although the surface fire has been extinguished.

Fire has both direct and indirect impacts on historic properties. The most obvious are the destruction or damage to wood structures and ruins, vegetation associated with historic landscapes and/or Native American sacred places, and wooden artifacts, such as wooden grave markers and fence posts. A fire's impact is related to its intensity, duration, and soil conditions and is similar to the Refuge's concerns over damage to habitats. Fires, whose temperatures exceed 350-500 degrees, will often damage or destroy particular types of artifacts and cultural deposits. Aboriginal ceramics can be re-fired - altering or destroying paints, adding or destroying surface deposits, and altering the clay's constituents. Lithic debitage and tools may become crazed, brittle, discolored, and appear to be heat-treated. The latter were a common technique used by Native Americans to improve a material's flakability or to achieve a desired color or texture. Historic period glass will melt at high temperatures turning into an unrecognizable mass. Organic remains, such as shell and bone, can be calcined and friable. Ethnobotanical remains, such as carbonized seeds and nut shells, and pollen, can be destroyed.

A fire's duration is the mitigating parameter in the amount of damage a hot fire can wrought upon a historic property. A rapidly moving fire - no matter what temperature - will most likely have little effect.

The point of most prescribed burns is to reduce fuel load, eliminate exotic vegetation, or to alter the existing vegetative stage. Wildfires accomplish much of the same goals, but often in a more dramatic and unplanned fashion. The loss of vegetative cover promotes wind and water-caused erosion. A secondary effect is increased surface visibility. The latter can lead to illicit artifact collection and/or site vandalism and destruction.

At Okefenokee National Wildlife Refuge, two post-burn cultural resource investigations have been conducted. The primary objective was to relocate and map several known archaeological and historic sites on Billys Island following a March 1993 prescribed. Trowell (1993a and b) mapped the Hebard Cypress Company's Logging Camp and the Darling Company Turpentine Camp on Billys Island, but did not discuss the burn's impact to the above-ground architectural features and historic trash/artifact dumps. The burn removed large areas of the shrubby understory, which improved visibility of surfical features at the two camps. Several other sites on the island could not be relocated as the herbaceous and shrubby understory recovered fairly rapidly after the burn.

C. DESCRIPTION OF SERVICES TO BE PERFORMED

The post-burn archaeological assessment will consist of the following tasks.

- Conduct a non-collection pedestrian walkover of new firebreaks and staging areas located on the Refuge. Document surfacial concentrations of artifacts and other evidence of cultural deposits. A concentration consisting of more than four artifacts within a 100 meter5 area will be considered an archaeological site. Concentrations less than four artifacts will be considered as an isolated find.
- Documentation will consists of a brief verbal description and inventory of observed artifacts, landform, and habitat conditions; GPS coordinates; a series of photographs depicting the site, surrounding habitat, and artifacts in-situ; and a description of on-site soils. The soil description will be based upon at least one soil sample obtained using an Oakfield Model H Tube-Type Soil Sampler or similar device. Texture and color of all visible soil horizons will be described.
- During the pedestrian walkover, the contractor will document all observed above-ground architectural remains and features. Such remains may include, but are not limited to, historic housesites, historic farmsteads, cattle dips, logging camps, mill sites, and cemeteries. The documentation will minimally consist of a sketch map, a verbal description of the site and observed damage/condition; photographs of the site, individual features, and surrounding habitat, GPS coordinates, and a description of on-site soils.
- When the hammocks are physically accessible, conducted a pedestrian walkover along their parameters to ascertain post-burn conditions and presence of observable cultural materials and deposits. The documentation process of observable cultural materials will be the same as described above. Pre- and post-burn aerial photographs, historic maps, and oral histories may prove useful in identifying potential precolumbian mounds, earthworks, historic home and farmstead sites.
- Conduct a non-collection pedestrian walkover of seven selected recorded archaeological sites on these interior upland hammocks and Trail Ridge to ascertain post-burn conditions and to identify adverse impacts, such as increased erosion following loss of vegetative cover or disturbance due to fire control techniques. At least one soil profile will be described utilizing the technique described above. The sites include the Martha Dowling North Mounds (9CR34), the Old Grooms Field Mounds (9CR31/32), 9WE47 [Blackjack Island], 9WE49 [Honey Island], 9CR78 [Floyds Island], the Lee Family Cemetery [Billys Island], and the Hebard Cypress Company's Logging Camp [Billys Island].
- Document and assess the efficacy of the fire team's steps to protect the National Register-listed Floyds Island Cabin and the National Register-eligible Chesser Island Homestead.
- Upon completion of the fieldwork, the contractor will complete and submit updated and new site forms to the Georgia Site Files at the University of Georgia, Athens.
- The contractor will prepare a technical report describing the post-burn assessment, impacts to the Refuge's cultural resources, and recommendations to mitigate fire impacts and minimize and/or avoid such impacts during rehabilitation efforts. Copies of the draft report will be submitted for review to the Regional Historic Preservation

Officer/Regional Archaeologist and the Refuge. Comments and suggested revisions will be provided to the contractor within 30 days. The contractor will have 60 days to revise the draft report. Upon completion the contractor will submit one unbound copy with accompanying illustrations, three bound copies, and a digital copy on CD. The digital copy will be formatted as a pdf document.

D. GUIDELINES FOR ADMINISTRATIVE PROCEDURES

1. All phases of the study shall be closely coordinated with the Service's Regional Historic Preservation Officer/Regional Archaeologist (RHPO), whose office is located at Savannah Coastal Refuges, and the BAER Team Leader at the Refuge. The contractor is required to maintain routine telephone communications with the RHPO while work is being conducted, including notification of start and completion dates.

2. Drawings, maps, and other materials and guidance will be provided to the extent that the Government determines necessary in order to meet the objectives of the study.

3. The contractor assumes all responsibility for liabilities incurred to him or herself, equipment or to sites being studied during the course of this work.

4. In the event that human skeletal remains are discovered, excavation of that specific shovel test unit will cease immediately. The contractor or his/her field director will contact the RHPO and the Refuge Manager. The Refuge Manager will contact the Refuge Law Enforcement Officer. If the human skeletal remains are determined to the be Native American, the RHPO will contact the pertinent federally recognized tribes pursuant to the provisions of the Native American Grave Protection and Repatriation Act. Should the human remains be deemed part of a crime scene, then jurisdiction and control will be turned over to the pertinent federal, state, and local law enforcement agencies.

E. REPORT

1. The Contractor shall prepare a bound report that shall include, (but is not limited to) the following elements: abstract, introduction, methodology, brief evaluation of previous work in the area, consideration of identified cultural resources in the area, the topographic base map, recommendations, summary, and bibliography. The above items need not be discrete units but shall be discernable to the reader.

2. The abstract shall be a synopsis of the report where the reader may find general conclusions and recommendations of the survey.

3. The introduction shall include, but is not limited to the following: the purpose of the survey, delineation of the study boundaries, and a general statement concerning the nature of the study conducted.

4. The study area shall be placed in its regional setting with regard to environmental factors affecting the location of cultural resources and the known culture history, which should be briefly summarized.

5. The methodology used in data collection and analysis shall be described in sufficient detail for a reviewer to understand what was done and why. This shall include (but is not limited to) a discussion of the survey and sampling procedures, the types of data collected, artifact and feature retrival procedures, recording techniques, classificatory scheme, method of chronological determination, and any special analytical techniques.

6. Maps, diagrams and photographs which show the area reconnoitered, and locations of cultural resources recorded, shall be included. All profiles of soil anomalies that are discussed in the report shall also be included as figures. The base topographic map shall depict the locations of all extant structures, architectural ruins, isolated finds or features identified on the island.

7. The report shall contain a brief summary and evaluation of previous archaeological and historical studies of the region, including dates, extent, and adequacy of past work as it reflects on the interpretation of what might be found in the project area.

8. Georgia Site forms shall be completed for each newly identified site and added as one of the report's appendices.

9. The contractor is responsible for ensuring curation of all records recovered in this study. Upon completion of the assessment and acceptance of the final report by the FWS, the contractor shall submit these records to the RHPO/RA.

F. FORMAT SPECIFICATIONS

1. The final report shall be clearly printed on 8½ x 11 good quality bond paper. A 1" left margin, 1" right margin, 1" top margin and 1.5" bottom margin shall be used.

2. The title page of the report shall include the title and number of contract, the contracting party, the principal investigator's name, and the date.

3. All references cited and/or utilized shall be listed in American Anthropological Association format. Contacts with individuals shall be cited as well.

4. The location of all sites, cities, towns, villages, highways, rivers, and other features discussed shall be shown on an appropriate figure.

5. Information shall be presented in textual, tabular, and graphic forms that are most appropriate to communicate necessary information. The Contractor shall give every consideration to the use of nontextual forms of presentation, particularly profile (cross-

section) drawings in combination with maps, to maximize the quantity and quality of information per page.

6. All tables shall have a number, title, appropriate explanatory notes, and source note.

7. All graphic presentation, including maps, cross-sections, charts, and diagrams shall be referred to as "Figures", and have a border and a margin of 0.75" on the left and right side (if vertically positioned), 0.25" at the bottom and 0.5" at the top. An effort should be made to avoid foldouts unless absolutely necessary.

8. All figures shall have a title block with the following information:

a. Name of refuge and state.

b. Number and title of the figure indicating the type of information presented, the geographic location of the information if applicable, and the applicable date.

9. All figures shall display a north arrow, linear scale, and key, when applicable. Written scales (such as 1" = x) are not permitted.

10. The location of the refuge bounds shall be clearly indicated in relation to the material presented on all figures.

11. All figures should be easily reproducible by standard photocopying equipment. Clear copies of historic maps are particularly essential. If clear copies cannot be obtained, transfer of pertinent data to another figure is acceptable.

12. All site locations shall be shown on U.S.G.S. 7.5 minute quadrangles, and shall be located on the Universal Transverse Mercator (UTM). Written directions for sites should be clear enough to ensure its future accurate "on the ground" location by persons not accompanying the survey archaeologist.

13. All measurements shall be metric. Historic period resources shall be recorded in the English System in addition.

14. Diagnostic and/or unique artifacts shall be shown by drawings or photographs.

15. Black and white photographs are preferred except when color changes are important for understanding the data being presented. No Polaroid or instant type photographs may be used.

16. Negatives of all photographs included in the final report shall be submitted so that copies can be made for distribution.

G. DELIVERIES AND PERFORMANCE

Four products are required and shall be delivered to the District Contracting Officer=s Representative at the following address in accordance with the time schedule listed below:

U.S. Fish and Wildlife Service
Office of the Regional Archaeologist
Savannah Coastal Refuges
1000 Business Center Drive, Suite 10
Savannah, Georgia 31405

1. LETTER REPORT. The contractor will furnish a brief letter report summarizing the results of fieldwork, with emphasis upon any discovery of archaeological remains within the alternative visitor center tracts. Maps showing locations of finds, and other pertinent figures, shall be appended.

2. SITE FORMS. The contractor will furnish appended to the draft report, the typed original.

3. DRAFT REPORT WITH CURATION PLAN

4. FINAL REPORT. The final report will be prepared in accordance with the requirements outlined below. Four copies of a draft report that meets these requirements will be submitted to the U.S. Fish and Wildlife Service within 45 days of field work completion.

The U.S. Fish and Wildlife Service will prepare review comments on the draft report, in consultation with the State Historic Preservation Officer, and return them to the contractor within 60 days of the receipt of the draft.

The contractor will affirmatively address all comments and submit a revised draft within 30 days of the date of these comments. Subsequent drafts may be required. Upon acceptance of the final draft, the contractor will provide an unbound original plus accompanying illustrations, 5 copies of the report, and an electronic copy on CD. The electronic copy must be formatted as a pdf document.

H. SPECIAL CONTRACT REQUIREMENTS

Special contract requirement include personnel standards, standards for consultants, contractor obligations for implementation, curation, coordination project scheduling, and quality controls.

1. PERSONNEL STANDARDS. Personnel proposed for this project must meet the following minimal qualifications:

a. Project Directors or Principal Investigators (PI). Persons in charge of the investigation must have a graduate (Master's or PHD) degree or an equivalent level of professional experience as evidence by a publication record that demonstrates experience in field project formulation, execution, and technical reporting. Suitable professional references must also be made available to obtain estimates regarding the adequacy of prior work. If prior projects were of a sort not ordinarily resulting in a publishable report, a narrative should be included detailing the proposed project director's previous experience along with references suitable to obtain opinions regarding the adequacy of this earlier work.

b. Field Archeologist. The minimum formal qualifications for individuals practicing archeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by two years of graduate study with concentration in anthropology and specialization in archeology during one of these programs, and at least two summer field schools or their equivalent under the supervision of archaeologists of recognized competence; a Master's thesis or its equivalent in research and publication is highly recommended, as is the PHD degree. Individuals lacking such degrees may present evidence of a publication record and references from archaeologists who do meet these qualifications. For the purposes of this survey, documented knowledge and experience in Georgia=s and the southeastern coastal plain's history and archaeology are essential for individuals in this role.

c. Consultants. Personnel hired or subcontracted for their special knowledge and expertise must carry academic and experiential qualifications in their own fields of competence appropriate for the level of work they will perform on the project.

2. CONTRACTOR OBLIGATIONS FOR PROJECT IMPLEMENTATION

a. The Principal Investigator will be responsible for the validity of the material presented in the report of investigations. In the event of controversy or court challenge, the Principal Investigator may be called upon to testify on behalf of the Government in support of his/her findings at Government expense.

b. The contractor will assume all responsibility for and take all precautions to prevent damage to property entered. All excavations will be backfilled immediately after completion. The contractor should inquire of the refuge manager concerning specific precautions to employed within given wildlife habitats.

c. Human skeletal remains encountered by this program will be treated in accordance with National Park Service Guidelines for the Disposition of Archeological and Historical Human Remains. The RHPO/RA, the Refuge Manager, and the District representative will be immediately contacted. An appropriate course of action will be determined upon consultation with the federally recognized tribes.

3. CURATION. The contractor will be responsible for safeguarding and maintaining all specimens, photographs, maps, written documentation and other data, acquired as a result of the project until its transfer to the permanent curation facility. Final disposition of records and artifacts will be effected as the result of an agreement between the Federal Government, State authorities, and the Contractor.

4. COORDINATION. Mr. Richard S. Kanaski, Regional Historic Preservation Officer and Regional Archaeologist (912-652-4415, ext. 113) shall be contacted to arrange meetings or answer any questions on the nature of the work to be performed. The contractor shall maintain close communication with the refuge manager while in the field.

5. PROJECT SCHEDULING. The award for this project is expected to be in June 2007. The letter report summarizing results of fieldwork is required prior to July 15, 2007. The draft report is required prior to July 30. The final report will be required within 30 days of government comments.

6. QUALITY CONTROL. You will held responsible for the quality of the services provided and for all damages caused the government as a result of your negligence in the performance of any services furnished under the contract. Although submissions required by your contract are technically reviewed by the government, it is emphasized that your work must be prosecuted using proper internal controls and review procedures. The letter of transmittal for each submission which you make shall include a certification that the submission has been subjected to your own review and coordination procedures to insure completeness for each discipline commensurate with the level of effort required for that submission, and elimination of conflicts, errors and omissions. Documents which are significantly deficient in any of these areas will be returned to your for correction and/or upgrading prior to our completing our review. Contract submission dates will not be extended if a resubmission of draft material is required for this reason.

APPENDIX III

OKEFENOKEE POST-WILDFIRE RECONNAISSANCE FIELD FORM

OKEFENOKEE NWR POST-BURN RECONNAISSANCE
FIELD RECORD

Site/Isolate Code _____ **State Site Number** _____ **Date** _____

Site Name _____ **Recorder** _____

UTM Position: Zone _____

E _____ **N** _____ **Description** _____

E _____ **N** _____ **Description** _____

E _____ **N** _____ **Description** _____

E _____ **N** _____ **Description** _____

E _____ **N** _____ **Description** _____

Environment/Physiography

Landform _____ Environmental Zone _____

Nearest Fresh Water: 1. Stream 2. Spring 3. Swamp 4. River

Distance to Fresh Water (m) _____ Elevation Range AMSL (m) _____

Current Vegetation:
Overstory: _____

Understory: _____

Site Characteristics

Site Type: _____ Estimated Dimensions (m) _____

Orientation: 1. N-S 2. E-W 3. NE-SW 4. NW-SE 5. Round 6. Irregular 7. Unknown

Midden: 1. Present 2. Absent 3. Unknown

Features: 1. Present 2. Absent 3. Unknown

Percent Disturbance: 1. None 2. > 50 3. < 50 4. Unknown

Type of Disturbance _____ Surface Visibility (%) _____

Site Description _____

_____

_____

Soil Characteristics: _____

_____

_____

Photography:

Camera ID: _____

Landscapes/Features Photo Codes: _____

_____

_____

Artifact Photo Codes: _____

_____

_____

_____

_____

Sketch Map:

APPENDIX IV

SOUTHEASTERN HORIZONS, INC.
LABORATORY MANUAL

SOUTHEASTERN HORIZONS, INC.

A LABORATORY MANUAL FOR ANALYZING ARTIFACTS FROM ARCHAEOLOGICAL SITES

M041222.01

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and
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28 December 2004

INTRODUCTION

The purpose of this manual is to provide guidance in the analysis of artifacts recovered from archaeological sites. More precisely, it is to provide a systematic technique of extracting and recording information from artifacts and hence increase our understanding of the relationship between the artifacts and the people who made them. This includes properly receiving artifacts at the lab, cleaning and restoring, evaluation and categorizing, labeling, and final preparation for curation. It is a collection of the techniques developed over more than thirty years of field and laboratory investigation.

SECTION 1: RECEIVING

When artifacts are delivered from the field, they will be inventoried at the first possible opportunity. Each bag's Field Specimen Number (FS #) will be compared to the check list in the Field Specimen Catalog to ensure that all artifacts were successfully delivered to the lab. The responsible lab technician will mark a check (✓) adjacent to each as being delivered and initial and date the inventory. If the field and lab inventories do not match an immediate search will be initiated to account for the missing artifacts. The researcher must resolve any differences, explain their resolution in writing in the Field Specimen Catalog, and then sign and date the explanation.

SECTION 2: CLEANING

Throughout the cleaning process, the specific provenience information assigned in the field will be carefully maintained. After the artifacts are properly received, they will be cleaned primarily by brushing away any loose soil. If need be, they can be washed with tap water and then either air dried or dried in a low temperature, air sweep oven. On rare occasions, a mild soap solution can be used to wash artifacts but this should be avoided if possible. In extremely rare cases, non-aqueous solvents (e.g. alcohol, acetone, or methylene chloride) can be used to remove organic or hydrocarbon deposits that are unequivocally modern. Again, this should be avoided if possible since this process may remove materials and compounds that are important in the analysis of the artifacts.

Artifacts recovered from marine or estuarine environments are likely to contain salt and require special attention. Select a small sample (4-5) of artifacts and soak them in distilled water for about 12 hours. Then test the soak water for salt according to SOGART SOP S041229.02, Issue 1.0: *Testing Artifacts for the Presence of Salt*. If salt is present all of the artifacts must be desalinated. This is accomplished by soaking the entire assemblage in fresh water for 12 hours and then tested for salt. This procedure is repeated until no salt is detected in the soak water. Afterwards, the artifacts are removed and dried before analyzing. A note of caution, the fresh water used to soak the assemblage should be tested for salt before beginning the desalination process. If that test is positive, a new source of water should be sought.

SECTION 3: DATA RECORDING

Secure and dedicate a notebook to record the laboratory data for the site or project. It will be coded and formatted according to SOGART SOP: S041229.01 Issue 1.0: *Formatting and Recording Archaeological Data in Laboratory Notebooks*.

SECTION 4: ANALYSIS

The laboratory analysis will focus on the dating, function, and association of artifacts with cultural phases or time periods. The analysis materials will primarily include prehistoric stone tools/debris, ceramics, and ecofacts, as well as historic ceramics, glass, metal, brick and mortar, and plastic. What follows is a generalized categorization scheme for ordering artifacts during analysis.

4.10: Prehistoric Pottery

Prehistoric pottery is classified into three broad categories: (1) Typed, (2) Classified, and (3) Indeterminate.

4.11: Typed

Pottery fragments that are found to adequately conform to published type descriptions are assigned type names. These descriptions are found in a variety of literature sources. However, *A Guide to Georgia Indian Pottery Types* (Williams and Thompson 1999) contains most of those found in southern Georgia and northern Florida.

4.12: Classified

In the second category, sherds that cannot be reliably assigned to published types are given a descriptive terminology based on paste temper and surface decoration attributes.

Prehistoric Ceramic Temper

Temper is defined as all aplastics (inclusions) found in the paste (body) of prehistoric ceramics. Inclusions can be cultural or they may be incidental in the clay. Incidental inclusions vary markedly, even in a single clay source. The following are definitions of temper categories used in ceramic analysis.

Charcoal — Inclusions that are black and crumble when scratched with a dentil pick or similar instrument. In many cases small globular voids may also be evident in the body of the ceramic.

Clay — Inclusions that are brown, reddish brown, or orange and do not have sharp, angular, edges.

Fiber — Voids that appear as thread-like channels within the paste and are visible on both surfaces of the pottery. These result from the complete oxidation of vegetable fibers that were added to the paste.

Grit — Grains of quartz or silicon dioxide having a size range between one and three millimeters.

Phosphate — Inclusions that are pale brown to off-white and are acid negative (10% HCl). That is, when acid is applied they do not evolve gas (CO_2).

Sand — Grains of quartz or silicon dioxide of a size large enough to be seen with the unaided eye but smaller than one millimeter in diameter.

Shell — Inclusions that are white to off-white in color, usually planar in form, and evolve gas (CO_2) when subjected to an acid test (10% HCl).

Sherd — Brown, reddish brown, or orange inclusions that are planar and/or angular in shape and have clearly defined edges.

Spicules — Microscopic inclusions that impart a chalky "feel" to the pottery. This pottery seems untempered with the unaided eye but, when viewed under a stereo microscope (at about 30x), the spicules (skeletal elements of freshwater sponges) appear as slender, glass-like, slivers that are distributed throughout the paste. This temper is unique to the St. Johns series of pottery and most common in northern Florida.

Untempered — Ceramics that contain no visible inclusions.

Void — Cavities evident in the body and surfaces of the ceramic that resulted from some inclusion being completely oxidized or leached out.

Prehistoric Pottery Surface Treatments

Brushed — Very shallow, faint, non-parallel striations either on the surface or interior or on both surfaces.

Burnished — Ultra smoothed and fine-grained surface that has a sheen or appears polished when rubbed. This surface treatment usually occurs on the exterior of the vessel.

Filmed — The surface exhibits a distinctive thin contrasting color, usually red, from the interior and/or paste. It is occasionally found on the interior of vessels.

Incised — Grooves cut freehand into the paste through the use of a tool, often simply a small stick. The incising can be simple lines or complex zones of lines. This was usually applied only to the exterior surface. It often occurs with punctations.

Marked — Exterior surface treatments that result from using a material at hand and not designed specifically with decoration in mind. The following is a listing of some of the more common marking implements and materials.

Cob — Decorations made by impressing corn (maize) cobs into the surface(s) of pottery.

Cord — Decorations made by impressing cordage into the surface of the pottery. This was apparently accomplished by using a paddle or similar device wrapped with the cordage. The impressions were applied either parallel or in crossing pattern.

Fabric Decorations that were made by impressing a woven textile into the surface of the pottery. Often this can only be determined by making plasticene (modeling clay) impressions to view the "positive" of the decoration.

Finger Nail. Decorations made by impressing the pottery surface with a finger or thumbnail.

Net Decorations made by impressing the surface with a net.

Shell Decorations made by impressing the surface with a shell, more often its edge.

Obliterated A final surface treatment in which a previously decoration is smoothed over, almost to the point of non-recognition of the original decoration.

Pinched A surface treatment that was produced by pinching the soft clay between the thumb and index finger.

Plain Lack of any discernable decoration. This category is more frequently smooth but can also be rough. The differentiation key is the absolute lack of evidence of intentional decoration or smoothing.

Punctated A surface treatment in which a tool (probably small sticks or bones) was used to impress small dots, squares, rectangles, triangles, and a variety of other shapes into the pottery surface. These appear as isolated decorations, in lines, in zones, and randomly spaced. This technique is often found in conjunction with incising.

Roughened Decoration where the pottery surface was intentionally made coarse in appearance and to the touch.

Scraped Decoration where the surface of the vessel was scraped with a tool. The striations appear as parallel lines rather than random markings as in brushing. Often this was done with a shell or perhaps a toothed wooden implement.

Smoothed A surface treatment that exhibits planar striations, presumably made by rubbing the fingers across the surface.

Stamped Surface treatments that resulted from using a tool specifically designed to decorate the surface. The following is a listing of some of the more common stamped treatments

Check Decorated with a flat, rectangular paddle having a design that consisted of a grid or raised lands that intersect to form squares, rectangles, rhomboids, or triangles. The size of the squares, rectangles, rhomboids, or triangles varies from small (3 mm) to large (>10 mm) on the side. In many cases, the lands are as wide as the depressed areas (grooves). This produced a coarse, massive effect. The grooves are deep, sometimes attaining 3 mm and are usually square-cut. The overall effect of the decoration resembles a waffle.

Complicated Decorated with a usually large and elaborately carved paddle. The design elements can be curvilinear and include spirals, interlocking scrolls, concentric circles, snowshoes, swirls, figure sixes and figure eights. It can sometimes be rectilinear and consist of zones of straight lines that do not intersect forming a linear-like checkerboard effect (line-block). Over-stamping is almost always the case. The elements visible on the pottery are parts of a larger design that, presumably, had meaning to the potter. With careful study of well-executed stamps, the original design can be reconstructed.

Linear Check This design was either rouletted with a cylinder or applied using a carved paddle. It appears as a repeated parallel arrangement of two longitudinal lands that contain a series of finer transverse lands. The number of design elements usually ranges from one to eight. The longitudinal areas are invariably more massive and usually higher than the transverse lands. There is considerable variation in the width of the longitudinal lands themselves, ranging from 2 mm to 6 mm. They may be rounded, sloped, or flat.

Simple Decoration consisting of arrangements of shallow, longitudinal grooves which are either parallel or crossed. In some cases the design was applied by a bundle of dowels leaving a wavy effect. However, most simple-stamped designs were applied with either a thong wrapped paddle or a paddle carved with parallel or crossed grooves. The grooves are either squared, rounded, or V-shaped.

4.20: Indeterminate

In the third category, pottery fragments that are corroded or small, and cannot be reliably typed or classified are categorized as indeterminate. These will be enumerated and assigned catalog numbers, but not labeled. Instead they are bagged separately and the catalog number recorded on a tag place inside the bag.

Eroded Sherds whose surface(s) are deteriorated to the point that no surface decoration is discernable.

Diminutive Sherds with a surface area of less that 2 cm^2 and having no recognizable decoration. Size differentiation is accomplished by dropping sherds in a plastic funnel whose smaller orifice is trimmed to a diameter of 16 mm. Any sherds that pass through are considered diminutive. If a sherd passes through the funnel but exceeds 2 cm in length, it is considered as simply Indeterminate.

Indeterminate Sherds that are neither Eroded or Diminutive.

4.30: Prehistoric Lithics

Lithic tools will be categorized into a series of tool types. These include bifaces or points that, where possible, will be assigned type names when they conform to published type descriptions. One source of these descriptions is Whatley's (2002) *An Overview of Georgia Projectile Points*

and Selected Cutting Tools. Other tool type categories will include a variety of scrapers, drills, prismatic blades, knife blades, perforators, burins, gravers, spokeshaves, and endscrapers.

Discarded lithic debris (debitage) will be classified according to a group of analysis categories identified and defined below.

Primary Decortication Flake.	A generally large flake retaining cortex over more than 90% of its dorsal surface.
Secondary Decortication Flake	A flake retaining cortex over less than 90% of its dorsal surface.
Tertiary Decortication Flake	A non-decortication flake removed from the interior of a core or biface.
Bifacial Retouch Flake	A feather fractured flake that was removed by pressure techniques and retains the original, dulled edge of the biface. Both the original edge and the feathered margin of the flake form extreme acute angles from the transverse axis of the biface. Old flake scars on the original blade edge are usually visible on the flake, which often gives it a slight crescent shape.
Shatter	An angular, blocky fragment lacking any attribute of a flake. In general, it does not exhibit evidence of platforms or bulbs of percussion.
Fragment	A piece of stone, usually modified, but not identifiable to function or type; sometimes composed of unusual material.
Core	A blocky artifact with several flake removal scars, and one or more striking platforms; this includes a core fragment if it is large enough to determine that it was a portion of a core.
Projectile Point/Knife	A formal biface that is retouched and thinned and has a hafting element. These generally conform to a standardized type described in the literature, but may not always do so. This category also includes basal fragments that are complete enough for type identification.
Biface	A bifacially retouched and usually thinned artifact with no hafting element. It does not conform to a published type. This category also includes Projectile Point/Knife fragments that are unidentifiable as to type.
Unifacial Flake Tool	A flake, modified by intentional, retouch, and exhibiting unifacial use wear.
Modified Flake	A flake modified by intentional, planned, retouch, exhibiting flake scars along one or both faces.

Utilized Flake	A flake, unmodified by intentional retouch, exhibiting bifacial use wear modification. These were used expediently and then discarded.
Scraper	A unifacially retouched artifact with sufficient extensiveness and invasiveness of retouch to have altered the edge or edge shape.
Pot Lid Flake	Artifacts exhibiting small, circular pits, or the corresponding semi-spherical shatter, both of which resulted from the rapid heating and cooling of chert.

Historic Artifacts

Historic artifacts are categorized first by temporal categories to associate them with one or more of the historic periods of the regional model. Second, they are further categorized into material class according to a system devised by South (1977) that is based on function. This includes nine broad artifact groups: 1) Architecture, 2) Kitchen, 3) Furniture, 4) Arms, 5) Clothing, 6) Personal, 7) Tobacco, 8) Activities, and 9) Miscellaneous.

SECTION 5.0: PRESERVATION AND RESTORATION

In some cases it may be necessary to preserve or restore artifacts. Two excellent sources on this subject are *The Amateur Archaeologist's Handbook* (Robbins 1973) and *A Guide to Field Methods in Archaeolog*y (Heizer and Graham 1967). The researcher should refer to these and other published references for the more infrequent preservation issues. By far the most common preservation/restoration situations encountered is the rejoining of fragmented artifacts or the stabilization of fragile objects and eroding surfaces. Glues are the most common agents used to accomplish these tasks.

Two classes of glues commonly used are hydrocarbon-based and water-based. As a general rule, hydrocarbon-based glues are used for stabilizing fragile objects and eroding surfaces, while water-based glues are used for mending fragmented artifacts.

Elmer's Carpenter's Wood Glue (CWG; water-based) is recommended for mending ceramic objects such as pottery, tobacco pipes, effigies, etc. After applying the glue to both mendable surfaces, they are mated and all excess glue wiped away using a soft cloth and cotton swabs moistened with water. The use of a sand box will hold artifacts in their proper positions and facilitate the drying process. Fragments so glued set quickly (in about 10 minutes) but should be allowed to dry for at least 12 hours to assure complete curing of the glue.

Devcon Duco Cement (DUC) is a hydrocarbon-based glue that is used to stabilize any soft or deteriorating artifacts. This is most commonly done by diluting DUC with acetone and brushing the resulting solution over the artifact in several coats. The artifact can also be submerged in the solution, allowed to soak it up, and then dried. It is critical that the artifact be completely dry before applying this preservative. If not, moisture can be trapped inside the artifact and lead to worse deterioration than if left untreated. CWG can be used in the same way except it is diluted with water.

SECTION 6.0: LABELING

Labeling will follow the guidelines published by the Georgia Council of Professional Archaeologists (GCPA) in their *Georgia Standards and Guidelines for Archaeological Surveys* (2001) and summarized below. All diagnostic artifacts are labeled with a catalog number that is cross referenced to correlate with site number, provenience, type/classification, and sometimes function.

The numbers are applied to artifacts using black or white India ink and sealed with an appropriate sealant such as a 10-15 percent solution of Paraloid B-72 (PB-72). On non-porous materials such as historic glazed ceramics, glass, plastic, etc., the number is written directly on the surface first, allowed to dry, and then covered with a coating of PB-72 to seal and protect the ink. On porous materials, a film of sealant is first applied to the artifact and allowed to dry. Then the catalog number is applied and likewise allowed to dry. In the final step, another coat of sealant is applied to protect the catalog number. As an alternative to white ink, Paraloid B-72 can be modified by adding titanium dioxide. The resulting solution is white and can be applied to artifacts and allowed to dry, before writing the catalog number in black India ink. After the ink dries, a coat of clear PB-72 is applied for protection.

All artifacts are bagged individually or by type in self-sealing polyethylene bags that are at least 4 mil thick. A descriptive tag is enclosed in each individual/type bag. This tag will give site number, provenience, description, and count of the contents. Artifacts are bagged by provenience or type (i.e., ceramics, lithics, etc., from all proveniences stored together, or all types of artifacts bagged by excavation provenience) based on the analysis needed. However, the methods section of the report will detail this information.

The identification tags for bags and boxes are made of an inert, waterproof, archivally sound, materials (e.g. Nalgene, Tyvek, polyweave, etc., or an acid-free paper tag inserted into an appropriately sized polyethylene self-sealing bag) and marked with ink that is fade-proof, waterproof, and archivally sound. All information on the exterior of the bag is repeated on an internal tag of the type described above.

GLOSSARY

Aplastic. Any substance that is rigid at normal temperature. In the archaeological application it usually refers to materials added to the paste (inclusions) of pottery during manufacture to give it strength and reduce shrinkage during firing.

Attribute. A single characteristic or trait of a culture or artifact

Bifacial. Stone tools that have two worked surfaces. It is general term commonly used to refer to the appearance of a stone tool.

Cortex. The exterior weathered surface of stone that is used in the production of tools.

Debitage. The discarded flakes and shatter resulting from stone tool manufacture.

Decortication. The process of reducing a stone (usually chert) core to produce flakes suitable for making tools.

Ecofact. Articles derived from living organisms and modified or used by humans.

Field Specimen Catalog. A catalog containing written record of artifacts recovered from a site or project. It includes a Field Specimen Number, provenience information, description, and signatures of the collectors.

Field Specimen Number. A number assigned and recorded in the Field Specimen Catalog to provide for the accountability and tracking of artifacts.

Grooves. Depressed, usually squared, areas of a pottery surface decoration.

Lands. Raised, usually squared, areas of a pottery surface decoration.

Lithics. The stone tools and debris (debitage) found on archaeological sites

Paste. The clay or clay mixture that makes up the body of pottery.

Phase. Archaeological remains of a single culture, tribe, or people at a given period in their history.

Provenience. The descriptive terminology assigned to artifacts that reflects where they were found.

Spatial. A term having to do with space. Archaeologically, it usually refers to the geographical distribution.

Spicules. Siliceous structures that support the soft bodies of sponges. These are found in the paste of St. Johns pottery and impart a chalky feel. They are microscopic and appear as long slivers mixed throughout the paste.

Temper. Inclusions found in the paste of prehistoric pottery.

Temporal. A term having to do with position in time.

REFERENCES CITED

Georgia Council of Professional Archaeologists
2001 *Georgia Standards and Guidelines for Archaeological Surveys.* Published on the World Wide Web at http://www.georgia-archaeology.org/ GCPA/GCPA_S&G_Final.htm

Heizer, Robert F. and John A. Graham
1967 *A Guide to Field Methods in Archaeology*. The National Press, Palo Alto, California.

Robbins, Maurice
1973 *The Amateur Archaeologist's Handbook.* Second edition, Thomas Y. Crowell Company, New York.

South, Stanley
1977 *Method and Theory in Historical Archaeology*. Academic Press, New York.

Whatley, John S.
2002 An Overview of Georgia Projectile Points and Selected Cutting Tools. *Early Georgia*, Vol.30, No. 1.

Williams, Mark and Victor Thompson
1999 A Guide to Georgia Indian Pottery Types. *Early Georgia*, Vol. 27, No. 1.