National Park Service
U.S. Department of the Interior

Everglades National Park
Monroe County, Florida

Archaeological Survey of the Raulerson Brothers Canal, House Ditch, and Slagle Ditch

Cape Sable, Everglades National Park

ARPA Permit #EVER-2015-001

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New South Associates Technical Report #2524

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ABSTRACT

New South Associates, Inc. (New South) has completed the fieldwork for the archaeological survey associated with the Cape Sable Dams Restoration Project in Everglades National Park, Monroe County, Florida. This work was conducted under ARPA Permit EVER 2015-01. All permit stipulations were followed.

The Area of Potential Effects (APE) for this project included three locations: the Raulerson Brothers Canal, House Ditch, and Slagle Ditch (Figure 1). The APE included five proposed dam locations at Cape Sable: one in Slagle Ditch, one in House Ditch, and three within the Raulerson Canal. The survey also included five foot paths and three helicopter drop zones. The APE totaled approximately one acre of block survey and 1,830 feet (558 meters) of linear survey.

No cultural material was collected during this project. Three historic properties were identified during this survey. The Raulerson Brothers Canal (8MO2350) was recorded in its entirety as it was accessible by boat for its full length. 8MO2351 (House Ditch and plug) and 8MO2352 (Slagle Ditch and plug) were not accessible by boat north of the foot paths. The portions of these properties south of the plugs were surveyed, but the northern sections were not part of the current APE. The boundaries of these properties were extended to include their entire length (based on current aerial photographs).

The Raulerson Brothers Canal (8MO2350) is recommended as eligible to the NRHP under Criterion A and B. This is based on its possible association with the Raulerson brothers and early twentieth century cattle grazing, and on its known association with the twentieth century development of the Cape Sable region.

8MO2351 (House Ditch and plug) and 8MO2352 (Slagle Ditch and plug) are both recommended as eligible to the NRHP under Criterion A. This is based on their association with the twentieth-century development of the Cape Sable region and with the mid-twentieth conservation efforts of Everglades National Park.

The proposed restoration project will include changes to the physical integrity of these three properties, but would not affect their significance with regard to its associations the Raulerson brothers or with cattle grazing, land development, or conservation efforts at Cape Sable. In contrast, the proposed restoration will protect these resources through continued maintenance. New South recommends that the proposed undertaking will have no adverse effect on these three historic properties.

ACKNOWLEDGMENTS

New South would like to thank various people who contributed to the successful completion of this project. Valerie Chartier and Kenneth Stannard of AECOM provided project background and guidance. Lowell Evans and Penelope Del Bane with the Everglades National Park provided guidance on park access and resources. Captain Jason Sullivan with Rising Tide Charters provided and operated the boat used to access the survey area. He also provided valuable information on the local environmental conditions.

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New South Associates, Inc. (New South) has completed the fieldwork for the archaeological survey associated with the Cape Sable Dams Restoration Project in Everglades National Park, Monroe County, Florida. This work was conducted under Archaeological Resources Protection Act (ARPA) Permit EVER 2015-01. All permit stipulations were followed, as was the Scope of Work (SOW).

The Area of Potential Effects (APE) for this project included three locations: the Raulerson Brothers Canal, House Ditch, and Slagle Ditch (Figure 1). The APE included five dam locations at Cape Sable: one in Slagle Ditch, one in House Ditch, and three within the Raulerson Canal. The survey also included five foot paths and three helicopter drop zones (Table 1). The APE totaled approximately one acre of block survey and 1,830 feet (558 meters) of linear survey.

Table 1. Summary of Surveyed Areas

Survey Area	Location	Total Size
Raulerson Brothers Canal	Dam Locations (3)	3/8 acre
House Ditch Dam	Dam Location	1/8 acre
	Drop Off Zones (2)	1/4 acre
	Foot Paths (3)	680 feet
Slagle Ditch Dam	Dam Location	1/8 acre
	Drop Off Zone	1/8 acre
	Foot Paths (2)	1,150 feet

The archaeological survey of the APE included pedestrian survey (by boat and on foot) of all areas, judgmental shovel testing, photography, GPS recordation, and site recording. Eleven shovel tests were excavated including six at the Raulerson Brothers Canal, one at House Ditch, and four at Slagle Ditch. No prehistoric resources were identified within the APE. Five historic structures were identified: Raulerson Brothers Canal (8MO2350), House Ditch and plug (8MO2351), and Slagle Ditch and plug (8MO2352).

The APE was accessed by boat from the Flamingo Marina. The boat was provided by Rising Tide Charters and was driven by Captain Jason Sullivan. Access to the survey areas was fairly open with the exception of House Ditch, which was heavily overgrown with mangroves. House Ditch is accessible only at high tide with a small boat.

Fieldwork was completed on September 9-10, 2015. It was directed by Danny Gregory, RPA with the assistance of Justin Byrnes. This report was authored by Danny Gregory and Brad Botwick, RPA. Danny Gregory completed GIS, and graphics were prepared by David Diener. Jennifer Wilson edited the report, and Dr. J. W. Joseph provided technical review.

The environmental and cultural contexts used in evaluation follow this introduction. The methods used during the survey is described in Chapter IV. Results and recommendations are discussed in Chapter V. A list of the references that were cited in this report appear after Chapter V. A copy of the ARPA permit is contained in Appendix A, while Appendices B and C contain the Florida Master Site Files (FMSF) Log Sheet and Site Forms.

Figure 1. Project Location Map

Source: ESRI Resouce Data

II. ENVIRONMENTAL CONTEX

The purpose of the dam restoration project is to restore the failed plugs in the Cape Sable area of Everglades National Park. The project will provide solutions to issues associated with saltwater intrusion into and degradation of interior marshes north of the marl ridge; illegal motorized boat access; and unsafe conditions for motorized and non-motorized boaters at the plug sites. This chapter draws from a project Environmental Impact Statement (EIS) (URS Corporation 2009) and a recent National Park Service (NPS) report on local historic sites (Buttram et al. 2009) in describing aspects of the local environment (e.g., hydrology, vegetation, soils, flora, and fauna).

EVERGLADES NATIONAL PARK

The Florida Everglades extend around and south of Lake Okeechobee to the southern tip of the Florida peninsula and are bordered on the east and west by strips of higher coastal lands. This large area of land is roughly divided into three areas: the Lake Okeechobee section, the area south of the Tamiami Trail (mostly lying within the Everglades National Park), and the area south of the lake and north of the Tamiami Trail. Everglades National Park encompasses 1,509,000 acres of land and water in Dade, Monroe, and Collier counties in south Florida. The park is approximately 60 miles long and 40 miles wide; it is bounded on the north by the Tamiami Trail and Big Cypress National Preserve, on the west by the Gulf of Mexico, on the south by Florida Bay, and on the east by Homestead, Florida, and its surrounding agricultural areas. It holds the largest expanse of wilderness east of the Rocky Mountains, with 1,296,500 acres of the park designated as The Marjorie Stoneman Douglas Wilderness (Buttram et al. 2009:1).

CAPE SABLE

The Cape Sable peninsula extends from the southwestern tip of Florida, within Everglades National Park, into the Gulf of Mexico and Florida Bay. The cape contains stretches of shell beaches fringed by a mix of mangrove trees and marsh. Beyond the mangroves lies Lake Ingraham, the largest of the cape's lakes. It is the southernmost lake in the United States and covers less than 1,000 acres. Lake Ingraham has access to the Gulf of Mexico via the Middle Cape Canal and to Florida Bay via the East Cape Canal. It is backed by a narrow marl ridge that shelters the cape's numerous interior marshes. In the early twentieth century, a network of canals was dredged through the marl ridge to drain the cape's interior marshes for use in agriculture and cattle grazing. These canals have triggered substantial changes in the ecology of the area. At least seven canals were constructed, exposing the cape's interior marshes and lakes to Florida Bay and the Gulf of Mexico. Incoming tides now push marine waters and sediments inland, increasing salinity and transporting sediments to lakes and marshes. Outgoing tides flush freshwater from marshes north of the marl ridge and transport sediments toward Lake Ingraham and Florida Bay (URS Corporation 2009:3).

Hydrology

The Cape Sable canals cut through a low ridge of marl soil along the edge of the Cape that historically retained freshwater far upstream. Thus, fresh water drains from the interior wetlands and salt water from the Gulf of Mexico can penetrate inland. The resulting saltwater intrusion is accelerating the change from freshwater wetlands to a more saltwater estuary ecosystem within the larger region. Because the landscape no longer retains freshwater, rapid drainage through the canals accelerates acute impacts, such as marsh collapse (see the SOW).

The constant movement of water through man-made canals on the cape has led to the widening of several canals. The main East Cape Canal has widened from 20 feet to more than 300 feet, resulting in a substantial loss of coastal habitat. The expansion of these canals has exacerbated

sediment deposition in the cape's open waters and is converting Lake Ingraham into a tidal mud flat. The interior freshwater ecosystems of Cape Sable have experienced substantial change from exposure to the sea, as peat soil is lost and open water saline communities are replacing freshwater marsh communities (see the SOW).

The incursion of saltwater into formerly freshwater marsh systems as the result of sea level rise has also led to physical collapse of the marshes. This process has been accelerated on Cape Sable by saltwater moving through the canals past the marl ridge and through the smaller canals where the plugs have failed. Sediment, and probably nutrients, from the collapsed marsh also make their way to Florida Bay and the Gulf of Mexico. Replacing the failed plugs is expected to slow the rate of marsh collapse and the loss of sediment and nutrients from the interior marshes of Cape Sable (URS Corporation 2009).

Soil, Flora, And Fauna

The project areas are situated in inundated mangrove swamp; the majority of the soil in these areas is spoil that was deposited when the canals were constructed. While mangroves and succulents predominate, the raised spoil pile contains prickly pear, Spanish bayonet, Gumbo-limbo, and fern.

Higher salinity in the interior marshes has altered vegetation patterns and reduced the quality of wildlife habitat. The higher saline has also reduced juvenile crocodile habitat suitability and lowered the productivity of forage fishes and, concomitantly, affected the ability for wading birds and other fauna to forage efficiently. Greater volumes of seawater and sediment entering the lakes and marshes have also brought about changes that are compromising the function of coastal habitats important to sea turtles, recreational fish, and other plants and animals dependent on the cape for survival (see the SOW).

American crocodiles (*Crocodylus acutus*) nest in close proximity to the interior marshes of Cape Sable and juvenile crocodiles frequently use these wetlands as foraging habitat. Saltwater moving into the interior of Cape Sable through the canals have increased salinity and degraded nesting juvenile crocodile habitat. Crocodiles nest on higher ground but require nearby waters of lower salinity for young to survive and grow. Intruding saltwater now separates higher nesting areas from suitable habitat required by young crocodiles during the first crucial months of life when their tolerance for saltwater is low. It is expected that plugging of these canals will decrease salinity and lead to improved habitat conditions for juvenile crocodiles (see the SOW).

Roseate Spoonbills (*Ajaia ajaja*) nest on Sandy Key in Florida Bay and feed on small fish from the Cape Sable marshes. Fresh-to-brackish water systems produce more abundant stocks of small fish and invertebrate prey than marine systems. The Sandy Key spoonbill colony is critically dependent upon prey fish from the Cape Sable marshes during the breading season. The open canals flush freshwater from interior marshes, leaving saline marsh habitat that produces fewer small prey fish. Plugging the canals is expected to reduce salinity in interior marshes and produce better habitat for the fish prey of predatory fish and wading birds (see the SOW).

Dam Restoration

The NPS recognizes the importance of addressing impacts from the Cape Sable canals. Stopping tidal flow into the cape's interior marshes is the key to revitalizing the function of these freshwater marshes. While this landscape is naturally dynamic, slowing the rate of human-induced change to it may also bring greater resilience to the cape in the face of predicted sea level rise and the possibility of more frequent and intense hurricanes. The NPS plugged several of the canals at the marl ridge with earthen dams in the late 1950s and early 1960s. Over time, natural forces compromised two of these early structures and, by 1992, they had failed. The earthen dams were replaced in 1997 with sheet-piling dams, though these also failed after a few years, possibly due in part to vandalism, which increased erosion of the canal

banks. Openings at the failed plugs continue to widen, due to erosional processes (URS Corporation 2009:4).

In summary (URS Corporation 2009:5), restoration of the failed plug at these canals is needed to:

- Control the canal-induced intrusion of saltwater into freshwater and brackish marshes,
- Restore the existing plug so they can function effectively,
- Protect the freshwater and brackish interior marshes that serve as habitat,
- Reduce illegal motorized boat entry into wilderness areas, and
- Restore safe conditions at the dam sites for boaters.

EXISTING CONDITIONS WITHIN THE APE

All areas of the APE are on the marl ridge within the coastal marshes of Florida Bay. The surface within the APE contains marl clay, standing water, or dredge spoil (marl and limestone). The APE is subjected to tidal flows and constant erosion.

The Raulerson Brothers Canal is open with piles of dredge spoil along both banks. The area surrounding the canal contains wetland vegetation and marl clay at the surface. House Ditch is heavily overgrown with mangroves, and is only accessible at high tide. Slagle Ditch is more open, though the portion south of the dam is only a small, intermittent drainage. Both House and Slagle ditches are within active wetlands along the marl ridge (Figure 2).

Figure 2. Existing Conditions within the APE

A. Raulerson Canal, Looking East

B. House Ditch, Looking North

C. Flooded Area with Marl Clay, Footpath at Slagle Ditch, Looking South

III. CULTURAL CONTEXT

PREHISTORIC CONTEXT

Due to the lack of prehistoric resources within the APE, the following brief prehistoric context is designed to provide an overview of the prehistoric resources in the region. This section is included to show the types of prehistoric resources that could be expected near the APE and to highlight the reasons for their absence within the surveyed areas.

This prehistoric context was compiled using multiple sources (Bernhardt 2011; Carr 2002; Carr 2012; Griffin 2002; Janus Research 2008; Milanich 1994; Milanich and Fairbanks 1980; Smith et al. 2010). This context is organized by temporal periods, all of which are summarized in Table 2. These temporal designations were drawn primarily from Janus (2008), Griffin (2002), and Bernhardt (2011).

Table 2. Prehistoric Chronology of the Everglades

Period	Years Before Present (B.P.)
Glades IIIc	49–circa 300
Glades IIIb	600–496
Glades IIIa	800–600
Glades IIc	900–800
Glades IIb	1,100–900
Glades IIa	1,250–1,100
Glades I (late)	1,500–1,250
Glades I (early)	2,500–1,500
Pre-Glades/Late Archaic	5,000–2,500
Middle Archaic	7,000–5,000
Early Archaic	9,500–7,000
Paleoindian	12,000–9,500

Paleoindian Period (ca. 12,000–9,500 B.P.)

During this period, a mosaic of wetlands mixed with upland knolls, pine-oak islands, and cabbage palm hammocks characterized southern Florida (Carr 2002:193). At the beginning of Paleoindian period, the Florida peninsula was more than twice its present size and the climate was windy, cool, and arid (Kutbach and Wright 1985:178–180). Modern hydrological features such as the Everglades, Lake Okeechobee, and the Big Cypress swamp had not yet begun to form. However, low numbers of aquatic species (alligators, fish, and turtles) in the South Florida Paleoindian fossil record indicate that a few streams and water bodies did exist, although they may have been located mostly on the coast (Janus Research 2008).

Paleoindian drinking water sources were probably limited to sinkholes and similar karst features. The remains of grazing ungulates, such as bison, horse, peccary, and tapir, have been recovered from dredging and mining operations in southern Florida, indicating extensive areas of dry grasslands (Martin and Webb 1974). Pleistocene megafauna such as the giant tortoise, giant ground sloth, saber-toothed cat, mammoth, and mastodon were also present. Sand dunes were covered with xeric scrub vegetation such as rosemary and scrub oak. Near the end of the Paleoindian period, the climate had become warmer and wetter and the modern wetlands of southern Florida began to emerge. Sea levels began a fairly rapid rise, shrinking the available landmass through coastal inundation. Dramatic climate changes, and possible pressure from Paleoindian hunters, contributed to the extinction of the Pleistocene megafauna and other species.

Diagnostic Paleoindian artifacts in peninsular Florida include the large, lanceolate Simpson and Suwannee projectile points (Austin 1997:116; Bullen 1975:55–56; Daniel and Wisenbaker 1987:44–54; Purdy 1981:8–10). Work at the Cutler Fossil Site (8DA2001) indicates that Dalton forms may be present in southern Florida as well. Other tools associated with Paleoindian components include bifacial and unifacial adzes, blade-like flakes, flakes with beaked projections, hafted spokeshaves, unifacial retouched flakes, and a variety of unifacial scrapers, including discoidal, end, oblong, and side varieties (Daniel and Wisenbaker 1987:62–88; Purdy 1981:11–22).

Double-pointed bone splinter tools and other bone tools are also known, as are shell tools such as atlatl spurs (Cockrell and Murphy 1978; Milanich and Fairbanks 1980). Wooden artifacts, such as stakes, have been recovered from Paleoindian wet sites in southern Florida (Clausen et al. 1979).

Concentrations of Paleoindian artifacts around sinkholes and other karst river systems indicate that they relied on such natural water features for drinking water. For food, Paleoindians hunted now extinct Pleistocene big game animals such as camelids, ground sloth, horse, mammoth, and mastodon. There is also direct evidence that they hunted less elusive prey such as extinct giant tortoises (Clausen et al. 1979). However, it is likely that they more commonly subsisted on plants and smaller animals such as deer, fish, gopher tortoise, opossum, rabbit, raccoon, and shellfish (Milanich 1994:47). Paleoindian sites that have been located in the Gulf of Mexico (Dunbar et al. 1991) may provide evidence of the use of estuarine resources along ancient shorelines and deltas inundated by post-Pleistocene sea level rises (Quitmyer and Massaro 1998:12).

It is important to note that most of the information about Paleoindian occupation and subsistence comes from the karst region of central and north-central Florida (Daniel 1985; Daniel and Wisenbaker 1987; Dunbar 1991; Dunbar and Waller 1983; Goodyear et al. 1983; Neill 1958; Webb et al. 1984). To date, the most representative Paleoindian site in southern Florida is the Cutler Fossil Site (8DA2001), although the FSMF also lists 8GL130, the Shark Tooth Mountain Site, as associated with Pleistocene/Paleoindian fossil deposits. Paleoindian sites in southern Florida include Little Salt and Warm Mineral springs in Sarasota County, and the Douglass Beach Midden in St. Lucie County. To date, there is no direct information for Paleoindian subsistence in the study area due to the lack of documented sites.

Archaic Period (ca. 9,500–2,500 B.P.)
Early Archaic (9,500–7,000 B.P.).

In Florida, the Early Archaic period coincides with a drier climate, rising sea levels, and vegetation dominated by oak-savannah complexes (Carbone 1983:9; Milanich and Fairbanks 1980:49–50). Early Archaic and Paleoindian sites often overlap, but Early Archaic sites occur in a wider range of locations, suggesting use of newly emerging environments and resources (Milanich 1994:64). By the end of the Early Archaic, local environments were apparently becoming more subtropical. The situation in southern Florida is unclear, though dry conditions may have led to the region being largely uninhabited (Widmer 1988:202).

Janus Research (2008) identified two Early Archaic horizons: the Bolen and the Kirk. The main diagnostic markers for the Bolen Early Archaic are side-notched projectile points such as the Bolen and Greenbriar types (Austin 1997:122; Bullen 1975:51–53), as well as Kirk Corner-Notched (Farr 2006). Other stone artifacts associated with this horizon include adzes, Edgefield Scrapers, end scrapers, spokeshaves with graver spurs, side scrapers, and Waller knives (Purdy 1981:26–32). Many of these tools were also used during the preceding Paleoindian period, making it difficult to distinguish many Bolen and Paleoindian sites from each other (Purdy and Beach 1980:114–115).

Kirk Stemmed points are the primary diagnostic markers for the Kirk portion of the Early Archaic (Austin 1997:126; Farr 2006:79). Additional Early Archaic Kirk-related tools include varieties of choppers, scrapers, knives, and composite tools as well as antler handles, bone points, pins, awls, and punches (Milanich 1994:63, 67–69; Milanich and Fairbanks 1980:51). The Windover Site in Brevard County yielded evidence of the range of materials produced and used by Early Archaic peoples, including wood and bone implements, textiles woven from plant fibers, and a variety of economically useful plants and animals (Doran 2002). The Windover analysis indicated that

Early Archaic peoples utilized the fibers of sabal palm, saw palmetto, and other plants in the weaving of baskets and textiles. Windover also illustrated that at least some Early Archaic populations had developed an intensive exploitation strategy focused on inland aquatic resources supplemented by terrestrial game (Doran 2002:54). This site reveals a diverse social world and material culture during the period.

Based on Windover findings and comparison to Early Archaic data from elsewhere in North America, Doran (2002:54) presented a hypothetical model for Early Archaic settlement patterns and site types in southern Florida. The model suggested that most Early Archaic sites should be relatively small and widely distributed due to the mostly arid conditions of this time period. Occasional large sites should be located in more resource rich areas, such as at Windover Pond. Widmer (1988:65) proposed that southern Florida might have been largely abandoned during the Post-Kirk Horizon at the end of the Early Archaic. To date, the only site that can be firmly dated to this time is Windover (Austin 1997:127; Doran 2002).

In addition to habitation data, Windover provided evidence for a type of site known as the charnel pond, or mortuary pond. Such sites consist of shallow ponds underlain by intact peat sediments into which human burials were placed during the Early and Middle Archaic periods (Doran 2002:2). Mortuary pond sites are known for southern Florida but to date, Windover is the only definite Early Archaic example known.

Other Early Archaic site components in southern Florida include Little Salt Spring and Warm Mineral Spring in Sarasota County. In addition, a few isolated Bolen and Greenbriar points have reportedly been recovered by local collectors on the Lake Wales Ridge (Austin 1996) to the north. In southern Florida, possible Bolen and/or Kirk Corner-Notched points have been recovered from the Cutler Fossil Site (8DA2001) as well as Blue Cow (8BD2150), Sunset Lakes (8BD3176), and Silver Lakes (8BD1873).

Middle Archaic (7,000–5,000 B.P.).

The Middle Archaic can be seen as the environmental and cultural transition between the Early Archaic and the Late Archaic. During the Middle Archaic, the southern Florida environment approached that of modern times, becoming increasingly moister, while the climate grew more stable. Sea levels stabilized by 7,000 B.P. (Dixon 2001; Littman 2000), creating new surface water sources, extensive coastal marshes, and estuaries. Modern climates emerged toward 5,000 B.P., pine forests replaced the oak-savannah communities, and subtropical hardwood forests appeared at the southern tip of Florida (Carbone 1983:9). These changes allowed people to occupy new regions and encouraged population growth and regional development, indicated by increasing site density and diversity. Evidence from this period suggests that Middle Archaic human populations increasingly relied on shellfish and marine resources in coastal areas and expanded hunting, fishing, and plant-collecting in the emerging Everglades (Carr 2002:195).

During the Middle Archaic period, human populations began to develop distinct regional adaptations to the changing environmental conditions. Along the southwestern coast, populations developed year-round adaptations to the developing estuaries, producing large shell middens and constructing shell mounds in the process. Within the southern Florida area, Middle Archaic populations began to adapt to the developing Everglades ecosystem and the more dispersed wetland resources to the north of Lake Okeechobee. Unique adaptations to the interior marshlands of southern Florida can be seen developing during the Middle Archaic and have been labeled the Glades or Everglades Archaic (Pepe 2000:32; Pepe and Jester 1995:19; Wheeler 2004; Wheeler et al. 2002:143–144), as discussed in more detail in the following description of the Late Archaic period.

Although distinct regional differences are now becoming increasingly apparent for the Middle Archaic period, distinct chronologies for each of these regional cultures have yet to be

established. Diagnostic artifacts, where present, seem to be fairly homogeneous throughout the 2,000 years of the Middle Archaic, making subperiods currently almost impossible to define (Janus Research 2008).

A variety of Florida Archaic Stemmed (FAS) and related points are the most distinctive artifacts associated with the Middle Archaic period. Researchers recognize several sub-types of FAS point, including Levy, Marion, and Putnam types (Bullen 1975:32). However, Farr (2006) noted that, many times, FAS points cannot and should not be neatly categorized by a sub-type and should instead be described only as FAS. He also pointed out that FAS points are not a very good chronological marker as they have been found in Late Archaic as well as the early post-Archaic contexts (Farr 2006:79).

Newnan points, which may be related to FAS points, are also very common at Middle Archaic sites (Austin 1997:128–136; Bullen 1975:31), although, unlike FAS points, they seem to have a tight chronological range. For instance, Farr (2006:94) postulated a range of about 7,000-7,500 B.P. for Newnan points. To date, Thonotosassa points seem to be a mostly west coast phenomenon, having been found mainly around the Tampa Bay area (Farr 2006). Within southern Florida, an example of this point was noted at the Ryder Pond Site (8LL1850).

Austin (1997:129) has noted a decrease in the Middle Archaic use of shaped tools other than bifaces and an increased dependence on flake tools. Wooden artifacts known from the Middle Archaic include a variety of wooden stakes and other tools recovered from wet sites as well as dugout canoes. Although a variety of shell tool types are known from Middle Archaic sites, the main shell tool type known for the region during this time is the conch shell celt (*Strombus sp.*) (Wheeler 1994).

Austin (1997:135–136) pointed out that settlement patterns during the Middle Archaic were either sedentary or more mobile, depending upon the availability of abundant and dependable food resources. As areas of surface water increased during the period, there was less need for interior populations to remain "tethered" to permanent water sources. As such, the wider availability of surface water and associated faunal and floral resources would have supported more mobile hunter-gatherer populations within the interior of southern Florida. Further, Austin (1997:132) found that these Archaic sites from southern Florida are typically smaller and contain fewer artifacts, particularly lithic debitage, than Middle Archaic sites in central or northern Florida. Examples include Taylor Creek #1 (8OB266), Taylor Creek #3 (8OB273), Ten-Mile Creek (8SL1181), and interior sites in Lee and Collier counties (8CR706, 8LL1773, 8LL2007, and 8LL2329) (Loubser et al. 2005). Several Middle Archaic sites also have been identified on sandy ridges along the eastern edge of the Everglades; these include Ranch Ridge (8BD1119) and Long Lake Estates (8BD3283), which contain scatters of lithic artifacts, Middle Archaic point types, and lithic debitage (Janus Research 2008).

Germany Canal Mounds (8SL70) and other sites located farther south such as Bass Creek/Blockbuster #1 (8DA2878) and Cheetum (8DA1058) may represent early manifestations of the aforementioned Glades Archaic culture. At Cheetum, a Middle Archaic cemetery was identified in a concreted (calcrete) layer at the base of a dense Glades period midden. Radiocarbon analysis dates this cemetery to the end of the Middle Archaic or beginning of the Late Archaic (Newman 1993).

A final Middle Archaic site type is the mortuary, or charnel, pond site. As discussed above, mortuary ponds are shallow ponds containing human interments. While Windover represented this site type during the Early Archaic period, most known mortuary pond sites date to the Middle Archaic. Examples in southern Florida include Bay West in Collier County and Republic Groves in Hardee County. Ryder Pond (8LL1850) has also been recorded as a Middle Archaic mortuary pond site, but the presence of associated Pleistocene fauna suggests that additional research is needed to fully understand the temporal aspect of site occupation.

Late Archaic (5,000–2,500 B.P.).

Essentially modern environmental conditions had been reached by the beginning of the Late Archaic period, when freshwater resources were available throughout southern Florida. The water table continued to rise slightly during the post Archaic periods, inundating small knolls located along the edge of the Everglades in the process (Carr et al. 1991:125–126; Wheeler 2004:49). The emergence of stable coastal environments led to greater estuarine richness, which permitted larger human populations and regionalization of cultures as people adapted to specific habitats (Milanich 1994:83). Native American populations in south Florida at this time increased their reliance on marine resources in coastal areas and expanded hunting, fishing, and plant collection throughout the interior (Carr 2002:195).

Until recently, variations of Bullen's chronology for the Late Archaic Orange culture in northeastern Florida were generally used for the Late Archaic in southern Florida. Using this scheme, fiber-tempered pottery, the earliest ceramic type known for North America, was considered a marker for the Late Archaic period. The use of this standard fiber-tempered sequence for the Late Archaic in southern Florida has more recently come into question. Based on his research in southwestern Florida, Widmer (1988:68) hypothesized that the earliest Late Archaic sites "include untempered chalky pottery and limestone-tempered pottery as well as the usual fiber-tempered Orange pottery." Austin (1997:136) stated that the "identification of a true Orange Horizon in south Florida is debatable." Instead, what is more common is the presence of "semi-fiber tempered" pottery in the basal levels of middens, "often in association with thick St. Johns Plain or sand tempered plain sherds, and overlying either culturally sterile sands, or sparse scatters of lithic artifacts" (Austin 1996; Austin 1997:136). Both Widmer and Austin agreed that semi-fiber tempered components at sites throughout southern Florida are "ephemeral" and soon replaced in the archaeological record by components consisting exclusively of sand-tempered pottery (Austin 1997:136; Widmer 1988:72–73).

More recently, Mike Russo has investigated the Joseph Reed Shell Ring on Jupiter Island (Russo and Heide 2002), where radiocarbon dates indicate chalky pottery appears between 3,500 and 3,300 B.P. whereas sand-tempered pottery is seen to appear around 3,280 B.P. Based on the evidence from excavations at this site, Russo and Heide (2002) have proposed a new chronology for the Late Archaic in southeastern Florida. A period labeled Late Archaic I is marked by fiber-tempered and/or semi-fiber tempered plain pottery. During the next proposed period, Late Archaic II, only chalky ware pottery, possibly early St. Johns Plain, is predicted to occur. The next proposed period, Late Archaic III, is distinguished by the presence of plain sand-tempered pottery along with the chalky ware. Russo and Heide (2002) pointed out that this chronology is similar to the chronology proposed by Widmer (1988) for southwestern Florida, suggesting, among other things, that non-fiber-tempered pottery was developed earlier in southern Florida than elsewhere in the state.

In addition to early examples of sand-tempered plain sherds from the Joseph Reed Shell Mound, other early examples are also reported from southwestern Florida. At the Mulberry Midden (8CR697), sand-tempered plain pottery was dated at about 3,390 and 3,430 B.P. (Lee and Beriault 1993; Russo and Heide 2002). Dates for sand-tempered plain from Heineken Hammock (8CR231) are even earlier, ranging from 4,000-4,500 B.P. (Lee and Beriault 1993; Russo and Heide 2002). Again, using the standard fiber-tempered sequence for southern Florida, sand-tempered plain pottery should not be present at such early dates, only fiber-tempered pottery.

Importantly, it is now becoming clear that many of the ubiquitous faunal bone middens located in the interior wetlands of southern Florida date to Late Archaic times, despite the fact that many of them lack pottery. Such sites are difficult to date because, not only do they often lack chronologically diagnostic artifacts, but

also most of the faunal bone at the sites lacks collagen, the radiocarbon-datable material in bone. Nonetheless, ongoing research by the National Park Service in the Big Cypress National Preserve and Everglades National Park has yielded dense aceramic faunal bone middens yielding radiocarbon dates between 4,800 and 3,500 B.P. (Schwadron 2006).

To explain the dichotomy between Late Archaic Everglades area sites that lack fiber-tempered pottery and large, coastal shell mounds that have abundant examples of early pottery, Pepe and Jester (1995:19) proposed that there are two, distinct Archaic traditions in southeastern Florida. In this model, the fiber-tempered pottery tradition is largely a coastal phenomenon associated with shell mound building, while the aceramic Archaic or "Glades Archaic" is a more widespread tradition that may have given rise to the distinctive regional culture of the Tequesta and their ancestors (Pepe 2000:29–32; Russo and Heide 2002:80; Wheeler et al. 2002:143–144).

Additionally, Austin suggested that the presence of "semi-fiber-tempered" pottery at sites in southern Florida may not actually date to the Late Archaic, but instead may signify the beginning of the subsequent post-Archaic Tradition (Austin 1997:138). In other words, Austin held out the possibility that the ephemeral "semi-fiber-tempered" components in the basal levels of middens in southern Florida may better be incorporated into the initial periods of post-Archaic chronologies (i.e. Glades I Early).

Based on current research, there may be no diagnostic artifact in southern Florida that can be tied directly and/or exclusively to the Late Archaic. Instead, it appears that no single Late Archaic chronology is applicable everywhere in southern Florida, where several different populations are present during this period. There are also marked differences between coastal sites such as the Joseph Reed Shell Ring and the sites on which Widmer reported and the interior sites of the Everglades and its tributaries. For this reason, researchers are urged to acquire radiocarbon dates, if possible, from components thought to be Archaic or early post-Archaic. It is perhaps only through such means that gaps in our understanding of these time periods can be understood (Janus Research 2008).

As discussed above, several different types of ceramic artifacts have been attributed to the Late Archaic in southern Florida. These include plain and incised fiber tempered pottery, sand-tempered plain, thick and chalky wares, and Perico Plain and Incised, with both of the latter being limestone tempered wares known for southwestern Florida. Bone artifacts present within the study area include perforated shark teeth, cut rectangles of turtle bone, and artifacts carved from the long, straight bones of deer forelegs (metapodial bones) and interpreted as bone pins. Such pins are occasionally carved with geometric designs (Wheeler 1992; 1993; 2004:35). Shell tools include conch shell celts (*Strombus sp.*), which, although they are constructed from a marine species, are quite common at interior sites (Pepe and Elgart 2006). Late Archaic lithic artifacts are not common within the study area. However, a few FAS points have been recovered from aceramic sites, and due to the long chronological range of the type (Farr 2006:86), it is possible that some, or even all of them date to the Late Archaic.

Analysis of the faunal remains from the Honey Hill site (8DA411) provides data on faunal exploitation during the Glades Archaic. Not surprisingly, freshwater fish and turtle were the main taxa identified (Masson and Hale 1990). Shark and alligator were only represented in the lowest, aceramic (most likely Glades Archaic) site levels and upper midden levels. In the lowest, aceramic levels of the site, turtles contributed more biomass than bony fish. The aceramic MacArthur #2 site (8BD2592) exhibited a similar pattern of resource use, with reptile remains (turtle and snake) the dominant category collected, followed closely by bony fish (Fradkin 1996).

A substantial Late Archaic occupation was identified east of Lake Okeechobee at Ten Mile Creek (8SL1181) (Loubser et al. 2005). Two

separate Late Archaic components were delineated: Late Archaic I (1680-1205 B.C.) and Late Archaic II (1505-920 B.C.). Both components contained evidence for structures (wattle and daub huts), though the Late Archaic II habitation area was larger and more complex, including several midden areas as well (Loubser et al. 2005).

Late Archaic components are also common in Everglades (Ransom et al. 2001:9; Carr 2002:196), indicating use of resources available there as well. Late Archaic occupations in the Everglades show a shift around 3,500 B.P. from low tree islands, which had become inundated as the Everglades continued to develop, to more elevated locations. Occupations of these higher landforms persisted into historic times (Carr 2002:196). Sites with pottery suggest few differences in location, size, or assemblage from earlier non-ceramic sites. More and larger sites, however, suggest broader adaptations to emerging environments during this period. Special function sites include cemeteries, such as 8DA2132, occupying a limestone ridge overlooking Biscayne Bay (Carr and Beriault 1984). This and other sites (e.g., 8DA1082) suggest a relatively substantial and permanent Late Archaic presence in southeast Florida. Investigations in the Everglades have recently begun to yield evidence for extensive Late Archaic activity in the region. Much of the data comes from contexts that are presently inundated or below peat levels and is not readily encountered during surveys (Carr 2002).

Until recently, settlement patterns for the Late Archaic south of Lake Okeechobee were usually described in terms of coastal populations who occasionally ventured inland to procure certain resources unavailable on the coast (Widmer 1988). It is now widely realized that many interior sites or site components date to Late Archaic times. Such sites may represent a separate interior, aceramic Late Archaic adaptation that has been referred to as the "Glades Archaic" (Pepe 2000:29–32; Pepe and Jester 1995; Wheeler et al. 2002:143). Faunal bone deposits at some of these sites are extremely dense, suggesting more than just seasonal or temporary use.

A related site type is the "Knoll site," which Carr et al. (1991:125–126) identified in the eastern Everglades during a survey of western Broward County. They describe Knoll sites as small, natural elevations found in some parts of the eastern Everglades that provided dry ground during the Late Archaic (circa 5,000-3,000 B.P.) but were ultimately covered by rising water levels. Late Archaic peoples used these knoll sites for habitation, subsistence activities, and in some cases, burial (Wheeler 2004:49).

Late Archaic cemeteries are also known for the study area, especially in the Everglades. In most cases (85%), such cemeteries are located in habitation sites, typically within spatially confined areas, showing little preference for the part of the site they occupy (Felmley 1991). One additional Late Archaic site type that is known mainly in the area around Lake Okeechobee is the circle-ditch. Johnson's (1996) earthwork typology suggested that these sites represent one of the earliest earthwork types constructed in southern Florida, probably during the Late Archaic.

By the end of the Archaic period, circa 2,500 B.P., regional variation in pottery increased and dense village middens began to accumulate, suggesting a further increase in sedentism. There is also evidence for population growth and contact with groups to the north, south, and west. It appears that Florida groups at this time shared many ideas and traits with their more northern neighbors (Milanich 1994:108).

Glades Period (2,500–400 B.P.)

After circa 2,500 B.P., distinct regional cultures developed in south Florida that are defined primarily on the basis of pottery styles and associated material culture. The region encompassing the current project area is the Glades Region, which represents a refinement of John Goggin's (1947) original classification scheme.

John Goggin originally defined all of southern Florida, including the present study area, as the "Glades Area" (Goggin 1948; n.d.). His definition focused on a predominance of sand-

tempered pottery, a technology based on bone and shell tools, and an economy based on freshwater and marine resources (Goggin 1948; n.d.), but has been refined over the years. According to the most recent definition (Milanich 1994:xix, 298–311), the Glades Area comprises all of southern Florida to the east and south of Lake Okeechobee as far north as St. Lucie County as well as the southwestern coast of Florida south of Naples.

The Glades Area is the largest archaeological culture area in southern Florida. As a result, it is understandably diverse environmentally. The Glades Area includes several distinct ecological/physiographic regions, including the Big Cypress Swamp and the Everglades. An important, although localized physiographic feature is the tree island and tree hammock. Tree islands can be islands within the southern Florida environment, surrounded by water on all sides, while tree hammocks are clusters of hardwood vegetation surrounded by wetland vegetation species.

Pottery styles are the basis for defining Glades Region chronology, which was first developed by Goggin (n.d.) and later refined by Griffin (2002; see Table 1 below). This chronology works very well throughout most of the Glades Area.

A complete list of artifacts for the Glades Area is provided in Griffin (2002:72–122). In addition to the pottery types mentioned in Table 3 and several others that are included in Griffin (2002), there are a wide variety of artifacts manufactured from bone, shell, stone, and wood known for the Glades Area. Bone artifacts were manufactured from parts of several species, including deer antler and bone, shark teeth, fish spines and vertebrae, and turtle shell. Artifacts made using these materials include picks, hammers, adzes, celts, chisels, billets, anvils, awls, scrapers, fishhooks, gorges, points, daggers, spatulas, beads, rings, ornaments, net gauges, and pins.

Table 3. Glades Archaeological Area Chronology

Period	Time Frame	Types of Identifying Artifacts
Glades IIIc	496–circa 300 B.P.	Same as previous period, plus historic artifacts
Glades IIIb	600–496 B.P.	Glades Tooled, sand-tempered plain, and St. Johns. Check Stamped present; Surfside Incised and grooved lips are not present
Glades IIIa	800–600 B.P.	Plantation Pinched no longer present; Sand-tempered plain and grooved lips persist; appearance of Surfside Incised and St. Johns Check Stamped
Glades IIc	900–800 B.P.	Almost no decorated pottery; some grooved lips but no more lip arcs or crimped rims; Plantation Pinched appears
Glades IIb	1,100–900 B.P.	Sand-tempered plain and Key Largo Incised persist; Matecumbe Incised appears; none of the earlier decorated types are present; certain rim modifications (incised lip arcs and lip crimping and grooving) also appear for the first time
Glades IIa	1,250–1,000 B.P.	Appearance of Key Largo Incised and Miami Incised; sand-tempered plain and Opa Locka Incised persist; none of the earlier decorated types are present
Glades I Late	2,000–1,250 B.P.	First appearance of decorated pottery: Fort Drum Incised, Fort Drum Punctated, Cane Patch Incised, Gordon's Pass Incised, Opa Locka Incised, Sanibel Incised; sand-tempered plain persists
Glades I Early	2,500–2,000 B.P.	First appearance of sand-tempered pottery; no decoration

(Janus Research 2008)

Glades Area shell artifacts are most commonly manufactured from marine shells such as *Busycon*, *Strombus*, and *Pleuroploca*. Shell artifacts include dippers, vessels, saucers, spoons, picks, hammers, celts, adzes, gouges, chisels, awls, hones, knives, weights, beads, gorgets, and plummets. Stone was used infrequently as formal tools because of the lack of suitable material, although local sandstone and limestone were used in some cases. Stone artifacts in the Glades Area are usually those that have been traded into the area from farther north. Such artifacts include greenstone celts, plummets, and other artifacts.

Finally, one important Glades Area wooden artifact is the dugout canoe. These canoes were manufactured by hollowing out cypress or pine logs. Canoes are usually found in lake or pond beds that are exposed during drought conditions, or through some sort of dredging operations at such wetland locations (Wheeler et al. 2003). Artifacts from the Key Marco site indicated the existence of sophisticated woodworking traditions during this time (Milanich 1994:300–308; Milanich and Fairbanks 1980:247).

Faunal analysis at the Honey Hill site revealed that the lower midden levels (presumably Glades I and II) indicate an increase in the use of bony fish, whereas the upper midden levels (Glades II and III) show an increase in turtle use and a decrease in the importance of bony fish. Keel's (1990) analysis of faunal remains from the Guy Bailey site (8DA4752), a small Everglades site dating to the Glades IIa and IIb periods, follows the pattern documented at Honey Hill as well. Keel (1990:53–56, 99) indicated that freshwater bony fish and reptiles accounted for the majority of the biomass at Guy Bailey, with fish representing 62 percent of the minimum number of individuals (MNI) and 36 percent of the biomass, followed by reptiles, representing 22 percent of the MNI and 56 percent of the biomass (snakes accounted for 28 percent of the total estimated biomass). At the Sheridan Hammock site (8BD191), dating to the Glades IIIa and IIIb periods, Fradkin (1996) found that freshwater fish and reptiles were the most significant classes represented, with meat weight/biomass contributions almost equal for the two groups. This pattern, evident not only at Honey Hill, but also at other Everglades sites, suggests a broader change in food procurement through time (Wheeler 2004:18).

All tree islands and hardwood hammocks in the interior of southern Florida have the potential to contain an archaeological site, most of which are black dirt middens. Until recently, these midden sites were considered to be temporary, seasonal campsites used by coastal dwelling populations during "logistical" forays into the interior wetlands of southern Florida for the procurement of freshwater resources (Griffin 2002; Widmer 1988). The ubiquitous occurrence of this site type, and the dense midden assemblages at some of them, have led several researchers to suggest that at least some of these sites were inhabited permanently by groups who lived in the interior marshlands of southern Florida year-round (Carr and Beriault 1984:3; Loubser et al. 2005; Pepe 2000; Pepe and Jester 1995; Wheeler et al. 2002). Future research focused on site size, density, and distribution could allow for the recognition of settlement patterns among permanent residents of the interior portions of southern Florida (Janus Research 2008).

Site types and settlement patterns within the Glades period are a subject of much ongoing debate. These debates are hindered by either a reliance on descriptive terms not directly linked to past behavior, or the application of site typologies from adjacent regions. The discussions are also clouded by two conflicting theories: 1) the "Circum-Glades" peoples were not living in the eastern Everglades, but rather were only using the area for short-term resource extraction (Milanich and Fairbanks 1980); and 2) that both habitation and resource extraction sites were present in the non-coastal portions of the eastern Everglades (Carr 2002).

There are multiple site typologies from adjacent regions that have been applied to South Florida. The three major typologies are summarized in Table 4 Though these typologies continue to be used, all have major limitations. These limitations are discussed in detail in the Research Design below.

Table 4. Site Typologies Used in South Florida

Reference/Area	Site Type	Description
Taylor (1985) and Griffin (2002)/South Florida	Shell Works	Large complex shell sites with mounds, flat areas, ridges, and middens, found in mangrove swamps and along coastal river margins
	Shell Middens	Shell discard piles, no elaborations, found in mangrove swamps and along coastal river margins
	Eroded Beach Sites	Multiple functions, found in Cape Sable or inland along mangrove edge (old coastline)
	Earth Middens	Single or multiple earthen midden mounds
	Relic Shell Ridges	Natural features formed by wave action, used prehistorically
	Miscellaneous	Burial mounds, earthworks, historic house sites, Seminole forts, etc.
Athens (1983)/ Big Cypress Preserve	Primary Habitation	Middens with one or more refuse mounds
	Secondary Habitation	Middens over 8 inches (20 centimeters) thick, no refuse mounds
	Resource Procurement/ Processing Stations	Midden under 8 inches (20 centimeters) thick
	Mound Sites	Burial, sand, or other non-habitation mounds, no midden deposits
Widmer (1988)/ Big Cypress Preserve	Large Nucleated Villages	10 hectares or larger, 400+ individuals
	Small Villages	3–4 hectares, 50 individuals
	Fishing Hamlets/ Collecting Stations	Temporary use locations
Wheeler (2004)/ Southeastern Florida	Accreted Middens	Refuse deposits only, shell or earth, habitation sites
	Cemeteries	Areas of formal interment within habitation sites
	Temple Mounds	Formally constructed mounds of sand, shell, or midden
	Earthworks	Linear or crescent-shaped embankments, typically associated with habitation sites
	Constructed Habitation Mounds	Areas deliberately elevated with freshwater much/marl, used for habitation, documented on tree islands

Ten Thousand Islands

The southwestern coast of Florida, south of Naples, and extending inland to include the Big Cypress Swamp, is considered by some to be the Ten Thousand Islands area, district, or sub-region. Carr and Beriault (1984) considered the Ten Thousand Islands to be a separate archaeological culture area, while Griffin (2002) preferred to consider it a district within the larger Glades area, as does Milanich (1994).

The Ten Thousand Islands is distinguished by the presence of what has been called the Gordons Pass ceramic complex (Goggin n.d.). The Gordons Pass Complex is marked by the co-occurrence of Gordons Pass Incised and Sanibel Incised pottery. Sites with these pottery types have been documented in the Big Cypress Swamp (Ehrenhard et al. 1978) and other inland locations within the region (Azzarello et al. 2006). The absence of these ceramic types in the Caloosahatchee area to the north of the Ten Thousand Islands helps to distinguish between these two regions. Similarly, these ceramic types are almost unknown in southeastern Florida, helping to distinguish the Ten Thousand Islands from the rest of the Glades area. However, the distinction is short-lived, as Gordons Pass Incised and Sanibel Incised are present only for a

few hundred years (A.D. 500-750). This is one of the main reasons that Griffin disagrees with raising the Ten Thousand Islands district to a full-blown archaeological culture area (Griffin 2002; Janus Research 2008).

HISTORIC CONTEXT

A thorough treatment of the history of the general project area was completed in July 2009 by the NPS (Buttram et al. 2009), from which the following discussion has drawn. The NPS study provides a history of the Old Ingraham Highway, its associated canals, and historical development in the current study area. Built between 1915 and 1922, the Ingraham Highway was the first road to provide access into the area that is now Everglades National Park. As part of the highway's construction, a series of associated canals were built to provide road fill and drainage for the area, most prominently the Homestead and East Cape canals.

Spanish and British Florida

The first European explorers to the region arrived in 1513 and encountered people of the Glades III culture. Contact with Europeans led to the addition of metal, glass, ceramic, and other new materials to aboriginal material culture assemblages. But interaction also caused significant changes to aboriginal societies, and by the mid-eighteenth century, the native population had largely disappeared from the region (Milanich and Fairbanks 1980:237; Ransom et al. 2001:9–10).

Diverse refugee groups from northern Florida and Georgia ultimately occupied the region depopulated after European contact, eventually becoming known as the Seminoles. They used many of the same sites as the prehistoric aboriginal occupants but site distributions show more selective and specialized use, as some sites were used for residential camps, some exclusively for cultivation, and some as hunting camps. Sites with cemeteries or single graves are also known. Seminole populations initially favored locations in the eastern rim of the Everglades, but by circa 1900, pressure from white settlers pushed them west and concentrated settlement into a smaller number of tree islands (Carr 2002:198–199).

First Spanish period.

Learning of a French threat to Spanish interests in the Caribbean and La Florida, the Spanish Crown sent Pedro Menéndez de Aviles with 800 men in his fleet to eliminate the threat. Menéndez's fleet arrived at the mouth of the St. Johns River in September 1565 to find that Jean Ribault's French fleet had anchored the previous week. Being undermanned, the French fleet cut anchor and sailed off. Menéndez sailed south and established a fortified camp among the Seloy Indians at a site he called St. Augustine. Menéndez decided to attack the French Fort Caroline on foot and marched for two days. He quickly overtook the undermanned garrison and renamed it Fort San Mateo. One hundred and thirty-two French colonists were killed and the women and children were captured (Milanich 1995:148–150, 156).

Menéndez had grand plans for La Florida. He envisioned a series of garrisons along the coast of Florida to protect Spanish shipping in the Gulf, Atlantic, and Bahama Channel; an overland route from Santa Elena in South Carolina to New Spain in Mexico; and inland water routes connected by the Florida river systems. After the victory at Fort Caroline and the massacre and capture of other shipwrecked French, Menéndez sailed south to the St. Lucie Inlet and established Santa Lucia. Other garrisons were established at Mound Key, near Tampa, and at the mouth of the Miami River at Tequesta. Menéndez established the 20-man garrison at Tequesta in 1567 with captured deserters from St. Augustine. Shortly thereafter, Jesuit brother Francisco Villareal founded a Tequesta mission there (Milanich 1995:156–158).

Due to flawed perceptions of geography, lack of exportable mineral wealth, native aggression, and failure of the missions to build support among the native peoples, the settlements and forts established by Menéndez were short lived.

Because of their inability to recruit a significant number of converts, the Jesuits withdrew from Florida in 1572. Following the death of Menéndez in 1574, raids by native peoples, supply problems, and the abandonment of Santa Elena in 1587, St. Augustine became the only Spanish town in La Florida (Milanich 1995:160–163). Because the local native populations in south Florida were relatively far from the Spanish mission provinces and settlements in north Florida, they escaped the main thrust of Spanish colonial initiatives (Milanich 1995:63–65). However, it has been reported that later in the period, fishermen from Havana were transporting Indians from the Biscayne Bay area to Cape Sable, and that the Indians spoke Spanish "because of the frequent commerce with the boatmen from Havana" (Hann 1988:2).

The British period.

Florida became a British colony in 1763 with the signing of the Treaty of Paris at the close of the French and Indian War. By this time, Florida was inhabited by groups of natives that had been raiding the Spanish missions for decades and had weakened their hold on the colony. During the late seventeenth and early eighteenth centuries, new groups of native people entered the state. From 1702-1740, Creek and Yamasee Indians came in to raid Spanish missions and their native allies. Eventually, however, the Yamasee became Spanish allies. From 1740-1812, early Creek villages were established in northern Florida in old mission provinces of Apalachee and Timucua around Tallahassee and Gainesville and on the Apalachicola River and Lower Suwannee River. Pressure in Alabama and Georgia encouraged Upper and Lower Creeks to migrate to Florida from 1812-1820 (Covington 1993:5). These groups soon became known as the Florida Seminole, taken from the Spanish word cimarron or runaway.

When the British gained control of Florida, the peninsula was sparsely populated. In fact, more than 3,000 people abandoned Florida when the Spanish lost power. To stimulate growth, the English offered a relaxed land-grant policy and posted inviting advertisements. A large colony of immigrants was established at New Smyrna in 1766, and scattered plantations and homesteads were located along the Florida east coast, some along the Indian River. During the American Revolution, Florida became a haven for loyalists, mainly from Georgia and South Carolina. The population of the colony swelled from approximately 3,000 in 1776 to 17,000 in 1784 (Adams 1990:3–4).

Second Spanish period.

The Spanish reclaimed ownership of Florida in 1783 after the American Revolution, as Spain had supported the successful Americans. Spain, however, had true control only over previous settlements, namely St. Marks, Pensacola, and St. Augustine. They lacked the resources to develop the area, and the presence of hostile Indian groups played into the decision not to expand. Most of the settlements, plantations, and homesteads established during the British period of power along Florida's East Coast were abandoned (Adams 1990).

During the Second Spanish period, Florida became a haven for runaway slaves and provided a place for contraband trade and slave smuggling. The combination of angry, homeless Indians; escaped slaves; British arms merchants and slave traders; and frontiersmen created a land of lawlessness and unrest. To further add to the confusion, new settlers coming from Georgia, Alabama, and South Carolina were interested in adding Florida to the United States (Adams 1990).

Florida Territorial Period

Andrew Jackson invaded Florida during the First Seminole War in 1818. It became clear that Spain could no longer control the region and it was transferred to the United States in 1821 (Adams 1990). Andrew Jackson was named as the first Governor of the Territory of Florida in 1821 and was commissioned by Secretary of State John Quincy Adams "to receive, possess, and occupy the ceded lands; to govern the Floridas; and to establish territorial government" (Tebeau 1971:117). While

population increased considerably during the 1820s, poor transportation and an outbreak of yellow fever limited growth. In 1825, East Florida could claim only 5,077 inhabitants (Adams 1990:5).

The relative prosperity of the 1820s was shortened due to hostility between the settlers and the Seminole Indians, culminating in the Second Seminole War (1835-1842). What was to follow was seven years of brutal conflict resulting in unimaginable hardships to both Floridians and the Seminoles. While the Seminoles had used the Everglades for hunting prior to the Second Seminole War, it was this conflict that initiated more intensive occupation, with small, dispersed settlements in the Everglades, many of their sites being located on tree islands formally occupied in prehistoric times. After numerous battles throughout the 1830s, most of the Seminoles moved deep into the Everglades and much of the hostilities subsided (Mahon 1967).

Fort Poinsett, on East Cape Sable, was established and occupied from February to May 1838, and perhaps intermittently thereafter (Paige 1986:212–213). It was a star-shaped fort made of sand and wood, and Tebeau (1971:126–127) stated that the outlines of the fort were still visible prior to the 1935 hurricane. This location is at the southern tip of today's East Cape Canal.

In 1842, President John Tyler realized that the total removal of the Seminole population to reservations outside of Florida was impossible. On February 5, 1842, the commander of all troops in Florida, Colonel William Worth, recommended that the Seminoles be allowed to remain in peace in Florida. Secretary of War John Spencer ordered the termination of the Second Seminole War and the conflict came to an end. The Seminoles were allowed to remain on a reserve in southwest Florida, but the war had been costly to the Seminoles. A total of 4,420 Seminoles had been sent to Indian Territory in those seven years, out of an estimated population of 5,000 in 1835. Only about 600 hundred remained in Florida after the close of the war (Adams 1990:6; Covington 1993:106–109).

Due to the peace that had finally come to Florida, the federal government initiated a plan to attract settlers. The Armed Occupation Act was signed into law on August 4, 1842. For a period of nine months, 200,000 acres between Gainesville and the Peace River became available for those who would brave the inhospitable frontier and risk the possibility of Indian attack. The land had to be two miles or more from a fort and not near the coast. Each family head or single man over 18 years of age would receive 160 acres of free land if he improved and defended five acres of land continuously for five years. Some land was given to current residents who sought to increase their existing landholdings, but the majority went to newcomers, scouting out land suitable for agriculture within the peninsula (Covington 1993:110; Grismer 1950:99).

The Second Seminole War had provided a crude system of roads and trails from coast to coast that could be used for homesteaders and ranchers. In addition, military maps of the interior were created that were useful for later settlement. The war also provided South Florida with a series of forts that could be used as bases and settlements where supplies could be landed and taken to the interior or from the interior and loaded for export (Mahon 1967).

Between 1849-1854, distrust between the federal government and the Seminoles, settlers' insecurity about their safety, and lack of confidence in the federal government to find a peaceful solution to the "Seminole problem" created an atmosphere of unrest. Throughout the interlude between the Second and Third Seminole Wars, relations between white settlers and Indians were mostly peaceful, although both sides were still deeply mistrustful of the other. In August 1854, Secretary of War Jefferson Davis decided to force their removal and declared that if the Seminoles did not present themselves for removal, the military would use force. As a result of Davis's declaration, an Indian council was held near Taylor Creek northeast of Lake Okeechobee in

the fall of 1855. At the council, it was decided that the Seminole would attack settlers and military personnel at every opportunity.

Numerous skirmishes and battles ensued between the military and the Seminoles, and raids continued on the settlers. While the Seminoles were greatly outnumbered, the militia was poorly trained and organized, and the Seminole tactics developed during the Second Seminole War, in many cases, proved to their advantage. It was difficult to surprise the Seminoles and most of the time they were aware of the location of the troops and kept out of their way. Big Cypress Swamp and the Everglades also proved difficult places to conduct a battle, as the Seminoles were much more familiar with the terrain and could elude detection. Even with their elusiveness, the constant threat of attack and the persistence of the military took a toll on the few remaining warriors and their families. In the project vicinity, Fort Cross was established on Cape Sable in January 1857; it was only occupied for six months, and there are reportedly no remains of the post that can be found (Paige 1986:213–214).

While the final major conflict of the war was centered on Bowlegs and his bands in the Big Cypress, negotiations were underway for a resolution to the war. A treaty was negotiated between representatives of the Creeks and Indian Territory Seminoles on August 7, 1856 to give 2,170,00 acres of land in Indian Territory separate from the Creeks (Covington 1993:141). On March 27, 1858, the offer was accepted in council and on May 4, 38 men and 85 women and children boarded the Grey Cloud at Fort Myers and sailed to Egmont Key and then to New Orleans, ending armed conflict with the Florida Seminole (Covington 1993:143, 145). While additional diplomatic attempts were made to relocate the few remaining scattered bands of Seminoles in Florida, they were left to live in peace; however, their struggle to maintain their traditional way of life continues now. Today, the Brighton Indian Reservation is located near the northwest shore of Lake Okeechobee just north of Fisheating Creek. Other reservations include the Tampa Orient Road Reservation, Immokalee Farms, State Reservation (east of Big Cypress Reservation), Dania-Hollywood Reservation in Broward County, and Miccosukee Reservation in Dade County.

Florida At The Turn Of The Century

Significant growth began during the last decade of the nineteenth century. Meinig (1998:223) characterized Florida during this period as a subtropical colony of the North rather than an extension of the South, because Northern businessmen and entrepreneurs drove development. To promote internal growth, the Florida government began to offer considerable land grants for railroad construction. The work of one railroad magnate, Henry M. Flagler, accounted for most of the growth of eastern and southern Florida. Henry Morrison Flagler, formerly a partner of John D. Rockefeller, moved to Florida in the 1880s and built the Ponce de Leon hotel in St. Augustine to accommodate northern tourists in the winter. He later expanded this enterprise to include two neighboring hotels and built the Florida East Coast Railroad to bring clientele south from Jacksonville. In 1894, the railroad reached West Palm Beach and, by 1896, Flagler had extended the railroad to Miami and was contemplating building an overseas railroad to Key West (Meinig 1998:56–59).

In 1892, an expedition through the Everglades was made to determine whether the area could be drained or support a railroad. James Edmundson Ingraham, president of the South Florida Railroad Company of the Plant system, led this expedition. At this same time, Henry M. Flagler realized the potential of the area and planned to continue his railroad down the coast. To complete this task, Flagler hired Ingraham as his general agent, and after 1892, Ingraham handled most of Flagler's operations south of Daytona Beach. Ingraham later became land commissioner and a vice president of the Florida East Coast Railway Company and president of the Model Land Company and other auxiliary organizations of the Flagler system (Marchman 1947).

In 1905, construction on the railroad began south of Homestead. Seven years later, on January 22, 1912, Henry Flagler arrived in Key West on the first Florida East Coast Railway passenger train on the overseas railroad, which crossed 128 miles of water and keys to connect Key West with the mainland of Florida. The railroad united the long isolated island city with the rest of Florida and was regarded by Flagler as the crowning achievement of his life. By 1916, the Florida East Coast Railroad had 522 miles of mainline from Jacksonville to Key West and 217 miles of branch lines. The southern extent of the rail line was badly damaged in the Labor Day hurricane of 1935 and eventually replaced by an automobile highway (Gannon 1993).

As an incentive for railroad construction, the State of Florida offered Flagler 3,700 acres of state land for every mile of track the Florida East Coast Railroad lay. When the railroad completed the line to Key West in 1912, the Model Land Company (a subsidiary of the railroad created to manage its property) placed a claim for 2,050,000 acres. The State of Florida did not control that much territory, and Flagler settled for 260,000 acres of land in Broward, Dade, and Palm Beach Counties. The majority of this property, 210,000 acres, was in South Florida and included all of Cape Sable. Two Florida East Coast Railroad subsidiaries, the Model Land Company (also known as the Cape Sable Land Company) and the Dade Muck Company (which already owned land in the area), managed this new property (Paige 1986; Will 1984). According to Will (1984), the Model Land Company sold this land to the National Park Service for $295,000 when Everglades National Park was created.

Drainage and Development of the Florida Everglades

In addition to railroad construction, the State of Florida saw the drainage and development of the Everglades as a way to promote growth. In June 1847, U.S. Secretary of the Treasury Robert J. Walker assigned Buckingham Smith of St. Augustine, Florida, the task of surveying the Everglades and reporting on the feasibility of reclaiming the swampland. After leading an exploration party through the Everglades, Smith reported to Congress that the area could be reclaimed by a series of canals. He also noted that such a plan would kill numerous swamp animals, but this loss was acceptable for the creation of new agricultural lands (Paige 1986). The State of Florida could do little with Smith's report until 1850, when President Millard Fillmore signed "An Act to Enable the State of Arkansas and other States to Reclaim the 'swamp land' Within Their Limits" and gave Florida jurisdiction over the Everglades.

The following year, Florida officially received a land grant for approximately 20,000,000 acres and created the Board of Internal Improvements to administer this newly acquired land and oversee its drainage. Because of financial and organizational difficulties, the Internal Improvement Board did little to drain the Everglades and sold Hamilton Disston four million acres of swampland for one million dollars in 1881. Disston then built a canal from Lake Okeechobee to the Caloosahatchee River to drain water into the Gulf of Mexico. The canal, however, did not reduce the water level of the lake and reclaimed less land than expected. The contract for drainage operations ceased in 1889, and Disston died before he could renew it (Paige 1986).

Much of south Florida's development at the end of the nineteenth and early twentieth centuries relates to the workings of Henry Flagler's Florida East Coast Railroad (FECRR). Flagler received Florida land grants amounting to several million acres between 1885 and 1912 under the Swamp Land Grant Act of 1850. Because the Federal government controlled this program, and preferred land going to reclamation projects rather than railroads, it terminated the program. Consequently, Flagler did not receive much of the land promised him. Following a legal dispute with the state's Internal Improvement Fund, he settled for title to 260,000 acres, the largest portion of which—210,000 acres—was in the Cape Sable area. Flagler went on to increase his holdings through purchases from other corporations and individuals, or by taking over companies having

their own properties. He established a Land Department within the FECRR to manage the company's real estate. In 1900, Flagler split off this department as a separate corporation, the Model Land Company (Brown and Hudson 1996:48–50).

James Ingraham initiated drainage efforts in the Cape Sable area while working for Flagler's companies. At one time a president of Henry Sanford's South Florida Railroad Company, Ingraham took part in an 1892 survey of the Everglades on behalf of railroad executive Henry Plant to identify possible routes to gain access to Key West (via ferry). Although Ingraham found the region unsuitable for rail travel, he became convinced it could be developed for farming. Meanwhile, he reported that a route to Key West from the peninsula's east coast was the most practical for a rail line. Henry Flagler took note of Ingraham's appraisals of both railroad and land improvement prospects, and hired him as a vice-president of the FECRR as well as made him head of its Land Department. Flagler later put Ingraham in charge of the Model Land Company and other real estate operations of the FECRR (Brown and Hudson 1996:65; Vogel 2015).

The Model Land Company under Ingraham aggressively and successfully marketed south Florida. Among the strategies for growth, the company established "colonies" in new areas to encourage settlement as well as undertaking land reclamation and transportation programs (Brown and Hudson 1996). Around 1914, Ingraham instigated construction of a road (later the Ingraham Highway) between Royal Palm State Park at Paradise Key and the town of Flamingo on Florida Bay as an inducement to investors. The road was constructed between 1915 and 1919, while the adjacent ditch supplying building material became the Homestead Canal (Hammond 2008:104).

Ingraham planned on establishing a new settlement west of Flamingo once the new highway was completed. He began efforts at reclaiming land in 1919 with a westward extension of the Homestead Canal toward Whitewater Lake (later Lake Ingraham). Ingraham's death in 1924 sapped the project of much of its momentum, while the Florida real estate crash in 1926 effectively ended efforts at developing the region (Hammond 2008:105). By this time, settlers and scientists had come to understand that the Everglades was poorly suited for cultivation (Douglas 1947:379; Grunwald 2006:166; McCally 1999:122–125), which further detracted from potential investment. Also around the same time, Ernest Coe began promoting the idea of establishing a national park in the Everglades. The concept received official approval in the Federal government in 1934. Over the following years, the state gradually acquired land for the park until, in 1946, Governor Millard Caldwell set up the Everglades National Park Commission to accomplish this process more efficiently. Finding that the majority of the Everglades had no potential for agriculture, the commission invoked eminent domain laws to obtain the necessary land in a single action, in effect freezing all future speculation and development (Douglas 1947:380–381). The Cape Sable area went from private ownership to public land during this period.

When Ingraham began the western extension of the Homestead Canal, the Cape Sable area was sparsely occupied by settlers raising crops for shipment to Key West. Wanless and Vlaswinkel (2005:25) noted that the ditches built in the project area date from the early to mid-1920s and reflect a series of dredging projects intended to drain the interior freshwater marsh for cultivation and grazing.

Raulerson Brothers Canal, Slagle Ditch, and House Ditch

The construction of the Raulerson Brothers Canal is a bit of a mystery. The name Raulerson Brothers refers to the sons of Noel Rabun Raulerson (1820-1901), a cattle rancher from the Kissimmee area near Basinger, Florida. Noel had 13 children, seven of which were sons: William H. Raulerson (1841-1914), John R. Raulerson (1843-1864), David Early Raulerson (1846-1935), Noel Raulerson Jr. (1848-1951), Archibald Raulerson (1850-1895),

Peter Raulerson (1857-1947), and Hardey Raulerson (1865-1907) (Ancestry.com 2015; Hendry 2012). In 1884, James Waddell purchased 1,120 acres at Cape Sable for a coconut farm. Some portion of this land was acquired from the existing pre-emption claims by the "Raulerson brothers" from that same year (Shaw 2008:37). The "Raulersons of Kissimmee" were also noted as making an attempt at cattle grazing at Cape Sable around 1904 (Shaw 2008:65). Two of Raulerson brothers, Noel Jr. and William, had purchased their father's cattle herd in 1879 (Parker n.d.:25–28). The Raulerson brothers had reportedly left Cape Sable by 1907, as evidenced by abandoned structures attributed to them (Shaw 2008:65).

The confusion regarding the Raulerson Brothers Canal's construction stems from the source of the name. Was the canal actually built by the Raulerson Brothers, presumably for draining lands for cattle grazing? If so, it was likely built between 1904 and 1907. It is also possible that the canal was named for the Raulerson Brothers simply because it was constructed on land either owned by them or otherwise attached to their name. If this is the case, the canal may have been built after 1919 along with the other drainage structures in and around Lake Ingraham (see below). The canal was definitely built prior to 1928 as it appears on an aerial photograph reproduced by Wanless and Vlaswinkel (2005:38).

Slagle Ditch and House Ditch date to the 1920s and reflect efforts at reclaiming the marshy Cape Sable area for agriculture and land development (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The ditches cut through the marl ridge along the southwest and south margins of Cape Sable and connect the interior freshwater marsh to Lake Ingraham and Florida Bay. Slagle Ditch and House Ditch, along with the Homestead Canal, J Canal, East Cape Canal, Middle Cape Canal, and Ingraham Canal, were built by the Model Land Company, a holding of the Florida East Coast Railroad, which was the largest land owner in the Cape Sable area during the early twentieth century.

The U.S. Coast and Geodetic Survey East Cape to Mormon Key chart illustrates the area north and west of Whitewater Lake (Lake Ingraham). The 1924 edition shows no canals in this area, while the Raulerson Brothers Canal (and nearby Middle Cape Canal) appear on the 1932 edition (U.S. Coast and Geodetic Survey 1924; 1932). A 1928 aerial photograph reproduced in Wanless and Vlaswinkel (2005:38) shows these canals in place by then.

Slagle Ditch and House Ditch to the south apparently were built at the same time. The earliest source to illustrate these structures was the U.S. Geodetic Survey Alligator Reef to Sombrero Key chart of 1933, which indicated that both canals were in place by that year (U.S. Coast and Geodetic Survey 1933). The 1957 edition of the chart also shows the road (now Coastal Prairie Trail) from Flamingo extending west to House Ditch (U.S. Coast and Geodetic Survey 1957). Wanless and Vlaswinkel (2005:24) noted that this road was actively used despite treacherous bridge crossings at Slagle's and House ditches.

Construction of these structures exposed Lake Ingraham and the interior freshwater marshes to tidal influence, saline intrusion, and erosion. To counteract these effects, Everglades National Park tried blocking the canals with earthen plug in the 1950s and 1960s. After these failed by the early 1990s, sheet pile dams were installed, which also failed (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The current Cape Sable Canals Dam Restoration project reflects efforts to provide solutions to these issues.

Everglades National Park

Everglades National Park was created out of the need to conserve South Florida's ecosystem. It was becoming obvious to the residents of South Florida, the state, and the nation that the abundant wealth of natural resources in the Everglades were going to be used up (Tebeau 1963:129).

Lumbermen cut the cypress, pine, and mahogany at the end of the nineteenth and beginning of the twentieth centuries. Clam canneries had exhausted the great clam beds (Tebeau 1963:125). Sport fishermen increased in number and the supply of game fish decreased. Plume hunters pushed many species of bird to near extinction. Animals that were once plentiful – alligators, crocodiles, manatees, bears, otters, raccoons, deer and turkey – had disappeared from much of the land (Tebeau 1963:126). Additionally, rare plants and animals were being collected to almost complete loss. Natural fires threatened to destroy the food and living area of other plants and animals, as did intentional fires set by hunters to drive out game (Tebeau 1963:126).

A movement to create the park began in the early twentieth century as development in south Florida took hold. Conservation efforts began in the early twentieth century to battle the side effects from dredging and draining the Everglades. A 4,000-acre parcel, known as Royal Palm State Park on Paradise Key, was the first section protected in 1916. The drive to establish the park gained momentum in the 1920s when activists like Ernest F. Coe formed the Tropical Everglades National Park Association to lobby for the park's creation. Coe was a landscape architect who came to Miami in the 1920s. He is sometimes called the "Papa of the Everglades National Park" (Tebeau 1963:128). Other supporters of the Everglades National Park were Dr. John Kunkel Small and Dr. David Fairchild who recognized that many of the smaller hammocks had rare plant life and should be managed by the government.

Support to create a National Park in the Everglades was high, however, many sportsmen were conflicted as the consequences of their use of the area was regulated (Tebeau 1963:127). The process of creating a National Park in the Everglades would take a long time and those fighting for its cause would have to win several battles before it would happen. On December 6, 1947, President Harry S. Truman, culminating years of efforts by dedicated conservationists, formally dedicated the Everglades National Park – 460,000 acres preserved for purely biological, and not geological, resources, at Everglades City. The park has increased in size several times and it is now the largest designated wilderness east of the Rocky Mountains with a total area of 1,296,500 acres. The most recent addition is the Eastern Everglades Expansion Area, a 107,000-acre preserve that was set aside in 1989.

Today, efforts to battle the degradation of the Everglades ecosystem continue. Since its dedication in 1947, the Everglades has been designated a Wetland of International Importance on June 4, 1987; a World Heritage Site on October 24, 1979; a designated Wilderness on November 10, 1978; and an International Biosphere Reserve on October 26, 1976. The Comprehensive Everglades Restoration Plan (CERP) represents a concerted effort to restore a more natural hydrology to the environment of southern Florida.

FLORIDA'S FEDERALLY RECOGNIZED INDIAN NATIONS

The project area's history is tied to the Euro-American settlement of southeastern Florida, its encroachment into the Everglades, and Native American response to this encroachment. Significant themes in the history of the Everglades involve land reclamation and water management, as well as the distinctive Gladesmen Culture. More recently, efforts at managing water resources more effectively and restoring the Everglades ecosystem have been important. This section provides an overview of the Federally-Recognized Native American Seminole and Micosukee tribes and the development of Broward and Miami-Dade counties and discusses important themes related to the history and culture of the Everglades.

The Seminole and Miccosukee tribes share common origins in Southeastern prehistory and have a shared history in Florida. The primary difference between them is political, and dates to the years after the Indian Reorganization Act

of 1934, when native peoples and tribes were encouraged by the U.S. government to establish tribal constitutions and formal governance policies (Weisman 1999:29). Looking back, it can be said that the Seminole and Miccosukee of today are proud descendants of those who refused to sign a treaty or move into non-local territory.

Early Historic Period Origins

Although little is known of the languages spoken by the earliest native groups of southern Florida, the place names and native words recorded by early European travelers suggest that southern Florida languages differed from the Timucuan and Apalachee languages of northern Florida (Milanich 1995). Also, according to archaeological evidence and early European travelers' accounts, the southernmost Florida Indians were primarily gatherer-hunters, while those north of present day Cape Canaveral practiced agriculture. Milanich (1995:56) noted that "a 1675 Spanish document lists the groups along the Atlantic coast south of Cape Canaveral as the Ais, Sanaluces, Jeagas, Jobeses (Hobe), Viscaynos, and Matecumbres." The Tequesta and Calusa also figured prominently in the region at that time.

One early account from Fontaneda noted that the powerful Calusa Indians of southwestern Florida ruled the Lake Okeechobee region where there were "many towns of thirty to forty inhabitants each; and as more places there are in which people are not so numerous. They have bread of roots, which is their common food the greater part of the time; and because of the lake, which rises in some seasons so high that the roots cannot be reached in consequence of the water, they are for some time without eating the bread. Fish is plentiful…but when there is hunting, either deer or birds, they prefer to eat meat or fowl, eels, trout, alligators, snakes, and animals like rats" (True 1944:13).

As far as material culture is concerned, Fontaneda said men wore breechcloths woven of palm and women wore skirts of Spanish moss; these same materials were added as temper to prehistoric Late Archaic pots roughly 3,000 years earlier. For weapons, the Calusa had bows and arrows that could penetrate the armor of the Spanish soldiers, and also used the atlatl, a throwing stick dating back to Archaic times (True 1944:14).

Another detailed account of Indians living in southern Florida is that of Jonathan Dickinson (Andrews and Andrews 1985). During his travels, Dickinson observed political, economic, religious, architectural, and technological aspects of the native hunters-fishers-collectors. His descriptions mentioned chiefs of varying status, deer skin and vegetable fiber clothes, bone hairpins, net fishing, spear fishing, catamaran canoes, palmetto covered huts on raised ground, bow hunting of deer, roasting of oysters, consumption of palmetto berries, and ceremonial rites led by a village shaman.

Documented containers in use included ceramic bowls, woven baskets, and gourds. In Dickinson's account, a ceramic bowl could also serve as a drum by stretching a skin across its opening. The Indians must have had access to colorants, such as ocher, clay, and/or plant residues, since a number of accounts mention that human bodies and objects were painted red, white, and black (Andrews and Andrews 1985; Sturtevant 1987).

European and Native American Conflict

Between 1740 and 1812, early Creek villages were established in northern Florida in the mission provinces of Apalachee and Timucua, around Tallahassee and Gainesville, and along the Apalachicola and Lower Suwannee rivers. From 1812-1820, pressures in Alabama and Georgia encouraged both Upper and Lower Creeks to migrate to Florida, where they settled in areas that were no longer occupied (Covington 1993:5). They transplanted their farming way of life to the Florida hammocks and began herding free-ranging cattle from old Spanish ranches.

As the relocated Creeks grew further apart from their past heritage and began to take on their own identity, they became known as Seminoles.

The word "Seminole" came from the Spanish word cimarrone, meaning people apart from, or runaway. In the early twentieth century, Seminole Creek elders told anthropologist John Swanton (1922:344) that descendants of the old native tribes of Florida still lived among them.

Seminoles and Miccosukees in Florida

Today, there are two federally-recognized Indian nations with reservations in Florida. One is the Seminole Tribe of Florida and the other is the Miccosukee Tribe of Indians of Florida. Culturally, historically, linguistically, and even through marriage and family connections the Seminoles and Miccosukees are closely and inseparably linked. The native language of the Miccosukee people and most Seminoles is called Miccosukee (also spelled Mikasuki), while some Seminoles speak a related language known as Muskogee or Creek-Seminole (Weisman 1999:29:). In an effort to survive during their early years, both groups scattered into the Everglades. There was a long period of regrouping and recovery, as medicine and ceremonies were negatively impacted, and many tribal members died.

By the early 1800s, the Seminoles had become well established east of Tallahassee and near present-day Gainesville. Their way of life was based on farming and raising cattle. Hunting for deer was also important and the Seminoles were very involved with British trading firms in the deerskin trade. Although Florida was again under Spanish rule after the American Revolution, the British still operated here due to their past successful business dealings with the tribes (Covington 1993; Weisman 1999:29:).

The early Seminole settlements were organized in the traditional Southeastern Indian plan. Each area of settlement had a central town, where the chief lived and where people gathered for public events. Around this were smaller farmsteads in the countryside where families went about their daily lives. With the coming of the Seminole wars with the United States, the Seminoles moved south and sought refuge in the Everglades (Weisman 1999:29:).

During the Indian Wars of the 1800s, most of the Miccosukees were removed to the West but about 100 mostly Mikasuki-speaking Creeks never surrendered and hid out in the Everglades (Weisman 1999:29:). The Miccosukee were farming people. Miccosukee women did most of the farming and harvested crops of corn, beans, and squash. Miccosukee men did most of the hunting and fishing, catching game such as deer, wild turkeys, rabbits, turtles, and alligators. Miccosukee foods included cornbread, soups, and stews (Redish and Lewis 2011).

To survive in the south Florida environment, the Miccosukees had to adapt by living in small camps on tree islands spread throughout the Everglades (Miccosukee Tribe of Indians of Florida 2011). The Miccosukee people lived in houses called chickees that were made of wood, with roofs thatched with palmetto fronds. As the Miccosukee tribe eventually moved farther into the Everglades, they began building their houses on wooden stilts. This raised the floor two or three feet off the ground and protected the homes from flooding and swamp animals. Today, chickees are used for ceremonial reasons or for recreational use, and not for residences (Redish and Lewis 2011).

Prior to late nineteenth century drainage modifications, wetlands in southern Florida extended from north of Lake Okeechobee to the southern tip of the peninsula. It is widely accepted that upland areas, tree islands, and hammocks were prehistoric and historic habitation sites (Carr 2002; Smith 2008). Hammock is the name given to non-pine upland areas that are usually made up of hardwood trees with inclusions of other vegetation, such as cabbage palm and red cedar (Whitney et al. 2004:85). A key attribute of these landforms in pre-drainage southern Florida was that even seemingly slight differences in elevation were highly significant in creating unique habitats and opportunities for human settlement. Tribal use of these areas continues today as camps and for more permanent, highly developed settlement.

The Tribes in the Twentieth Century

The Seminoles began the twentieth century where they were at the conclusion of the Seminole Wars - in abject poverty, hiding out in remote camps on tree islands in the wet wilderness areas of South Florida. There, finally away from U.S. government oppression, they lived off the land and maintained minimal contact with the outside world. Hunting, trapping, fishing, and trading with the white man at frontier outposts provided the Seminoles with their only significant income (Seminole Tribe of Florida 2013).

Soon, a "drain-the-Everglades" mentality promoted by politicians and developers had negative effects. Poor crops, shrinking numbers of fish and game, droughts, serious hurricanes, the Depression, and other problems brought new challenges to the Seminoles. The collapse of the frontier Seminole economy in the 1920s threatened the Florida Indians with assimilation or extinction (Seminole Tribe of Florida 2013). The wilderness no longer provided for all; instead, many people lived as tenants on lands where they worked or they appeared as a sideshow in tourist attractions.

In 1934, Congress passed the Indian Reorganization Act, which recognized the rights of American Indians to conduct elections and govern their own political affairs. Distrustful of any government involvement, the Seminoles did not take advantage of this opportunity until 23 years later, when the Tribe was faced with official termination by the U.S. Government (Seminole Tribe of Florida 2013). In 1957, the Seminoles set up the Seminole Tribe of Florida and negotiated an agreement with the U.S. Government regarding land.

The Miccosukees kept to themselves in the Everglades for about 100 years, resisting efforts to become assimilated. Then, after the Tamiami Trail highway was built in 1928, the Tribe became open to adopting a new status. To ensure that the federal government would formally recognize the Miccosukee Tribe, Buffalo Tiger led a group to Cuba in 1959, where they asked Fidel Castro for, and were granted, international recognition as a sovereign country within the United States (Miccosukee Tribe of Indians of Florida 2011).

In 1962, the U.S. Secretary of the Interior approved the Miccosukee Constitution and the Tribe was officially recognized as the Miccosukee Tribe of Indians of Florida. This legally established the Miccosukees' tribal existence and their sovereign status with the U.S. Government. Present Tribal members now number over 600 and are direct descendants of those who eluded capture (Miccosukee Tribe of Indians of Florida 2011).

IV. METHODS

This chapter provides details on the background research and field methods used during the archaeological survey.

BACKGROUND RESEARCH METHODS

Background research for the project consisted of records search of the FMSF, a review of current and historic aerial photographs and maps of the APE, and a variety of archival sources. In addition to the published sources referenced throughout the contexts, efforts were made to obtain primary source material on the construction of the Raulerson Brothers Canal, House Ditch, and Slagle Ditch. Sources for this search included Everglades National Park, the State Archives of Florida, the records of the Florida Internal Improvements Trust Fund, the U.S. Army Corps of Engineers, and the Monroe County Historical Society.

FIELD METHODS

Field methods included pedestrian survey, judgmental shovel testing, photography, and GPS recording. All fieldwork complied with the Scope of Work (SOW), the Florida *Guidelines for Survey Projects*, F.A.C. Chapter 1A-46, and all stipulations of the Archaeological Resources Protection Act.

Pedestrian Survey

Pedestrian survey was conducted throughout the entire APE. The canal and ditches were surveyed by boat. The dam locations, footpaths, and helicopter drop off zones were surveyed on foot. Regardless of visibility, the ground surface in all sites was examined for features, such as structural elements. No surface artifacts were identified so no surface collections were conducted.

Judgmental Shovel Testing

Judgmental shovel testing was initially intended for any areas that were visibly dry and did not contain wetland vegetation. As nearly the entire APE was within active wetlands, shovel tests were excavated in slightly drier areas, on visible features (plug), or within proposed dam locations such as at the Raulerson Brothers Canal.

All shovel tests were approximately 12 inches (30 centimeters) in diameter and excavated by hand and were terminated within hydric marl clay. Shovel tests received unique field designations. All soils were screened through 0.25-inch mesh hardware cloth for systematic artifact recovery. Soils encountered in shovel tests were described using standard terminology for color and texture using a Munsell soil chart, and shovel test locations were plotted on project maps that showed the locations of roads, water sources, disturbed areas, and other pertinent information.

Spatial Control, Mapping, and Photography

Horizontal control was maintained through a variety of methods including pacing, measuring tapes, and GPS units. The location of the APE was delineated prior to the fieldwork in geographic information systems (GIS) software (ArcGIS 10). These locations were built using project plans provided by AECOM. The shapefiles were uploaded to the GPS receiver. New South used Trimble GeoXT GPS unit for this project. The GeoXT has a sub-meter positional accuracy following post-processing.

Detailed plan maps were produced for each site. Sketch maps were generated and digital maps were produced using a GPS unit. Digital field maps were later refined in ArcGIS 10 using the collected spatial data. Prominent surface features and excavations were also included in this phase of documentation.

All photographs were taken digitally using a camera with a resolution of at least eight megapixels. Photographic images on these cameras were downloaded daily and backed up. A detailed photograph log was kept. General views of the canals and representative shovel test profiles were photographed.

V. RESULTS AND RECOMMENDATIONS

Archaeological survey was conducted on the Raulerson Brothers Canal, House Ditch, and Slagle Ditch (Table 5). All dam locations, footpaths, and helicopter drop off zones were subjected to pedestrian survey either by boat or on foot. Judgmental shovel testing was conducted at all three locations. Pedestrian survey confirmed that nearly all of the APE contained either hydric soil or dredge spoil. Eleven shovel tests were excavated including six at the Raulerson Brothers Canal, one at House Ditch, and four at Slagle Ditch. None contained cultural material.

The survey area was accessed by boat from the Flamingo Marina. The boat was provided by Rising Tide Charters and was driven by Captain Jason Sullivan. Access to the survey areas was fairly open with the exception of House Ditch, which was heavily overgrown with mangroves. House Ditch is accessible only at high tide with a small boat. Fieldwork was completed on September 9-10, 2015. It was directed by Danny Gregory with the assistance of Justin Byrnes.

No prehistoric resources were identified during the survey. Five historic structures were identified: Raulerson Brothers Canal (8MO2350), House Ditch and plug (8MO2351), and Slagle Ditch and plug (8MO2352). These three historic properties are discussed in detail below.

HISTORIC PROPERTIES

Five historic structures were identified during the survey. These were recorded as three separate historic properties. 8MO2350 includes the Raulerson Brothers Canal. 8MO2351 contains House Ditch and a plug. 8MO2352 contains Slagle Ditch and a plug. All three properties are discussed below.

8MO2350: The Raulerson Brothers Canal

The Raulerson Brothers Canal connects the Everglades marsh to the northwestern corner of Lake Ingraham (Figure 3). The canal cuts east from Lake Ingraham through the marl ridge. It measures 1,893 feet (577 meters) long and is approximately 50 feet (15 meters) wide. Dredge spoil (marl and limestone) is present along both banks.

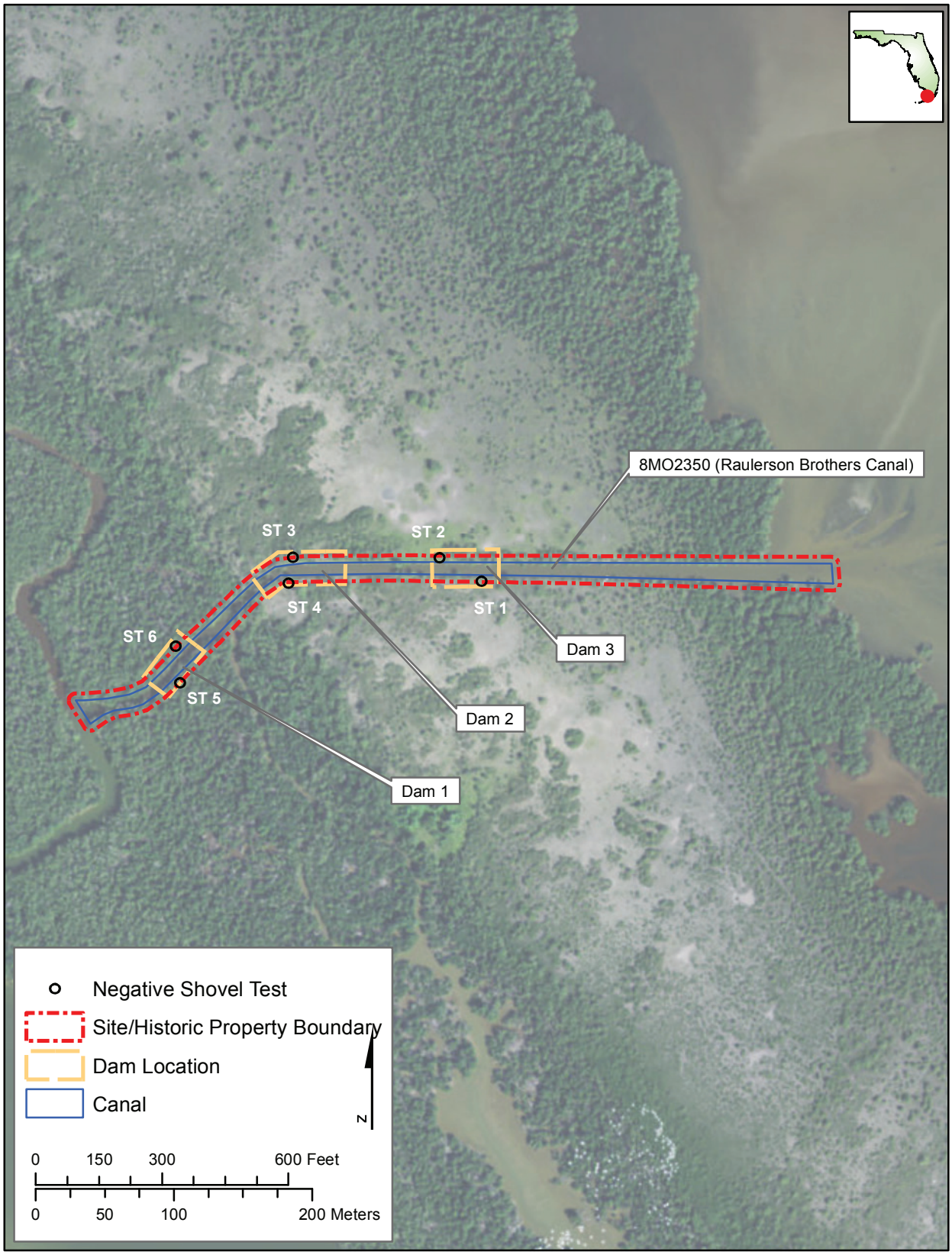
An earthen plug was constructed at the Raulerson Brothers Canal in ca. 1956 by the Everglades National Park (URS Corporation 2009). The Raulerson Brothers Canal plug failed in 2007 and was repaired in 2008. By 2010 it had failed again and the canal is currently not impeded (URS Corporation 2009).

Three dam locations are proposed for the Raulerson Brothers Canal. All three were shovel tested (one shovel test on either canal bank at each dam location) and photographed. The canal banks consisted of marl clay and dredge spoil. The area beyond the canal on both sides consists of hydric soil at the surface (marl clay). No artifacts or related structures were observed (Figure 4).

Though the Raulerson brothers owned land at Cape Sable as early as 1884, but the canal does not appear to be that old. If the canal was built by the Raulerson brothers to drain land for cattle grazing, it likely dates to between 1904 and 1907. If the canal was simply named after the Raulerson brothers, it likely dates to between 1919 and 1928. Each possible origin for the canal can provide the site with historic significance. If the canal was built by the Raulerson brothers, it is directly associated with at least two of the pioneers of the development and use of Cape Sable (Criterion B). It is also then significant for its association with a rare attempt at cattle grazing in Cape Sable, an industry that was found to not be suitable due to the poor quality of the local grasses as a food source for cattle (Criterion A).

If the canal was simply named for the Raulerson brothers due to its geographic location on land owned or occupied by them, it was likely part of

Figure 3. Plan View of the Raulerson Brothers Canal (8MO2350)



Source: ESRI Resouce Data

Figure 4. Photographs of the Raulerson Brothers Canal

A. Shovel Test 4, Raulerson Dam 2, South Bank, Marl Clay Dredge Spoil

B. Raulerson Dam 2, North Bank

C. Raulerson Brothers Canal from West End, Looking East

Table 5. Summary of Survey in the APE

Survey Area	Location	Total Size	Shovel Tests
House Ditch	Proposed Dam Location	1/8 acre	1
	Drop Off Zones (2)	1/4 acre	0
	Foot Paths (3)	680 feet	0
Slagle Ditch	Proposed Dam Location	1/8 acre	1
	Drop Off Zone	1/8 acre	1
	Foot Paths (2)	1150 feet	2
Raulerson Brothers Canal	Proposed Dam Locations (3)	3/8 acre	6
		Total	11

Flagler's early twentieth-century land development plans for Cape Sable (Criterion A). In fact, even if the Raulerson brothers actually built the canal (or had it built), it was likely used as part of Flagler's land development. Either way, the Raulerson Brothers Canal is recommended as eligible under Criterion A and potentially eligible under Criterion B.

Aside from the canal structure itself, no other historic structures were identified at the Raulerson Brothers Canal. The canal exists in its original location, though a century of erosion has likely expanded the banks and washed away the original spoil piles. The setting of the canal remains the same as it did during its construction. As the canal is an excavated structure, the integrity of its historic materials does not apply. The design and workmanship of the canal were fairly simple and has not changed. The feeling and association of the canal have shifted from an agricultural feature to one geared toward conservation, recreation, and tourism. Overall, though the canal remains in the same basic location and setting, its current incarnation is quite different from the original structure in size and function. As such, the site retains little integrity.

Based on the lack of buried deposits and the substantial erosion that has occurred within the canal, 8MO2350 retains little potential to provide important information on the history of the area beyond what has already been documented (Criterion D). Based on the lack of additional structures and original bank deposits, the canal cannot convey physical features that characterize early twentieth century drainage features from Cape Sable (Criterion C).

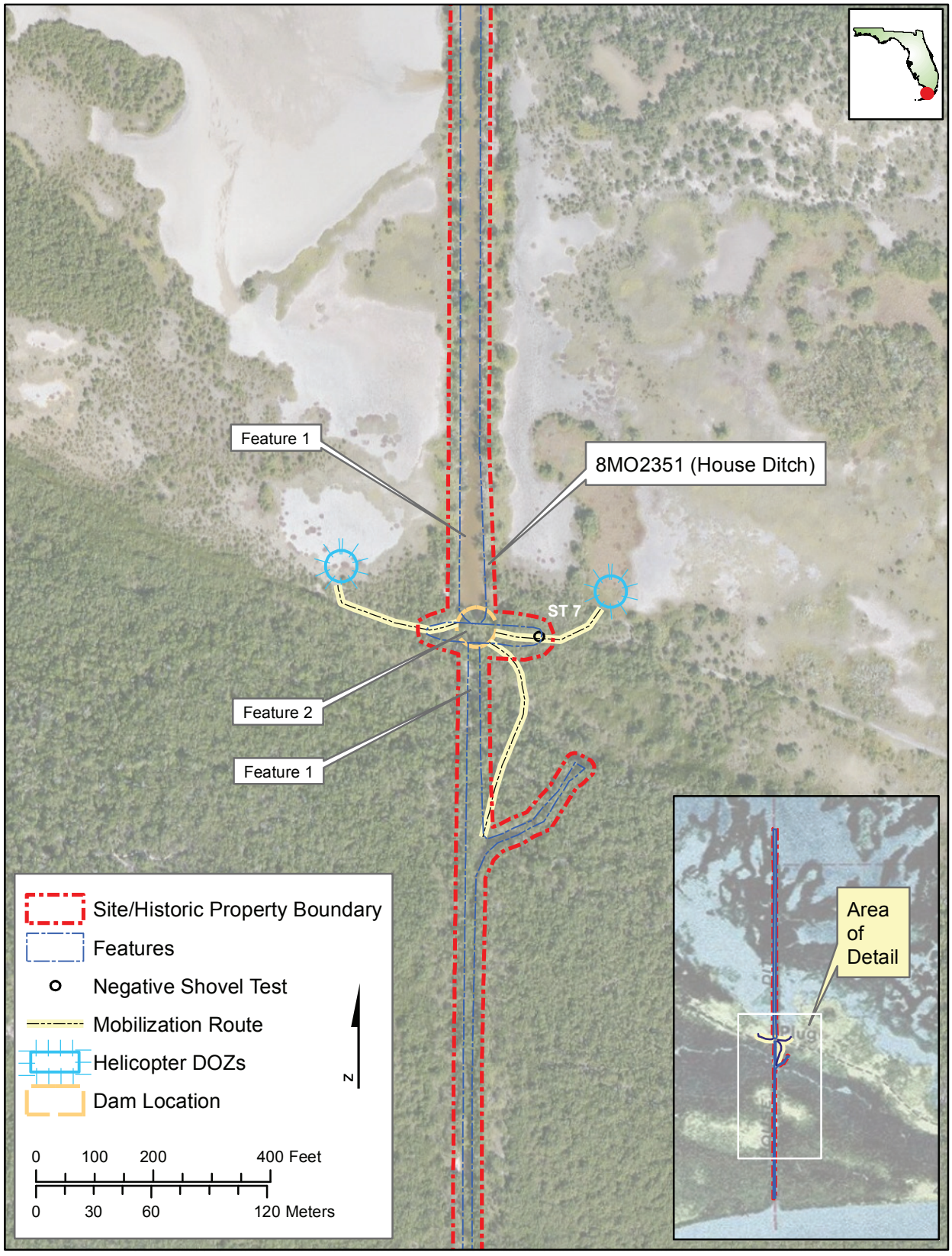
Based on its possible association with the Raulerson brothers and early twentieth century cattle grazing, and on its known association with the twentieth century development of the Cape Sable region, New South recommends that the Raulerson Brothers Canal is eligible to the NRHP under Criterion A and B.

The proposed restoration project will include changes to the physical integrity of the canal, but would not affect its significance with regard to its associations with the Raulerson brothers or twentieth century cattle grazing or land development in Cape Sable. In contrast, the proposed restoration will protect this resource through continued maintenance. New South recommends that the proposed undertaking will have no adverse effect on the Raulerson Brothers Canal.

8MO2351: House Ditch

8MO2351 contains two historic structures, House Ditch (Feature 1) and an earthen plug (Feature 2). Feature 1, House Ditch, connects Florida Bay to the Everglades marsh through a large marl ridge (Figure 5). The ditch itself is narrow and overgrown with mangroves, but is accessible by small boat at high tide (Figure 6). The ditch measures approximately 5,131 feet (1,564 meters) in length and is approximately 16 feet (five meters) wide.

Figure 5. Plan View of House Ditch and Plug (8MO2351)



Source: ESRI Resouce Data

Figure 6. Photographs of House Ditch (Feature 1)

A. House Ditch South End, Looking North

B. House Ditch Center, Looking South

The earthen plug (Feature 2) is visible and measures approximately 66 feet (20 meters) east/west by 10 feet (three meters) north/south and is approximately 1.6 feet (50 centimeters) high (Figure 7). It is composed of dredge spoil (marl clay and limestone). One shovel test was excavated into the plug to confirm its identification. No artifacts were found at this property. The plug is relatively intact but is actively eroding. It is located at the south end of the marl ridge.

The two historic structures at 8MO2351 were built at different times. House Ditch (Feature 1) first appears on the U.S. Coast and Geodetic Survey *Alligator Reef to Sombrero Key* chart of 1933 (U.S. Coast and Geodetic Survey 1933). It was likely built in the 1920s after the completion of the Homestead Canal in 1919. The ditch is approximately 50 feet (15 meters) wide and is currently open, with water flowing in from both ends. The earthen plug (Feature 2) was built in the 1950s or 1960s by Everglades National Park and remains intact, though it is actively eroding.

House Ditch remains in its original location, though it has expanded through erosion. The setting is similar to the early twentieth century. The construction of the earthen plug has also altered the design of the ditch. It no longer performs its original function, which was to drain water from areas to the north into Florida Bay. The materials and workmanship of the ditch are simple and have not been altered. The feeling and association of the ditch have shifted from an agricultural drainage feature to one geared toward conservation. The integrity of House Ditch is therefore limited.

The earthen plug is an historic structure that was constructed within House Ditch, but has a separate period of significance. The integrity of this feature is good. It is in its original location and contains only original materials. The setting, design, and workmanship remain the same as when it was constructed. The feeling and association are still geared toward preventing drainage through the ditch.

Though House Ditch was likely built near the end of the Cape Sable land boom and did not serve to catalyze further development, it was part of Flagler's early twentieth-century land development plans for Cape Sable (Criterion A). The earthen plug was part of the mid-twentieth century restoration and conservation efforts by Everglades National Park, and is no way related to the earlier development plans for Cape Sable (Criterion A).

The evidence that the Model Land Company actually built House Ditch is circumstantial. It has not been demonstrated to be directly associated with either Henry Flagler or James Ingraham (Criterion B). The earthen plug is also not known to be related (directly or indirectly) to important historical figures from this area (Criterion B).

Based on the lack of buried deposits and the changes to the property through erosion and construction, 8MO2351 retains little potential to provide important information on the history of the area beyond what has already been documented (Criterion D). Based on the lack of additional structures and original bank deposits, the ditch cannot convey physical features that characterize early twentieth century drainage structures from Cape Sable (Criterion C).

Based on its association with the twentieth-century development of the Cape Sable region and with the mid-twentieth conservation efforts of Everglades National Park, New South recommends that 8MO2351 is eligible to the NRHP under Criterion A. The property is not considered eligible under Criterion B because it does not have a direct association with either Flagler or Ingraham, two individuals of historic importance in south Florida. It is not considered eligible under Criterion C due to its limited integrity. Finally, the property does not retain the potential to provide information of importance to prehistory or history and is not considered eligible under Criterion D.

The proposed restoration project will include changes to the physical integrity of the ditch and plug, but would not affect its significance with regard to its associations with the land development or conservation efforts at Cape

Figure 7. Photographs of House Ditch Plug (Feature 2)

A. House Ditch Dam Dredge Spoil

A. House Ditch Dam, Looking West

C. House Ditch, Looking South from Dam

Sable. In contrast, the proposed restoration will protect this resource through continued maintenance. New South recommends that the proposed undertaking will have no adverse effect on 8MO2351.

8MO2352: Slagle Ditch

8MO2352 contains two historic structures, Slagle Ditch (Feature 1) and an earthen plug (Feature 2). Feature 1, Slagle Ditch, connects Florida Bay to the Everglades marsh through a large marl ridge (Figure 8). The southern end of Slagle Ditch connects to an existing drainage approximately 984 point (300 meters) north of the coast. The ditch itself was easily accessible by boat up to the southern end of the foot path (Figure 9). The ditch measures approximately 2,201 feet (671 meters) in length and is approximately 16 feet (five meters) wide. The Coastal Prairie Trail crosses over the Slagle Ditch plug.

The earthen plug (Feature 2) is visible and measures approximately 82 feet (25 meters) east/west by 10 feet (three meters) north/south and is approximately 1.6 feet (50 centimeters) high (Figure 10). It is composed of dredge spoil (marl clay and limestone). One shovel test was excavated into the plug to confirm its identification. No artifacts were found at this property. The plug is relatively intact but is actively eroding.

The two historic structures at 8MO2352 were built at different times. Slagle Ditch (Feature 1) first appears on the U.S. Coast and Geodetic Survey *Alligator Reef to Sombrero Key* chart of 1933 (U.S. Coast and Geodetic Survey 1933). It was likely built in the 1920s after the completion of the Homestead Canal in 1919. The portion of the ditch north of the plug has widened through erosion. It is approximately 50 feet (15 meters) wide and is currently open. South of the plug, the ditch has little flowing water and has been overgrown with mangroves. This section is currently only 3-6 feet (1-2 meters) wide. The earthen plug (Feature 2) was built in the 1950s or 1960s by Everglades National Park and remains intact, though it is actively eroding.

Slagle Ditch remains in its original location, though the northern portion has expanded and the southern portion is partially filled in and overgrown. The setting of the northern portion is similar to the early twentieth century. The southern portion is no longer visible as a manmade ditch, and instead looks like a small (though relatively straight) drainage within the thick mangroves. The construction of the earthen plug has also altered the design of the ditch, as it no longer performs its original function, which was to drain water from areas to the north into Florida Bay. The materials and workmanship of the ditch are simple and have not been altered. The feeling and association of the ditch have shifted from an agricultural drainage feature to one geared toward conservation. The integrity of Slagle Ditch is therefore limited.

The earthen plug is an historic structure that was constructed within Slagle Ditch, but has a separate period of significance. The integrity of this feature is good. It is in its original location and contains only original materials. The setting, design, and workmanship remain the same as when it was constructed. The feeling and association are still geared toward preventing drainage through the ditch.

Though Slagle Ditch was likely built near the end of the Cape Sable land boom and did not serve to catalyze further development, it was part of Flagler's early twentieth-century land development plans for Cape Sable (Criterion A). The earthen plug was part of the mid-twentieth century restoration and conservation efforts by Everglades National Park, and is no way related to the earlier development plans for Cape Sable (Criterion A).

The evidence that the Model Land Company actually built Slagle Ditch is circumstantial. It has not been demonstrated to be directly associated with either Henry Flagler or James Ingraham (Criterion B). The earthen plug is also not known to be related (directly or indirectly) to important historical figures from this area (Criterion B).

Figure 8. Plan View of Slagle Ditch (8MO2352)

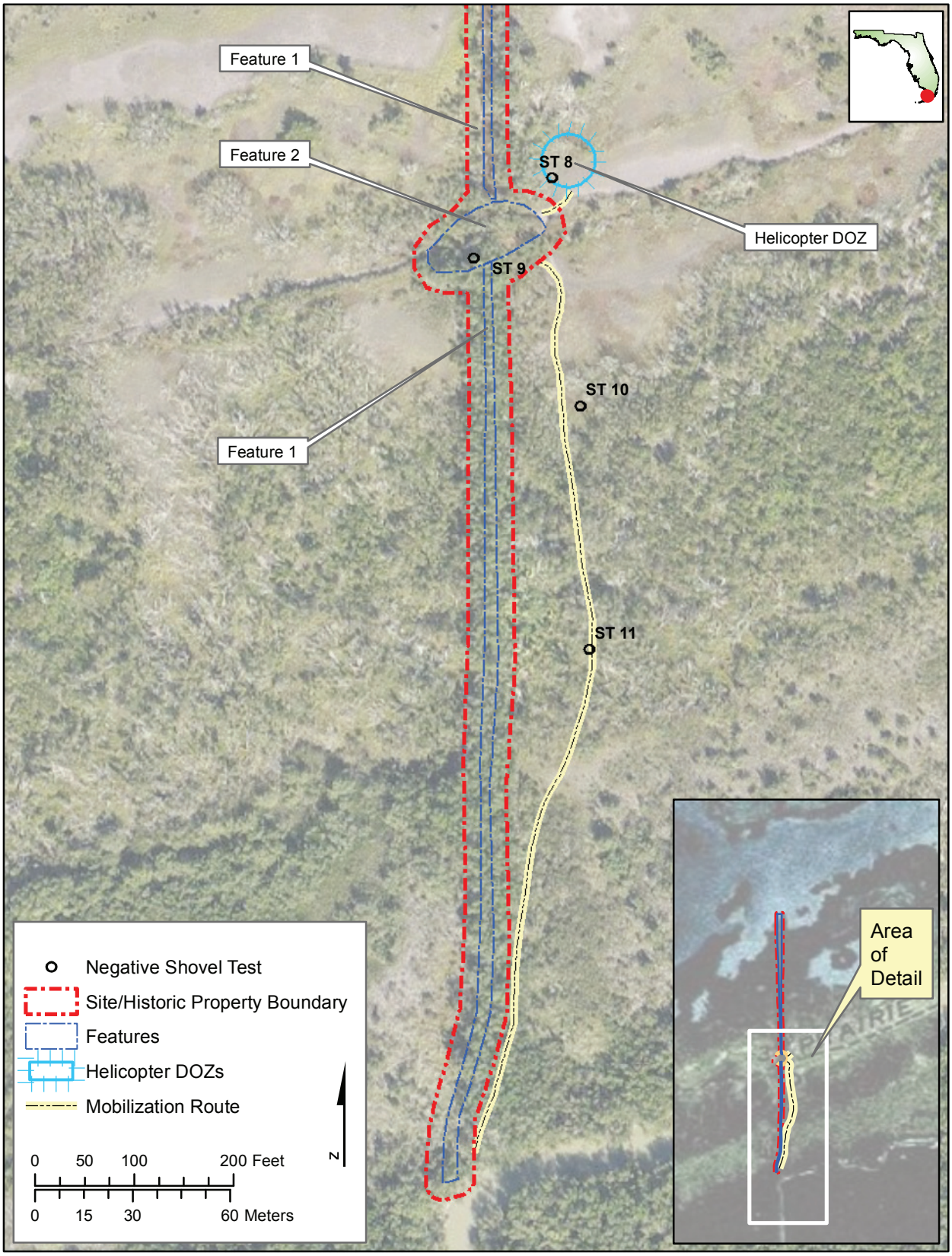


Figure 9. Photographs of Slagle Ditch (Feature 1)

A. Slagle Ditch South End, Looking North

A. Slagle Ditch, Looking North from Dam

C. Coastal Prairie Trail, Looking East

Figure 10. Photographs of Slagle Ditch Plug (Feature 2)

A. Slagle Ditch, Looking South from Dam

B. Slagle Ditch Dam, Looking East

Based on the lack of buried deposits and the changes to the property through erosion and construction, 8MO2352 retains little potential to provide important information on the history of the area beyond what has already been documented (Criterion D). Based on the lack of additional structures and original bank deposits, the ditch cannot convey physical features that characterize early twentieth century drainage structures from Cape Sable (Criterion C).

Based on its association with the twentieth-century development of the Cape Sable region and with the mid-twentieth conservation efforts of Everglades National Park, New South recommends that 8MO2352 is eligible to the NRHP under Criterion A. The property is not considered eligible under Criterion B because it does not have a direct association with either Flagler or Ingraham, two individuals of historic importance in south Florida. It is not considered eligible under Criterion C due to its limited integrity. Finally, the property does not retain the potential to provide information of importance to prehistory or history and is not considered eligible under Criterion D.

The proposed restoration project will include changes to the physical integrity of the ditch and plug, but would not affect its significance with regard to its associations with the land development or conservation efforts at Cape Sable. In contrast, the proposed restoration will protect this resource through continued maintenance. New South recommends that the proposed undertaking will have no adverse effect on 8MO2352.

SUMMARY AND RECOMMENDATIONS

No cultural material was collected during this project. Three historic properties were identified during this survey. The Raulerson Brothers Canal (8MO2350) was recorded in its entirety as it was accessible by boat for its full length. 8MO2351 (House Ditch and plug) and 8MO2352 (Slagle Ditch and plug) were not accessible by boat north of the foot paths. The portions of these properties south of the plugs were surveyed, but the northern sections were not part of the current APE. The boundaries of these properties were extended to include their entire length (based on current aerial photographs).

The Raulerson Brothers Canal (8MO2350) is recommended as eligible to the NRHP under Criterion A and B. This is based on its possible association with the Raulerson brothers and early twentieth century cattle grazing, and on its known association with the twentieth century development of the Cape Sable region.

8MO2351 (House Ditch and plug) and 8MO2352 (Slagle Ditch and plug) are both recommended as eligible to the NRHP under Criterion A. This is based on their association with the twentieth-century development of the Cape Sable region and with the mid-twentieth conservation efforts of Everglades National Park.

The proposed restoration project will include changes to the physical integrity of these three properties, but would not affect their significance with regard to its associations the Raulerson brothers or with cattle grazing, land development, or conservation efforts at Cape Sable. In contrast, the proposed restoration will protect these resources through continued maintenance. New South recommends that the proposed undertaking will have no adverse effect on these three historic properties.

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APPENDIX A: ARPA PERMIT

Please use this number when referring to this permit

No.: EVER 2015-001 EVER 2015-01

DI Form 1991 (Rev Jan 2008)
for use with DI Form 1926
OMB No. 1024-0037
Exp. Date (6/30/2014)

United States Department of the Interior

PERMIT FOR ARCHEOLOGICAL INVESTIGATIONS

To conduct archeological work on Department of the Interior lands and Indian lands under the authority of:

- ☒ The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) and its regulations (43 CFR 7).
- ☐ The Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225, 16 U.S.C. 431-433) and its regulations (43 CFR 3).
- ☐ Supplemental regulations (25 CFR 262) pertaining to Indian lands.
- ☐ Bureau-specific statutory and/or regulatory authority: _____

1. Permit issued to Danny Gregory	2. Under application dated July 8, 2015
3. Address 6150 Ponce De Leon Ave. Stone Mountain, GA 30083	4. Telephone number(s) 770 498-4155
	5. E-mail address(es) jwjoseph@newsouthassoc.com dgregory@newsouthassoc.com

6. Name of Permit Administrator Dr. J.W. Joseph	7. Name of Principal Investigator(s) Danny Gregory
Telephone number(s): 770 498-4155	Telephone number(s): 336 269-4831
Email address(es): jwjoseph@newsouthassoc.com	Email address(es): dgregory@newsouthassoc.com
8. Name of Field Director(s) authorized to carry out field projects Danny Gregory	Telephone number(s): 336 269-4831
	Email address(es): dgregory@newsouthassoc.com

9. Activity authorized: Permittee proposes to survey dam locations, helicopter drop off zones, and foot paths associated with the Cape Sable Canal Dams Restoration Project . Field techniques will include visual inspection, and 30 cm diameter shovel tests spaced at 20 m intervals. All excavated material will be screened through 6.35 mm (0.25 in) hardware mesh. (See research design in permit proposal).

10. On lands described as follows: Canal dam locations and associated helicopter drop off zones, and foot paths in Everglades National Park. These study areas encompass approximately one acre and 557 linear meters (1,830 feet) on Monroe county, Florida. See project map in permit proposal.

11. During the duration of the project From July 15, 2015 To July 15, 2016

12. Name and address of the curatorial facility in which collections, records, data, photographs, and other documents resulting from work under this permit shall be deposited for permanent preservation on behalf of the United States Government.

Southeast Archeological Center, 2035 E. Paul Dirac Drive, Johnson Building, Suite 120, Tallahassee FL 32310

13. Permittee is required to observe the listed standard permit conditions and the special permit conditions attached to this permit.

14. Signature and title of approving official Deputy Regional Director	15. Date 8/18/15

APPENDIX B: ARCHAEOLOGICAL SITE FORMS

Page 1

☒Original
☐Update

ARCHAEOLOGICAL SITE FORM
FLORIDA MASTER SITE FILE
Version 4.0 1/07

Consult *Guide to Archaeological Site Form* for detailed instructions

Site #8 _____
Field Date 9-9-2015
Form Date _____
Recorder # FS 1

Site Name(s) Raulerson Brothers Canal — Multiple Listing (DHR only) _____
Project Name Cape Sable Dams Restoration Project — Survey # (DHR only) _____
Ownership: ☐private-profit ☐private-nonprofit ☐private-individual ☐private-nonspecific ☐city ☐county ☐state ☒federal ☐Native American ☐foreign ☐unknown

LOCATION & MAPPING

Clear Location Values

USGS 7.5 Map Name LAKE INGRAHAM WEST — USGS Date 1992 — Plat or Other Map _____
City/Town (within 3 miles) _____ — In City Limits? ☐yes ☒no ☐unknown — County Monroe
Township _____ Range _____ Section _____ ¼ section: ☐NW ☐SW ☐SE ☐NE — Irregular-name: _____
Township _____ Range _____ Section _____ ¼ section: ☐NW ☐SW ☐SE ☐NE
Landgrant _____ — Tax Parcel # _____
UTM Coordinates: Zone ☐16 ☒17 Easting 486396 Northing 2785726
Other Coordinates: X: _____ Y: _____ — Coordinate System & Datum UTM, NAD 1983
Address / Vicinity / Route to: Boat access only, from Flamingo Marina through Lake Ingraham
Name of Public Tract (e.g., park) Everglades National Park

TYPE OF SITE (select all that apply)

SETTING

☐Land (*terrestrial*)
☐Lake/Pond (*lacustrine*)
☐River/Stream/Creek (*riverine*)
☒Tidal (*estuarine*)
☐Saltwater (*marine*)
☐Wetland (*palustrine*)
  ☐usually flooded
  ☐usually dry
☐Cave/Sink (*subterranean*)
  ☐terrestrial
  ☐aquatic

STRUCTURES OR FEATURES

☐log boat
☐agric/farm building
☐burial mound
☐building remains
☐cemetery/grave
☐dump/refuse
☒earthworks (historic)
☐fort
☐midden
☐mill
☐mission
☐mound, nonspecific
☐plantation
☐platform mound
☐road segment
☐shell midden
☐shell mound
☐shipwreck
☐subsurface features
☐surface scatter
☐well

FUNCTION

☐campsite
☐extractive site
☐habitation (prehistoric)
☐homestead (historic)
☐farmstead
☐village (prehistoric)
☐town (historic)
☐quarry

Other Features or Functions (Choose from the list or type a response.)
1. Earthen Dam — 2. Canal

CULTURE PERIODS (select all that apply)

ABORIGINAL

☐Alachua
☐Archaic (nonspecific)
☐Archaic, Early
☐Archaic, Middle
☐Archaic, Late
☐Belle Glade
☐Cades Pond
☐Caloosahatchee
☐Deptford
☐Englewood
☐Fort Walton
☐Glades (nonspecific)
☐Glades I
☐Glades II
☐Glades III
☐Hickory Pond
☐Leon-Jefferson
☐Malabar I
☐Malabar II
☐Manasota
☐Mississippian
☐Mount Taylor
☐Norwood
☐Orange
☐Paleoindian
☐Pensacola
☐Perico Island
☐Safety Harbor
☐St. Augustine
☐St. Johns (nonspecific)
☐St. Johns I
☐St. Johns II
☐Santa Rosa
☐Santa Rosa-Swift Creek
☐Seminole (nonspecific)
☐Seminole: Colonization
☐Seminole: 1st War To 2nd
☐Seminole: 2nd War To 3rd
☐Seminole: 3rd War & After
☐Swift Creek (nonspecific)
☐Swift Creek, Early
☐Swift Creek, Late
☐Transitional
☐Weeden Island (nonspecific)
☐Weeden Island I
☐Weeden Island II
☐Prehistoric (nonspecific)
☐Prehistoric non-ceramic
☐Prehistoric ceramic

NON-ABORIGINAL

☐First Spanish 1513-99
☐First Spanish 1600-99
☐First Spanish 1700-1763
☐First Spanish (nonspecific)
☐British 1763-1783
☐Second Spanish 1783-1821
☐American Territorial 1821-45
☐American Civil War 1861-65
☐American 19th Century
☒American 20th Century
☐American (nonspecific)
☐African-American

Other Cultures (Choose from the list or type a response. For historic sites, give specific dates.)
1. _____ — 3. _____
2. _____ — 4. _____

OPINION OF RESOURCE SIGNIFICANCE

Clear Evaluation Values

Potentially eligible individually for National Register of Historic Places? ☒yes ☐no ☐insufficient information
Potentially eligible as contributor to a National Register district? ☒yes ☐no ☐insufficient information
Explanation of Evaluation (required if evaluated; use separate sheet if needed) the canal is likely part of the Model Land Company's (Flagler and Ingraham) larger early 20th century land development plans for Cape Sable (criterion A), though it doesn't retain any archaeological information (D) or architectural significance (C)
Recommendations for Owner or SHPO Action doubtful that the proposed restoration project will have any adverse effect on the canal

DHR USE ONLY	OFFICIAL EVALUATION	DHR USE ONLY
NR List Date _____ ☐Owner Objection	SHPO – Appears to meet criteria for NR listing: ☐yes ☐no ☐insufficient info Date _____ Init._____ KEEPER – Determined eligible: ☐yes ☐no Date _____ NR Criteria for Evaluation: ☐a ☐b ☐c ☐d (see *National Register Bulletin 15*, p. 2)	

HR6E045R0107 Florida Master Site File / Div. of Historical Resources / R. A. Gray Bldg / 500 S Bronough St., Tallahassee, FL 32399-0250
Phone **(850) 245-6440** / Fax **(850)-245-6439** / E-mail **SiteFile@dos.state.fl.us**

Page 2

ARCHAEOLOGICAL SITE FORM

Site #8 _____

FIELD METHODS (select all that apply)

SITE DETECTION			SITE BOUNDARY		
☐no field check	☒exposed ground	☒screened shovel	☐bounds unknown	☐remote sensing	☐unscreened shovel
☐literature search	☐posthole tests	☐screened shovel-1/4"	☐none by recorder	☒exposed ground	☒screened shovel
☐informant report	☐auger tests	☐screened shovel-1/8"	☐literature search	☐posthole tests	☐block excavations
☐remote sensing	☐unscreened shovel	☐screened shovel-1/16"	☐informant report	☐auger tests	☐estimate or guess

Other methods; number, size, depth, pattern of units; screen size (attach site plan) pedestrian/boat survey of canal, 2 shovel tests on bank at each dam location (6 total), 1/4 inch screen

SITE DESCRIPTION

Extent Size (m^2) 11,540 Depth/stratigraphy of cultural deposit marl clay at the surface, dredge spoil along banks (marl and limestone)

Temporal Interpretation - Components (check one): ☒single component ☐multiple component ☐uncertain

Describe each occupation in plan (refer to attached large scale map) and stratigraphically. Discuss temporal and functional interpretations:
20th century drainage feature only

Integrity - Overall disturbance: ☐none seen ☐minor ☒substantial ☐major ☐redeposited ☐destroyed-**document!** ☐unknown

Disturbances / threats / protective measures erosion, dams were breached and excavated

Surface collection: area collected _____ m^2 # collection units_____ | Excavation: # noncontiguous blocks _____

ARTIFACTS

Clear Artifact Values

Total Artifacts #0 ○count ○estimate | Surface #_____ | Subsurface #_____

COLLECTION SELECTIVITY

☐unknown ☒unselective (all artifacts) ☐selective (some artifacts) ☐mixed selectivity

SPATIAL CONTROL

☐uncollected ☐general (not by subarea) ☐unknown ☐controlled (by subarea) ☐variable spatial control ☐other (describe in comments below)

ARTIFACT CATEGORIES and DISPOSITIONS

____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____

select a disposition from the list below for each artifact category selected at left

A - category always collected
S - some items in category collected
O - observed first hand, but not collected
R - collected and subsequently left at site
I - informant reported category present
U - unknown

Artifact Comments _____

DIAGNOSTICS (type or mode, and frequency: e.g., *Suwanee ppk, heat-treated chert, Deptford Check-stamped, ironstone/whiteware*)

1. _____ N=____ 4. _____ N=____ 7. _____ N=____
2. _____ N=____ 5. _____ N=____ 8. _____ N=____
3. _____ N=____ 6. _____ N=____ 9. _____ N=____

ENVIRONMENT

Clear Environment Values

Nearest fresh water: Type Lake > 5 acres Name Lake Ingraham Distance from site (m) 1
Natural community COASTAL DUNE LAKE Topography Coastal-ocean Elevation: Min 0 m Max 1 m
Local vegetation mangroves
Present land use canal
SCS soil series none available Soil association none available

DOCUMENTATION

Clear Documentation Values

Accessible Documentation Not Filed with the Site File - including field notes, analysis notes, photos, plans and other important documents

1) Document type Photographs Maintaining organization New South Associates
Document description digital photos File or accession #'s _____

2) Document type Field notes Maintaining organization New South Associates
Document description _____ File or accession #'s _____

RECORDER & INFORMANT INFORMATION

Informant Information: Name _____
Address / Phone / E-mail _____

Recorder Information: Name Danny Gregory Affiliation New South Associates
Address / Phone / E-mail 408B Blandwood Ave, Greensboro, NC 27401, 336-379-0433, dgregory@newsouthassoc.com

Required Attachments

❶ **PHOTOCOPY OF 7.5' USGS QUAD MAP WITH SITE BOUNDARIES MARKED *and* SITE PLAN**
Plan at 1:3,600 or larger. Show boundaries, scale, north arrow, test/collection units, landmarks and date.

Cape Sable Dams Restoration Project

New South Associates, 2015

Historic Context

The Raulerson Brothers Canal, Slagle Ditch, and House Ditch date to the 1920s and reflect efforts at reclaiming the marshy Cape Sable area for agriculture and land development (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The canals cut through the marl ridge along the southwest and south margins of Cape Sable and connect the interior freshwater marsh to Lake Ingraham and Florida Bay. These three drainage features, along with the Homestead Canal, J Canal, East Cape Canal, Middle Cape Canal, and Ingraham Canal, were built by the Model Land Company, a holding of the Florida East Coast Railroad, which was the largest land owner in the Cape Sable area during the early twentieth century. The following brief overview describes the canals' historic context and documents their approximate dates.

Much of south Florida's development at the end of the nineteenth- and early twentieth centuries relates to the workings of Henry Flagler's Florida East Coast Railroad (FECRR). Flagler received Florida land grants amounting to several million acres between 1885 and 1912 under the Swamp Land Grant Act of 1850. Because the Federal government controlled this program, and preferred land going to reclamation projects rather than railroads, it terminated the program. Consequently, Flagler did not receive much of the land promised him. Following a legal dispute with the state's Internal Improvement Fund, he settled for title to 260,000 acres, the largest portion of which—210,000 acres—was in the Cape Sable area. Flagler went on to increase his holdings through purchases from other corporations and individuals, or by taking over companies having their own properties. He established a Land Department within the FECRR to manage the company's real estate. In 1900, Flagler split off this department as a separate corporation, the Model Land Company (Brown and Hudson 1996:48–50).

James Ingraham initiated drainage efforts in the Cape Sable area while working for Flagler's companies. At one time a president of Henry Sanford's South Florida Railroad Company, Ingraham took part in an 1892 survey of the Everglades on behalf of railroad executive Henry Plant to identify possible routes to gain access to Key West (via ferry). Although Ingraham found the region unsuitable for rail travel, he became convinced it could be developed for farming. Meanwhile, he reported that a route to Key West from the peninsula's east coast was the most practical for a rail line. Henry Flagler took note of Ingraham's appraisals of both railroad and land improvement prospects, and hired him as a vice-president of the FECRR as well as making him head of its Land Department. Flagler later put Ingraham in charge of the Model Land Company and other real estate operations of the FECRR (Brown and Hudson 1996:65; Vogel 2015).

The Model Land Company under Ingraham aggressively and successfully marketed south Florida. Among the strategies for growth, the company established "colonies" in new areas to encourage settlement as well as undertaking land reclamation and transportation programs (Brown and Hudson 1996). Around 1914, Ingraham instigated construction of a road (later the Ingraham Highway) between Royal Palm State Park at Paradise Key and the town of Flamingo on Florida Bay as an inducement to investors. The road was constructed between 1915 and 1919, while the adjacent ditch supplying building material became the Homestead Canal (Hammond 2008:104).

Ingraham planned on establishing a new settlement west of Flamingo once the new highway was completed. He began efforts at reclaiming land in 1919 with a westward extension of the Homestead Canal toward Whitewater Lake (later Lake Ingraham). Ingraham's death in 1924 sapped the project of much of its momentum, while the Florida real estate crash in 1926 effectively ended efforts at developing the region (Hammond 2008:105). By this time, settlers and scientists had come to understand that the Everglades was poorly suited for cultivation (Douglas 1947:379; Grunwald 2006:166; McCally 1999:122–125), which further detracted from potential investment. Also around the same time, Ernest Coe began promoting the idea of establishing a national park in the Everglades. The concept received official approval in the Federal government in 1934. Over the following years, the state gradually acquired land for the park until, in 1946, Governor Millard Caldwell set up the Everglades National Park Commission to accomplish this process more efficiently. Finding that the majority of the Everglades had no potential for agriculture, the commission invoked eminent domain laws to obtain the necessary land in a single action, in effect freezing all future speculation and development (Douglas 1947:380–381). The Cape Sable area went from private ownership to public land during this period.

When Ingraham began the western extension of the Homestead Canal, the Cape Sable area was sparsely occupied by settlers raising crops for shipment to Key West. Wanless and Vlaswinkel (2005:25) note that the canals built in the project area date from the early to mid-1920s and reflect a series of dredging projects intended to drain the interior freshwater marsh for cultivation and grazing. Historic maps and aerial photographs illustrate this process. The U.S. Coast and Geodetic Survey East Cape to Mormon Key chart illustrates the area north and west of Whitewater Lake (Lake Ingraham). The 1924 edition shows no canals in this area, while the Raulerson Brothers Canal (and nearby Middle Cape Canal) appear on the 1932 edition (U.S. Coast and Geodetic Survey 1924, 1932). A 1928 aerial photograph reproduced in Wanless and Vlaswinkel (2005:38) shows these canals in place by then.

The two project area canals to the south apparently were built at the same time. The earliest source to illustrate these canals was the U.S. Geodetic Survey Alligator Reef to Sombrero Key chart of 1933, which indicated that both canals were in place by that year (U.S. Coast and

Geodetic Survey 1933). The 1957 edition of the chart also shows the road (now Coastal Prairie Trail) from Flamingo extending west to House Ditch (U.S. Coast and Geodetic Survey 1957). Wanless and Vlaswinkel (2005:24) noted that this road was actively used despite treacherous bridge crossings at Slagle's and House ditches.

Construction of these canals exposed Lake Ingraham and the interior freshwater marshes to tidal influence, saline intrusion, and erosion. To counteract these effects, Everglades National Park tried blocking the canals with earthen dams in the 1950s and 1960s. After these failed by the early 1990s, sheet pile dams were installed, which also failed (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The current Cape Sable Canals Dam Rehabilitation project reflects efforts to provide solutions to these issues.

Raulerson Brothers Canal (Field Site [FS] 1)

The Raulerson Brothers Canal connects the Everglades marsh to the northwestern corner of Lake Ingraham. Though its exact construction date is unknown, it falls between the completion of the Homestead Canal in 1919 and the publication of a 1928 aerial photograph reproduced by Wanless and Vlaswinkel (2005:38).

Three earthen dams were constructed along the Raulerson Brothers Canal by the Everglades National Park sometime in the 1950s or 1960s. Following their failure, these dams were replaced by sheet pile dams in the early 1990s. The sheet pile dams also failed and the canal is currently not impeded (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010) (Figure 2).

The locations of the three dams were not visible during fieldwork. All three were shovel tested (one shovel test on either canal bank at each dam location) and photographed. The canal banks consisted of marl clay and dredge spoil. No artifacts or related structures were observed.

Though it was likely built near the end of the land boom and did not serve to catalyze further development, the Raulerson Brothers Canal was part of Flagler's early twentieth century land development plans for Cape Sable. However, the evidence that the Model Land Company actually built the canal is circumstantial. Though the canal itself is intact, the three dams have been largely destroyed and no other historic structures were identified. Due to the lack of structures and intact features (except for the canal itself), the site does not retain the potential to provide important information regarding the historic use of the area. It does not exhibit any direct association with the lives of significant persons or any architectural significance.

Based on its association with the twentieth century development of the Cape Sable region, New South recommends that the Raulerson Brothers Canal is eligible to the NRHP under Criterion A. Criteria B, C, and D are not applicable to this resource.

Based on its association with the twentieth century development of the Cape Sable region, New South recommends that Slagle Ditch is eligible to the NRHP under Criterion A. Criteria B, C, and D are not applicable to this resource.

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U.S. Coast and Geodetic Survey
1924 East Cape to Mormon BayUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

1932 East Cape to Mormon BayUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

1957 Alligator Reef to Sombrero KeyUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

Vogel, Ruthanne
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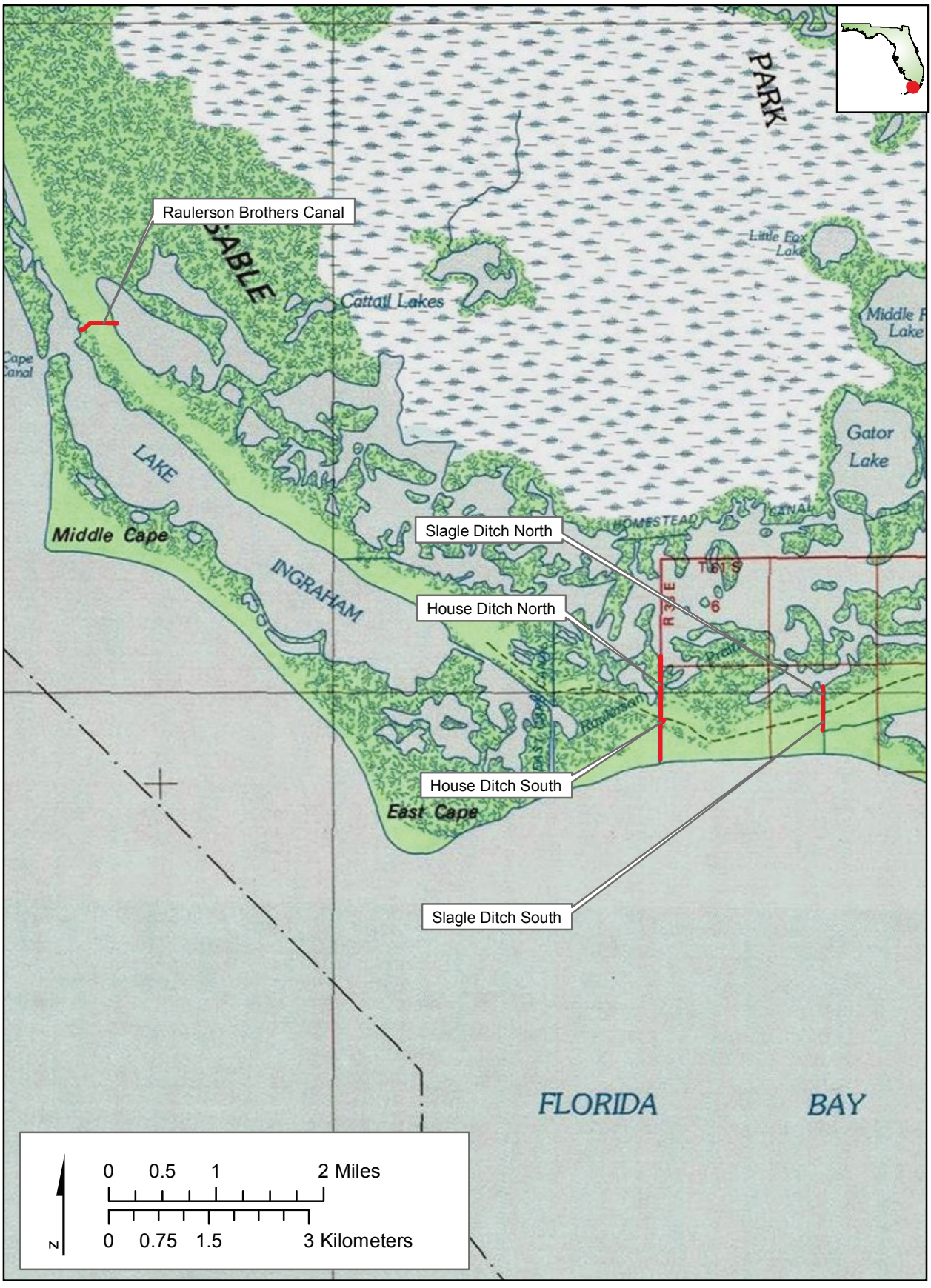
Wanless, Harold R., and Brigitte M. Vlaswinkel
2005 *Coastal Landscape and Channel Evolution Affecting Critical Habitats at Cape Sable, Everglades National Park, Florida*. University of Miami, Miami, Florida.

Zucker, Mark, and Carrie Boudreau
2010 Sediment Transport on Cape Sable, Everglades National Park, Florida. In . Las Vegas, Nevada.



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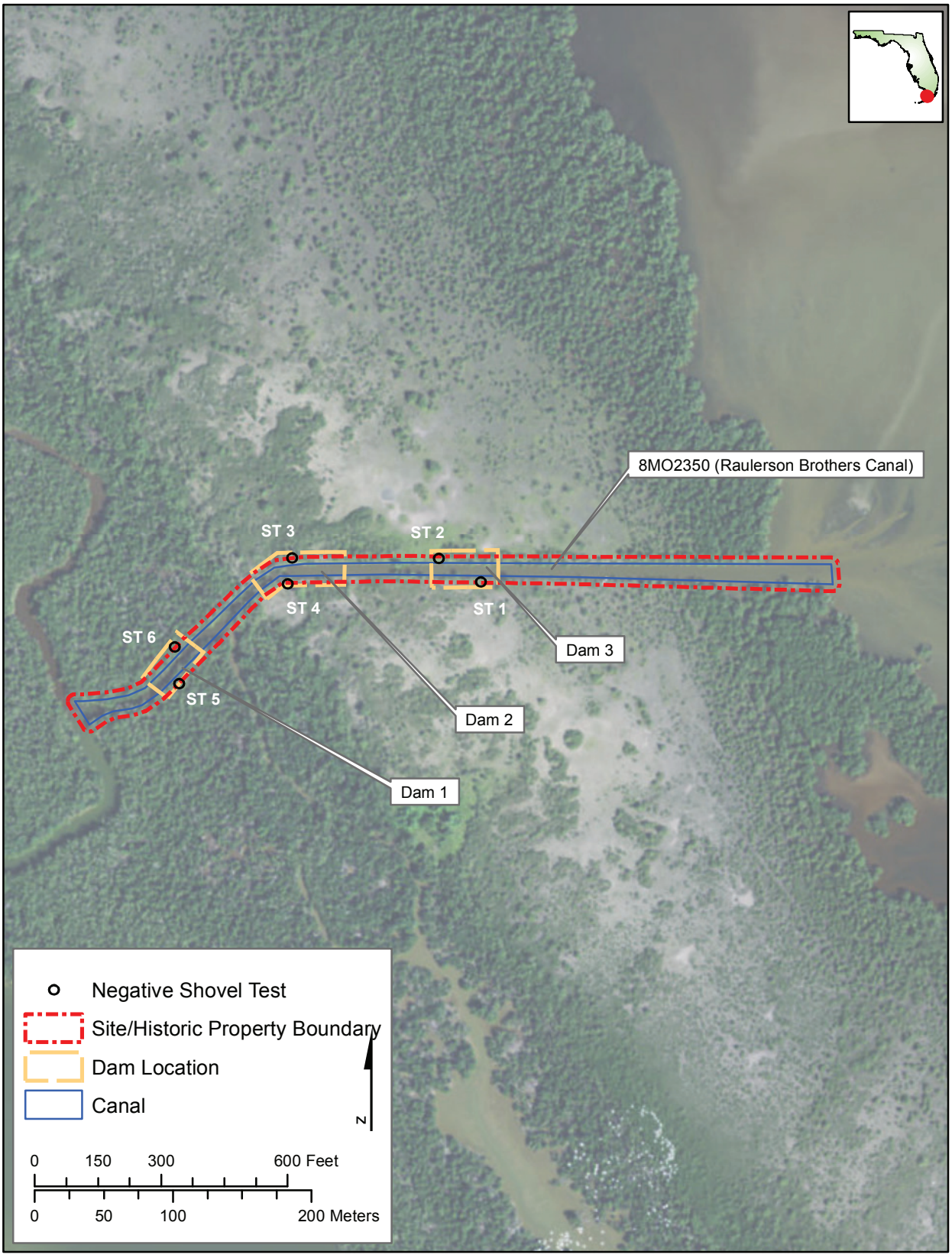

Source: ESRI Resouce Data

Page 1

☒Original
☐Update

ARCHAEOLOGICAL SITE FORM
FLORIDA MASTER SITE FILE
Version 4.0 1/07

Consult *Guide to Archaeological Site Form* for detailed instructions

Site #8 MO02351
Field Date 9-10-2015
Form Date 10-9-2015
Recorder # FS 2

Site Name(s) House Ditch — Multiple Listing (DHR only) _____
Project Name Cape Sable Dams Restoration Project — Survey # (DHR only) _____
Ownership: ☐private-profit ☐private-nonprofit ☐private-individual ☐private-nonspecific ☐city ☐county ☐state ☒federal ☐Native American ☐foreign ☐unknown

LOCATION & MAPPING
Clear Location Values

USGS 7.5 Map Name LAKE INGRAHAM EAST — USGS Date 1974 — Plat or Other Map _____
City/Town (within 3 miles) _____ — In City Limits? ☐yes ☒no ☐unknown — County Monroe
Township _____ Range _____ Section _____ ¼ section: ☐NW ☐SW ☐SE ☐NE — Irregular-name: _____
Township _____ Range _____ Section _____ ¼ section: ☐NW ☐SW ☐SE ☐NE
Landgrant _____ — Tax Parcel # _____
UTM Coordinates: Zone ☐16 ☒17 — Easting 494925 — Northing 2779851
Other Coordinates: X: _____ Y: _____ — Coordinate System & Datum UTM, NAD 1983
Address / Vicinity / Route to: Boat access only, from Flamingo Marina along coast

Name of Public Tract (e.g., park) Everglades National Park

TYPE OF SITE (select all that apply)

SETTING

- ☐Land (*terrestrial*)
- ☐Lake/Pond (*lacustrine*)
- ☐River/Stream/Creek (*riverine*)
- ☒Tidal (*estuarine*)
- ☐Saltwater (*marine*)
- ☐Wetland (*palustrine*)
  - ☐usually flooded
  - ☐usually dry
- ☐Cave/Sink (*subterranean*)
  - ☐terrestrial
  - ☐aquatic

STRUCTURES OR FEATURES

- ☐log boat
- ☐agric/farm building
- ☐burial mound
- ☐building remains
- ☐cemetery/grave
- ☐dump/refuse
- ☒earthworks (historic)
- ☐fort
- ☐midden
- ☐mill
- ☐mission
- ☐mound, nonspecific
- ☐plantation
- ☐platform mound
- ☐road segment
- ☐shell midden
- ☐shell mound
- ☐shipwreck
- ☐subsurface features
- ☐surface scatter
- ☐well

FUNCTION

- ☐campsite
- ☐extractive site
- ☐habitation (prehistoric)
- ☐homestead (historic)
- ☐farmstead
- ☐village (prehistoric)
- ☐town (historic)
- ☐quarry

Other Features or Functions (Choose from the list or type a response.)
1. _____ 2. _____

CULTURE PERIODS (select all that apply)

ABORIGINAL

- ☐Alachua
- ☐Archaic (nonspecific)
- ☐Archaic, Early
- ☐Archaic, Middle
- ☐Archaic, Late
- ☐Belle Glade
- ☐Cades Pond
- ☐Caloosahatchee
- ☐Deptford
- ☐Englewood
- ☐Fort Walton
- ☐Glades (nonspecific)
- ☐Glades I
- ☐Glades II
- ☐Glades III
- ☐Hickory Pond
- ☐Leon-Jefferson
- ☐Malabar I
- ☐Malabar II
- ☐Manasota
- ☐Mississippian
- ☐Mount Taylor
- ☐Norwood
- ☐Orange
- ☐Paleoindian
- ☐Pensacola
- ☐Perico Island
- ☐Safety Harbor
- ☐St. Augustine
- ☐St. Johns (nonspecific)
- ☐St. Johns I
- ☐St. Johns II
- ☐Santa Rosa
- ☐Santa Rosa-Swift Creek
- ☐Seminole (nonspecific)
- ☐Seminole: Colonization
- ☐Seminole: 1st War To 2nd
- ☐Seminole: 2nd War To 3rd
- ☐Seminole: 3rd War & After
- ☐Swift Creek (nonspecific)
- ☐Swift Creek, Early
- ☐Swift Creek, Late
- ☐Transitional
- ☐Weeden Island (nonspecific)
- ☐Weeden Island I
- ☐Weeden Island II
- ☐Prehistoric (nonspecific)
- ☐Prehistoric non-ceramic
- ☐Prehistoric ceramic

NON-ABORIGINAL

- ☐First Spanish 1513-99
- ☐First Spanish 1600-99
- ☐First Spanish 1700-1763
- ☐First Spanish (nonspecific)
- ☐British 1763-1783
- ☐Second Spanish 1783-1821
- ☐American Territorial 1821-45
- ☐American Civil War 1861-65
- ☐American 19th Century
- ☒American 20th Century
- ☐American (nonspecific)
- ☐African-American

Other Cultures (Choose from the list or type a response. For historic sites, give specific dates.)
1. _____ 3. _____
2. _____ 4. _____

OPINION OF RESOURCE SIGNIFICANCE
Clear Evaluation Values

Potentially eligible individually for National Register of Historic Places? ☒yes ☐no ☐insufficient information
Potentially eligible as contributor to a National Register district? ☒yes ☐no ☐insufficient information
Explanation of Evaluation (required if evaluated; use separate sheet if needed) the ditch is likely part of the Model Land Company's (Flagler and Ingraham) larger early 20th century land development plans for Cape Sable (criterion A), though it doesn't retain any archaeological information (D) or architectural significance (C)
Recommendations for Owner or SHPO Action doubtful that the proposed restoration project will have any adverse effect on the ditch

DHR USE ONLY	OFFICIAL EVALUATION	DHR USE ONLY
NR List Date _____ ☐Owner Objection	SHPO – Appears to meet criteria for NR listing: ☐yes ☐no ☐insufficient info Date _____ Init._____ KEEPER – Determined eligible: ☐yes ☐no Date _____ NR Criteria for Evaluation: ☐a ☐b ☐c ☐d (see *National Register Bulletin 15*, p. 2)	

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Page 2

ARCHAEOLOGICAL SITE FORM

Site #8 MO02351

FIELD METHODS (select all that apply)

SITE DETECTION			SITE BOUNDARY		
☐no field check	☒exposed ground	☒screened shovel	☐bounds unknown	☐remote sensing	☐unscreened shovel
☐literature search	☐posthole tests	☐screened shovel-1/4"	☐none by recorder	☒exposed ground	☒screened shovel
☐informant report	☐auger tests	☐screened shovel-1/8"	☐literature search	☐posthole tests	☐block excavations
☐remote sensing	☐unscreened shovel	☐screened shovel-1/16"	☐informant report	☐auger tests	☐estimate or guess

Other methods; number, size, depth, pattern of units; screen size (attach site plan) pedestrian/boat survey of ditch and dam, 1 shovel test dug into dam feature, three shovel tests around site, 1/4 inch screen

SITE DESCRIPTION

Extent Size (m^2) 11,540 Depth/stratigraphy of cultural deposit marl clay at the surface, dredge spoil used to build dam (marl and limestone)

Temporal Interpretation - Components (check one): ☒single component ☐multiple component ☐uncertain

Describe each occupation in plan (refer to attached large scale map) and stratigraphically. Discuss temporal and functional interpretations:
20th century drainage feature only

Integrity - Overall disturbance: ☐none seen ☒minor ☐substantial ☐major ☐redeposited ☐destroyed-**document!** ☐unknown

Disturbances / threats / protective measures erosion, dam is slightly eroded but remains intact

Surface collection: area collected _____ m^2 # collection units_____ | Excavation: # noncontiguous blocks _____

ARTIFACTS

Clear Artifact Values

Total Artifacts #0 ○count ○estimate | Surface #_____ | Subsurface #_____

COLLECTION SELECTIVITY

☐unknown ☒unselective (all artifacts) ☐selective (some artifacts) ☐mixed selectivity

SPATIAL CONTROL

☐uncollected ☐general (not by subarea) ☐unknown ☐controlled (by subarea) ☐variable spatial control ☐other (describe in comments below)

ARTIFACT CATEGORIES and DISPOSITIONS

____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____

select a disposition from the list below for each artifact category selected at left

A - category always collected
S - some items in category collected
O - observed first hand, but not collected
R - collected and subsequently left at site
I - informant reported category present
U - unknown

Artifact Comments _____

DIAGNOSTICS (type or mode, and frequency: e.g., *Suwanee ppk, heat-treated chert, Deptford Check-stamped, ironstone/whiteware*)

1. _____ N=____ 4. _____ N=____ 7. _____ N=____
2. _____ N=____ 5. _____ N=____ 8. _____ N=____
3. _____ N=____ 6. _____ N=____ 9. _____ N=____

ENVIRONMENT

Clear Environment Values

Nearest fresh water: Type Other Name Atlantic Ocean Distance from site (m) 1
Natural community ESTUARINE TIDAL MARSH Topography Coastal-ocean Elevation: Min 0 m Max 1 m
Local vegetation mangroves
Present land use ditch
SCS soil series none available Soil association none available

DOCUMENTATION

Clear Documentation Values

Accessible Documentation Not Filed with the Site File - including field notes, analysis notes, photos, plans and other important documents

1) Document type Photographs Maintaining organization New South Associates
Document description digital photos File or accession #'s _____

2) Document type Field notes Maintaining organization New South Associates
Document description _____ File or accession #'s _____

RECORDER & INFORMANT INFORMATION

Informant Information: Name _____
Address / Phone / E-mail _____

Recorder Information: Name Danny Gregory Affiliation New South Associates
Address / Phone / E-mail 408B Blandwood Ave, Greensboro, NC 27401, 336-379-0433, dgregory@newsouthassoc.com

Required Attachments

❶ **PHOTOCOPY OF 7.5' USGS QUAD MAP WITH SITE BOUNDARIES MARKED *and* SITE PLAN**
Plan at 1:3,600 or larger. Show boundaries, scale, north arrow, test/collection units, landmarks and date.

Cape Sable Dams Restoration Project

New South Associates, 2015

Historic Context

The Raulerson Brothers Canal, Slagle Ditch, and House Ditch date to the 1920s and reflect efforts at reclaiming the marshy Cape Sable area for agriculture and land development (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The canals cut through the marl ridge along the southwest and south margins of Cape Sable and connect the interior freshwater marsh to Lake Ingraham and Florida Bay. These three drainage features, along with the Homestead Canal, J Canal, East Cape Canal, Middle Cape Canal, and Ingraham Canal, were built by the Model Land Company, a holding of the Florida East Coast Railroad, which was the largest land owner in the Cape Sable area during the early twentieth century. The following brief overview describes the canals' historic context and documents their approximate dates.

Much of south Florida's development at the end of the nineteenth- and early twentieth centuries relates to the workings of Henry Flagler's Florida East Coast Railroad (FECRR). Flagler received Florida land grants amounting to several million acres between 1885 and 1912 under the Swamp Land Grant Act of 1850. Because the Federal government controlled this program, and preferred land going to reclamation projects rather than railroads, it terminated the program. Consequently, Flagler did not receive much of the land promised him. Following a legal dispute with the state's Internal Improvement Fund, he settled for title to 260,000 acres, the largest portion of which—210,000 acres—was in the Cape Sable area. Flagler went on to increase his holdings through purchases from other corporations and individuals, or by taking over companies having their own properties. He established a Land Department within the FECRR to manage the company's real estate. In 1900, Flagler split off this department as a separate corporation, the Model Land Company (Brown and Hudson 1996:48–50).

James Ingraham initiated drainage efforts in the Cape Sable area while working for Flagler's companies. At one time a president of Henry Sanford's South Florida Railroad Company, Ingraham took part in an 1892 survey of the Everglades on behalf of railroad executive Henry Plant to identify possible routes to gain access to Key West (via ferry). Although Ingraham found the region unsuitable for rail travel, he became convinced it could be developed for farming. Meanwhile, he reported that a route to Key West from the peninsula's east coast was the most practical for a rail line. Henry Flagler took note of Ingraham's appraisals of both railroad and land improvement prospects, and hired him as a vice-president of the FECRR as well as making him head of its Land Department. Flagler later put Ingraham in charge of the Model Land Company and other real estate operations of the FECRR (Brown and Hudson 1996:65; Vogel 2015).

The Model Land Company under Ingraham aggressively and successfully marketed south Florida. Among the strategies for growth, the company established "colonies" in new areas to encourage settlement as well as undertaking land reclamation and transportation programs (Brown and Hudson 1996). Around 1914, Ingraham instigated construction of a road (later the Ingraham Highway) between Royal Palm State Park at Paradise Key and the town of Flamingo on Florida Bay as an inducement to investors. The road was constructed between 1915 and 1919, while the adjacent ditch supplying building material became the Homestead Canal (Hammond 2008:104).

Ingraham planned on establishing a new settlement west of Flamingo once the new highway was completed. He began efforts at reclaiming land in 1919 with a westward extension of the Homestead Canal toward Whitewater Lake (later Lake Ingraham). Ingraham's death in 1924 sapped the project of much of its momentum, while the Florida real estate crash in 1926 effectively ended efforts at developing the region (Hammond 2008:105). By this time, settlers and scientists had come to understand that the Everglades was poorly suited for cultivation (Douglas 1947:379; Grunwald 2006:166; McCally 1999:122–125), which further detracted from potential investment. Also around the same time, Ernest Coe began promoting the idea of establishing a national park in the Everglades. The concept received official approval in the Federal government in 1934. Over the following years, the state gradually acquired land for the park until, in 1946, Governor Millard Caldwell set up the Everglades National Park Commission to accomplish this process more efficiently. Finding that the majority of the Everglades had no potential for agriculture, the commission invoked eminent domain laws to obtain the necessary land in a single action, in effect freezing all future speculation and development (Douglas 1947:380–381). The Cape Sable area went from private ownership to public land during this period.

When Ingraham began the western extension of the Homestead Canal, the Cape Sable area was sparsely occupied by settlers raising crops for shipment to Key West. Wanless and Vlaswinkel (2005:25) note that the canals built in the project area date from the early to mid-1920s and reflect a series of dredging projects intended to drain the interior freshwater marsh for cultivation and grazing. Historic maps and aerial photographs illustrate this process. The U.S. Coast and Geodetic Survey East Cape to Mormon Key chart illustrates the area north and west of Whitewater Lake (Lake Ingraham). The 1924 edition shows no canals in this area, while the Raulerson Brothers Canal (and nearby Middle Cape Canal) appear on the 1932 edition (U.S. Coast and Geodetic Survey 1924, 1932). A 1928 aerial photograph reproduced in Wanless and Vlaswinkel (2005:38) shows these canals in place by then.

The two project area canals to the south apparently were built at the same time. The earliest source to illustrate these canals was the U.S. Geodetic Survey Alligator Reef to Sombrero Key chart of 1933, which indicated that both canals were in place by that year (U.S. Coast and

Geodetic Survey 1933). The 1957 edition of the chart also shows the road (now Coastal Prairie Trail) from Flamingo extending west to House Ditch (U.S. Coast and Geodetic Survey 1957). Wanless and Vlaswinkel (2005:24) noted that this road was actively used despite treacherous bridge crossings at Slagle's and House ditches.

Construction of these canals exposed Lake Ingraham and the interior freshwater marshes to tidal influence, saline intrusion, and erosion. To counteract these effects, Everglades National Park tried blocking the canals with earthen dams in the 1950s and 1960s. After these failed by the early 1990s, sheet pile dams were installed, which also failed (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The current Cape Sable Canals Dam Rehabilitation project reflects efforts to provide solutions to these issues.

House Ditch (FS 2)

House Ditch first appears on the U.S. Coast and Geodetic Survey *Alligator Reef to Sombrero Key* chart of 1933 (U.S. Coast and Geodetic Survey 1933). The ditch itself is narrow and overgrown with mangroves, but is accessible by small boat at high tide. The foot path and drop zones all contained marl clay at the surface and were within active marshes. Standing water is present in most areas. Due to the presence of hydric soils, shovel testing was conducted along the foot path or in the drop zones.

The House Ditch dam (Feature 1) is visible and measures approximately 20 meters east/west by 3 meters north/south and is approximately 50 centimeters high (Figure 3). It is composed of dredge spoil (marl clay and limestone). One shovel test was excavated into the dam to confirm its identification.

Though it was likely built near the end of the land boom and did not serve to catalyze further development, House Ditch was part of Flagler's early twentieth century land development plans for Cape Sable. However, the evidence that the Model Land Company actually built the ditch is circumstantial. The ditch and dam (Feature 1) are intact, no other historic structures were identified. Due to the lack of structures, the site does not retain the potential to provide important information regarding the historic use of the area. It does not exhibit any direct association with the lives of significant persons or any architectural significance.

Based on its association with the twentieth century development of the Cape Sable region, New South recommends that House Ditch is eligible to the NRHP under Criterion A. Criteria B, C, and D are not applicable to this resource.

References Cited

Brown, William E., and Karen Hudson
1996 Henry Flagler and the Model Land Company. *Tequesta* 56: 46–78.

Douglas, Marjory Stoneman
1947 *The Everglades River of Grass*. Hurricane House Publishers, Inc., Coconut Grove, FL.

Grunwald, Michael
2006 *The Swamp: The Everglades, Florida, an the Politics of Paradise*. Simon & Schuster, New York.

Hammond, James
2008 *Florida's Vanishing Trail*. Self Published.

McCally, David
1999 *The Everglades: An Environmental History*. University Press of Florida, Gainesville, Florida.

U.S. Coast and Geodetic Survey
1924 East Cape to Mormon BayUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

1932 East Cape to Mormon BayUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

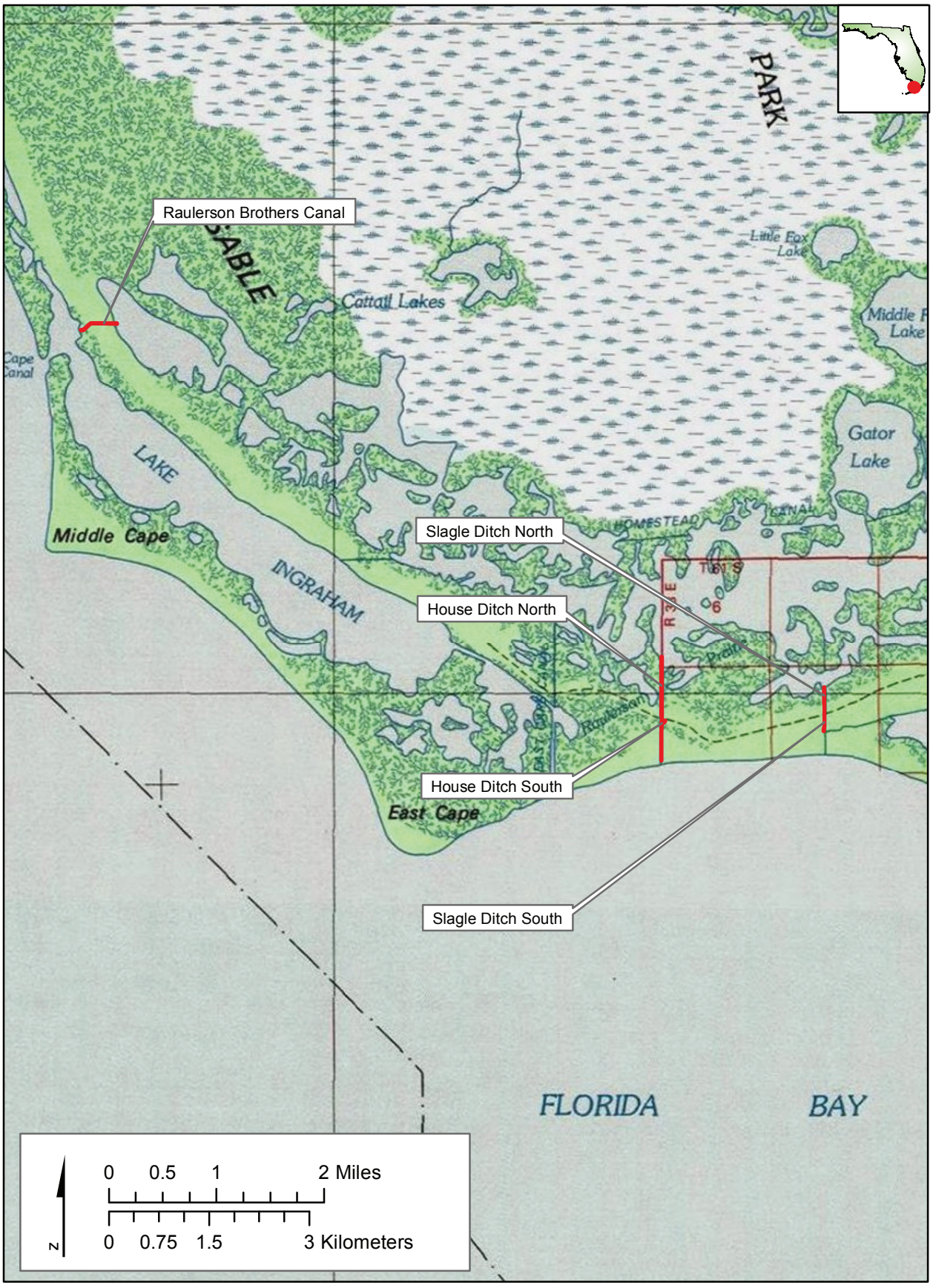
1933 Alligator Reef to Sombrero KeyUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

1957 Alligator Reef to Sombrero KeyUnpublished Nautical Chart. U.S. Coast and Geodetic Survey. NOAA Office of Coast Survey Historical Map & Chart Collection.

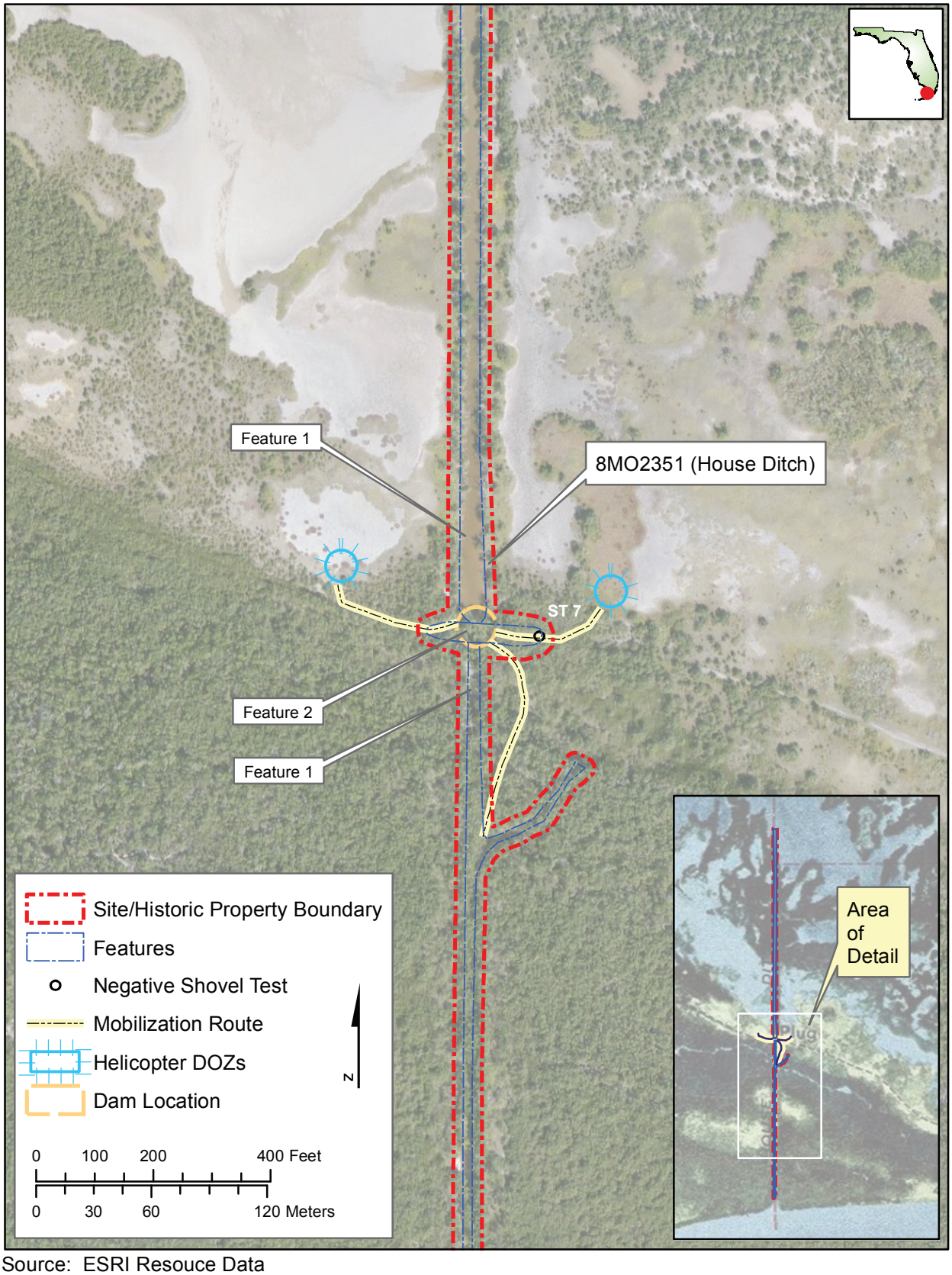
Vogel, Ruthanne
2015 Everglades Biographies: James Edmundson Ingraham. *Reclaiming the Everglades: South Florida's Natural History, 1884-1934*.

Wanless, Harold R., and Brigitte M. Vlaswinkel
2005 *Coastal Landscape and Channel Evolution Affecting Critical Habitats at Cape Sable, Everglades National Park, Florida*. University of Miami, Miami, Florida.

Zucker, Mark, and Carrie Boudreau
2010 Sediment Transport on Cape Sable, Everglades National Park, Florida. In . Las Vegas, Nevada.



Source: ESRI Resouce Data



Source: ESRI Resouce Data

Page 1

☒Original
☐Update

ARCHAEOLOGICAL SITE FORM
FLORIDA MASTER SITE FILE
Version 4.0 1/07

Consult *Guide to Archaeological Site Form* for detailed instructions

Site #8 _____
Field Date 9-10-2015
Form Date 10-9-2015
Recorder # FS 3

Site Name(s) Slagle Ditch — Multiple Listing (DHR only) _____
Project Name Cape Sable Dams Restoration Project — Survey # (DHR only) _____
Ownership: ☐private-profit ☐private-nonprofit ☐private-individual ☐private-nonspecific ☐city ☐county ☐state ☒federal ☐Native American ☐foreign ☐unknown

LOCATION & MAPPING

Clear Location Values

USGS 7.5 Map Name LAKE INGRAHAM EAST — USGS Date 1974 — Plat or Other Map _____
City/Town (within 3 miles) _____ — In City Limits? ☐yes ☒no ☐unknown — County Monroe
Township _____ Range _____ Section _____ ¼ section: ☐NW ☐SW ☐SE ☐NE — Irregular-name: _____
Township _____ Range _____ Section _____ ¼ section: ☐NW ☐SW ☐SE ☐NE
Landgrant _____ — Tax Parcel # _____
UTM Coordinates: Zone ☐16 ☒17 Easting 497361 Northing 2779917
Other Coordinates: X: _____ Y: _____ — Coordinate System & Datum UTM, NAD 1983
Address / Vicinity / Route to: Boat access only, from Flamingo Marina along coast
Name of Public Tract (e.g., park) Everglades National Park

TYPE OF SITE (select all that apply)

SETTING

☐Land (*terrestrial*)
☐Lake/Pond (*lacustrine*)
☐River/Stream/Creek (*riverine*)
☒Tidal (*estuarine*)
☐Saltwater (*marine*)
☐Wetland (*palustrine*)
  ☐usually flooded
  ☐usually dry
☐Cave/Sink (*subterranean*)
  ☐terrestrial
  ☐aquatic

STRUCTURES OR FEATURES

☐log boat
☐agric/farm building
☐burial mound
☐building remains
☐cemetery/grave
☐dump/refuse
☒earthworks (historic)
☐fort
☐midden
☐mill
☐mission
☐mound, nonspecific
☐plantation
☐platform mound
☐road segment
☐shell midden
☐shell mound
☐shipwreck
☐subsurface features
☐surface scatter
☐well

FUNCTION

☐campsite
☐extractive site
☐habitation (prehistoric)
☐homestead (historic)
☐farmstead
☐village (prehistoric)
☐town (historic)
☐quarry

Other Features or Functions (Choose from the list or type a response.)
1. Earthen Dam — 2. Ditch

CULTURE PERIODS (select all that apply)

ABORIGINAL

☐Alachua
☐Archaic (nonspecific)
☐Archaic, Early
☐Archaic, Middle
☐Archaic, Late
☐Belle Glade
☐Cades Pond
☐Caloosahatchee
☐Deptford
☐Englewood
☐Fort Walton
☐Glades (nonspecific)
☐Glades I
☐Glades II
☐Glades III
☐Hickory Pond
☐Leon-Jefferson
☐Malabar I
☐Malabar II
☐Manasota
☐Mississippian
☐Mount Taylor
☐Norwood
☐Orange
☐Paleoindian
☐Pensacola
☐Perico Island
☐Safety Harbor
☐St. Augustine
☐St. Johns (nonspecific)
☐St. Johns I
☐St. Johns II
☐Santa Rosa
☐Santa Rosa-Swift Creek
☐Seminole (nonspecific)
☐Seminole: Colonization
☐Seminole: 1st War To 2nd
☐Seminole: 2nd War To 3rd
☐Seminole: 3rd War & After
☐Swift Creek (nonspecific)
☐Swift Creek, Early
☐Swift Creek, Late
☐Transitional
☐Weeden Island (nonspecific)
☐Weeden Island I
☐Weeden Island II
☐Prehistoric (nonspecific)
☐Prehistoric non-ceramic
☐Prehistoric ceramic

NON-ABORIGINAL

☐First Spanish 1513-99
☐First Spanish 1600-99
☐First Spanish 1700-1763
☐First Spanish (nonspecific)
☐British 1763-1783
☐Second Spanish 1783-1821
☐American Territorial 1821-45
☐American Civil War 1861-65
☐American 19th Century
☒American 20th Century
☐American (nonspecific)
☐African-American

Other Cultures (Choose from the list or type a response. For historic sites, give specific dates.)
1. _____ — 3. _____
2. _____ — 4. _____

OPINION OF RESOURCE SIGNIFICANCE

Clear Evaluation Values

Potentially eligible individually for National Register of Historic Places? ☒yes ☐no ☐insufficient information
Potentially eligible as contributor to a National Register district? ☒yes ☐no ☐insufficient information
Explanation of Evaluation (required if evaluated; use separate sheet if needed) the ditch is likely part of the Model Land Company's (Flagler and Ingraham) larger early 20th century land development plans for Cape Sable (criterion A), though it doesn't retain any archaeological information (D) or architectural significance (C)
Recommendations for Owner or SHPO Action doubtful that the proposed restoration project will have any adverse effect on the ditch

DHR USE ONLY	OFFICIAL EVALUATION	DHR USE ONLY
NR List Date _____ ☐Owner Objection	SHPO – Appears to meet criteria for NR listing: ☐yes ☐no ☐insufficient info Date _____ Init._____ KEEPER – Determined eligible: ☐yes ☐no Date _____ NR Criteria for Evaluation: ☐a ☐b ☐c ☐d (see *National Register Bulletin 15*, p. 2)	

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Page 2

ARCHAEOLOGICAL SITE FORM

Site #8 _____

FIELD METHODS (select all that apply)

SITE DETECTION			SITE BOUNDARY		
☐no field check	☒exposed ground	☒screened shovel	☐bounds unknown	☐remote sensing	☐unscreened shovel
☐literature search	☐posthole tests	☐screened shovel-1/4"	☐none by recorder	☒exposed ground	☒screened shovel
☐informant report	☐auger tests	☐screened shovel-1/8"	☐literature search	☐posthole tests	☐block excavations
☐remote sensing	☐unscreened shovel	☐screened shovel-1/16"	☐informant report	☐auger tests	☐estimate or guess

Other methods; number, size, depth, pattern of units; screen size (attach site plan) pedestrian/boat survey of ditch and dam, 1 shovel test dug into dam feature, three shovel tests around site, 1/4 inch screen

SITE DESCRIPTION

Extent Size (m^2) 11,540 Depth/stratigraphy of cultural deposit marl clay at the surface, dredge spoil used to build dam (marl and limestone)

Temporal Interpretation - Components (check one): ☒single component ☐multiple component ☐uncertain

Describe each occupation in plan (refer to attached large scale map) and stratigraphically. Discuss temporal and functional interpretations:
20th century drainage feature only

Integrity - Overall disturbance: ☐none seen ☒minor ☐substantial ☐major ☐redeposited ☐destroyed-**document!** ☐unknown

Disturbances / threats / protective measures erosion, dam is slightly eroded but remains intact

Surface collection: area collected _____ m^2 # collection units_____ | Excavation: # noncontiguous blocks _____

ARTIFACTS

Clear Artifact Values

Total Artifacts #____0____ Ocount Oestimate | Surface #_____ | Subsurface #_____

COLLECTION SELECTIVITY

☐unknown ☒unselective (all artifacts) ☐selective (some artifacts) ☐mixed selectivity

SPATIAL CONTROL

☐uncollected ☐general (not by subarea) ☐unknown ☐controlled (by subarea) ☐variable spatial control ☐other (describe in comments below)

ARTIFACT CATEGORIES and DISPOSITIONS

____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____
____ - _____

select a disposition from the list below for each artifact category selected at left

A - category always collected
S - some items in category collected
O - observed first hand, but not collected
R - collected and subsequently left at site
I - informant reported category present
U - unknown

Artifact Comments _____

DIAGNOSTICS (type or mode, and frequency: e.g., *Suwanee ppk, heat-treated chert, Deptford Check-stamped, ironstone/whiteware*)

1. _____ N=____ 4. _____ N=____ 7._____ N=____
2. _____ N=____ 5. _____ N=____ 8._____ N=____
3. _____ N=____ 6. _____ N=____ 9._____ N=____

ENVIRONMENT

Clear Environment Values

Nearest fresh water: Type Other Name Atlantic Ocean Distance from site (m) 1
Natural community ESTUARINE TIDAL MARSH Topography Coastal-ocean Elevation: Min 0 m Max 1 m
Local vegetation mangroves
Present land use ditch
SCS soil series none available Soil association none available

DOCUMENTATION

Clear Documentation Values

Accessible Documentation Not Filed with the Site File - including field notes, analysis notes, photos, plans and other important documents

1) Document type Photographs Maintaining organization New South Associates
Document description digital photos File or accession #'s _____

2) Document type Field notes Maintaining organization New South Associates
Document description _____ File or accession #'s _____

RECORDER & INFORMANT INFORMATION

Informant Information: Name _____
Address / Phone / E-mail _____

Recorder Information: Name Danny Gregory Affiliation New South Associates
Address / Phone / E-mail 408B Blandwood Ave, Greensboro, NC 27401, 336-379-0433, dgregory@newsouthassoc.com

Required Attachments

❶ **PHOTOCOPY OF 7.5' USGS QUAD MAP WITH SITE BOUNDARIES MARKED *and* SITE PLAN**
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Cape Sable Dams Restoration Project

New South Associates, 2015

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The Raulerson Brothers Canal, Slagle Ditch, and House Ditch date to the 1920s and reflect efforts at reclaiming the marshy Cape Sable area for agriculture and land development (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The canals cut through the marl ridge along the southwest and south margins of Cape Sable and connect the interior freshwater marsh to Lake Ingraham and Florida Bay. These three drainage features, along with the Homestead Canal, J Canal, East Cape Canal, Middle Cape Canal, and Ingraham Canal, were built by the Model Land Company, a holding of the Florida East Coast Railroad, which was the largest land owner in the Cape Sable area during the early twentieth century. The following brief overview describes the canals' historic context and documents their approximate dates.

Much of south Florida's development at the end of the nineteenth- and early twentieth centuries relates to the workings of Henry Flagler's Florida East Coast Railroad (FECRR). Flagler received Florida land grants amounting to several million acres between 1885 and 1912 under the Swamp Land Grant Act of 1850. Because the Federal government controlled this program, and preferred land going to reclamation projects rather than railroads, it terminated the program. Consequently, Flagler did not receive much of the land promised him. Following a legal dispute with the state's Internal Improvement Fund, he settled for title to 260,000 acres, the largest portion of which—210,000 acres—was in the Cape Sable area. Flagler went on to increase his holdings through purchases from other corporations and individuals, or by taking over companies having their own properties. He established a Land Department within the FECRR to manage the company's real estate. In 1900, Flagler split off this department as a separate corporation, the Model Land Company (Brown and Hudson 1996:48–50).

James Ingraham initiated drainage efforts in the Cape Sable area while working for Flagler's companies. At one time a president of Henry Sanford's South Florida Railroad Company, Ingraham took part in an 1892 survey of the Everglades on behalf of railroad executive Henry Plant to identify possible routes to gain access to Key West (via ferry). Although Ingraham found the region unsuitable for rail travel, he became convinced it could be developed for farming. Meanwhile, he reported that a route to Key West from the peninsula's east coast was the most practical for a rail line. Henry Flagler took note of Ingraham's appraisals of both railroad and land improvement prospects, and hired him as a vice-president of the FECRR as well as making him head of its Land Department. Flagler later put Ingraham in charge of the Model Land Company and other real estate operations of the FECRR (Brown and Hudson 1996:65; Vogel 2015).

The Model Land Company under Ingraham aggressively and successfully marketed south Florida. Among the strategies for growth, the company established "colonies" in new areas to encourage settlement as well as undertaking land reclamation and transportation programs (Brown and Hudson 1996). Around 1914, Ingraham instigated construction of a road (later the Ingraham Highway) between Royal Palm State Park at Paradise Key and the town of Flamingo on Florida Bay as an inducement to investors. The road was constructed between 1915 and 1919, while the adjacent ditch supplying building material became the Homestead Canal (Hammond 2008:104).

Ingraham planned on establishing a new settlement west of Flamingo once the new highway was completed. He began efforts at reclaiming land in 1919 with a westward extension of the Homestead Canal toward Whitewater Lake (later Lake Ingraham). Ingraham's death in 1924 sapped the project of much of its momentum, while the Florida real estate crash in 1926 effectively ended efforts at developing the region (Hammond 2008:105). By this time, settlers and scientists had come to understand that the Everglades was poorly suited for cultivation (Douglas 1947:379; Grunwald 2006:166; McCally 1999:122–125), which further detracted from potential investment. Also around the same time, Ernest Coe began promoting the idea of establishing a national park in the Everglades. The concept received official approval in the Federal government in 1934. Over the following years, the state gradually acquired land for the park until, in 1946, Governor Millard Caldwell set up the Everglades National Park Commission to accomplish this process more efficiently. Finding that the majority of the Everglades had no potential for agriculture, the commission invoked eminent domain laws to obtain the necessary land in a single action, in effect freezing all future speculation and development (Douglas 1947:380–381). The Cape Sable area went from private ownership to public land during this period.

When Ingraham began the western extension of the Homestead Canal, the Cape Sable area was sparsely occupied by settlers raising crops for shipment to Key West. Wanless and Vlaswinkel (2005:25) note that the canals built in the project area date from the early to mid-1920s and reflect a series of dredging projects intended to drain the interior freshwater marsh for cultivation and grazing. Historic maps and aerial photographs illustrate this process. The U.S. Coast and Geodetic Survey East Cape to Mormon Key chart illustrates the area north and west of Whitewater Lake (Lake Ingraham). The 1924 edition shows no canals in this area, while the Raulerson Brothers Canal (and nearby Middle Cape Canal) appear on the 1932 edition (U.S. Coast and Geodetic Survey 1924, 1932). A 1928 aerial photograph reproduced in Wanless and Vlaswinkel (2005:38) shows these canals in place by then.

The two project area canals to the south apparently were built at the same time. The earliest source to illustrate these canals was the U.S. Geodetic Survey Alligator Reef to Sombrero Key chart of 1933, which indicated that both canals were in place by that year (U.S. Coast and

Geodetic Survey 1933). The 1957 edition of the chart also shows the road (now Coastal Prairie Trail) from Flamingo extending west to House Ditch (U.S. Coast and Geodetic Survey 1957). Wanless and Vlaswinkel (2005:24) noted that this road was actively used despite treacherous bridge crossings at Slagle's and House ditches.

Construction of these canals exposed Lake Ingraham and the interior freshwater marshes to tidal influence, saline intrusion, and erosion. To counteract these effects, Everglades National Park tried blocking the canals with earthen dams in the 1950s and 1960s. After these failed by the early 1990s, sheet pile dams were installed, which also failed (Wanless and Vlaswinkel 2005; Zucker and Boudreau 2010). The current Cape Sable Canals Dam Rehabilitation project reflects efforts to provide solutions to these issues.

Slagle Ditch (FS 3)

Slagle Ditch also first appears on the U.S. Coast and Geodetic Survey *Alligator Reef to Sombrero Key* chart of 1933 (U.S. Coast and Geodetic Survey 1933). The ditch itself was easily accessible by boat up to the southern end of the foot path. Between there and the dam, the ditch consists of a small drainage with little standing water. Pedestrian survey revealed hydric soil (marl clay) along all three foot paths and within both drop zones. One shovel test was excavated within the drop zone, confirming the presence of hydric soil. Two shovel tests were excavated along the foot path in the slightly drier areas, both of which still contained hydric soil.

The Slagle Ditch dam consists of a low earthen berm of dredge spoil (marl and limestone). It measures approximately 25 meters east/west by 3 meters north/south and is 50 centimeters high. Its identification was confirmed by shovel testing. The Coastal Prairie Trail crosses over the Slagle Ditch dam.

Though it was likely built near the end of the land boom and did not serve to catalyze further development, Slagle Ditch was part of Flagler's early twentieth century land development plans for Cape Sable. However, the evidence that the Model Land Company actually built the ditch is circumstantial. The ditch and dam (Feature 1) are intact, no other historic structures were identified. Due to the lack of structures, the site does not retain the potential to provide important information regarding the historic use of the area. It does not exhibit any direct association with the lives of significant persons or any architectural significance.

Based on its association with the twentieth century development of the Cape Sable region, New South recommends that Slagle Ditch is eligible to the NRHP under Criterion A. Criteria B, C, and D are not applicable to this resource.

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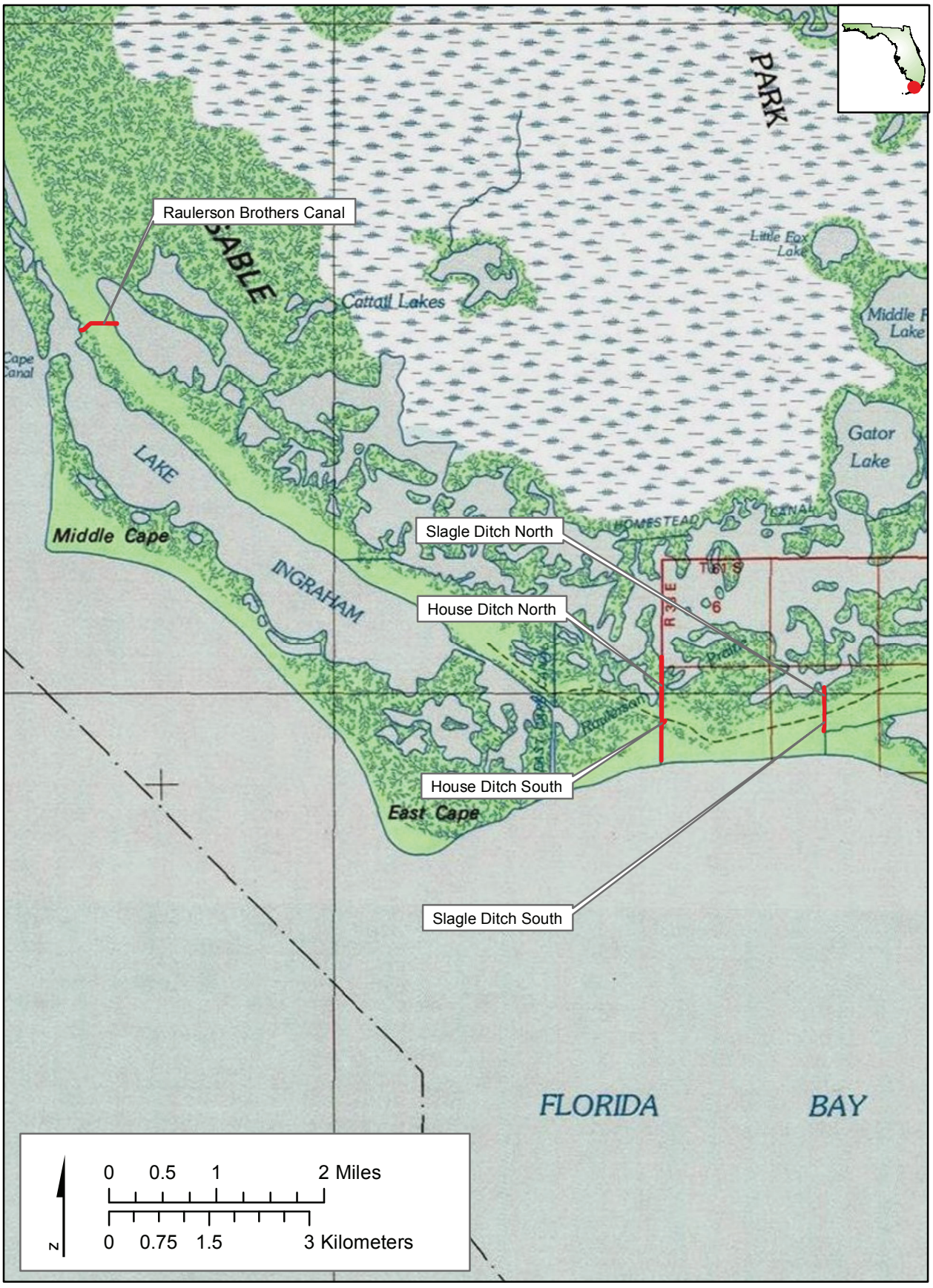

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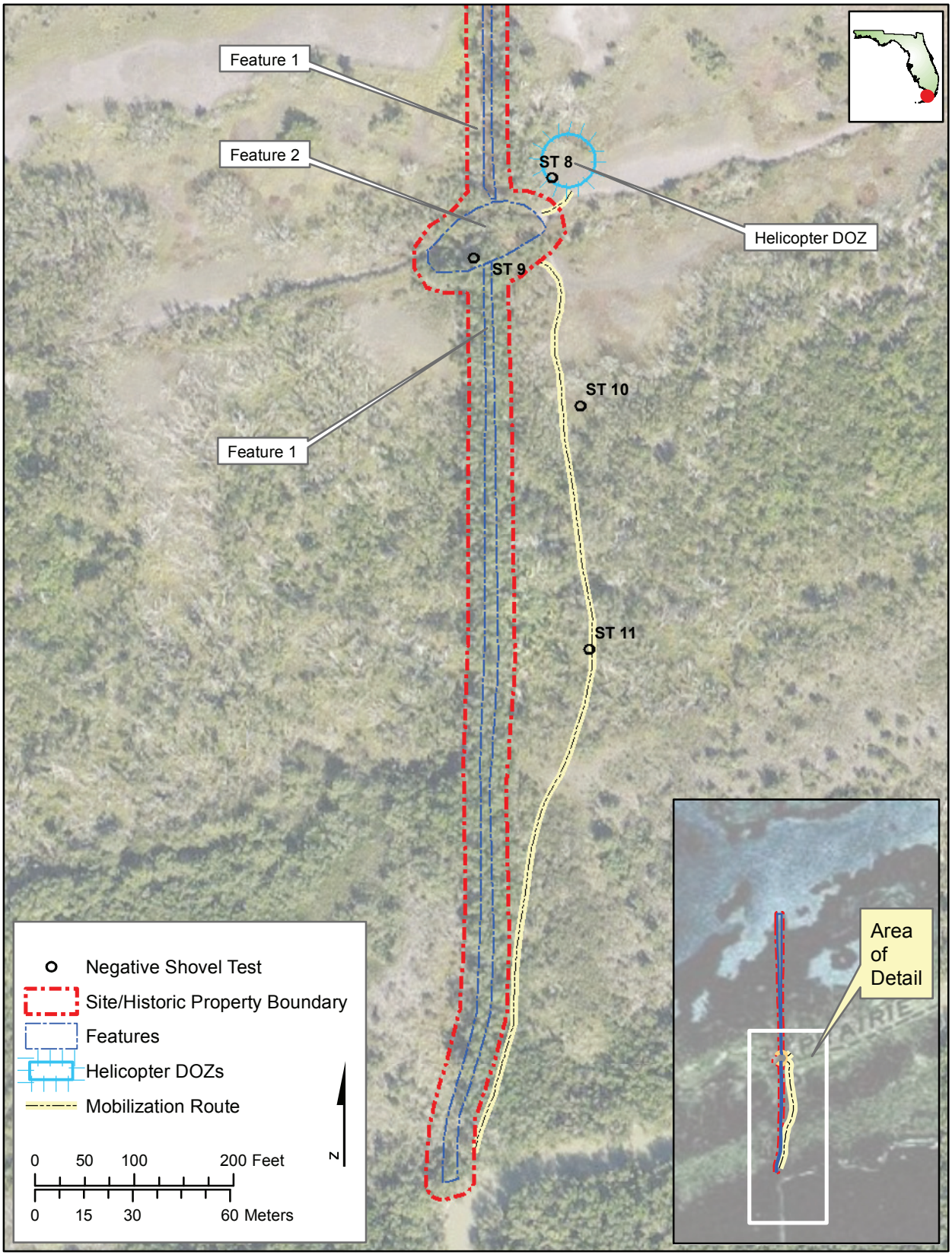

Feature 1
Feature 2
ST 8
Helicopter DOZ
ST 9
ST 10
Feature 1
ST 11
Area of Detail
Negative Shovel Test
Site/Historic Property Boundary
Features
Helicopter DOZs
Mobilization Route
0 50 100 200 Feet
0 15 30 60 Meters
N

APPENDIX C: FLORIDA MASTER SITE FILES SLS FORM

Page 1

Ent D (FMSF only)_____

Survey Log Sheet

Florida Master Site File
Version 4.1 1/07

Survey # (FMSF only) _____

Consult *Guide to the Survey Log Sheet* for detailed instructions.

Identification and Bibliographic Information

Survey Project (name and project phase) Cape Sable Dams Restoration Project

Report Title (exactly as on title page) Archaeological Survey of the Raulerson Brothers Canal, House Ditch, and Slagle Ditch, Cape Sable, Everglades National Park, Monroe County, Florida

Report Authors (as on title page, last names first) 1. Danny Gregory 3. _____ 2. Brad Botwick 4. _____

Publication Date (year) 2015 **Total Number of Pages in Report** (count text, figures, tables, not site forms) 60

Publication Information (Give series, number in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)
New South Associates, Inc. Technical Report, Stone Mountain, GA 30083

Supervisors of Fieldwork (even if same as author) Names Danny Gregory

Affiliation of Fieldworkers: Organization New South Associates City Stone Mountain, GA

Key Words/Phrases (Don't use county name, or common words like *archaeology*, *structure*, *survey, architecture, etc.*)

1. Cape Sable 3. Flagler 5. _____ 7. _____
2. canal 4. Model Land Company 6. _____ 8. _____

Survey Sponsors (corporation, government unit, organization or person directly funding fieldwork)

Name Valerie Chartier Organization AECOM

Address/Phone/E-mail 239-908-3982, valerie.chartier@aecom.com

Recorder of Log Sheet Danny Gregory **Date Log Sheet Completed** 10-9-2015

Is this survey or project a continuation of a previous project? ☒No ☐Yes: **Previous survey #s (FMSF only)** _____

Mapping

Clear Mapping Values

Counties (List each one in which field survey was done; attach additional sheet if necessary)

1. Monroe 3. _____ 5. _____
2. _____ 4. _____ 6. _____

USGS 1:24,000 Map Names/Year of Latest Revision (attach additional sheet if necessary)

1. Name LAKE INGRAHAM EAST Year 1974
2. Name LAKE INGRAHAM WEST Year 1992
3. Name _____ Year _____
4. Name _____ Year _____
5. Name _____ Year _____
6. Name _____ Year _____

Description of Survey Area

Dates for Fieldwork: Start 9-9-2015 End 9-10-2015 **Total Area Surveyed** (fill in one) _____hectares 3 acres

Number of Distinct Tracts or Areas Surveyed 3

If Corridor (fill in one for each) **Width:** _____meters _____feet **Length:** _____kilometers _____miles

HR6E066R0107 Florida Master Site File, Division of Historical Resources, Gray Building, 500 South Bronough Street, Tallahassee, Florida 32399-0250
Phone 850-245-6440, FAX 850-245-6439, Email: SiteFile@dos.state.fl.us

Page 2 **Survey Log Sheet** Survey #_____

Research and Field Methods

Types of Survey (check all that apply): ☒archaeological ☐architectural ☒historical/archival ☐underwater ☐damage assessment ☐monitoring report ☐other(describe): _____

Scope/Intensity/Procedures pedestrian survey of canal/ditches, foot paths, and helicopter drop zones; judgmental shovel testing

Preliminary Methods (check as many as apply to the project as a whole)

☐Florida Archives (Gray Building)	☒library research- *local public*	☐local property or tax records	☒other historic maps
☐Florida Photo Archives (Gray Building)	☐library-special collection - *nonlocal*	☐newspaper files	☐soils maps or data
☐Site File property search	☒Public Lands Survey (maps at DEP)	☒literature search	☐windshield survey
☒Site File survey search	☐local informant(s)	☐Sanborn Insurance maps	☒aerial photography

☐other (describe): _____

Archaeological Methods (check as many as apply to the project as a whole)

☐Check here if **NO** archaeological methods were used.

☐surface collection, controlled	☐shovel test-other screen size	☐block excavation (at least 2x2 m)
☐surface collection, uncontrolled	☐water screen	☐soil resistivity
☒shovel test-1/4"screen	☐posthole tests	☐magnetometer
☐shovel test-1/8" screen	☐auger tests	☐side scan sonar
☐shovel test 1/16"screen	☐coring	☒pedestrian survey
☐shovel test-unscreened	☐test excavation (at least 1x2 m)	☐unknown

☐other (describe): _____

Historical/Architectural Methods (check as many as apply to the project as a whole)

☐Check here if **NO** historical/architectural methods were used.

☐building permits	☐demolition permits	☐neighbor interview	☐subdivision maps
☐commercial permits	☐exposed ground inspected	☐occupant interview	☐tax records
☐interior documentation	☐local property records	☐occupation permits	☐unknown

☒other (describe): published sources on land development

Survey Results (cultural resources recorded)

Site Significance Evaluated? ☒Yes ☐No Clear Check Boxes

Count of Previously Recorded Sites 0 **Count of Newly Recorded Sites** 3

Previously Recorded Site #'s with Site File Update Forms (List site #'s without "8". Attach additional pages if necessary.) _____

Newly Recorded Site #'s (Are all originals and not updates? List site #'s without "8". Attach additional pages if necessary.) FS 1, FS 2, FS 3

Site Forms Used: ☐Site File Paper Form ☒Site File Electronic Recording Form

*****REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPY OF USGS 1:24,000 MAP(S)*****

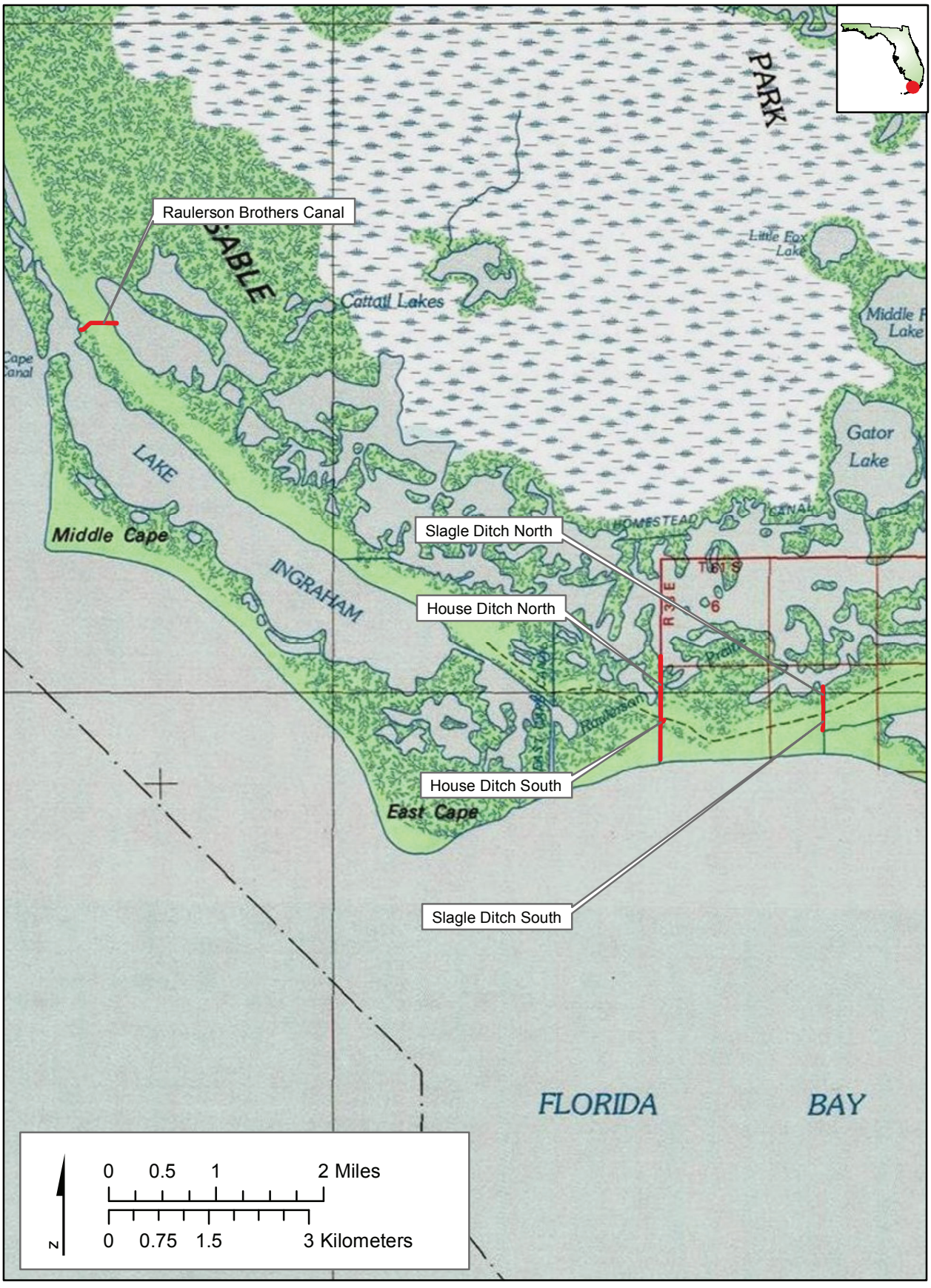
SHPO USE ONLY **SHPO USE ONLY** **SHPO USE ONLY**

Origin of Report: ☐872 ☐CARL ☐UW ☐1A32 # _____ ☐Academic ☐Contract ☐Avocational ☐Grant Project # _____ ☐Compliance Review: CRAT # _____

Type of Document: ☐Archaeological Survey ☐Historical/Architectural Survey ☐Marine Survey ☐Cell Tower CRAS ☐Monitoring Report ☐Overview ☐Excavation Report ☐Multi-Site Excavation Report ☐Structure Detailed Report ☐Library, Hist. or Archival Doc ☐MPS ☐MRA ☐TG ☐Other: _____

Document Destination: _____ **Plotability:** _____

HR6E066R0107 Florida Master Site File, Division of Historical Resources, Gray Building, 500 South Bronough Street, Tallahassee, Florida 32399-0250
Phone 850-245-6440, FAX 850-245-6439, Email: SiteFile@dos.state.fl.us



Source: ESRI Resouce Data