



An assessment of the applicability of luminescence dating to developing an absolute chronology for the production and use of sand-tempered plain ceramics in south Florida



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ABSTRACT

The human occupation of the southern Florida peninsula has, at least since the formation of the Everglades, focused on the raised land surfaces and ecological diversity provided by tree islands. Although survey work is far from comprehensive, thousands of such sites are thought to exist. The archaeological record of tree islands is complex as both island formation and site formation processes are likely intertwined and as yet poorly understood. Most sites are typically shallowly buried, with limited potential for the recovery of artifacts or materials suitable for absolute dating. The frequent occurrence of fragments of an undecorated utilitarian ceramic type referred to as sand-tempered plain is a common marker for occupations at such sites throughout the southern Florida Peninsula. Contextual evidence suggests that this ceramic type has a very broad temporal range and its earliest use is vigorously debated. The results of a preliminary program designed to obtain dates directly on sand-tempered plain ceramics are reported. The results suggest that luminescence dating can yield absolute dates on this ubiquitous material type but the technique's precision has limited the ability to build fine-grained regional chronologies which could help refine our understanding of human groups operating in the unique Everglades environment.

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The relative paucity of radiometric dates and lack of an absolutely dated chronology for the cultural occupation of Florida's interior is a major constraining factor in our current understanding of the region. The southern Florida peninsula represents a unique environmental region and is the only sub-tropical portion of the continental United States. Published archaeological investigations in the interior of this area began in the middle of the 19th century and have revealed a densely occupied archaeological landscape with several large ceremonial centers and smaller domestic sites that typically occupy elevated tree islands (Carr, 2002; Griffin, 2002; Thompson and Pluckhahn, 2012). Tree island formation is still poorly understood, but anthropogenic activity has been strongly associated with the development of these unique archaeological and environmental contexts (e.g., Carr, 2002). Regionally, these sites vary greatly in size and shape, yet all have relatively limited sedimentation and typically contain dense

accumulations of faunal material, shell, pottery, and occasionally charcoal. Features are seldom encountered and the midden-like nature of the cultural material suggests that these sites often represent time-averaged palimpsests of episodic human activity.

Regional overviews take a traditional culture historical approach and focus on delineating the region into culture areas based on physiographic setting, site type, artifact assemblage composition, and occasionally absolute dating information (e.g., Griffin, 2002). This approach has most recently been articulated by Carr (2012) who breaks the southern – central Florida peninsula into five distinct sub-areas during the late Prehistoric period (Fig. 1). Where radiocarbon determinations are available from tree island contexts they indicate that occupations typically begin by 5000 B.P. as the environment of the Everglades began to coalesce (see Carr, 2002 Table 6.1, Schwadron, 2006).

The purpose of Tribal archaeology as practiced by the Seminole Tribe of Florida is to ensure that the cultural beliefs and spiritual values of the tribal members are incorporated within any research design for archaeological research (Cypress, 1997). Tribal beliefs require that archaeological sites be identified but that such sites should be respected by methodologies which generate least

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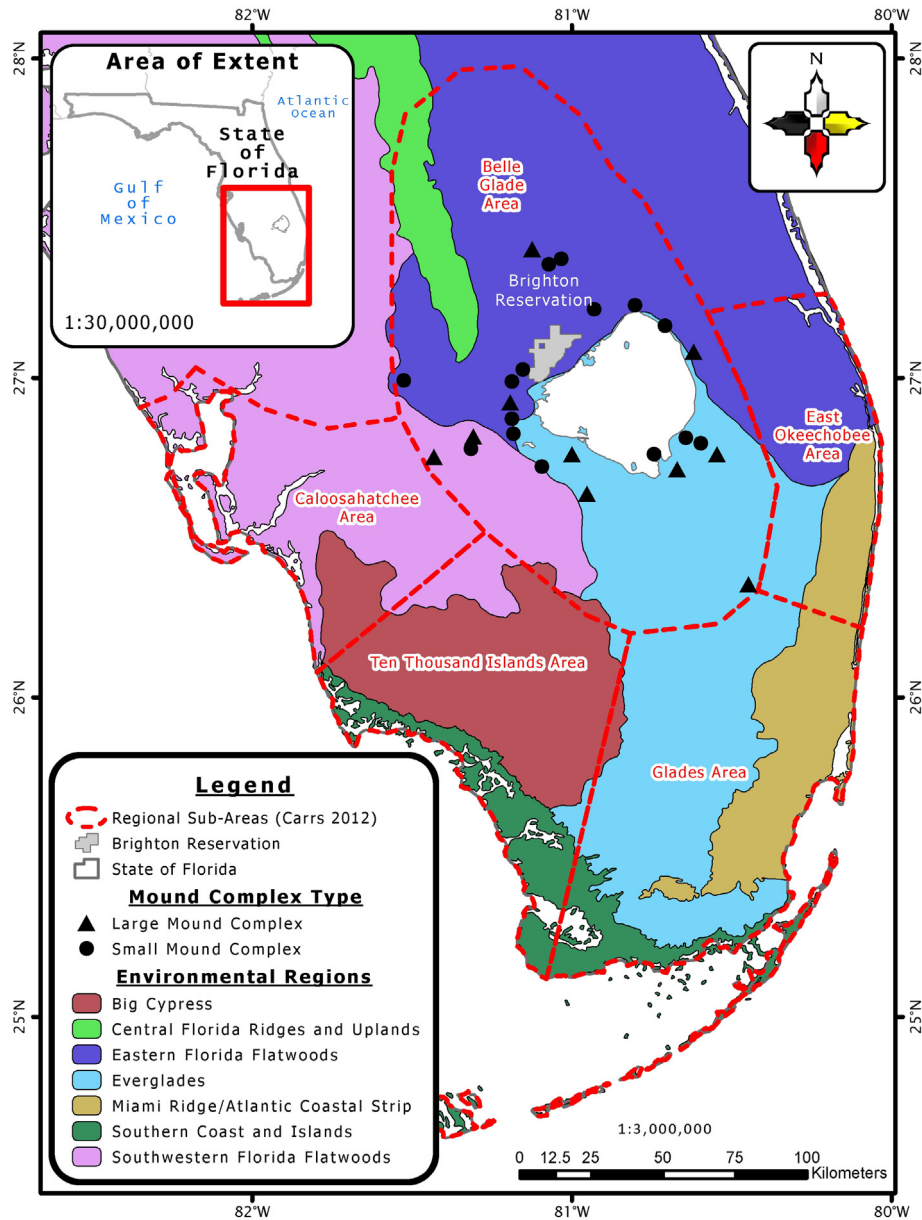


Fig. 1. Southern Florida peninsular physiographic region showing Carr's (2012) regional sub-areas, regionally important sites, and the location of the Brighton Seminole Indian reservation (modified after Carr, 2012: Figure 3.1).

disturbance. Tribal archaeology, therefore, typically involves non or minimally invasive excavation methods that rely heavily on remote sensing, surface inspection and limited shovel-testing. Within this indigenous paradigm, the ability to chronologically bracket sand-tempered ceramic production and therefore to be able to comparatively date ceramics identified during surface inspection or through limited testing would be particularly advantageous. This perspective recognizes the need for archaeological research when the objective furthers knowledge and is undertaken in consultation with the cultural beliefs of the Seminole Tribe (Cypress, 1997). The recovery and destructive analysis of pottery fragments for purposes of the report herein was considered by a THPO cultural advisor, who consulted with the local community prior to moving forward with the project.

The Seminole Tribe of Florida Brighton Reservation is located on the western shore of Lake Okeechobee within the area identified as comprising the Belle Glade culture area (Fig. 1). The Tribal Historic Preservation Office of the Seminole Tribe of Florida is responsible

for all cultural resources located on the Tribe's six reservations (Tribal Resolution C185-02). To this end, the office keeps a site file of all sites located on the 36,000 acre Brighton reservation. The environment of the Brighton Reservation consists of short grass pasture punctuated by hundreds of small elevated tree islands known locally as hammocks. These tree islands were preferentially selected for the placement of Seminole camps at least since the inception of the reservation (Covington, 1976). As is the case elsewhere in southern Florida, the archaeological record also indicates that past populations also favored these tree island settings as places of concentrated resources, shade, and dry ground. To date, more than 954 surveys and 270 archaeological sites have been recorded on the Brighton Reservation. Sites tend to comprise shallowly buried dense accumulations of domestic refuse known locally as 'black dirt middens'. Site depths typically extend less than 50 cm below the modern ground surface with very little apparent vertical stratigraphy. Sites are identified through surface and sub-surface investigation methods through visual inspection of large

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