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THE LUCAYANS AND THEIR WORLD

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ABSTRACT

Early published accounts have depicted the Lucayans in highly generalized, ahistorical terms. These images were based on small numbers of small-scale excavations confined to only a few islands. Our current understanding of Lucayan lifeways, broadened by increased numbers of excavations, fine-grained artifact recovery, the addition of paleoethnobotanical, zooarchaeological and geoarchaeological analyses, and the application of radiocarbon dating, is far richer and more complicated than previously realized. This research reveals inter-island differences in the timing and origin of colonization, geographical and temporal ceramic variability, localized environmental adaptations, and contrasting political economies among the islands.

INTRODUCTION

The Bahama archipelago is divided into three climatic zones based on rainfall and temperature, which affect vegetation types and distributions: moist subtropical (Abaco, Andros, Grand Bahama, New Providence, also known as the Pine Islands); most tropical (the central islands, Acklins Island, Cat Island, Crooked Island, Eleuthera, Exumas, Long Island, Rum Cay, Samana Cay, San Salvador); dry tropical (Great Inagua, Little Inagua, Mayaguana, and the Turks & Caicos) (Sears and Sullivan 1978). Slight temperature and rainfall gradients exist in a north-south pattern. The environmental zones correspond roughly to three Lucayan cultural zones or sub-areas (Granberry 1956).

The people who permanently settled the Bahama archipelago are known as the Lucayans; the English term for the Spanish word, "Lucayos." Previously published accounts of Lucayan history have presented highly generalized accounts of their life ways and depicted them in largely ahistorical terms (e.g., Keegan 1992, 1997; Sears and Sullivan 1978) partly because radiocarbon dating had not been applied universally to excavated sites and because temporal variability in Lucayan ceramics was overlooked. Much of the research reported in the early publications was based on surface collected artifacts and small-scale excavations limited to a few islands. Larger scale, systematic excavations on more islands, fine-grained data recovery, and the integration of radiocarbon dates, and zooarchaeological, paleothnobotanical, and geoarchaeological findings, offer a more complicated picture of Lucayan culture. We now believe that Lucayan history can be divided into three periods (Figure 1): Non-Lucayan (A.D. 700-1300), Early Lucayan (A.D. 700/800-1100), and Late Lucayan (A.D. 1100-c. A.D. 1530) and that Lucayan culture differed geographically and temporally. While there are numerous shared characteristics among the islands, there are inter-island differences in colonization history and sociopolitical organization. There is also variation in environmental adaptations among the islands. In contrast, ethnohistoric descriptions only reveal some of the geographical variation that the archaeological record has brought to

light. For example, during the fifteenth century, the Lucayans of the northern and central Bahamas spoke Ciboney Taíno, a Taíno dialect of northern Cuba and the northwest and western Hispaniolan provinces of Marien and Xaragua, while the Lucayans of the Turks & Caicos spoke Classic Taíno (Granberry and Vescelius 2004:15). Because of similarities in language and some forms of material culture, particularly ceramics, it is suggested that the Lucayans of the central and northern islands possessed economic and cultural ties with the people of northern Cuba and were ethnically the same or biologically descended from them, while the Lucayans who lived in the Turks & Caicos were politically a part of the Hispaniolan Taíno *cacicazgo* system.

Non-Lucayan (A.D. 700-1300)

From the time of its earliest peopling, the Turks & Caicos served as a colonial enclave of Hispaniolan cultures (Keegan 1992:58, 1997, 2007, Keegan et al. 1998). The earliest evidence for human occupation of the archipelago comes from the Coralie site located on the north coast of Grand Turk. The site, which was occupied by Ostionan Ostionoid peoples from northeastern Hispaniola or Puerto Rico dates to A.D. 705-1100 and overlaps for a brief period with the next influx of colonists, the Meillacans and the Lucayans.

The remains at the site suggest repeated visits for short period of times that occurred for only part of the year. The food remains allow us to gauge the impacts of humans on animals that had no prior human (Carlson 1999; Carlson and Keegan 2004). The earliest Ostionan occupants mainly consumed large ground-dwelling birds, iguanas, green sea turtles and large carnivorous fishes. During later occupations, consumption patterns shifted to smaller, tree-dwelling birds, smaller sea turtles and iguanas, and a large tortoise (*Geochelone* sp.) that is now extinct. The Coralie site was permanently abandoned before the end of the 12th century.

A second wave of people who established outpost colonies on Middle Caicos, Grand Turk, Providenciales, and their off shore cays during the eleventh through the thirteenth centuries, is attributed to an influx of Meillacan Ostionoid peoples from northern Hispaniola. These sites existed until the A.D. 1300s when the Meillacan abruptly and unexpectedly ceased establishing colonies in the Turks & Caicos. Concurrently, during the late eleventh century and extending into the A.D. 1200s, numerous Lucayan sites were established on Middle Caicos and the Lucayans and Meillacans lived in close proximity.

The earliest known Meillacan site, located on Pelican Cay, just north of Middle Caicos, dates to cal. A.D. 980-1180 (cal. A.D. 1050) (two sigma) (Sinelli 2010). In the middle of the twelfth century, Meillacan settlements were established on Middle Caicos, Middleton Cay, Long Cay, and Providenciales. All of these sites produced radiocarbon dates of A.D. 1160-1170. Meillacan colonies were also established on Ambergris Cay and Horse Cay. These sites were intermittent, perhaps, seasonally-settled occupations. Sinelli (2010) argues that the communities were initially set up to export resources—conch from the rich conch beds to the south of Middle Caicos and fish from the teeming reefs to the north – to a growing Hispaniolan population that could no longer support itself locally. As time passed, however, the sites focused on the production of beads that were presumably exported to Hispaniola. Drills, made from chert that was imported from Hispaniola, were used to manufacture the beads. Middletown Cay, which was first a seasonally-occupied Meillacan site located off the coast of Middle Caicos, grew into a

large, permanently occupied settlement containing a large dense midden, numerous residences and a north-south oriented oval plaza. Because of it size and large public space, Sinelli (2010) has suggested that it was home to a *cacique* who coordinated its economic activities. As a result of its burgeoning population, a sister settlement was established on nearby Long Cay. Like other Meillacan occupations, Middleton Cay was abandoned suddenly (Sinelli 2010).

During the early to mid A.D. 1200s, Meillacan sites were established on Grand Turk and its off-shore cays. The Governour's Beach, Corktree Beach, Gibbs Cay, and Cotton Cay sites were also bead-making locales that were occupied repeatedly, perhaps seasonally, for short periods of time (Carlson 1993, 2010; Sinelli 2010). By the late A.D. 1200s/early A.D. 1300s, Meillacan peoples ceased to visit Grand Turk. The sudden abandonment of the Governour's Beach site is attributed to a growing and expanding Lucayan presence and reflects the dominant position they were assuming in the Turks & Caicos (Carlson 1993; Keegan 2007).

The 12th century was a time of interaction among peoples whose pottery reflects different identities. Ostionan people were abandoning the Turks & Caicos, Meillacan peoples were arriving from the south, and Lucayan peoples were entering from the north and/or west.

We know most about the Meillacan diet from Grand Turk and the data suggest that the meat diet differed significantly from the Ostionan residents at Coralie. The Meillacan diet consisted of a range of reef and shallow-water fishes (e.g., grunts, bonefish), inter-tidal mollusks, and a minor contribution of terrestrial fauna (Carlson 1993, 2010; Sinelli 2010). Like the earlier Ostionan occupation, the Corktree Beach site yielded evidence for sea turtles, iguana and possibly land tortoise. Although there have been efforts to understand the contribution of plant foods to the diet, macrobotanical recovery has failed to yield plant food remains for the Meillacan occupation (Newsom and Wing 2004).

Earliest Human Presence

Evidence for the earliest human presence of the central and northern Bahamas is known provisionally from Preacher's Cave (Eleuthera) where a triton shell (cal. A.D. 560-720, 2 sigma) was found adjacent to the cave (Carr et al. 2006). The shell has a circular hole cut in the outer wall attributed to human modification. More certain evidence for human occupation comes from the cave where a burial dating to A.D. 810-1010 was exhumed (Schaffer et al. 2012). Human skeletal remains from Sawmill Sink blue hole on Abaco date to B.P. 1040 ±40 (Steadman et al. 2007:19899) implies that the northern Bahamas had been settled or at least visited by that time. Evidence from cores from several ponds on Abaco suggests human landscape modification early as 1200 B.P. (Slayton 2010) suggesting that Abaco may already have been seasonally or permanently settled.

The Early Lucayans (A.D.700/800-1100)

By the A.D. 800s, the Lucayans had settled San Salvador and New Providence. Three open-air sites have been excavated: the Three Dog and the Pigeon Creek dune 2 sites (San Salvador) and the Pink Wall site (New Providence) (Berman and Gnivecki 1995; Berman and Hutcheson 2000; Bohon 1999). Early Lucayan sites are small with shallow middens and low artifact densities suggesting that they were occupied by small communities composed of extended families or small lineages who moved their villages every few years. No structural supports

indicating house size or shape have been found. A hearth and adjacent windbreak have been excavated at the Pigeon Creek site. Discrete, gendered, activity areas (plant processing, pottery manufacture, cooking) have been identified for the Three Dog and Pigeon Creek dune 2 sites (Berman and Pearsall 2000; Berman et al. 2012). Several other sites on San Salvador have yielded radiocarbon dates from this period but the artifact assemblages associated with the dates are undescribed.

The early Lucayans were horticultural fisher-collectors whose diet consisted of reef and pelagic fish, sea turtles, fresh-water turtles, inter-tidal mollusks, root, tuber, and seed crops, wild and domesticated tree fruits, and wild plants and fruits (Berman 1993; Berman and Pearsall 2000; Berman et al. 2012). Terrestrial fauna contributed in minor ways to the diet. Starch grain and phytolith evidence demonstrates that the early Lucayans grew domesticated crops such as *Capsicum sp*. (chili peppers), cf. *Cucurbita sp.* (squash), *Zea mays* (corn), *Manihot esculenta* (manioc), and several varieties of wild roots and tubers (Berman and Pearsall 2000, 2008; Berman et al. 2012). These were recovered from chert microliths. Corn starch grains were also found on a small shell flake and on a ceramic griddle sherd.

Early Lucayans made and used tiny shell beads, tinklers, and pendants from different shell species. They manufactured microliths from imported chert, using them in a variety of tasks, including grating and scraping plant materials, and incising shell, wood, and bone (Berman et al. 1999; Berman and Pearsall 2000, 2008; Berman et al. 2012). Early Lucayans made and used scrapers, pounders, and axes from local limestone. Various species of coral were used for scraping, polishing, and shaping wood, bone, and shell artifacts. Wood for constructing residences, cooking, and other purposes was procured from local plant communities (Berman and Pearsall 2000, 2011).

Lucayan pottery consisted of hemispheric, carinated, and boat-shaped vessels and flat, mass-molded griddles that were made from local clays and crushed shell-temper. Three types of pottery are known for this period: Crooked Island ware, a red-slipped, reduced shell-tempered ceramic; Abaco Red Ware, a buff-slipped, partially oxidized shell-tempered pottery, and Palmetto Ware, an unslipped, shell-tempered oxidized pottery (Berman 2011b; Granberry and Winter 1995). Only a small percentage of early Lucayan pottery possesses decorations, which consist of fine-line incision and incised appliqué not unlike the Meillacan pottery found in north central Cuba (Tabio and Guarch 1966) and northwestern Hispaniola (Rouse 1939) at the same time. Non-local pottery constitutes a small portion of the ceramic assemblage. Early Lucayan pottery is thinner than Late Lucayan pottery (Berman 2011b).

Late Lucayan Period
(A.D. 1100-c.A.D. 1530+)

Late Lucayan sites occur on all islands in the archipelago and include open-air residential, special purpose, burial, and rock art sites. Population increase is reflected by greater numbers of larger sites. Thicker middens indicate that people lived at these sites for longer periods of time. Late Lucayan occupations lie above or are adjacent to earlier occupations. On Middle Caicos, the Lucayans and Meillacans co-existed until the late A.D. 1200s/early A.D. 1300s. According to Sinelli (2010:313) competition between the Meillacans and Lucayans for land and marine resources may have instigated the Meillacan exodus.

Late Lucayan village sites are typically located on the crests of sand dunes that are situated along tidal creeks. The settlements are near agriculturally-productive soils and places where canoes could be beached. Water seeps or inland lakes with fresh water lenses, and fishing and shellfish collecting areas are located in close proximity. Site survey data suggest that most Lucayan sites occur as paired settlements, defined by Keegan (1992:83) as "sites that are situated within each other's catchment areas." Although post molds, hearths, activity areas and middens have been located in the northern and central Bahamas, no site has been excavated extensively enough to expose residential or community structure. Sub-surface testing at the Ward Minnis site (San Salvador) has revealed five artifact concentrations believed to be houses (Blick and Bovee 2007), but it is not known if these structures were contemporaneously occupied or if they date to the Early or Late Lucayan periods. Community layout is more fully understood in the Turks & Caicos and house structures, middens, and public spaces have been identified and excavated at MC-6, MC-12, and numerous sites located on nearby cays (Keegan 2007; Sinelli 2010).

During this period, economic interaction with Cuba and Hispaniola and probably other islands in the Bahama archipelago intensified; the source of these relations might have been politically motivated (Berman 2011a). Imported raw materials and items such greenstone, basalt, and jadeite petaloid axes and diorite beads and figurines speak to trade and exchange with Cuba and Hispaniola. Unworked and incomplete greenstone and basalt objects and greenstone and basalt flakes suggest that the materials were imported and worked on-site. Quartz crystals have been found at the North Storr's Lake (Shaklee et al. 2007) and other sites, and copper has been found at the North Storr's Lake site (Shaklee et al. 2007). It is believed that these objects held symbolic value and may be associated with a religious specialist such as a shaman or a political leader (or a religious specialist who is a political leader). Other non-local materials such as chert are found, too. The exact source areas for these materials are unknown, partly because petrographic studies have not been conducted on the artifacts and also because it is hard to differentiate geological proveniences between Cuba and Hispaniola (Berman et al. 1999). A study by Johnson (in Rose 1982, 1987) indicates that a piece of jadeite from the Pigeon Creek dune 1 site may have originated in the Motagua Valley of Guatemala. Recently, jadeite sources have been found at various locales in Cuba and Hispaniola suggesting that the jadeite found in Lucayan sites may have had a more local origin (Berman 2011a). Diorite is also found throughout the northern Antilles. There are numerous sources of copper in Hispaniola and Cuba, although a major source copper exists in southeastern Cuba. The earliest outpost sites in the Turks & Caicos consist entirely or almost entirely of non-local ceramics (Sinelli 2001; Carlson 1995, 1999), while the frequency of non-local sherds throughout the islands declines through time. Sites located further away from Hispaniola and Cuba show lower percentages of non-local sherds in a south to north gradient (Berman 2011a).

Other objects, believed to come from within the Bahamas have also been reported. For example, small, hand-held pestles manufactured from aragonite have been found at the Palmetto Grove (Hoffman 1970) and the Pigeon Creek dune1 sites (Rose 1982, 1987). Aragonite flakes, recovered from the Pigeon Creek and North Storr's Lake sites (Berman and Gnivecki field notes; Shaklee et al. 2007), suggest that the pestles were manufactured on-site. It is

not known what the pestles were used for, although Hoffman (1970) reports finding ground pigment on at least one of them, suggesting that they were used to grind substances. It is believed that the aragonite comes from the Bahamas, but its source is unknown.

By the A.D. 1400s (and probably as early as the A.D. 1100s), many categories of locally produced material culture similar to that of Hispaniola and northern and eastern Cuba, such as wooden, shell, coral, and limestone *cemís*, pendants, and figurines, are ubiquitous throughout the archipelago. Wooden *duhos*, found in the central Bahamas and the Turks & Caicos (although not in the northern Bahamas), share many features with those from Hispaniola, Cuba, and Puerto Rico, but possess characteristics that make them uniquely Lucayan. The largest sized *duhos* found in the Caribbean and some of the most complexly executed two dimensional designs are found on *duhos* from the Bahamas (Ostapkowicz 1998, 2008).

By the fifteenth century, the Turks & Caicos was a colonial Lucayan enclave, possibly a provincial chiefdom to one of the larger Hispaniolan Taíno chiefdoms (Keegan 2007, Keegan et al. 1998). Las Casas noted that *Caonabó,* the fifteenth century Taíno cacique of Maguana, was born in the Bahamas and Keegan (2007) has suggested that MC-6 (on Middle Caicos), replete with a plaza, a central court, astronomical alignments, earthen embankments, and a road system leading to a salt pond (Sullivan 1981) may have been his birthplace. The site may also have functioned as a "port-of-trade" where local goods such as salt, salted fish and conch, cotton, parrots, and other items were exported to Hispaniola in exchange for non-local goods and *Taíno* succession rights. The Lucayans reoccupied other sites, which were once Meillacan outposts mainly on Middle Caicos and its cays. The Middleton Cay and Spud sites were likely tied to the export economy (Sinelli 2010).

The sociopolitical organization of the central and northern islands is less well understood. Lacking evidence for craft specialization, large public spaces, and other features associated with chiefdoms, it appears that late Lucayan society of the central and northern Bahamas may have been organized along ranked lineage lines where leadership, power, prestige, and authority were achieved through competition or seniority and vested in chieftains, big men" or "great men" (Berman 2011a). Here, local group leaders might have appropriated symbolically powerful objects such as *duhos* from Hispaniola or eastern Cuba (which became a *Taíno* chiefdom in the latter half of the fifteenth century) (Rouse 1992), using them to assert authority and manipulate their constituents. Using these and other non-local materials and objects as gifts, Antillean elites created political and trade alliances, establishing loyalties in those areas of the Bahama archipelago not directly under their control.

The frequency and volume of pottery from sites is greater than from the earlier period. Pottery is thicker, vessel sizes increase, and twilled and wicker basketry-impressions appear on the bases of some griddles and the lower portion of bowls (Berman 2011b). Experimental work suggests that the impressions, which often exhibit complex forms, were purposefully executed (Berman and Hutcheson 2000; Hutcheson 2001, this volume). Basketry-impressed pottery is a uniquely Lucayan tradition, found primarily in the southern and central Bahamas and Turks & Caicos. The intricate woven designs most likely possess symbolic meanings and recent findings indicate inter-and intra-island differences in weaves (Hutcheson 2011).

Ceramic variation is not well understood because archaeologists have tended to lump all locally made pottery from this time period into one category, Palmetto ware (Hoffman 1970; Sears and Sullivan 1978). Re-examination of written reports and analyses of excavated materials (Berman 2011a) confirm that there are three ceramic sub-zones as suggested by Granberry (1955, 1956). In the northern Bahamas (the Pine Islands), Abaco Red ware dominates. Palmetto plain ware occurs in lesser amounts, and only trace amounts of its decorated variants (Sears and Sullivan 1978) are present. Decorative treatment consists largely of parallel and cross-hatched designs (Berman 2011b; Berman et al. 2006; Granberry and Winter 1995; Vernon 2007) similar to late Meillacan ceramics found contemporaneously in north-central Cuba (Valcárcel Rojas et al. 1996). In the central Bahamas, Plain Palmetto ware dominates. Surface decoration, characterized by rim points, sigmoid and incised sigmoid appliqué, and occasional cross-hatched and parallel incision, is rare. Bate (2011) also found Abaco Red and Crooked Island wares in the Long Bay site (San Salvador) ceramic assemblage; we believe they exist in other Late Lucayan assemblages. In the Turks & Caicos, Palmetto ware and its variants are the dominant pottery; typological variation has been overlooked here, as elsewhere. Decorated locally produced sherds reflect late Meillacan and Chican Ostionoid influence reinforcing the notion that the Turks & Caicos were part of a *Taíno* polity with close ethnic and social connections to Hispaniola.

The ceramics suggest that the Lucayans participated in different Antillean interaction spheres: the northern islands with northern Cuba, the central islands and the Inaguas with northern Cuba and Hispaniola, and the Turks & Caicos with Hispaniola and eastern Cuba. The Lucayans used their ceramics (and possibly basketry) to create and maintain social boundaries, build alliances, and assert territorial ownership of farmlands, fishing areas, and/or sacred areas. Because of the spatial correspondence of the three pottery zones to the archipelago's three climate/vegetation zones (*sensu* Sears and Sullivan 1978), Berman (2011b) suggests that cultural identity was intimately tied to space and place. Colonization histories and inter-island competition for resources and expansion particularly after A.D. 1100 may have been motivating factors in the creation of distinct expressions of regional Lucayan identity, at least in the central and northern islands, which does not appear to have been ruled directly from Hispaniola, as observed in the Turks & Caicos.

Like the earlier peoples who settled the archipelago, the late Lucayans were horticultural fisher-collectors. Fish and shellfish were procured from reefs and offshore waters in close site proximity (Newsom and Wing 2004). A focus on parrotfish characterizes early and late Lucayan fishing patterns on San Salvador (Newsom and Wing 2004). Wooden fish hooks, shell spear points, wooden fids, and charred *Piscidia sp.*(Berman 2000; Berman and Pearsall 2011; Granberry 1955; Keegan 1992; Keegan and Carlson 2008) provide direct technological evidence for a variety of procurement methods that include hook and line, nets, basket traps, spears, bows and arrows, weirs, harpoons, and possibly fish poison. Several species of fresh water and sea turtle were also actively exploited (Blick et al. 2006; Newsom and Wing 2004; O'Day 2002). The Lucayans also gathered a wide range of near-shore and inter-tidal mollusks such as conch, West Indian topsnail, and nerites. Late Lucayan sites typically contain large amounts of *Codakia sp.* not observed in such great quantities at earlier sites. Crocodiles, which were consumed (Keegan 1992), may have also served as mortuary

accompaniments (Carr et al. 2006) and wooden and shell figurines depicting crocodiles (Berman 2000; Vernon 2007) suggest they figured significantly into Lucayan life. A few sites have yielded remains of iguanas and hutías and dog remains were found at a site in the Turks and Caicos (Newsom and Wing 2004). Oviedo y Valdéz (1959) noted that the *Taíno* regarded iguanas and sea turtles as prestige foods that the elite distributed at ceremonial feasts (Keegan 2007:179). Birds contributed little to the diet (Newsom and Wing 2004; Whyte et al. 2005), but some birds may have been captured for their plumage and mythical significance. Fish and other meats were roasted on above- ground frames known as *barbacoa,* while fish, hutía, iguana, vegetables, and invertebrates were likely cooked in a pepper pot stew. Throughout the occupation of the archipelago, beginning with the Ostionoid presence, a common practice for cooking sea turtles was to roast them on their backs in a hearth.

It is argued that the Lucayans grew the same crops as the Hispaniolan *Taíno* (Keegan 1997), although only a few of these plants have been recovered from late Lucayan sites. In his *diario,* Columbus describes what is believed to be maize and maize (Dunn and Kelley 1989). Maize starch grains have been found on chert microliths from the Long Bay site (Berman et al. 2011), while carbonized maize kernels radiocarbon dated to cal. A.D. 1460-1650 (two sigma) were excavated from the Pigeon Creek site dune 1 midden (Berman et al. 2012), and a corn cob dating to the mid-fifteenth century was recovered from Preacher's Cave (Eleuthera) (Carr et al. 2006). Manioc starch grains have been found on microliths from the North Storr's Lake site (San Salvador) (Berman et al. 2012). Besides the previously mentioned starch grain and macrobotanical evidence for corn and manioc, cf. *Calathea latifolia* (lleren) starch grains have been recovered from microliths from the North Storr's Lake and the Long Bay sites, a phytolith belonging to the Marantaceae family was identified on a microlith from the Long Bay site (Berman et al. 2012), wild and domesticated tree fruits were recovered from a cave site on San Salvador (Winter et al. 1999), and wild tree fruits have been found from the Deadman's Reef site (Grand Bahama) (Berman and Pearsall 2011). These finds are the only existing evidence for late Lucayan plant consumption.

Like their early Lucayan predecessors, the late Lucayans used shell and limestone hoes to clear fields, and shell adzes and axes and fire to fell trees and clear vegetation. It is not known whether the basalt axes found at many late Lucayan sites were used to fell trees, nor do we know what purpose the small hand-held greenstone petaloid axes served.

Prepared fields were located in inter-dune swales. Inter-island differences exist in the choice of fuel woods, probably due to differences in floristic environments (Berman and Pearsall 2011). It is hypothesized that the late Lucayans also cultivated herbs, fruit trees, medicinal and pigment plants, and other crops in house gardens and sinkholes.

Stable isotope and osteological studies have also contributed to a generalized understanding of the Lucayan diet (Keegan and DeNiro 1988, Pateman 2007, Stokes 1998). While much progress in dietary reconstruction from fauna has been made for this time period, most zooarchaeological studies focus on procurement technology and habitat (Wing and Reitz 1982; Newsom and Wing 2004). Only a few investigators have examined quantitative methods (Whyte et al. 2005) or temporal variation. Blick (2007) found a reduction in number, size, and weights of

land crabs, parrotfish, grouper, West Indian topsnail, and chiton from the tenth through the fifteenth centuries at the Minnis-Ward site, which he attributes to overexploitation associated with population growth. With the decline in the amounts, kinds, and sizes of protein sources, what coping strategies did the Lucayans implement; were lower-ranked species substituted (Keegan 1992) or other dietary shifts implemented? Was there intensification in plant production or inter-island food exchanges? These and other questions such as the impact of decreased sea surface temperatures associated with the onset of the Little Ice Age (A.D. 1300) on fisheries and the timing of local extinctions of terrestrial fauna need to be investigated further. Moreover, in order to fully address these issues, the study of the botanical remains must be expanded and macro-and micro-botanical recovery techniques and residue analyses applied to the findings. Studies from the Early Lucayan period indicate that a multi-pronged approach is necessary to recover botanical data (Berman and Pearsall 2008). Such research can also inform on the environment and other forms of plant use. Finally, little attention has been paid to the symbolic meanings of particular foods, food preparation techniques (such as butchering and cooking practices), and the role of food in the political economy (see O'Day 2002 and Keegan 2007 for exceptions).

Rock Art

Rock art is found on East Caicos, Crooked Island, Rum Cay, and San Salvador in a variety of cave types (Hoffman 1973; Nuñez Jiménez 1997; Winter 1993, 2009). New Providence is the only northern island to have yielded a rock art site. Of course, this does not mean that rock art sites on other islands don't exist—they just have not yet been found. Petroglyphs (rock engravings) are the dominant form; only a few petrographs (rock paintings) are known. Rock art depictions are primarily anthropomorphic; there are only a few known zoomorphic and geometric representations and only a handful of realistic images have been recorded. A canoe paddle from Hartford Cave, Rum Cay, is the most widely known example (Winter 2009).

Regional differences in the types of images and stylistic renderings suggest that rock art, much like Lucayan ceramics and basketry, was closely tied to identity and that the caves in which it is found may have served as territorial or ethnic signposts and boundaries. In the central Bahamas, the dominant image is a human head, which is believed to represent ancestors, spirit helpers, or masked dancers (Roe 2009;Winter 2009). These representations consist largely of disembodied figures—faces without bodies, or faces with the upper half of their bodies. In contrast, all but one of the Jacksonville Cave (East Caicos) figures possesses appendages (de Booy 1912).

Hartford Cave contains the largest number of images in the archipelago and here images occur in zoned clusters (Nuñez Jiménez 1997). One particularly graphic grouping consists of 13 petroglyphs: a swaddled image that appears to be giving birth, a set of images in which one individual appears to be crying adjacent to a headless woman lying in a birthing position holding her head in her left hand, and a series of faces, some of which appear to be masked or wearing costumes. In the Jacksonville Cave scene, one individual, who looks like he is wearing an owl mask, bears a spear or dance wand. Another wears a cap similar to those associated with highly ranked *Taíno* individuals. Another wears a bracelet, perhaps a wrist rattle. The scene appears to depict a dance ceremony

composed of at least one shaman and a local leader.

There are numerous interpretive challenges to understanding Lucayan rock art, but an initial starting point is to treat the images as parts of scenes in which they occur. Of course, this is not always possible, since the images may not be contemporaneous and some sites contain only one image. Like all rock art, Lucayan representations are laden with metaphors that have layered meanings. Dualistic concepts such as life and death and young and old, typical of Antillean imagery in other media, populate the cave rock surfaces. Other oppositions are likely present but not understood. Caves with rock art can be conceived as "story walls," where visual references to myths, stories, or real historical events were retold, perhaps through ceremonies. According to Keegan and Carlson (2007), caves were "sanctuaries for ritual purposes" and along with burial caves, served as entry points to the subterranean world. Consequently, images indicating motion and flight represented by bats, owls, and individuals wearing feather headdresses figure significantly. The Hartford Cave paddle may signify migration stories (Winter 2009).

Mortuary Variability

Human burials are known from throughout the archipelago (Keegan 1992; Pateman 2007). Lucayan burials are confined to dry caves, blueholes, and caves with direct connections to water. This burial pattern contrasts with Cuba, where large cemeteries are located in or adjacent to villages. As symbolically-charged spaces that figure significantly into pan-Antillean mythology, it is not surprising that Bahamian caves and blue holes served as burial sites; the question remains as to whether caves were exclusive to the burial of only certain individuals. Furthermore, why were some individuals buried in caves and some in blueholes?

Most human remains and their accompanying grave goods have been recovered from dry caves, but due to human and animal disturbance, they are fragmentary and context is tentative. While skeletal remains and mortuary accompaniments from submerged contexts tend to be better preserved, they are difficult to excavate, require specially trained underwater archaeologists, and need expensive conservation once they are removed.

A series of findings suggest that individuals with special statuses were buried in these contexts and that rituals unique to their social positions may have occurred there. A small canoe, part of the Stargate blue hole (Andros) burial assemblage, is believed to have served a ritual purpose since it is too small for regular inter-island travel (Callaghan and Schwabe 2001; Palmer 1997). The individuals found in this space may have been ceremonially interred. Three burials from Preacher's Cave (Eleuthera) possess unique mortuary treatments (Schaffer et al. 2010). Two late Lucayan individuals, one male, one female were each wrapped in a twilled mat. The male, aged 25-30 years old, was buried with an Atlantic trumpet triton in front of his thorax, parts of a sea turtle at his foot, and 29 sunrise tellina shells, a clump of red ochre, and a fish bone scarifier behind his shoulders. Each of these objects is symbolically significant; taken as a whole they suggest that the individual may have been a shaman, someone who possessed special powers or position. Another burial, which dates to the early Lucayan period, presents another enigmatic scenario. This 20-25 year old male was wrapped in cordage and buried face down with his hands crossed in front of this waist. His lower legs and

skull had been removed purposefully, although there was no sign of decapitation. Schaffer et al. (2012) have noted a cross-cultural pattern in whereby individuals who have been buried in this manner (face-down) may have been individuals who deviated from social norms.

Finally, some dry caves have yielded sherds, animal and plant remains, and wooden bowls. Such materials are associated with feeding the deceased as they journeyed to the next place (Granberry 1955; Pateman 2007; Winter et al. 1999). We do not know if inclusion of such items is proof that the individuals in these caves held unique statuses, as too few burials have been excavated to provide a comparative perspective.

Burial data also contributes to our understanding of Lucayan health, fitness, diet, and body aesthetics. According to Pateman (2007), the age of death for most individuals occurred between 21-40, followed closely by individuals aged 41-60. Pathologies include degenerative diseases and metabolic disorders such as osteophytosis, arthritis, Scmorl's modes, and healed fractures. Many individuals possess periodontis and carious lesions attributed to a diet rich in starch and sugars (Pateman 2007; Schaffer et al. 2012). Individuals often show evidence for cranial (frontal) flattening.

Lucayan Depopulation

Most historians believe that the Bahama archipelago was depopulated as early as 1513 or 1520, but a growing body of radiocarbon evidence suggests that Lucayan sites lasted into at least the first third or mid 1500s (Berman 2011:Table 1; Blick, this volume). Sinelli (2010) has suggested that the Lucayans who lived on some of the Turks & Caicos islands survived into the 1600s. After Columbus's 1492 landfall and encounter with the Lucayans on Guanahaní, the Bahama islands are rarely mentioned in historical accounts and only appear in texts referencing Spanish exploration and slaving operations (Gnivecki 1995; Granberry 1979-1981; Hoffman 1990). Material evidence for Spanish presence in the Bahama archipelago comes from a number of islands: earthenware sherds (Acklins Island, Conception Island, Cotton Cay, the Exumas, Long Island, Samana Cay, San Salvador); majolica (San Salvador), metal artifacts (San Salvador, Middle Caicos); and glass beads (San Salvador) (Bate 2011; Hoffman 1987a,b; Keegan 1992; Sinelli 2010; Sullivan 1981). Bones of Norwegian rats have been found at MC-32 (Middle Caicos). suggesting that boats carrying these rodents may have anchored in the area. Spanish shipwreck sites offer additional evidence for Spanish presence in the area. The St. John's wreck found off of Grand Bahama (pre-1550) included an iron conquistador's helmet (c. 1520-30), seven iron *versos*, three *barbardettas*, and olive jars (Marken 1994:16; 52-57). In 1500, two of Vincente Yáñez Pinzón's ships were lost due to a hurricane; two remaining ships were damaged (Lemos 1998b:549). The Highborn Cay (Exumas) and the Molasses Reef wrecks (West Caicos Bank) may have been salvaged by the Lucayans (Lemos 1998a:38-41; Smith 1998:31-33). The Molasses Reef wreck contained a pair of iron leg manacles suggesting that it might have been involved in slaving (Smith 1998:32).

Las Casas (1951) and Oviedo y Valdés (1959) provide ethnographic descriptions of the enslaved Lucayans of Hispaniola and Cuba. These accounts offer insights into Lucayan lifeways, although they were recorded after the Lucayans had been removed from their homelands and may depict beliefs and practices that reflect cultural displacement rather than indigenous

ways. The accounts of the Lucayans in the Pearl Islands reflect the egregious conditions under which they lived, worked, and died.

Lacking from the historical and archaeological records is evidence for Lucayan resistance to Spanish enslavement. It is hard to believe that once the Lucayans learned what the Spanish were up to, they willingly allowed themselves to be captured and enslaved. In fact, there are several accounts in the Columbus *diario* of escape attempts by Lucayan captives who traveled with Columbus and his men to Cuba and Hispaniola (Dunn and Kelley 1989). Sites reflecting Lucayan flight and acts of *maronage* may likely be located deep in the interior of the island and in inaccessible caves.

CONCLUSIONS

While advances in archaeological method and theory of the last 15-20 years have contributed significantly to what we now know about Lucayan history, numerous unanswered questions remain. These include, but are not exclusive to: explanations about the role of exotic artifacts in local and regional political economics, the significance of the early human remains on the northern islands, the colonization history for each of the islands—were they settled permanently in a linear manner or were some islands bypassed, evidence for Archaic Age visits or colonization, the socio-political relationship of the Lucayans who inhabited the northern islands with Cuba, Hispaniola, the rest of the archipelago, intra-island socio-political relationships, Lucayan religious belief and practice (and how it resembled or differed from Taíno religious thought and practice), and the role of rock art in Lucayan memory systems. Additionally, no Lucayan residential structure has been excavated fully. Extensive excavations accompanied by fine-grained paleoethnobotanical and zooarchaeological analysis on each of the islands can bring us closer to a more informed understanding of inter-and intra-island social, political and cultural relationships, variability in Lucayan material, social, political, and economic life, and early Lucayan-Spanish encounters.

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Table 1 Non-local ceramic frequency by island

Period	Island Group	Site Number	Island or Site Name	Closest Island	Radiocarbon Date	References
Antillean Expansion- Ostionoid						
	Turks & Caicos	GT-3	Coralie	Grand Turk	cal A.D. 705-1170	Keegan 1997: 21; Carlson and Keegan 2004: 89
Antillean Expansion- Meillacoid						
	Turks & Caicos					
			Pelican Bay	Middle Caicos	cal A.D. 980-1180 (cal. A.D. 1050) (two sigma)	Sinelli 2010: 458, 464
		MC-8	Plantation	Middle Caicos	No reliable radiocarbon dates were secured	Sinelli 2001
		MC-10	Kendrick	Middle Caicos	cal. A.D. 1020-1040 (two sigma) (cal. 1160 intercept),	Sinelli 2001: 91-92, 164
			Spud	South Caicos	cal. A.D. 1030-1220 (cal. A.D. 1160 intercept), cal. A.D. 1260-1320, cal. A.D. 1350-1390, (cal. 1290 intercept), cal. A.D. 1290-1429 (cal. A.D. 1320, 1350, 1390) (two sigma)	Sinelli 2010: 457, 459, 460, 461
			Middleton Cay	South Caicos	cal. A.D. 1040-1260 (cal. A.D. 1160 intercept) (two sigma)	Sinelli 2010: 457, 462
		GT-2	Governour's Beach	Grand Turk	cal. A.D. 1020-1290 (cal A.D. 1221 intercept), cal. 1047-1280 (cal. A.D. 1225 intercept), cal. A.D. 1120-1330 (cal. A.D. 1262 intercept), cal. A.D. 1250-1410 (cal. A.D. 1307 intercept), (two sigma)	Keegan 1991: 14; Carlson and Keegan 2004: 89
			Gibbs Cay	Grand Turk	cal A.D. 1170-1280 (cal. A.D. 1260) (two sigma)	Sinelli 2010: 467-468
		GT-4	Corktree Beach	Grand Turk	cal. A.D. 1270-1320, 1350-1390 cal. A.D. 1280-1490 (two sigma)	Carlson 2010: 13

Period	Island Group	Site Number	Site Name	Closest Island	Radiocarbon Date	References
Early Lucayan						
	Central Bahamas	SS-21	Three Dog	San Salvador	cal A.D. 600-950 (cal. A.D. 685 intercept), cal. A.D. 650-1020 (cal. A.D. 812, 847, 852 intercept), cal. A.D. 680-1010 (cal. A.D. 883 intercept), cal. A.D. 790-1030 (cal. A.D. 972 intercept), cal. A.D. 828-1157 (cal. A.D. 991 intercept) (two sigma)	Berman and Gnivecki 1995: 430
		SS-1	Pigeon Creek Dune 2	San Salvador	cal. A.D. 895-1170 (cal. A.D. 1015 intercept) (two sigma)	Berman and Hutcheson 2000: Table 2, 421
	Northern Bahamas	NP-12	Pink Wall	New Providence	cal. A.D. 850-1145 (two sigma)	Bohon 1999: 33, 70
Late Lucayan						
	Turks & Caicos	MC-12		Middle Caicos	cal. A.D. 1040; cal. A.D. 1230-1256 cal A.D. 1282 cal. A.D. 1142-1422 (two sigma)	Keegan 1997: 56; 2007: 138
		MC-32		Middle Caicos	cal. A.D. 1284	Keegan 1997: 56
		MC-6		Middle Caicos	uncal. A.D. 1437+/-70	Keegan 2007: 142
			Middleton Cay	South Caicos	cal. A.D. 1350-1390	Sinelli 2010: 457, 462, 463
	Southern Bahamas	GI-3		Great Inagua	cal. A.D. 1320-1510 (cal. 1433 intercept) (two sigma)	Keegan 1993: 34-35

Period	Island Group	Site Number	Site Name	Closest Island	Radiocarbon Date	References
	Central Bahamas		McKay	Crooked Island	A.D. 1240 +/-65 (uncal. one sigma) A.D. 1260+/75 (uncal. one sigma)	Winter 1978: 238-239
		AC-14	Delectable Bay	Acklins Island	no chronometric dates Keegan 1984	
		SS-4	North Storrs Lake	San Salvador	cal. A.D. 1065-1075 and cal. A.D. 1155-1275 (cal. A.D. 1220 intercept), cal. A.D. 1065-1075 and cal. A.D. 1155-1295 (cal. A.D. 1250 intercept), cal. A.D. 1400-1515 and cal. A.D. 1585-1625 (cal. A.D. 1435 intercept), cal A.D. 1430-1670 (cal. A.D. 1515, 1585, 1625 intercept) (two sigma)[1]	Delvaux, personal communication, 2009; Delvaux et al. 2009
		SS-2	Palmetto Grove	San Salvador	cal. A.D. 1280-1460 (cal A.D. 1410 intercept), cal. A.D. 1430 -1654 (cal. A.D. 1483 intercept) (two sigma)	Berman and Gnivecki 1995: 429
		SS-1	Pigeon Creek Dune 1	San Salvador	cal. A.D. 1435-1635 (cal. A.D. 1480 intercept) (two sigma)[2] cal A.D. 1460-1650 (cal. A.D. 1520, 1580, 1630) (two sigma)*	Berman and Hutcheson 2000: Table 3, 422; Berman et al. 2012
		SS-9	Long Bay	San Salvador	late fifteenth-early sixteenth centuries (no radiocarbon dates, artifacts)	Hoffman 1987a, b
	Northern Bahamas		Clifton Pier	New Providence	uncal. A.D. 1090-1200, A.D. 1145+/-55	Winter 1978
		NP-13	Alexandra	New Providence	cal. A.D. 990-1270, cal. A.D. 1035-1305, cal. A.D. 1055-1300, cal. A.D. 1065-1305, cal. A.D. 1170-1405, cal. A.D. 1190-1395 cal. A.D. 1205-1400, cal. 1225-1425, cal. 1240-1420, cal. 1315-1450 (two sigma)	Vernon 2007: 20
		NP-14	Flipper	New Providence	cal. A.D. 805-1050, cal. A.D. 1040-1290 cal. A.D. 1160-1300, cal. 1215-1405, cal. A.D. 1250-1425, cal. A.D. 1280-1405, cal. A.D. 1325-1500, cal. A.D. 1335-1515, (two sigma)	Vernon 2007: 20
		NP-15	Clifton	New Providence	NP-13 and NP-14, one site	Vernon 2007
		GB-4	Deadman's Reef	Grand Bahama	cal. A.D. 1400-1485 (two sigma)	Berman and Hutcheson 2000

[1] The site also yielded earlier dates, cal. A.D. 855-1000 (cal. A.D. 905, 920, 950 intercept) (two sigma) (Delvaux, personal communication 2009)
[2] Richard Rose (1987: 331) has published uncalibrated dates from the Pigeon Creek dune 1 site: A.D. 1050-1170, A.D. 1090-1230, A.D. 1260-1400, A.D. 1280-1460, A.D. 1350-1470, 1400-1540 (two sigma)
*Carbonized maize kernels