

A Timeline of Taíno Development in the Virgin Islands
By Kenneth S. Wild / Virgin Islands National Park
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Abstract
This paper focuses on archaeological investigations conducted at the prehistoric sites at Cinnamon Bay and Trunk Bay located on St. John, US Virgin Islands (**Figure 1**). A chronology of Taíno development in the Virgin Islands is presented using the sequential radiocarbon dates from sequential archaeological levels. The necessity to apply Puerto Rican and Dominican Republic ceramic subseries terminology to ceramics of the northern Virgin Islands is once again addressed. A shift in ceramic style and artifact types found at the end of the Monserrate ceramic period indicates a pivotal point in the development of Taíno culture.

Resumen
En este trabajo se centra en investigaciones arqueológicas realizadas en los yacimientos prehistóricos en la Cinnamon Bay y Trunk Bay en St. John, US Virgin Islands. Una cronología del desarrollo Taíno en las Virgin Islands se presenta con las fechas de radiocarbono secuencial de niveles arqueológicos secuenciales. Una vez más se aborda la necesidad de aplicar terminología cerámica subseries de Puerto Rico y República Dominicana a la cerámica de las Virgin Islands del norte. Un cambio en el estilo de cerámica y tipos de artefacto que se encuentra al final del periodo de cerámica Monserrate indica un punto fundamental en el desarrollo de la cultura Taína.

Résumé
Cet article se concentre sur les fouilles archéologiques menées sur les sites préhistoriques à la Cinnamon Bay et Trunk Bay situé à St. John, Virgin Islands américaines. Une chronologie du développement de Taíno dans les Virgin Islands est présentée en utilisant les datations séquentielle de niveaux archéologiques séquentielles. La nécessité d'appliquer de Porto Rico et République Dominicaine terminologie sous-série céramique à la céramique des Virgin Islands du Nord s'adresse une fois de plus. Un changement dans le style céramique et types d'artéfacts trouvés à la fin de la période de céramique de Monserrate indique un point tournant dans le développement de la culture Taíno.

Introduction
The majority of the data presented here was recovered from the Cinnamon Bay prehistoric site, from a specific area of the site that produced evidence for continual ritual activity. This site is located in the northern Virgin Islands on the island of St. John, which is in the US Virgin Islands. All radiocarbon dates discussed in this paper are calibrated and in 2- sigma ranges, unless otherwise specified, and the source material was charcoal. The following proposed

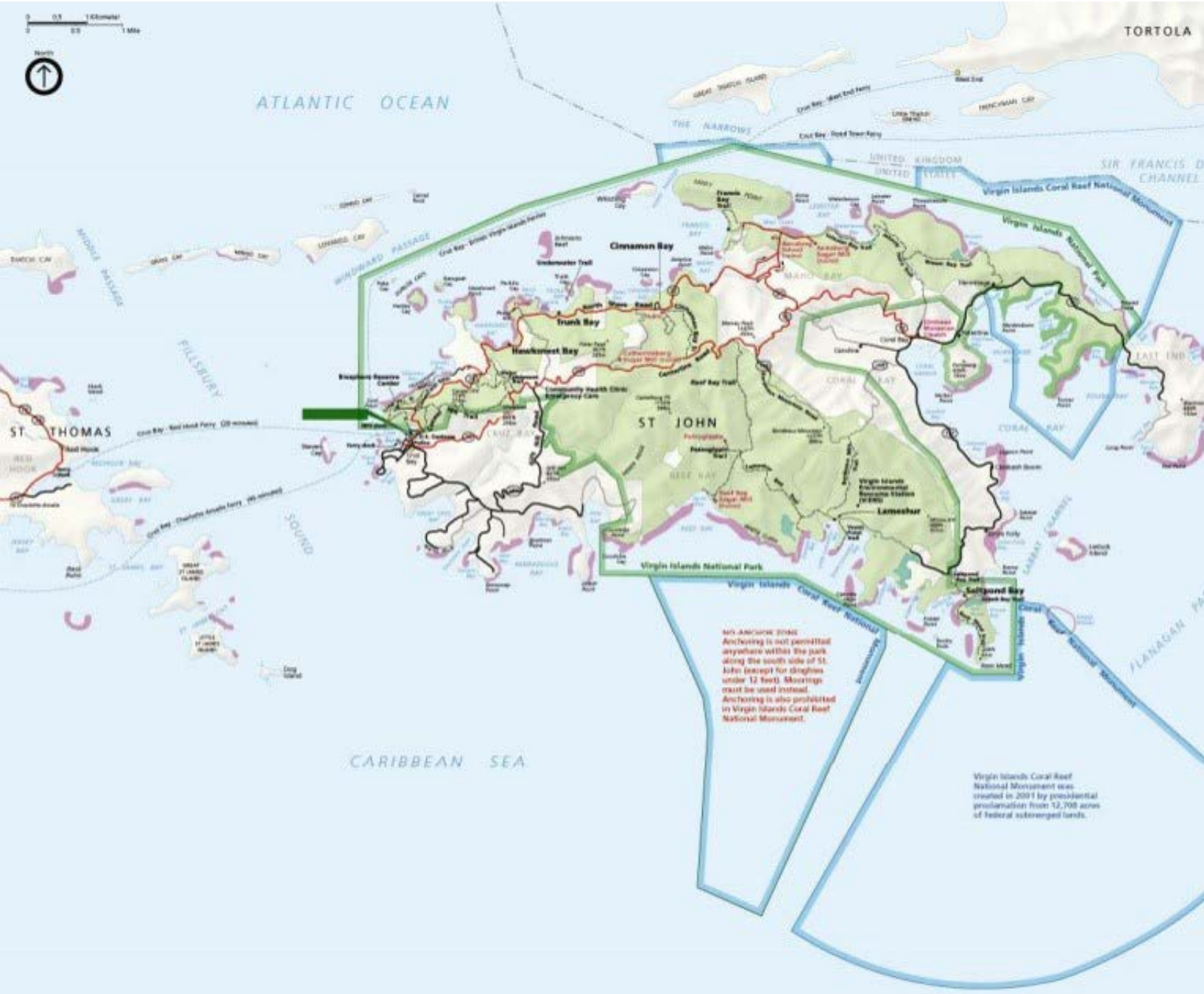


Figure 1. Park Boundary Brochure Map

chronology of cultural development in the Virgin Islands is based on sequential radiocarbon dates, from sequential 10-centimeter archaeological levels, along with regionally defined ceramic design elements and other stylistic artifacts. Also taken into consideration are: 1) shifts in iconographic design, 2) changes and/or an observable increase in ceremonial activity, 3) the presence or absence of specific artifact types, and 4) shifts in overall artifact assemblage.

Site Context

At the Cinnamon Bay Site, three 4X4 meter units were excavated in 10-centimeter levels. Each level was excavated in a manner that allowed for contextual recording of most faunal remains and artifacts (**Figure 2**). The process was time consuming due to the amount of materials found in situ and the depth of the deposits; it took three and a half years to complete the three units. The excellent preservation at the site dictated a meticulous approach. Just below the surface, the articulation of delicate faunal remains evidenced a lack of disturbance,

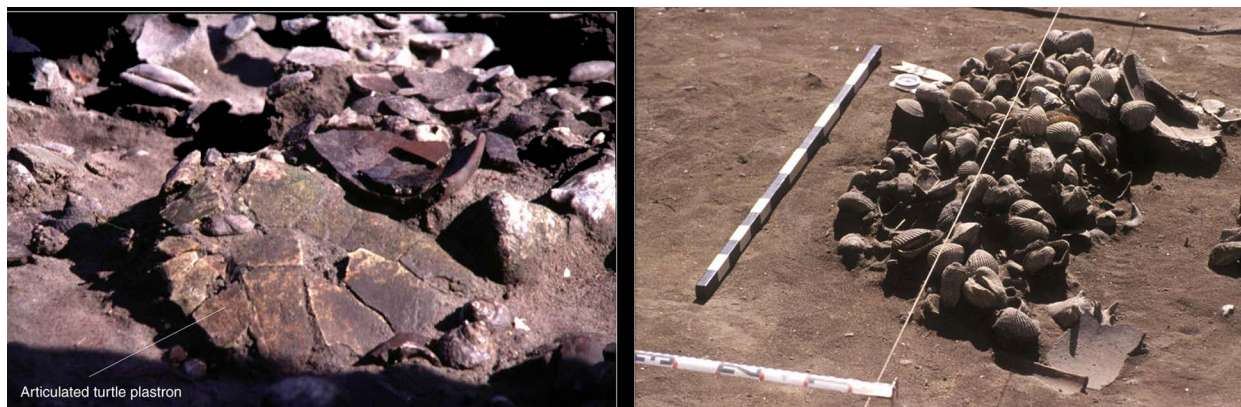


Figure 3. Left, articulated turtle plastron. Right, a pile of closed bivalve Eared-Ark shells in a probable offering ceramic vessel.

particularly an articulated turtle plastron and an offering of closed bivalve Eared-Ark shell remains in a decorated ceramic vessel (**Figure 3**). Evidence that material remains were in situ as deposited by the original inhabitants was found throughout all the 10 to 11 levels of each of these units.



Figure 5. Visible islands from St. John, VI.

The excellent preservation from the surface down was determined to be the result of a Colonial road that has been in use since the mid-1600s, if not back to the Taíno period (**Figure 4**). It is apparent that for over three hundred years the road has prevented animals and plant roots from mixing the in situ deposits. The road has also prevented the upper levels from being disturbed by plowing and other farming activities. Today the loose beach sand in this part of the site prevents any surface disturbance by pedestrian and minor vehicular traffic, and has apparently done so since the Pre-Columbian inhabitants abandoned the area. Archaeological evidence indicates that preservation at depths below fifty centimeters probably relate to the function of the site. This particular location served a ceremonial offering purpose, in which the site would have been abandoned and left undisturbed until the next ceremonial event, thus preventing daily occupational activities from mixing the discrete ceremonial deposition (Wild 2001).

Background

The northern Virgin Islands stretch east from the eastern end of Puerto Rico, with St. John being centrally located within the island group. Therefore it is possible to sight and navigate from St. John to Puerto Rico and all islands in-between, as well as St. Croix to the south, and to all the British Virgin Islands to the east (**Figure 5**). So it should be no surprise that there are identical ceramic designs and shifts in artifact assemblages in this geographically close and visible interaction sphere. In 1952 Gary Vescelius, a researcher under Irving Rouse, made this connection. In his report on the St. Croix Archaeological Project he wrote “that the basic sequence of ceramic styles on St. Croix is in essence identical with that of eastern Puerto Rico and Vieques.” He goes on to state that “future investigations in the northern Virgin Islands will reveal the existence of a comparable sequence” (Vescelius 1952). Not surprisingly, after 60 more years of research the cultural chronology of the northern Virgins has been found to correspond with that of eastern Puerto Rico throughout prehistory, and the local ceramic complexes and associated artifacts are considered equivalent (Lundberg et al. 1992, Lundberg 2005; Lundberg and Wild 2006; Righter et al. 2004; Wild 2001).

Although researchers since the 1950s have demonstrated the similarities in the material remains to Puerto Rico and have recom-



Figure 2. Excavation at Cinnamon often included educational programs.



Figure 4. Oxholm's 1780 map depicting historic road over ceremonial site area.



Figure 6. Stone artifacts from St. John, VI.

mended that the ceramic typology of Puerto Rico and to some extent Hispaniola be used to describe ceramic styles in these islands, the use of the old 1920s terminology (i.e., the Magens Bay-Salt River, etc. designations) still persists, possibly due to the use of Rouse's popular ceramic typology chart (Rouse 1992).

Since the 1920s, the Virgin Islands have yielded artifacts exemplifying Taíno cultural ideology very similar to Puerto Rico and the Dominican Republic. Objects typically associated with Taíno culture found on St. John alone include a complete carved stone ball belt or collar, fragments of stone belts, carved stone axes (**Figure 6**), sculpted three-pointed zemi stones, gold and mother-of-pearl eye and teeth inlays for carved wooden and beaded idols, ceramic vessels with zoomorphic and anthropomorphic adornos, and rock art. Across the island chain, elaborate "elbow stones," celts, pestles bearing sculptured faces, and carved vomit sticks have been recovered (e.g., Kay 1976; Lundberg 2005; Righter 2002; Righter et al. 2004; Wild 2001). Ball courts lined with stone are known from Vieques (Rodríguez and Rivera 1983) and St. Croix.

Analysis

Analysis of the Trunk Bay material demonstrated that the development of the Monserrate ceramic style progressed like that of eastern Puerto Rico (Lundberg and Wild 2006). Preliminary analysis of the Cinnamon Bay ceramic styles appeared to match as well. Taking this into consideration, along with the above mentioned inter-island geography and previous findings and recommendations, the analytical approach of this study used the descriptive attributes that define eastern Puerto Rico and Hispaniola artifacts. In the process of analyzing the Trunk Bay and Cinnamon Bay materials, a detailed analytical handbook and corresponding Microsoft Access analysis program was developed that is continually updated to incorporate ceramic design elements and attributes identified within specific ceramic series and subseries (Wild and Lundberg 2002). This approach has greatly enhanced the ability to make regional interaction and cultural comparisons.

In undertaking the analysis of materials from these sites, a concerted effort is underway that is comparing individual design elements and other attributes found on ceramic, stone, and shell artifacts, from each of these periods, to identical or nearly identical designs found in other regions across the Caribbean into South America. To date this work has already begun to hint at the dynamics of cultural interaction of pre-Columbian peoples of St. John.

Chronological Results

Beginning with the Monserrate Period and working up through this chronology, the analysis had to begin at the Trunk Bay Site, located one bay over from Cinnamon Bay. Here it was found that the Monserrate Period began around AD 800 (Lundberg and Wild 2006). At the base of the Cinnamon Bay Site at 115 centimeters below the surface (cmbs), an adorno of similar shape and red slip (**Figure 7**, image 1) demonstrated continuity with the Trunk Bay materials (Figure 7, image 2). However, the 2-sigma radiocarbon dates at Cinnamon Bay are no older than AD 1020, suggesting that the different styles of face decoration found at Trunk Bay, i.e. the flat anthropomorphic faces and head lug types, may predate AD 1020. There is also an obvious absence of zoomorphic design elements, stone beads, tiny shell beads, and ceremonial deposits at Trunk Bay. It should be noted that most sites dating to this period in the Virgin Islands have rarely produced effigy faces. In comparing the design elements found in the faces from the Trunk Bay Site, many elements can be found across the Caribbean, such as the coffee bean eyes, a heart shape outlining the face, the prominent brow. However, face #4 in Figure 7 appears across the Caribbean in nearly identical fashion from South America (Antczak and Antczak 2006) to Aruba's Tanki Flip Site (Versteeg and Rostain 1997), Barbados (Drewett 2000), and all the way through to Cuba (González and Godo 2000:72).



Figure 7. Effigy faces. No.1 found at 115 cmbs at Cinnamon Bay; 2-6 are from Trunk Bay.



Figure 8 Left: Ostiones vessel sherds found stacked with a sherd from a red and black painted Monserrate plate, depicted on the right.

site of “Duey Bajo also known as Hacienda Luisa Josefaan in San Germán,” which is located in western Puerto Rico (personal communications Yvonne Narganes 2014), (**Figure 9**). Similar faces have also been recovered from the Dominican Republic.

In these last three Monserrate levels there also occurred a significant increase in ceremonial artifacts. Specifically, inlays for wooden or stone statues, the head of a carved zemi stone, a small gold/copper mixed square pendant, stone beads, and carved shell artifacts were recovered (**Figure 10**). Ceramics zoomorphic designs once again reappear. Zoomorphic designs were absent from Trunk Bay. Also, in the last Monserrate levels, 7 and 8, the first Santa Elena designs begin to appear in small numbers. The 2-sigma radiocarbon dates for all the Monserrate levels at Cinnamon Bay were nearly the same, AD 1020 to 1200. However, given the stratigraphic nature of this deposit, and the 1-sigma radiocarbon dates, it is probable that these upper Monserrate levels date to around AD 1100 to 1200; more precise dating techniques will help in confirming this sequential probability (**Figure 11**).

Given the additional stylistic elements present in the later Monserrate Period, and the first appearance of artifact types associated with Taíno culture, it seems probable that the Monserrate Period should be chronological subdivided. The sequence on St. John indicates an initial Monserrate I era dating from AD 800 to around AD 1100 as found at Trunk Bay and in levels 9 through 11 (80-115 cmbs) at Cinnamon Bay, followed by a Monserrate II era dating from AD 1100 to 1200, as found in levels 6, 7, and 8 (50-80 cmbs) at Cinnamon Bay.

In level 6, at 50 to 60 centimeters below the surface, the ceramic style began to shift in that Santa Elena design elements were introduced and found mixed with Monserrate pottery. In the following two levels, 30-40 and 40-50 cmbs, the 2-sigma dates shift to AD 1180 to 1280, and Santa Elena attributes become primary. However, certain design elements within these levels are nearly identical to design elements present in the Suazoid Series of the Windward Islands (personal communications William Keegan 2014). Also, some Santa Elena sherds from Cinnamon Bay have design elements identical to those illustrated as Meillacoid pottery from Haiti (Keegan et al. 2013:80). Within these levels were also carved shell, a gold disc, eye inlays, stone beads, and many elaborate zoomorphic vessels (**Figures 11 and 12**).

At Cinnamon Bay the Monserrate style pottery was recovered from 115 centimeters below the surface up to 50 centimeters below the surface. In the last three Monserrate layers, at 50-60, 60-70 and 70-80 centimeters below the surface, there were additional design elements added into the basic Monserrate style.

In these layers black and red painted pottery suddenly appears along with ceramics identified with the Ostiones Culture of western Puerto Rico. Intermixed in what appeared to be a purposely stacked pile of an Ostiones vessel was one sherd from a red and black Monserrate plate. The rest of the sherds of the Monserrate red and black plate were recovered nearby in situ lying face down with the bottom broken out (**Figure 8**). Surprisingly, the Ostiones vessel matches almost exactly two bowls on display in the Museum of History, Anthropology and Art at the University of Puerto Rico, Rio Piedras campus. These vessels



Figure 9. Left: Ostiones vessel recovered from Cinnamon Bay. Right: two Ostiones bowls on display in the Museum of History, Anthropology and Art at the University of Puerto Rico, Rio Piedras campus.



Figure 10. Example of inlays, pendants, beads and carved zemi stone found in the upper Monserrate II levels. Top row, 50-60 cmbs: inlays, carved shell and stone beads; middle row, 60-70 cmbs: shell pendant, gold/copper pendant, stone beads; and bottom row, 70-80 cmbs: shell inlays, stone beads and carved quartz zemi head.

Carbon 14 Dates from Cinnamon Bay Ceremonial Area - Conclusions

Beta Analysis #	Unit #	Level	cmbs	Predominate Ceramic Type	C-14 2-Sigma Range	*Probable Date Range	Diagnostic Artifact Assemblage
184206	Unit 3	1	0-10	Historic	2 Sigma 1650-1950	1650-1950	Mostly historic and modern remains mixed with some prehistoric sherds
184208	Unit 3	2	10-20	Chican	2 Sigma 1320-1440	1320-1440	Taino era Esperanza styles mixed with some Boca Chica and Capa design elements. Minor remnants of Santa Elena designs
184209 69973	Unit 3 Unit 1	3	20-30	Chican	2 Sigma 1290-1450	1290-1400	
184211	Unit 3	4	30-40	Santa Elena	2 Sigma 1180-1280	1180-1280	Santa Elena ceramic design elements with Taino like ceremonial objects
		5	40-50	Santa Elena	No Data		
184217	Unit 3	6	50-60	Monserate II/Santa Elena	2-Sigma dates for these levels are identical, AD 1020-1270. a timeframe too long to clearly date the sequential artifact shifts that occur in these levels.	1 Sigma 1140-1240	Santa Elena and Monserate II ceramics with Taino like ceremonial objects
184212	Unit 3	7	60-70	Monserate II		Sequential possibility 1100-1200	First appearance of carved zemi stones, inlays, Ostiones ceramics & Monserate black and red design elements. Reintroduction of zoomorphic design elements. Minor first apparence of Santa Elena designs
184218	Unit 3	8	70-80	Monserate II			
69974	Unit 1 Unit 3	9, 10, 11	80-110	Monserate I		1 Sigma 1050-1100	Monserate design elements also anthropomorphic faces on lugs and flat faces.
Multiple samples	Trunk Bay			Monserate I		Multiple dates 800-1200	

Figure 11. Probable temporal ranges based on radiocarbon dates, sequential depth, and artifact types.



Figure 12. Far right: Santa Elena sherds from 30-50 cmbs. Top left (30-40 cmbs): shell and gold inlays, bat nosed adorno, nose plug, and shell beads. Bottom left (40-50 cmbs): nose plug, shell pendant and inlays.

The 2-sigma radiocarbon range correspondingly shifted to the next century, AD 1290 to 1440. Within these Chican levels, the Esperanza design elements dominated. However, ceramic styles typically associated with western Puerto Rico and the Dominican Republic were well represented, with both Capá and Boca Chica incised design elements. Additional designs most typically associated with the Boca Chica style are the elaborate anthropomorphic faces with bat nose and headdress design elements characteristic of cacicazgo affiliation. Their presence on St. John certainly suggests the possibility of cacique influence or association that is extending from a cacicazgo center. The presence of this strong bat iconographic focus may suggest affiliation to Hispaniola's "fierce bat complex" observed by Shirley McGinnis (2001). However, a closer examination of identical or nearly identical designs, as well as the origin of these and other objects, such as the gold pendants typically associated with Hispaniola and Puerto Rican caciques, is required and is currently underway.

Other artifacts recovered that are typically associated with Taíno culture of the Greater Antilles include carved stone beads, carved shell, teeth and eye inlays, carved monk seal teeth, objects used for piercing, offerings, and zoomorphic effigy vessels. The shallowest anthropomorphic Boca Chica ceramic effigy vessel was recovered in situ between 10 and 20 centimeters below the surface. This vessel displays a slight style shift away from the obvious bat nose vessels of the preceding level, possibly suggesting a chronological/ cultural shift or perhaps a change in cacique affiliation (**Figure 13**).

Discussion

The 2-sigma radiocarbon dates for these Chican levels started at AD 1290/1300 and ended between AD 1420 and 1440. This is interesting because on St. Thomas, the next large island west of St. John, the Tutu Village site also appears to be abandoned in the middle of the 15th century (Richter 2002). This raises many questions. The first question of course is why and whether other Virgin Islands Taíno sites, such as St. Croix's Salt River Site, are abandoned around the same time. With

The Elenan Period ends around AD 280/1300, lasting about one hundred to one hundred and fifty years at the most. However, within these levels, elements of the Santa Elena style were well represented, and it is here that the first bat nosed anthropomorphic head was recovered, but without a head-dress. The headdresses and Chican pottery immediately followed in the layers above.

The two Chican levels, located at 10-20 and 20-30 centimeters below the surface, were protected by a hard packed 0-10 cmbs surface level. This surface level was a mix of modern 1950s material and colonial artifacts dating back to the mid-1600s, as well as some prehistoric remains.

Thus, the Chican levels were sandwiched between this protective surface layer and the Santa Elena levels. At 30 centimeters below the surface the ceramic style shifted quickly, with just a moderate mixing of Santa Elena design elements into the Chican subseries.

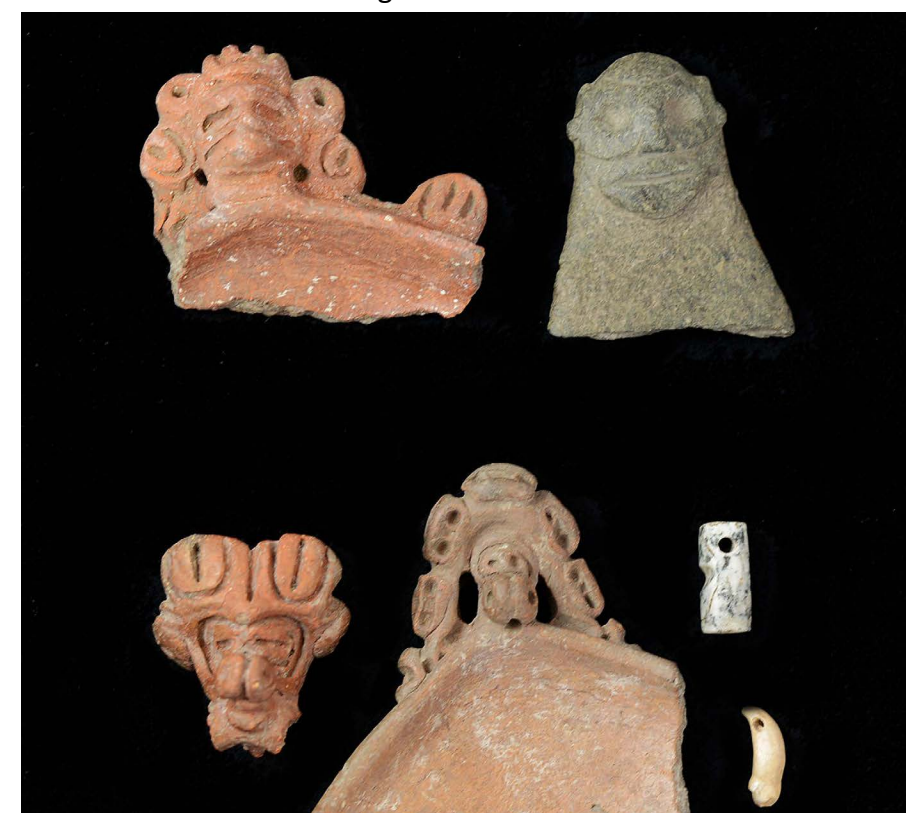


Figure 13. Example of artifacts from Chican levels. Top row (10-20 cmbs): effigy vessel and stone carving. Bottom row (20-30 cmbs): bat nosed vessels, carved stone bead, and carved monk seal tooth.

more research, maybe this information can also help explain ethno-historical accounts like the reported confrontational encounter with Columbus at Salt River, and why Columbus reported that he saw no inhabitants in the northern Virgin Islands.

Existing ceramic chronology leading into the Taíno Period, as defined by Rouse (1992) and which is most often quoted, places the Monserrate complex as dating from AD 600 to 900, followed by the Santa Elena complex from AD 900 to 1200, then ending with the Esperanza complex dating from AD 1200 to 1500. On St. John at the Cinnamon Bay and Trunk Bay sites, this basic depositional sequence matches Rouse’s 1992 ceramic table, but the date of deposition does not. In general, the Monserrate complex was found to date from AD 800 to 1200. The majority of the Santa Elena complex at Cinnamon Bay begins around AD 1150, although the exact transition between Monserrate and Santa Elena remains unclear. The Santa Elena style appears to diminish around AD1280. Chican pottery first appears around AD 1290/1300 (**Figure 14**). Thus, overall, these radiocarbon dates from Cinnamon Bay are later than what has been published for Puerto Rico. This could make it seem as if development of Taíno culture was delayed in the Virgin Islands. However, this is highly improbable given the number of identical ceremonial artifacts, identical ceramic design elements, and iconography found in both regions. This, coupled with the fact that these islands are in sight of each other, suggests that the dates for Puerto Rico and the surrounding area probably need to be reviewed and possibly revised.

Conclusions

In summary, using established regional ceramic design elements has greatly facilitated the ability to compare and to address questions related to regional differences, similarities, and influences. Incorporating an analysis approach that includes identifying identical design elements on ceramic, bone and shell artifacts, as well as rock art, as found in other regions of the Caribbean and South America, is providing a greater understanding of the possible interaction sphere of the Virgin Islands as the islands’ cultures develop through time.

Defining Taíno development in the Virgin Islands has been possible through a closer examination of the Monserrate Period. In the shallower levels of this period, artifacts typically identified with western Taíno culture appear, along with an increase in elaborate objects used for ceremonial purposes traditionally associated with Taíno culture. As a result, two sequential Monserrate periods have been proposed. The intact, sequential, in situ deposits at Cinnamon Bay have provided a temporal sequence of prehistoric development from AD 1020 to AD 1440 for St. John, although it remains to be determined if these findings can be applied regionally. However, the ceramic subseries and associated artifacts have a decidedly different temporal chronology than that being currently applied in the Greater Antilles. Specifically, the Monserrate Period lasts much longer. Consequently, the Santa Elena Period is shortened to 100-150 years, and the Chican Period does not appear until AD 1280/1300. Why there is this difference in temporal periods, and why large Taíno sites appeared to be abandoned by the mid-15th century in the Virgin Islands raises questions to be explored, and also the need to examine old vs. current radiocarbon dates, dating techniques, context of the data, and cross-Caribbean interaction.

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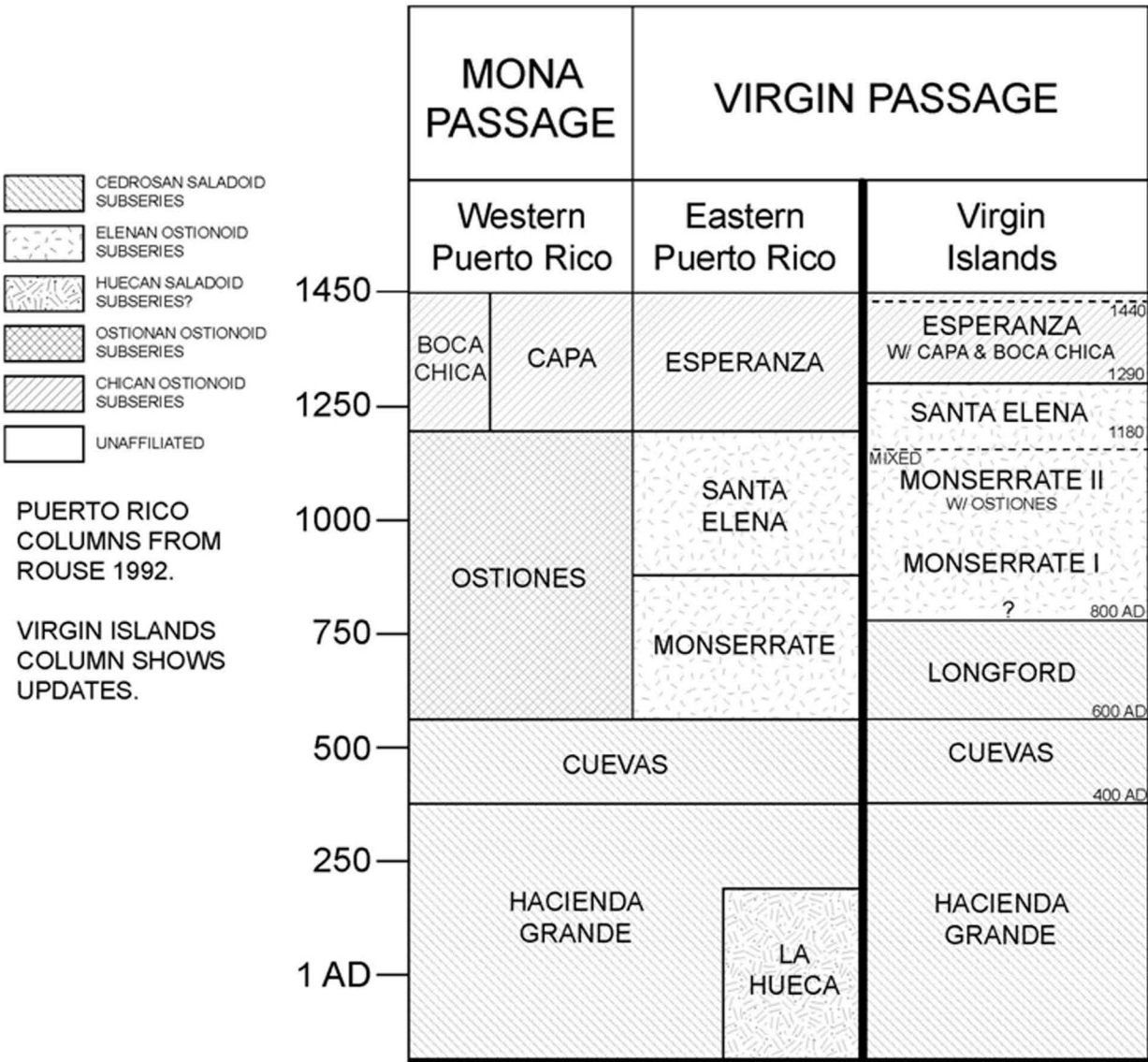


Figure 14. A modified version of Rouse’s 1992 chart, comparing his dates for Puerto Rico to the findings on St. John.

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