33 THE POTTERY OF MARCO GONZALEZ, BELIZE

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This paper reviews and contextualizes recent research on the ceramics from Marco Gonzalez (Ambergris Caye). The pottery of Marco Gonzalez provides details on the activities conducted at the site, such as salt production, but also reflects the site's occupational history and changing trade and exchange relationships over time.

Introduction

The site of Marco Gonzalez lies at the southern tip of Ambergris Caye, about 8 km south of San Pedro Town (Figure 1). Reconnaissance in 1984 led to excavations carried out in 1986 and 1990 (Graham 1989; Graham and Pendergast 1987, 1989; Pendergast and Graham 1987, 1990). Further excavations were organized in 2010 in response to a developer's plans to build on the site (Simmons and Graham 2017). Research aimed specifically at soil formation processes and the study of Maya Dark Earths was initiated in 2013 (Graham et al. 2015, 2016; Macphail et al. 2016). Here, we review the site's occupation history based on pottery data. We remain uncertain, based on present evidence, whether or not pottery was produced on the caye. Information from petrographic studies such as pottery temper and clay inclusions (Ting 2013) suggests strongly that most if not all ceramics were imported and/or passed through Marco Gonzalez as items of trade; the pottery is thus a good indicator of the site's connections to other sites and regions.

Aimers examined pottery from both San Pedro and Marco Gonzalez in 2012 and 2013. and spent three weeks classifying ceramics in the Marco Gonzalez lab in January and February of 2016 with the assistance of Kay McCarron and Jan Brown. Although a number of contexts were examined, most of the time over the three weeks was dedicated to examination of pottery from Structures 14 and 19 (profiles are shown in Graham et al. 2016). Of particular interest from these two excavation units were 256 Coconut Walk Unslipped sherds (Graham 1994: 153-156), associated with Late Classic salt production (Graham et al. 2016: 9-16). With the help of Kay McCarron, Jan Brown, and Jerry Choco, Aimers examined and classified 2,872



Figure 1. Northern Belize showing Marco Gonzalez.

sherds from these deposits, of which 619 (22%) could be classified to type and/or variety. The remaining sherds were classified to the Group or Ware level.

Late Preclassic and Terminal Preclassic

The known use of the site began sometime in the Late Preclassic (300 BC to AD 1). The 2016 research added more evidence of Preclassic occupation in the form of sherds of the types Sierra Red, Polvero Black, Flor Cream, Iguana Creek White, Laguna Verde Incised, Happy Home Orange, Repasto Black-on –red, and Puletan Red-and-unslipped. Two preserved mammiform supports (from different vessels) are typically classified as Aguacate Orange and are normally dated to between 100 B.C.-A.D. 400 (Brady, et al. 1998:22). Sea level is known to have risen by about 60cm over the last 2000 years or so (Dunn and Mazzullo 1993) explaining the inundation of the earliest levels of the site. By the Terminal Preclassic (ca. A.D. 1 - 250), the site was intensively used with evidence of fishing and occupation-related activities such as midden accumulation, cooking, and fish and shellfish processing (Graham et al 2015: 4).

An interesting aspect of the Terminal Preclassic to Early Classic occupation is remains of maize (*Zea mays*) and craboo (*Byrsonima* sp.). These suggest: "that the community at the site was engaged in exchange activities. Neither of these species grows naturally under conditions in which coral sand forms the soil parent material, and imported food had to be stored. Both of these factors suggest that networks of exchange were regular and wideranging." (Graham et al 2015: 24).

Early Classic

Platform construction and midden accumulation continued into the Early Classic (A.D. 250- 550) (Graham et al. 2015:4) but only very limited areas were exposed in test pits and we cannot yet bracket this period with confidence. As in other areas of the lowlands, however, polychrome pottery in the form of basal-flanged bowls with distinctive geometric designs makes its appearance (Graham et al. 2015; 14, Fig. 16). A good example of the quality of these imports are two bowls which are definitely imported from the mainland and are generally thought of as Petén-related. These would normally be classified as Actuncan Orange-polychrome or Dos Arroyos Orangepolychrome --types that are so similar that some people simply "lump" or hyphenate these two types.

An Early Classic Pucte Brown globular jar and a miniature Pucte Brown vessel are also evidence of trade with the mainland. Although the forms from Marco Gonzalez are somewhat unusual, the finish and fabric look much like Pucte Brown from other parts of Belize such as the Belize Valley. A Protoclassic Chan Pond Unslipped: Chan Pond Variety shoulder (MG 386) with vestigial strap handle that matches exactly the description and illustrations in the Barton Ramie ceramic monograph (Gifford 1976: Fig 77 i-k) (Floral Park phase), has a distinctive micaceous fabric that Aimers has seen frequently in the Belize Valley. This suggests that even relatively utilitarian, unslipped vessels were imported to Marco Gonzalez.

Late Classic and Terminal Classic

We do not yet have enough information to say when the focus changed to the intensive salt processing that characterizes the Late Classic period at the site. Intensive processing could have begun in the 6th century or early in the 7th century. Based on information from the Colson Point sites, we provisionally place the start of the salt industry at about A.D. 600/650 with termination at around A.D. 750. The pace of construction activity was most intense at Marco Gonzalez from about A.D. 750/800 to 950 (Graham et al 2015:4), when most of the structures that appear on the map (Figure 2) were built. Construction began, however, before the end of the 8^{th} century, when polychromes were still being produced (the latter part of the Late Classic), and continued through the time when monochrome ceramics came to dominate in the Terminal Classic. Thus the activities at Marco Gonzalez do not match mainland divisions between the Late and Terminal Classic, because the salt processing ends in the 8th century.

A Saxche Orange-polychrome with an interior that is more tan than orange matches a varietal description in Gifford well (Gifford 1976: 207 Catalogue no. 21411). Most of the Late Classic polychromes from Tikal were Saxche Orange-polychrome so, again, we seem to be seeing a connection to the Peten region. A Uacho Black-on orange dish (Saxche Ceramic Group) was the lid for a lip-to-lip cache with the Saxche Orange-polychrome vessel.

About 9% of all the sherds examined in 2016 were striated. Encanto Striated (Uaxactun Unslipped Ware) is the best typological designation for the Late Classic striated sherds (e.g., those from Lot 382) (see Ball 1990; Guderjan and Garber (1995). Encanto Striated was defined for the Terminal Classic at

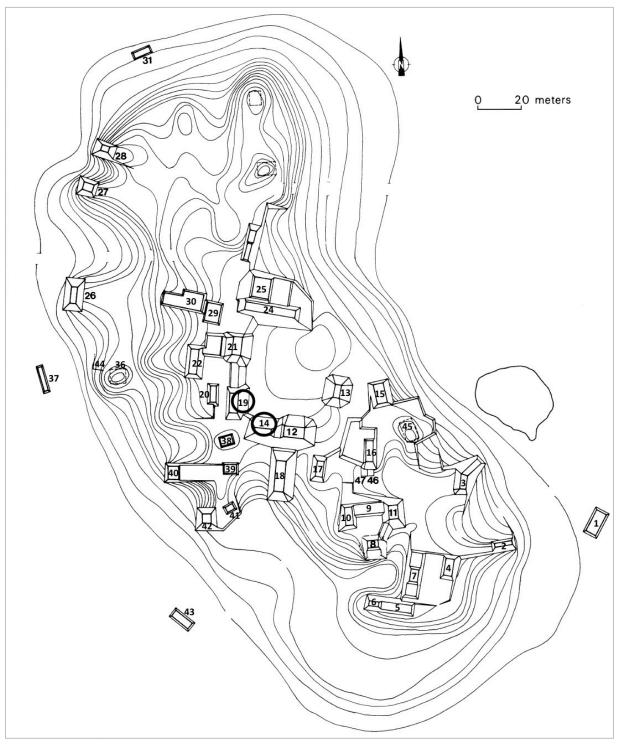


Figure 2. Site map of Marco Gonzalez with structures 9 and 14 circled.

Uaxactun (Smith 1955; Smith and Gifford 1966) and one broken rim from Marco Gonzalez is very similar to sherds typed as Encanto striated in the El Meco report (Robles Castellanos 1986: Fig 37 m-n). But, a similar style is found along the Caribbean coast and at Mayapan where it is also called Yokat Striated in Puuc Unslipped Ware. Therefore the Encanto Striated identification is probably better considered a ceramic system designation (ceramic systems group stylistically analogous types that have been given different names in different places) (Aimers 2009). There are no particularly good analogues in the Barton Ramie report; Aimers has never seen this form in his work in the Belize Valley, and it is very similar to rims that he has examined from San Juan, Ek Luum and Chac Balam, all on Ambergris Caye.

One conclusion from our 2016 research is that the slipped sherds more closely resemble Belize Valley and Petén types, whereas the unslipped/striated types, including Coconut Walk Unslipped, more closely resemble coastal types. This suggests that the utilitarian types were local in inspiration and probably manufacture, whereas serving types were influenced from the Late Classic inland area, including the Belize Valley, and possibly imported from there. Encanto Striated, as a Terminal Classic type, may also indicate the reorientation of the site's trade connections away from the troubled Petén sites in the latter part of the Late Classic to the more stable Yucatan.

The similarity of a Tunich-Red-on Orange (Late Classic) (Palmar Group) rim (MG 375) to one in Gifford's Belize Valley report (1976:252) also suggests Classic Period connections between Marco Gonzalez and the Belize Valley/ Petén. Another Petén-related Late Classic type found at Marco Gonzalez, Subin Red, is also found at Ek Luum and San Juan on Ambergris Caye.

Graham and colleagues (2015: 4) have written that beginning in the latter part of the Late Classic, "the site's occupants constructed buildings of local reef stone and wood over salt production debris, expanded the settlement, and buried their dead ... beneath the floors of successive structures." Although the Terminal Classic saw the abandonment of many sites on the mainland, Marco Gonzalez continued to be occupied and to import pottery from other parts of the Maya world. Notably, however, the pottery at the site suggests a reorientation away from the Petén and western Belize and toward northern Belize, Quintana Roo, and Yucatan.

Carmen Ting (2013) examined Terminal Classic Molded-carved sherds from different sites in Belize including five from Marco

Gonzalez that she classified as Ahk'utu' Molded-carved, a type originally defined by Helmke and Reents-Budet (2008) based on vessel shape, foot style, iconography, and glyphs. Aimers believes that because she was working with single sherds rather than full or partial vessels, a Pabellon Molded-carved Ceramic System designation would have been more conservative. In any case, Ting found a variety of pastes that suggest a variety of production locations, with petrography suggesting northern Belize. Some of the Molded-carved types have been called "imitation Fine Orange", but we have real Fine Orange at Marco Gonzalez in a Yalton Blackon-orange vessel, part of the Silho Group of Fine Orange ware. Fine Orange was produced in the Gulf Coast region and the similarities of some of the Postclassic pottery forms and design motifs at Lamanai, Altun Ha, Cerros, and Marco Gonzalez suggest that northern and coastal Belize had some sort of connection to the Gulf Coast (Aimers 2014). In any case, the emphasis on the salt trade in the Late Classic seems to have given way to more diversified trade and exchange in Terminal Classic times. Stemp and Graham (2006: 28) suggest that "[b]ased on the site's location and the presence of imported goods such as black obsidian, Sierra de las Navajas green obsidian, jade, chert, granite, limestone, haematite, and the [imported] ceramic types ..., Marco Gonzalez probably served as a hub in an exchange network involving both coastal and inland communities" (Stemp and Graham 2006:28). This idea has been supported by recent research on obsidian sourcing; X-Ray fluorescence analysis of 110 pieces of obsidian from various contexts at Marco Gonzalez indicates that obsidian was obtained from eight different highland sources. Just over 80% of the assemblage comes from El Chaval and Ixtepeque, whereas lesser amounts of central Mexican obsidian from Pachuca and Ucareo are present (Simmons and Graham 2017).

Dating Salt Production

During the 2016 research at Marco Gonzalez, we were particularly interested in Coconut Walk Unslipped because we have been examining it closely for a couple of years (Aimers, et al. 2016). Due to its distinctive,

LOT I	Level	<u># sherds</u>	<u>CWU</u>	<u>% CWU</u>	Diagnostics	Temporal Assessment
MG359 1	1	59	1	1.69	Zakpah Grp., Roaring Creek Red	Terminal Classic-Early Postclassic
MG364 2	2	9	2	22.22	Saxche O-p, Rubber Camp Brown	Late Classic
MG367 3	3	12	4	33.33	Saxche O-p, Ash tempered sherd	Late Classic
MG369 4	4	12	5	41.67	Vaca Falls Grp, Saxche O-p, Sotero Red-brown	Late Classic
MG371 5	5	18	12	66.67	none; 4 Pine Ridge Carbonate are probably Classic	
MG374 6	6	30	18	60.00	Uacho Black on orange	Late Classic
MG377 7	7	23	11	47.83	none; 2 Pine Ridge Carbonate are probably Classic	
MG382 8	8	262	87	33.21	Aguacate, Sierra, Repaste Black-on red Polvero, Cabro, Encanto, Gavilan Black-on Or	Late Preclassic
MG390 9	9	2 vessels	0	0.00	two Actuncan O-p basal flange bowls below 382 in level 383	Intrusive deposit; Early Classic
MG383 9	9	9	1	11.11	Cabro Red, Dos Arroyos Grp	Late Preclassic-Early Classic

Table 1. Structure 14.

quartz sand tempered fabric and crude form, it is virtually impossible to miss in a collection. Graham (1994) was the first person to suggest that the pottery was associated with salt production, and recent evidence of tidal flat muds in deposits with Coconut Walk sherds adds support to the idea that Coconut Walk pottery was used to contain brine from which water was driven off by heating over fires (Graham et al. 2015). The pottery closely resembles McKillop's Punta Ycacos Unslipped, which was definitely used in salt production. Graham and Pendergast (1989:6-7) describe meter-deep deposits of layers of charcoal interlaced with Coconut Walk Unslipped; sections both drawn and photographed can be viewed in Graham and colleagues' report (2015) on Maya Dark Earth at the site. Both of the units that McCarron and Aimers investigated in 2016 had areas in which Coconut Walk Unslipped and charcoal were intermixed, along with deteriorated floor surfaces.

Table 1 shows the percentage of Coconut Walk Unslipped as a percentage of sherds from each Lot in Structure 14. We based the temporal assessment for each Lot on diagnostic sherds other than Coconut Walk Unslipped. As you can see, the peak is 66.67% of all sherds from

the Late Classic Lot 371. The earliest Coconut Walk Unslipped is associated with Late Preclassic types like Cabro Red (sometimes categorized as Sierra Red) from Lot 383. Notably, however, there was also an Early Classic Dos Arroyos Group sherd in this lowest lot and this draws attention to the fact there has been a great deal of mixing of levels at the site, largely the product of land crab burrowing. Still, despite some anomalies, this is a fairly tidy distribution that at least suggests that Coconut Walk Unslipped (and thus probably salt production) may have started as early as the very Early Classic, and possibly even by the end of the Preclassic. The latest context has 1.69% Coconut Walk Unslipped associated with Roaring Creek Red, and Zakpah Group sherds, normally dated to the Terminal Classic and Early Postclassic.

Structure 19 (Table 2) shows a much distribution of Coconut messier Walk Unslipped, again reflecting stratigraphic mixing. In this case, the highest percentage of Coconut Walk Unslipped is 36.59%, about half of the highest percentage from Str 14. This Lot contains a mix of Late Classic and Early Postclassic sherds such as Zalal Gouged-incised, and a Red Neck Mother jar rim. What is

<u>LOT</u>	Level	<u># sherds</u>	<u>CWU</u>	<u>% CWU</u>	Diagnostics	Temporal Assessment
MG360	1	74	2	2.70	Zalal G-I	Early Postclassic
MG361	2	59	13	22.03	Zakpah Grp, Red Neck Mother conjoins with 365	Early Postclassic
MG365	3	41	15	36.59	Zalal G-I, Red Neck Mother conjoins with 361 post-slip incised conjoins with 373	Late Classic-Early Postclassic
MG373	4	25	1	4.00	Saxche O-P, Tsabak Unsl, Vaca Falls, Subin Red, post-slip incised conjoins with 365	Late Classic
MG375	5	81	26	32.10	meditation black, Ttunich red-on- orange	Late Classic
MG378	5	28	5	17.86	Cubeta Incised	Late Classic
MG381	5	1 vessel	0	0.00	Pucte Brown vessel	Early Classic
MG386	6	134	44	32.84	Dos Arroyos O-P, Dos Hermanos Red(H), Caldero Buff-polychrome	Early Classic
MG389	7	156	9	5.77	Dos Arroyos O-P, Triunfo Stri, Chorro fluted	Early Classic
MG391	8	359	0	0.00	Actuncan O-P, Agaucate/Aguila, Balanza Black, Caldero Cream-poly, Dos Arroyos O-P, Iguana Creek White, Puletan Red-Unslipped, Sierra Red, Sapote Striated	Late Preclassic-Early Classic
MG392	9	148	0	0.00	Sierre Red. Polvero Grp, Puletan Red-unslipped	Late Preclassic
MG393	10	188	0	0.00	Sierre Red,. Sarteneja Usulutan, Puletan Red-unslipped, Laguna Verde Inc, Iguana Crk White, Happy Home Orange, Flor Cream	Late Preclassic

Table 2. Structure 19.

interesting in this case is that Coconut Walk Unslipped was not found in Late Preclassic contexts, but by the second Early Classic Lot (MG 386) Coconut Walk Unslipped accounts for 33% of sherds.

Graham is particularly concerned about the mixed nature of the levels at Marco Gonzalez, especially given that land crabs have been active from Preclassic times. Therefore more excavation is necessary to learn whether Coconut Walk is a distinctive part of the expansion of the salt industry in the 7th and 8th centuries, or whether the type had been used at the locale in earlier times to process brine. That salt processing itself had likely been carried out both prior to and long after the Late Classic, however, is not doubted. Heather McKillop

(personal communication 2016) points out that salt production extended from the Early Classic to the Postclassic at Paynes Creek; most of the workshops at the Paynes Creek Salt Works date to the Late Classic, but there are a few sites, such as the Eleanor Betty site, that have longer use dating to the Early Classic. "The distribution of limited quantities of brine-boiling artifacts at Frenchman's Cay and Wild Cane Cay that household production for suggests immediate use may have been characteristic of the Postclassic along the coast . . . The Punta Ycacos salt works were abandoned at the end of the Classic period, when the inland consumers of salt left such cities as Lubaantun, Nim Li Punit, Uxbenka, and Pusilha" (McKillop 2002:178). Indications are, based on evidence from

McKillop's investigations as well as those at Marco Gonzalez and Colson Point, the processing of salt for local use and possibly export has a long history at sites on Belize's coast and cayes, but that processing and export became an industry in the Late Classic period. How the development of such an industry relates to mainland political dynamics has yet to be explored.

Early Postclassic

Occupation at Marco Gonzalez continues into the Early Postclassic period (A.D. 950 to ca. 1200). At Lamanai, the Early Postclassic Buk phase, characterized by Zakpah Group pottery, is now dated A.D. 962 to 1200/1250 and this is the time of some of the most impressive pottery at Marco Gonzalez, pottery with close stylistic connections to Lamanai. In terms of construction, platforms seem to have been added to during the Early Postclassic, and the additions are characterized by large stair risers that may have functioned as "bleechers". Unfortunately, however, all the Zakpah and Zalal gougedincised ceramics at Marco Gonzalez have been found in surface or non-primary deposits, whereas most of the ceramics characterizing the Terminal Classic were recovered from burials beneath the floors capping the platforms.

Two Early Postclassic Tohil Plumbate vessels were recovered from burials at Marco One depicts a hunchback and a Gonzalez. second, called a "button-face jar" by Shepard (1948) is "decorated with a face that has several bat-like features and is surrounded by appliqué bosses (Graham and Pendergast 1989: Fig. 6). The decorated area retains traces of blue paint, which was apparently not applied to the remainder of the surface" (Graham and Pendergast 1989:7). Plumbate was produced near the present Pacific coast border between Mexico and Guatemala (Neff 2003) and there are two versions of plumbate. "The hardness and unusual color of the surfaces probably led to the appellation 'Plumbate'. However, the implication that Plumbate surfaces have a lead glaze was conclusively disproved by Shepard (1948), who found that an unusual, high alumina, high-iron slip clay combined with partial reduction firing created a vitrified surface with the unusual, grey or olive-green color (Neff 2003:21).

San Juan Plumbate is found in Late and Terminal Classic (AD 600–900) contexts in southern Chiapas, Guatemala, and El Salvador. Tohil Plumbate is generally thought to be Early Postclassic (AD 900–1200) and is found across Mesoamerica. Cobos ((2004:542) associates plumbate at Chichen Itza with Late-phase Sotuta (900-1050). Tohil plumbate has now been shown to have been produced in the Rio Cahuacan drainage of Chiapas (Neff 2003:31). Neff compared Plumbate to the pottery you can buy at airports around the world—small vessels made for a multicultural market that can be easily transported. (Pool and Bey III 2007).

A similar button-face jar was published from the excavations at San Juan (Valdez, et al. 1995: Fig. 49). Aimers has part of the San Juan collection in his lab and it is interesting how much it differs from the Marco Gonzalez collection, most notably in the very high percentage of Yucatan-related trickle wares, types that are virtually absent in the Marco Gonzalez sample. This may suggest that San Juan, about as far north as you can get from Marco Gonzalez on Ambergris Caye, was dominating contact with the north. Based on the substantial quantities of Zakpah Group ceramics at the site (Graham and Pendergast 1989: Fig. 7), Marco Gonzalez clearly had closer ties to Lamanai and Cerros to the southwest than to Yucatan. As Pendergast (1990:176) noted

"despite the site's small size, Lamanairelated ceramics occur in quantities greater than those encountered in the richest Lamanai middens; ... Though the forms decoration are generally and those characteristic of Lamanai, both paste features and vessel sizes, as well as some decorative motifs, distinguish the Marco Gonzalez material from [Lamanai] In turn, the Lamanai collection contains very small quantities of pottery with motifs that are prevalent at [Marco Gonzalez], so that two-directional exchange may be in evidence"

In her study of the Zakpah Group ceramics from Marco Gonzalez, Ting (2013:268) concluded: 1) that "the distribution of the Zakpah ceramics ... consisted of local and regional spheres"; 2) that the Marco Gonzalez sherds were produced at "multiple foreign sources"; and 3) that the "extent of interaction between the local and regional distribution spheres appear to have increased throughout the course of the Classic to Postclassic transition" (Ting 2013: 269):

"Unless the community at Marco Gonzalez had exceptionally high demand for chalices and jars, the large quantity of samples recovered from the site, coupled with the coexistence of products from diverse sources, and the evidence so far suggests a lack of local production, are all indicative of the potential involvement by the community at Marco Gonzalez in facilitating the movement of chalices and pedestal-based jars along the coast" (Ting 2013: 249).

Late Postclassic and colonial periods

Graham, following Dunn and Mazzullo (1993) suggests that mangrove encroachment and coastal sedimentation at about AD 1200-1250 led to a reduction in occupation at Marco Gonzalez. San Pedro has produced a large quantity of material from the Late Postclassic, and it is probable that Marco Gonzalez occupants moved north to San Pedro once their locale no longer served as a port (Graham at el 2015:4). Less intensive and apparently intermittent occupation continued, however, throughout the Postclassic (A.D.1200-1500) and early Historic periods (A.D. 1500-1650)" (Graham et al 2015:4). One indication of this limited occupation is a Late Postclassic Tulum Red vessel from Structure 12 (Graham and Pendergast 1989: Fig 12).

Also from Structure 12 is a bowl (Graham and Pendergast 1989: Fig. 11a) that is probably best categorized as part of the Chen Mul Modeled ceramic system, particularly because Chen Mul Modeled system effigy censer sherds were found near it (Graham and Pedergast 1989: 13-14). These vessels are often said to depict the diving god known at Tulum. Ringle, instead, follows Spinden (1933) and newer work by Koontz (1994) on the iconography of El Tajin to suggest "that the descending gods at Tajin, both in zoomorphic form, were the local manifestation of Quetzalcoatl" (Ringle 2004: Like Spinden and Koontz, he 186). demonstrates parallels in the sculpture of Chichen Itza. This would appear to be more evidence of Postclassic Gulf Coast connections (Aimers 2014). Some activity in the early Spanish colonial/Historic period (A.D. 1500-1650) is reflected in an offering in a late addition to the stair of Str. 12 as well as from surface scatter (Graham and Pendergast 1989: 14, Figure 11b, c). No colonial-period ceramics were examined in 2016.

Conclusion

Trade and exchange is evident from the earliest-known Preclassic levels at Marco Gonzalez. Food (maize and craboo) is first indicated, but by the Early Classic period, imported pottery is common. Mainland connections change from the Belize Valley and Peten in the Classic Period to Lamanai and the northern lowlands by Postclassic times. Although we must be cautious owing to the disturbed stratigraphy at the site, there are some indications that salt production had a long history at the site and started in the Early Classic. Production became much more than a household industry in the Late Classic, however. One hypothesis is that the demand of lowland kingdoms for salt increased in the Late Classic and was met by villages and towns situated along the coast and cayes of Belize. Why did the demand increase remains to be explored? Did populations increase exponentially? Or are we looking at the reorientation of trade networks that had operated in Early Classic times when Teotihuacan was the power in the region? Why did the industry in Belize "crash" at the end of the 8th century? Who were the people who built the town on the ruins of the salt industry? Throughout its occupation, Marco Gonzalez demonstrates the importance of trade and exchange to the ancient Maya, yet the site's history makes clear that networks fluctuated over time, sometimes dramatically. Despite such fluctuations, occupants maintained some level and kind of commercial activity along with their exploitation of marine resources. Whether these occupants were the same ethnic or cultural group over time is another critical question. Our

hope is that further investigation, including studies of the skeletal remains, will produce some answers.

References

Aimers, Jamers J, Elizabeth Haussner, Dori Farthing and Satoru Murata

2016 An Expedient Technology and Its Implications for Ancient Maya Trade and Interaction. In *Perspectives on the Ancient Maya of Chetumal Bay*, edited by D. Walker, pp. 149-161. University Press of Florida, Gainesville.

Aimers, James J.

- 2009 Bring It On: Using Ceramic Systems at Lamanai. Research Reports in Belizean Archaeology 6:245-252.
- 2014 Follow the Leader: Fine Orange Pottery Systems in the Maya Lowlands. In *The Ancient Maya of Central America: Settlemernt Paterns, Architecture, Hieroglyphic Texts, and Ceramics,* edited by G. E. Braswell, pp. 308-332. Routledge, New York.

Brady, James E., Joseph W. Ball, Ronald L. Bishop, Duncan Pring, Norman C. Hammond and Rupert A. Housley

1998 The Lowland Maya "Protoclassic": A Reconsideration of Its Nature and Significance. *Ancient Mesoamerica* 9:17-38.

Cobos, Rafael.

2004 Chichén Itzá: Settlement and Hegemony During the Terminal Classic Period. In *The Terminal Classic in the Maya Lowlands: Collapse*, *Transition, and Transformation*, edited by A. Demarest, P. M. Rice and D. S. Rice, pp. 517-544. University Press of Colorado, Boulder.

Dunn, Richard K. and S.J. Mazzullo

1993 Holocene Paleocoastal Reconstruction and Its Relationship to Marco Gonzalez, Ambergris Caye. *Journal of Field Archaeology* 20(2):121-131.

Gifford, James C.

1976 Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley. Memoirs of the Peabody Museum of Archaeology and Ethnology Volume 18. Harvard University, Cambridge.

Graham, Elizabeth

1994 The Highlands of the Lowlands: Environment and Archaeology in the Stann Creek District, Belize, Central America. Monographs in World Prehistory Number 19. Prehistory Press, Madison. Graham, Elizabeth and David M. Pendergast

1989 Excavations at the Marco Gonzalez Site, Ambergris Caye, Belize, 1986. *Journal of Field Archaeology* 16:1-16.

Helmke, Christophe and Dorie Reents-Budet

2008 A Terminal Classic Molded-Carved Ceramic Type of the Eastern Maya Lowlands. *Research Reports in Belizean Archaeology* 5:37-49.

McKillop, Heather

2002 Salt: White Gold of the Ancient Maya. University Press of Florida, Gainesville.

Neff, Hector H.

2003 Analysis of Mesoamerican Plumbate Pottery Surfaces by Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (La-Icp-Ms). *Journal* of Archaeological Science 30(1):21-35.

Pendergast, David M.

1990 Up from the Dust: The Central Lowlands Postclassic as Seen from Lamanai and Marco Gonzalez, Belize. In *Vision and Revision in Maya Studies*, edited by P. D. Harrison and F. S. Clancy, pp. 169-177. University of New Mexico Press, Albuquerque.

Pool, Christopher A. and George J. Bey III

2007 Conceptual Issues in Mesoamerican Pottery Economics. In *Pottery Economics in Mesoamerica*, edited by C. A. Pool and G. J. Bey III, pp. 1-38. University of Arizona Press, Tucson.

Robles Castellanos, Fernando

1986 Cronologia Ceramica De El Meco. In Excavaciones Arqueológicas En El Meco, Quintana Roo, edited by A. P. Andrews and F. R. Castellanos, pp. 77-130. Colección Cientifica, Instituto Nacional de Antropología e Historia, Mexico D.F.

Shepard, Anna O.

1948 Plumbate: A Mesoamerican Trade Ware. Publication 573, Carnegie Institution of Washington, Washington, D.C.

Simmons, Scott E. and Elizabeth Graham

2017 Maya Coastal Adaptations in Classic and Postclassic Times on Ambergris Caye, Belize. In *Trading Spaces: The Archaeology of Interaction, Migration and Exchange. Proceedings of the 46th Annual Chacmool Conference*, edited by M. Patton and J. Manion, In press. Chacmool Archaeology Association, University of Calgary, Calgary, Alberta, Canada, Calgary.

Smith, Robert E.

1955 *Ceramic Sequence at Uaxactun, Guatemala.* Middle American Research Institute, Publication 20. Tulane University, New Orleans. Smith, Robert E. and James C. Gifford

1966 Maya Ceramic Varieties, Types, and Wares at Uaxactun: Supplement to "Ceramic Sequence at Uaxactun, Guatemala". Middle American Research Institute, Publication 28. Tulane University, New Orleans.

Stemp, W. James and Elizabeth Graham

2006 Ancient Maya Procurement and Use of Chipped Chert and Chalcedony Tools at Marco Gonzalez, Ambergris Caye, Belize. *Lithic Technology* 31(1):27-55.

Ting, Carmen

2013 Change, Continuity, and the Maya Collapse: Reconstructing the Ceramic Economy in the Eastern Maya Lowlands During the Classic to Postclassic Transition. Unpublished Phd Thesis, Institute of Archaeology, University College London, London.

Valdez, Fred, Lauren A. Sullivan and Thomas H. Guderjan

1995 Ceramics from Northern Ambergris Caye Sites. In *Maya Trade, Settlement, and Populations on Ambergris Caye, Belize*, edited by T. H. Guderjan and J. F. Garber, pp. 95-112. Labrinthos, Lancaster, CA.