Proyectos Costa Maya and Ciudad Caucel: Archaeological Survey of Northwestern Yucatán: Ceramic and Lithic Analysis

With the assistance of: Teresa Ceballos Gallareta and Nancy Peniche May

Middle Preclassic Majan Red Vessel.

Research Year: 2007
Culture: Maya
Chronology: Middle Preclassic to Modern
Location: State of Yucatán, Northwest Corner of Yucatán Peninsula, México
Sites: Tzemé, Xtobo, Xcopté, Caucel, Xanilá, Anicabil

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Abstract

This report presents an overview of the results of the Costa Maya and Ciudad Caucel Projects obtained up to the end of 2007, as well as summaries of the results of the analysis of ceramics and lithic artifacts from both projects. The conclusions briefly discuss some of the implications of the research, and their contribution to our understanding of the development of civilization in the northern Maya Lowlands.

Resumen

Este reporte presenta un bosquejo de los resultados de los Proyectos Costa Maya y Ciudad Caucel obtenidos hasta fines de 2007, y resúmenes de los resultados del análisis de la cerámica y de los artefactos líticos de ambos proyectos. Las conclusiones esbozan las implicaciones de la investigación y su contribución a nuestro conocimiento del desarrollo de la civilización en el septentrión de las tierras bajas del área Maya.

Introduction: Project Summary and Update

This report summarizes the background history and ongoing research of the Proyecto Costa Maya, an intensive survey of prehistoric and historic Maya settlements in northwestern Yucatán, México. Since 1999, the authors have directed an intensive archaeological settlement pattern study that, as of late 2007, has involved the precise location and reconnaissance of more than 260 prehispanic and 160 historic sites in the region, an area of approximately 2200 square kilometers, enclosed by the highways between the city of Mérida and the ports of Celestún and Progreso (Figure 1).[1] Prior to 1999, only 69 prehispanic sites had been located in the region, and very little was known about them.

1 Maps showing the location of all sites recorded up to 2003 are included in the final field report of the Proyecto Costa Maya (Robles et al. 2003). This report includes maps of the distribution of sites in the survey area from Middle Preclassic times to the present. For more detailed accounts of the 1999-2003 fieldwork and the preliminary results, see the annual project reports by Andrews et al. (200, 2001, 2002), and Robles et al. (200, 2001, 2003). The latter are more detailed, and contain more data. All six reports, plus several other project papers and publications, are available online at http://faculty.ncf.edu/andrews/research/CostaMaya/cmpubs.htm. These maps include sites located before 2007. The final report will include updated maps. The current number of sites is not final either, as additional prehispanic and historic sites will be added to our database during 2008, and possibly later.

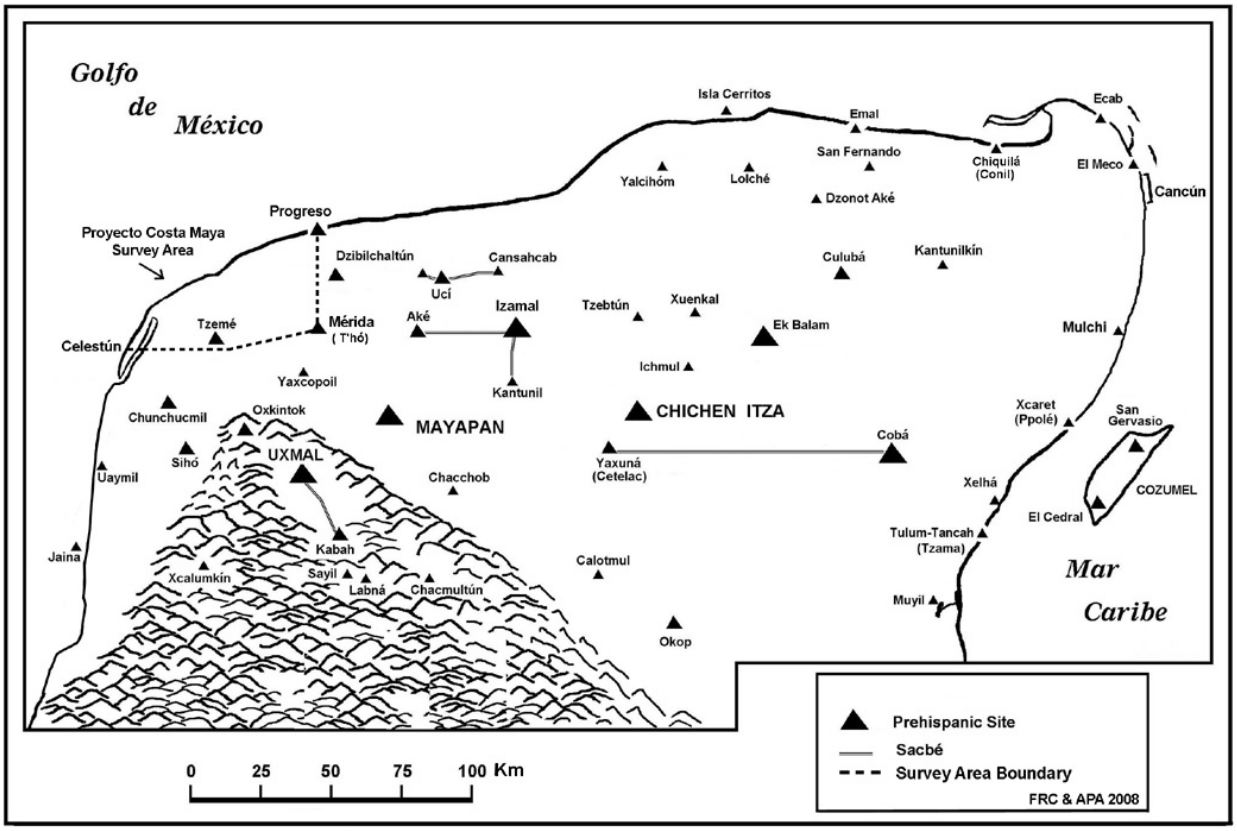

Figure 1. Northern Yucatán, showing Costa Maya Project Survey Area.

The northwest corner of Yucatán has long been known as the most arid part of the peninsula of Yucatán, and meteorological records over the last century indicate a lower average pattern of precipitation than other parts of the peninsula. Historic records of low-density occupation of the area during Colonial times appeared to support this, as do the oral history of farmers and plantation owners, who have long claimed that the soils were thin and lacking in nutrients, and that agricultural yields were very low. Even henequen productivity was low compared to other parts of northwestern Yucatán, and the most common use of the land has traditionally been the raising of bush cattle. In the 1970s, spot surveys of archaeological sites conducted by the *Atlas Arqueológico del Estado de Yucatán* appeared to indicate that the area was also lightly populated in prehispanic times. In the course of these surveys of the research area 56 prehispanic sites were reported, four of which had monumental architecture.[2] Subsequently, between 1980 and 1999, another 13 prehispanic sites were recorded in the course of later surveys and salvage operations.

2 Garza Tarrazona de González and Kurjack (1980). The four largest sites were Tzemé (CY-1), Chel (138), Kakamul Uilob (223), and Komchén (187). Most of the sites known in 1980 were only recorded, without detailed surveys and surface collections, and few were dated. They were also located near main roads and the coast. At the time, the interior was largely inaccessible.

On the basis of the perceived light occupation of the area, the principal investigators developed the hypotheses that, given the soil and rainfall conditions, 1) the prehispanic settlement pattern would be light, 2) a significant portion of the population would be living on the coast, exploiting coastal and marine resources, 3) that the communities of the interior would have been heavily dependent on coastal products, and, 4) that archaeological research would reveal evidence of close ties between the interior and the coast. As often occurs with archaeological projects, the results of our research have revealed a much more complicated picture.

Between 1999 and 2003 we conducted a detailed reconnaissance of the region, recording the exact location of all the prehispanic and historic sites we could find. We also attempted to determine the extent of the surface areas of each site, and their boundaries. A large number of these were surveyed and mapped to varying degrees, from simple sketch maps to 43 detailed maps of the centers of selected sites. Surface collections were made at most of the prehispanic and many of the historic sites, and 29 test excavations were carried out at 15 selected prehispanic sites. Between 2003 and 2006 additional survey and salvage excavations where conducted as part of the Ciudad Caucel project, under the direction of Fernando Robles and Josep Ligorred (Figure 2; for details, see below). This was an intensive survey of an ~8km^2 area west of Mérida and south of Caucel (Figure 3), which was blanketed with prehispanic remains. At least five prehispanic sites have been tentatively identified. However, given the continuous remains from one site to the next, a discrete partitioning of the sites as separate units at any given point in time will have to await the final ceramic analysis. Several historic sites – one hacienda and several ranchos – were also located in this survey.

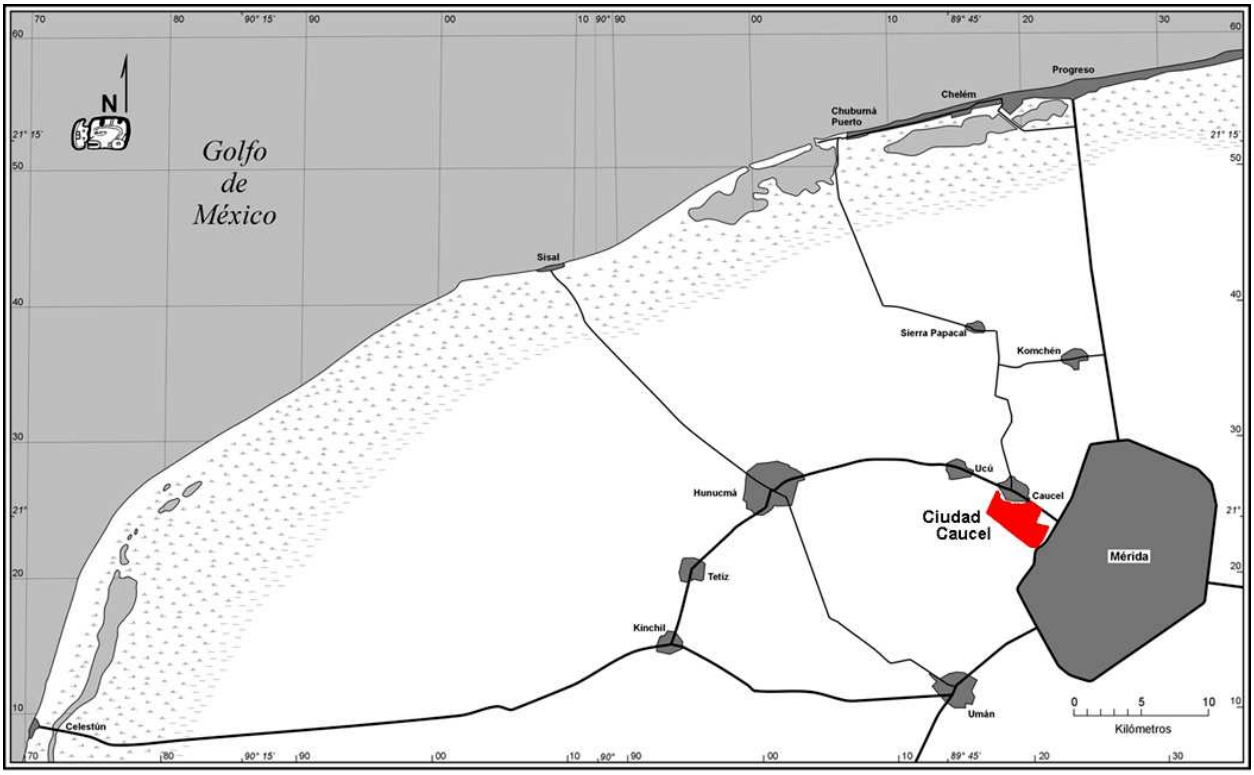

Figure 2. Costa Maya Project Survey Area, showing the location of the Ciudad Caucel Survey and Salvage area (from Uriarte 2006).

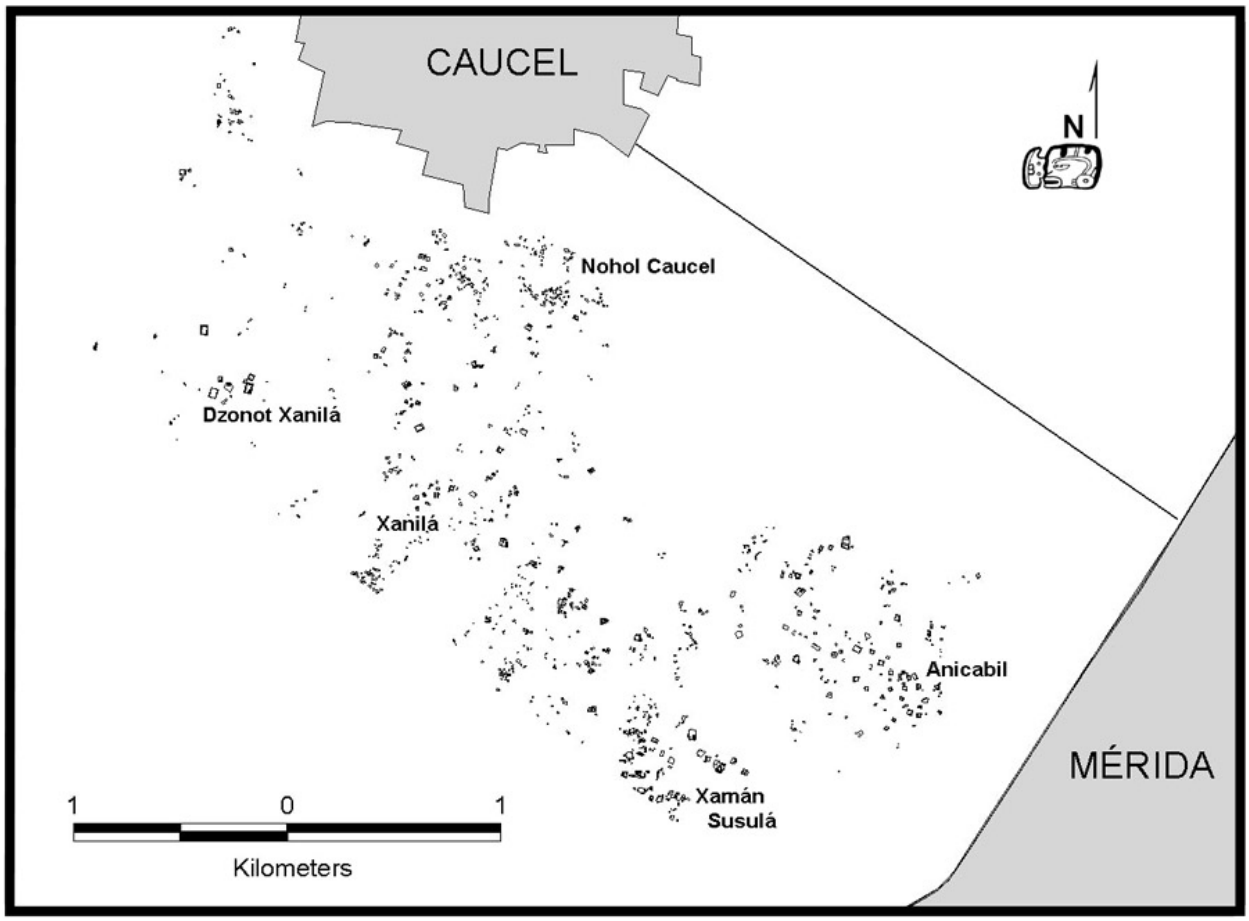

Figure 3. Map of Ciudad Caucel, showing the distribution of archaeological remains. Map courtesy of the Proyecto de Salvamento Ciudad Caucel. Fase III. Departamento de Patrimonio Arqueológico y Natural del Municipio de Mérida.

In the course of the Costa Maya project a number of interesting discoveries were made, including the presence of more than 115 Middle Preclassic sites, many of them part of a three tier settlement hierarchy; 25 of these had ballcourts. We also determined that the city of Tzemé was likely the capital of a Classic period kingdom or polity, and identified a Classic period seaport at Progreso (which may have served as the prehispanic port for Dzibilchaltún and/or T´ho/Mérida). Historic sites of interest include a Colonial period and 19th century logwood village, and a settlement of escaped African-American slaves (see reports by Andrews and Robles in Sources Cited).

The Costa Maya project was supported by the Instituto Nacional de Antropología e Historia of México, the National Geographic Society, New College of Florida, and the University of South Florida up until 2003. However, it never really ended, as there have been several spin-off projects, including an ongoing investigation of Xtobo, a Middle Preclassic town, which is a Tulane Ph.D. dissertation project directed by David Anderson (2005), and a series of large scale "salvamento" (salvage, or CRM) operations at Ciudad Caucel and adjoining areas directed by Robles and Ligorred.

These latter CRM operations, funded by the Municipality of Mérida and the State of Yucatán, have become a separate project. The municipal and state authorities are constructing a new city to the west of Mérida and south of the town of Caucel, known as Ciudad Caucel, the first phase of which involves the construction of 5,000 houses, avenues, streets, and parks. In their salvage project, Robles and Ligorred and a large crew of archaeological assistants and fieldworkers literally combed the area to be developed, locating numerous new sites, all of which were surface-collected. Several of these were selected for more extensive excavations, and some are being set aside for consolidation and long-term preservation in park areas inside the new urban area, which is now under construction. These include historic sites as well as prehispanic ones. Anicabil, an important Colonial and 19th century hacienda in the middle of the Ciudad Caucel development, has been mapped and its architecture fully recorded (Figure 4 and Figure 5). Plans are underway for its restoration, and the future use of its "*Casa Principal*" (Main House) and surrounding gardens as a community center and park in the new urban zone.

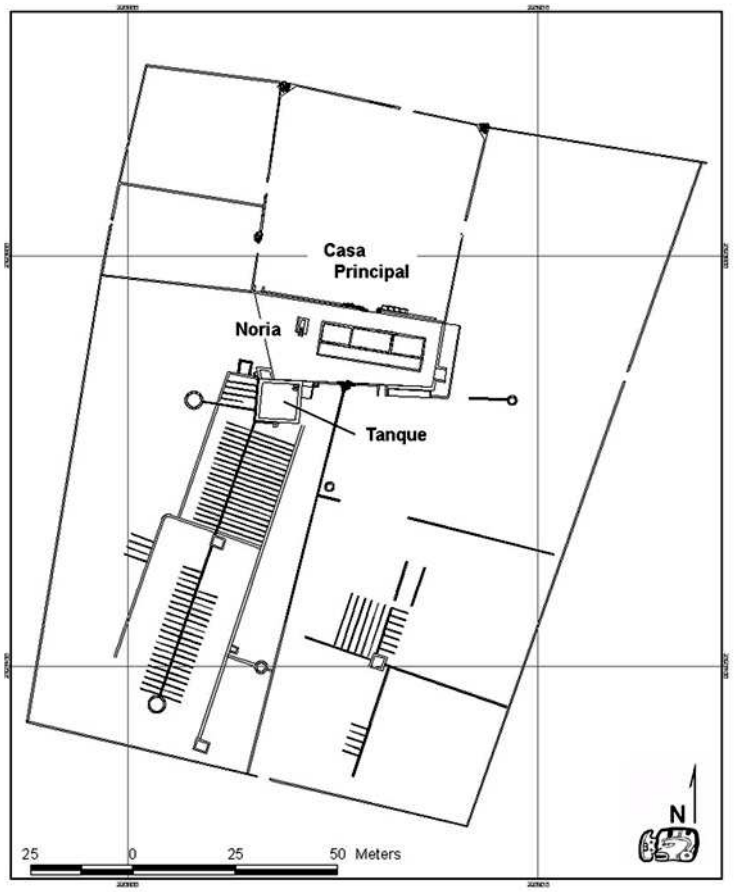

Figure 4. Groundplan of Hacienda Anicabil, with the *casa principal* (main house), corrals, *noria* (well), *tanque* (water tank), and irrigation system for the orchard. Originally an *estancia*—a corn and cattle ranch—of the 18th century, the hacienda was built in the late 18th and/or early 19th century and was incorporated into the henequén hacienda of Susulá sometime after 1870. Map courtesy of the Proyecto de Salvamento Ciudad Caucel. Departamento de Patrimonio Arqueológico y Natural del Municipio de Mérida.

Figure 5. Hacienda Anicabil – View of Casa Principal from northeast.

Significant discoveries in this salvage project include several new Middle Preclassic sites with new types of structures, an additional Middle Preclassic ballcourt (Figure 6), a Middle Preclassic platform with an altar, and several Classic and Postclassic settlements. It has not yet been determined whether all these sites are independent settlements, as many appear contiguous; the determination of the boundaries of these sites will have to await the final ceramic analysis, which is still underway. At any rate, it appears that the area immediately to the west of Mérida was densely occupied in prehispanic times, from the Middle Preclassic period onwards (Robles and Ligorred 2004). Studies of the domestic architecture and settlement patterns of Middle Preclassic Caucel have recently been completed (Uriarte 2006; Uriarte and Medrano 2005).

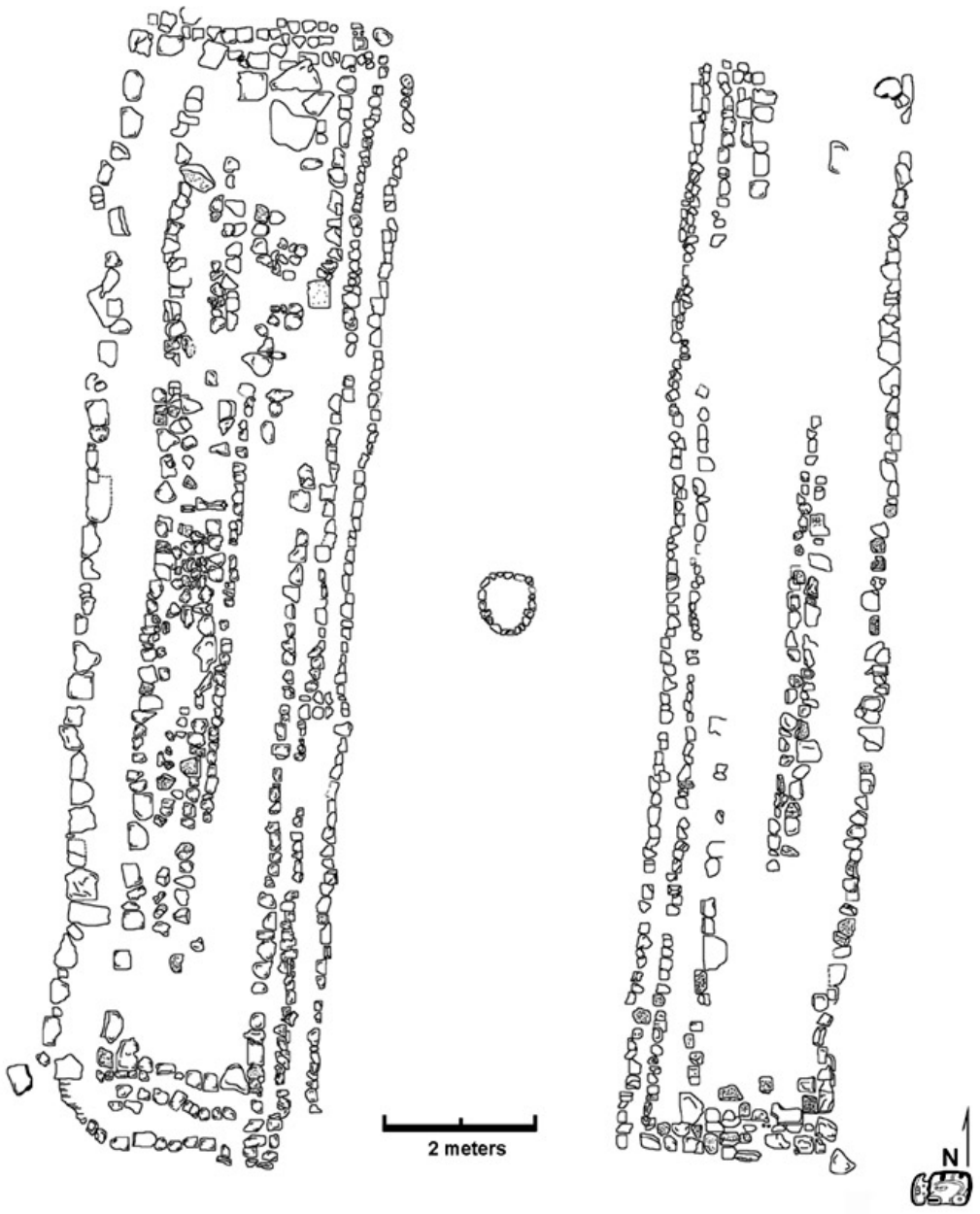

Figure 6. Groundplan of Middle Preclassic Xanilá Ballcourt, Ciudad Caucel. Mapped by Donato España, drawn by Edgar Medina. The longer structure on the west side measures 26.5m from north to south.

Major fieldwork ceased during 2007, when Robles and Andrews supervised lab work – mainly the analysis of the ceramics – by Teresa Ceballos, Fernando Robles and Nereyda Quiñones (2007; see also Ceballos and Robles 2007) – and lithic artifacts – by Nancy Peniche (2007). We also attended to a number of loose ends, including checking coordinates at a few sites, photographing several historic sites, preparing illustrations of the artifacts, drafting updated plans and maps, and updating the entire database to incorporate information from the last two seasons of the Ciudad Caucel project.

The excavations in late 2006 had secured the ceramic sequence, and there was no longer any need for further stratigraphic excavations. In addition, during 2007 we worked on the overall chronology of the project, reviewed radiocarbon dates from the northern Maya Lowlands, and held extensive discussions with colleagues with comparative ceramic collections. Most important in this regard were several days of discussions with E. Wyllys Andrews V, whose comparative material and experience from Dzibilchaltún and Komchén were very valuable. We are currently working on the final details of defining the ceramic complexes, and hope to present a comprehensive chronology of northwest Yucatán, from 1000/800 BCE to the present, in our final report.

A major highlight of the 2007 season was the discovery of a large Middle Preclassic platform beneath the Colonial church at Tetíz, a fortuitous find made in the course of a salvage assessment. These and other activities will be discussed in greater detail in our final report. Work for the 2007 season was conducted under the auspices of a grant from the Foundation for the Advancement of Mesoamerican Studies, Inc., (FAMSI), with additional in-kind support from the Instituto Nacional de Antropología e Historia of México, and New College of Florida.

The fieldwork for the Ciudad Caucel project is now almost completed, but new sites and complex structures kept appearing into the final weeks of the project in 2006. Plans were made to complete the investigations of several of these structures in 2007, to be done jointly with a survey of a new highway being planned between Mérida and Tetíz. However, owing to changes in national and local politics, the funding of the 2007 projects was postponed, and plans are being made to resume field activities in 2008.

In late 2007, Robles began a new salvage project in our survey area, NW of the ex-hacienda and modern village of Dzidzilché (CY-295), where a new housing development is planned. The fieldwork will include detailed surveys and excavations at selected sites, and the data will be included into our database in the future.

Ceramic Analysis Summary

Following is a preliminary report on the ceramic analysis from the Costa Maya and Ciudad Caucel projects, and includes a tentative chronological sequence for the northwest corner of the peninsula. This analysis was carried out by Teresa Ceballos and Fernando Robles and includes a preliminary assesment of the collections recovered up to 2007. The ceramic analysis will continue as new collections from additional salvage operations are added, and will ultimately provide information on ceramic manufacture and technology, form and function, and stylistic variation and its evolution in northwest Yucatán from Middle Preclassic to early Colonial times. This report does not include historic materials, which will be reported separately.

The bulk of the collection, approximately 214,000 sherds, was recovered at Ciudad Caucel in 2005 and 2006. Most of these materials came from rubble and the construction fill contexts of approximately 300 structures which were excavated in the course of the salvage operations. In the course of the excavations, ceramics were

recovered from a large number of primary contexts, which allowed us to establish temporal affinities between key ceramic groups. This was particularly useful in setting up a chronology for the Preclassic period, when most of the settlements of Ciudad Caucel saw their heaviest occupations. A few whole vessels were also recovered, mostly from Prelcassic contexts, or in structures built during those periods.

A much smaller collection, some 14,000 sherds, came from the Costa Maya survey. The majority of this material was obtained through surface collections at 200+ prehispanic sites, while a much smaller amount was recovered from 29 test pits at 15 sites across the survey region. The test pits were 2m² stratigraphic columns, excavated in open plazas in the central areas of the sites.

The ceramics from the above collections were analyzed using the type-variety system. The primary diagnostic units utilized in the identification were the ceramic groups. Clusters of ceramic groups form the basis for the definition of ceramic complexes, which form the backbone of the sequence. Given the primacy of Preclassic and Early Classic materials in our collections, our focus is predominantly on those periods, for which we have defined regional ceramic complexes (Xanilá and Anicabil). The ceramics from subsequent periods belong to well-established macro-regional ceramic spheres, and will be treated in summary fashion.

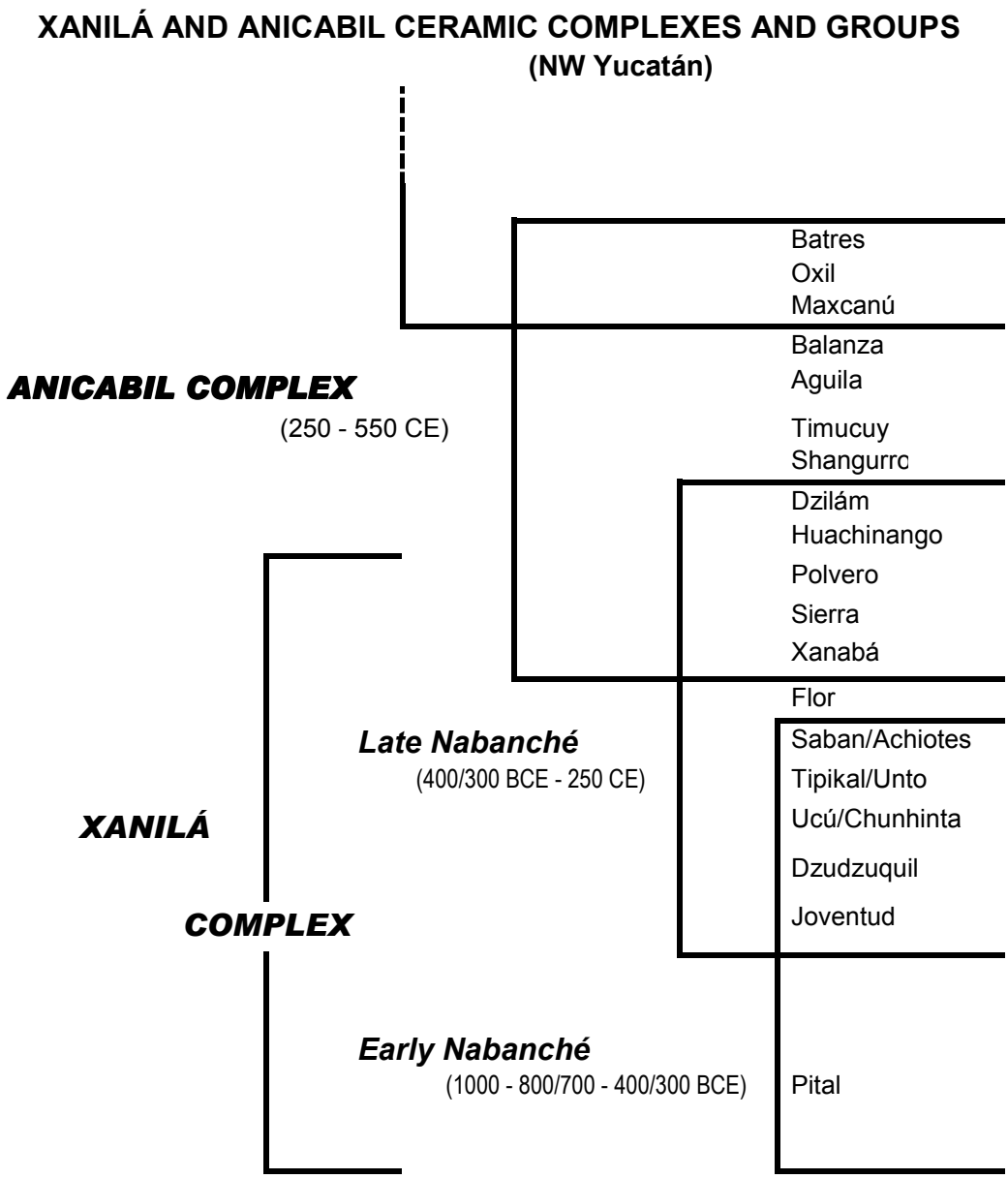

Figure 7. Tentative Chronological Alignment of Ceramic Complexes and Groups in the Middle and Late Preclassic Periods of NW Yucatán.

The dating of the ceramic complexes is still tentative pending final analysis of all the lots from past and future excavations in the northwest corner of Yucatán, processing of radiocarbon dates, and completion of a review of radiocarbon dates in the northern lowlands. Our ceramic complex definitions and dating of several groups of the Preclassic period – see Figure 7 – are at odds with the earlier Preclassic sequence at Komchén, established by E. Wyllys Andrews V (1986, 1988, 1990); those differences will be addressd in our final reports. On the basis of our analysis, we have defined the following sequence of ceramic complexes:

1) Xanilá Ceramic Complex (~1000-800/700 BCE–250 CE)

We do not have a precise begining date for this complex, which corresponds to the Middle and Late Preclassic periods of the northern Maya lowlands. A tentative initial date for this complex, based on comparisons with ceramics from other regions and a preliminary review of regional radiocarbon dates, would be 1000 BCE. A more conservative date, based on comparisons with existing sequences (i.e., Andrews IV and Andrews V 1980:271-72, Table 3), would be 800/700 BCE.

The Xanilá Ceramic Complex has two phases. The first is the Early Nabanché phase (~1000-800/700–400/300 BCE), which contains some of the earliest Middle Preclassic ceramics in northern Yucatán. The following Late Nabanché phase includes ceramics groups of the Late Preclassic period, dating to ca. 400/300 BCE to 250 CE.

The oldest ceramics recovered to date in northwestern Yucatán are comparable to those of the early Nabanché ceramic complex from Komchén (Andrews V 1986). The bulk of the Xanilá materials include fragments of thick-walled bowls with rounded and everted rims and a waxy slip, of the Joventud (red), Dzudzuquil (mottled), and Chunhinta (Ucú Black) groups. However, in our collections there is a notable absence of the the everted, outward-sloping flanged bowls that are typical of the early Nabanché complex of Komchén. The Joventud (red) and Dzudzuquil (mottled) groups include fragments of medium and small jars, with flat circular bottoms and globular bodies, or bodies with curving convergent lower walls and straight convergent upper walls. In both cases the jars are lacking handles, and the walls of the neck are straight or slightly divergently curved. Our collections also include tecomate fragments, though these are scarce. Other ceramics of this phase include several types of vessels of the Tipikal/Unto and Sabán groups – notably Chancenote striated jars of the latter group – which have traditionally been assigned to the Late Preclassic period. However, their presence in sealed deposits with other early Xanilá groups indicates an earlier beginning for these ceramics.

The Late Nabanché phase of the Xanilá complex is primarily characterized by the appearance of large quanities of ceramics of the Xanabá (red) group. These appear to be a late imitation of the Joventud red-orange tradition distinctive of NW Yucatán. However, the Xanabá ceramics exhibit a brittle gray-pink paste – tending more to gray – with gray calcite particles. Most sherds of this group exhibit a red-orange base color, a weaker tone than the base color of the Joventud group. The most common vessel shape of the Late Nabanché Xanilá complex is a thick-walled bowl with straight divergent walls, a flat base, and everted rims, similar to those of the Joventud, Dzudzuquil, and Chunhinta groups. Other distintive groups of this late Xanilá phase include the Chancenote striated jars of the Sabán group, and assorted vessels of the Tipikal/Unto groups. The Sabán ceramics occur in decreasing quantities and appear to fade out of the picture by the end of the Late Preclassic period. The Tipkal/Unto materials, on the other hand, increase throughout the phase and continue to be manufactured in the subsequent Early Classic Anicabil phase.

The origins of Xanilá ceramics are currently unknown. No earlier ceramics have been found in the northern Lowlands, which raises the possibility that Early Nabanché pottery

was introduced from elsewhere. Andrews V (1990) has noted similarities between the Early Nabanché ceramics of northern Yucatán and those of the Middle Preclassic southern lowlands, Gulf Coast, and Chiapas. The nature of these connections is elusive, though northern Yucatán was a dynamic player in the interaction between these areas. This is documented by the presence of Yucatec Nabanché ceramics in Middle Preclassic contexts at La Venta and the nearby site of San Andrés on the lower Gulf Coast (Andrews 1990, Von Nagy 2002), as well as a substantial number of imported lithic artifacts – maufactured from obsidian and volcanic and metamorphic stone recovered from Middle Preclassic contexts in NW Yucatán (see below).

2) Anicabil Ceramic Complex (~250-550 CE)

The Early Classic Anicabil ceramic complex, contemporary with the Cochuah ceramic horizon of northern Yucatán, is characterized by the disappearance of the monochrome ceramics of the Joventud, Dzudzuquil, and Chunhinta (Ucú) groups, an increased production of Xanabá ceramics – which become the dominant group during this period – and continued manufacture of several Late Nabanché groups: Sierra, Polvero, Huachinango, and Dzilám. Several new ceramic groups appear during this period, including Shangurro, Timucuy, Aguila, Balanza, Maxcanú, Oxil, and Batres. The first four groups are restricted to this time period, while the last three continue to be manufactured in the following period. As the groups in this complex and later periods are well-documented in the literature, they do not warrant further discussion in this report, and will receive fuller treatment in the final reports of the project.

3) Cehpech Horizon (550-1100 CE)

Our ceramics from this period fall within the parameters of the Cehpech and Sotuta spheres of this ceramic horizon, though differences in the distribution patterns of certain types of pottery – types of Cehpech slatewares and Silhó Fine Orange – suggest that there were two distinct political regions during the Late and Terminal Classic period. The first is a western polity centered around the city of Tzemé, whose territory likely covered the western half of our survey zone. The eastern half was likely part of the territory dominated by Dzibilchaltún during this period. Towards the later part of this period, there is a pronounced presence of Sotuta sphere ceramics at sites along the coast, suggesting that they were at the time independent of the interior sites, and formed part of a Pan-Mesoamerican maritime trade network which in Yucatán was dominated by the city of Chichén Itza. There are some indications that the Tzemé region may have interacted with the coastal sites, and enjoyed access to those networks in the final decades of the Terminal Classic period.

4) Western Tases Horizon (1100-1542 CE)

The final period of the prehispanic sequence of northwestern Yucatán is represented by ceramics of the Western Tases horizon of the Postclassic period, which corresponds to the Chechém complex of the Decadent period at Dzibilchaltún. These materials are scarce, and were only recovered from a few sites. As in other northern sites, Mayapán redwares – or Mama Group ceramics – are the most common type of pottery of the Postclassic period, and the diagnostic indicators of the Western Tases horizon (Robles

and Andrews 1986). We also recovered a few sherds of Yacman Striated and fragments of Chen Mul censers, both of the Nabulá ceramic group, another distinctive group of the Postclassic period. It is possible that some of the Mama and Nabulá ceramics in our collections date to the early Colonial period, as these wares continued to be produced well after the conquest. Finally, it is worth noting that Tases ceramics were not found at coastal sites; it would appear that the coast was largely uninhabited following the Classic period collapse.

Lithic Analysis Summary

Following is a summary of the analysis of the prehispanic lithic artifacts of the Costa Maya and Ciudad Maya projects, carried out by Nancy Peniche May (2007). From 2000 to 2006, project members recovered a total of 1740 lithic artifacts (Table 1). The majority of these – 1458 artifacts, or 84% – were obtained from salvage excavations, and to a lesser extent, from surface collections at Ciudad Caucel between 2003 and 2006. Most of these came from secondary deposits – surface, clearing debris, and construction fill of 93 structures investigated in the course of that project. Still, a large number of the Caucel artifacts, and a very small number of the Costa Maya items came from primary deposits that could be assigned to chronological periods on the basis of ceramic associations. Several samples of charcoal were recovered from primary deposits contexts at Ciudad Caucel, and will be submitted for C14 dating.

The remainder of the collection – 282 artifacts, or 16% of the total sample – came from surface collections, and to a lesser extent, from test pit excavations at sites across the Costa Maya project survey region, obtained between 2000 and 2002. 70% (N= 198) of the Costa Maya materials came from a single site, Xcopté (CY-87), located on the north coast between Sisal and Chuburná Puerto.

The analysis included the descriptive recording and measuring of individual artifacts, and their classification into categories based on 1) material, 2) type of industry, and 3) artifact type, based on form and/or function. The materials include limestone, chert, obsidian, and ground and polished igneous or metamorphic stone. The limestone artifacts were classified into major groups based on form and function and then, to the degree possible, into functional subtypes. The chert and obsidian were broken down according to industry – various types of percussion and polishing – and then into types, including unifacial and bifacial items, blades, flaked items, points, cores, and retouched and polished artifacts. The vast majority of the obsidian artifacts were prismatic blades and flakes, and were likely traded from distant sources in the Guatemalan and Central Mexican highlands. This collection also included one bead, and one exhausted core.

The small collection of pecked and ground igneous/volcanic stone artifacts (N=62) were classified into various types of tools, based on shape and function. These were almost all made from basalt, with the exception of a tiny number that may have been manufactured from other igneous stone. The even smaller collection (N=20) of polished metamorphic artifacts was divided into greenstone and serpentine items, which in turn were broken down into functional and morphological types.

The breakdown of the entire classification of all the lithic artifacts is presented in Table 1. For the sake of brevity, we will only discuss some of the salient features of Peniche's analysis of this collection.

The lithic artifacts were manufactured from locally available materials, or from sources elsewhere in the Maya lowlands or beyond. Limestone is locally available, and the vast majority of the tools made from this material most likely came from northwest Yucatán. 244 artifacts were recovered from primary contexts at Ciudad Caucel, with 93% of these coming from Middle Preclassic deposits. The remainder came from Late Preclassic, and Early and Late Classic contexts. Most of the Costa Maya artifacts were recovered at the site of Xcopté, a Terminal Classic port on the north coast.

The chert was likely traded from several sources in the nearby Puuc region, hilly regions in southern Quintana Roo and Campeche, and/or sources in northern Belize and the Guatemalan Petén. It is likely that the large bifaces arrived at Ciudad Caucel and the Costa Maya sites as finished products. Many of the smaller artifacts were most likely re-used, reduced from larger tools at the local level, through various types of modifications, such as percussion flaking, retouching, and polishing. The presence of small quantities of nodules, debitage flakes, and a core would also indicate some manufacture of smaller tools at the local level. The chert artifacts from primary contexts at Ciudad Caucel indicate the presence of both imported finished products and re-used and locally manufactured items from the Middle Preclassic through Late Classic times. Almost all of the chert artifacts from the Costa Maya survey were recovered from Xcopté.

The sources of the obsidian were determined visually by Peniche, and can only be considered statistically approximate. However, given recent advances in this technique, the margin of error is relatively small. Peniche was unable to determine the source of a small number of pieces. As the sources of the obsidian artifacts from the Costa Maya sites and Ciudad Caucel are very different, they will be discussed separately. The vast majority (N=228, or 88%) of the Ciudad Caucel obsidian came from the Guatemalan highlands, almost entirely from the source of El Chayal. The remainder of the volcanic glass came from assorted sources in the Central Mexican highlands, including Pachuca in the modern state of Hidalgo, Paredón and Zaragoza in Puebla, Pico de Orizaba in Veracruz, and Ucareo in Michoacán (Table 2).

The Ciudad Caucel sites from which the obsidian was recovered date primarily to the Middle and Late Preclassic periods, with lesser occupations in the Early and Late Classic periods. This fits well with known patterns of the obsidian trade – archaeological investigations indicate that a majority of sites occupied during these periods throughout the Maya lowlands acquired most of their obsidian from the Guatemalan highlands, and mainly from El Chayal. A very small number of artifacts from these periods originated at sources in Central México, reflecting a very light volume of trade with Central México during those periods. The majority of the small quantity of artifacts from Ciudad Caucel made from Central Mexican obsidian come from Late/Terminal Classic contexts, or sites with a significant occupation during that period. This also fits known trade patterns, as the volume of Central Mexican obsidian entering the northern Maya Lowlands during the Terminal Classic period increases

significantly during this period. At some Terminal Classic sites Central Mexican obsidian predominates. On a final note, there is little evidence of the local manufacture of obsidian artifacts. Only one exhausted core and a core flake were recovered at Ciudad Caucel, which would suggest that the vast majority of artifacts at that site arrived as finished products.

The sourcing of artifacts made from obsidian recovered from sites in the Costa Maya survey area reflects a very different pattern from the Ciudad Caucel material. These came from the same sources as the Ciudad Caucel materials, and from an additional source, Otumba, in the state of México. However, the total quantity of artifacts (N=144) is relatively small, and the sample is greatly skewed, as the majority (N=117, or 81%) comes from a single site, the coastal port of Xcopté. Surface collections and test excavations at this site suggest that its main period of occupation was during the Terminal Classic period, when it formed part of an extensive network of coastal trade entreports, through which large quantities of Mexican obsidian reached sites in the Northern Maya lowlands, likely exchanged for Yucatecan salt and other lowland products. 68% of the obsidian artifacts recovered from Xcopté (N=80) were made from Central Mexican obsidian.

The 62 artifacts made of igneous/volcanic material – mostly basaltic stone – were imported from either the Tuxtla mountains of Veracruz, or the Guatemalan highlands. These were recovered from Ciudad Caucel, mostly from Middle Preclassic contexts or sites with main occupations during that period. The most prominent type of artifact in this collection were 36 celts of various shapes and sizes, manufactured mostly from green basalt. Their function is unknown. Four were recovered from an offering in a Middle Preclassic ballcourt at the site of Xanilá. This ballcourt yielded 12 artifacts made from igneous stone, the single largest collection of such items recovered at Ciudad Caucel.

Our collection of polished artifacts made from metamorphic stone is small: Ciudad Caucel yielded 12 greenstone artifacts, and six sites in the Costa Mata survey area yielded two greenstone and six serpentine items. These included celts, beads, flakes, a spheroid, a pendant, a miniature relief sculpture, and assorted unidentified artifacts, flakes, and fragments. The most notable item was the small relief sculpture, which was made from a dark/water-green colored stone (possible jadeite?). It shows an individual sitting on his legs, wearing an elaborate headdress, with a headband and a bundle on his back – the typical image of a “bearer” or merchant. This was recovered from a Late Classic deposit in structure 4020 at Ciudad Caucel.

Viewed as a whole, the combined inventory of lithic artifacts from the Costa Maya and Ciudad Caucel projects represents one of the largest collections analysed in the northern Maya Lowlands. The only comparable collection is that of Dzibilchaltún, which lies on the western frontier of our survey area (Taschek 1994; Rovner and Lewenstein 1997). The present collection is likely not representative of the overall typological and temporal variability of the northwestern region, as it is heavily skewed by the larger Caucel sample, which in turn has an uneven temporal distribution. The vast majority of the limestone artifacts that were recovered from primary contexts date to the Middle Preclassic period. The chert and obsidian artifacts are spread across a large time span,

from Middle Preclassic to Late-Terminal Classic times, as is the tiny collection of artifacts made of metamorphic stone. Most of the material from the Costa Maya project is from Xcopté, a site primarily occupied during the Terminal Classic Period. While the temporal distribution patterns do not provide any statistically significant trends, they do provide evidence of a substantial long distance trade with other regions of Mesoamerica – the Puuc region, the southern lowlands, the Guatemalan highlands, and Central México – from Middle Preclassic times onwards. In fact, the large quantities of lithic artifacts from Middle Preclassic contexts at Ciudad Caucel provide us with our first well-documented evidence of long distance exchange between northern Yucatán and other parts of Mesoamerica at this early time.

TABLE 1 . LITHIC ARTIFACTS OF NW YUCATAN							
	[Costa Maya & Ciudad Caucel Projects, 2007]						
Material	**Artifact Type**	**Cd. Caucel**		**Costa Maya**		**Total**	
Limestone							
	Spheroid Sling Projectile	229		1		230	
	Spheroid	36		2		38	
	Smoother	22		4		26	
	Manuport	15				15	
	Net Sinker			11		11	
	Bark Beater	10				10	
	Disk	8		1		9	
	Celt	4		4		8	
	Bead	2				2	
	Sharpener	1				1	
	Donut	1				1	
	Mano (for Metate)			2		2	
	Pebble			1		1	
	Flake	4		3		7	
	Unidentified	11				11	
	Totals		343		29		372
Chert							
	Flakes, casual flakes, percussion macroblade,						
	percussion macroblade, percussion blades,						
	blades, decortication blades & core of						
	percussion flake	145		10		156	
	Bifacial, thin bifacial, thick bifacial,						
	flakes, percussion blades, unifacial &						
	bifacial thinning flakes	117		14		130	
	Casual percussion flake & cores,						
	frags, decortication flakes	71		9		80	
	Polished celts, mano, flakes & casual						
	percussion flakes	15				15	
	Flakes, frags, hammerstone & others	459		68		524	
	Totals		782*		101		883*

Obsidian								
	Prismatic blade, flake & exhausted core		244		140		384	
	Bifacial, prismatic blade & flake		6		4		10	
	Bipolar percussion flake				1		1	
	Bead				1		1	
	Flakes & chunks		12		2		14	
	Totals			259*		144*		403*
Igneous Stone (Basalt & other)								
	Celts		36				36	
	Metate Frag		1				1	
	Hammerstone		1				1	
	Scraper		2				2	
	Side Scraper		1				1	
	Flakes & Frags		13				13	
	Non-Basaltic Flakes & Frags		8				8	
	Totals			62				62
Metamorphic Stone								
	Greenstone - Small Spheroid		1				1	
	- Celt		3		1		4	
	- Bead		2		1		3	
	- "Bearer" Sculpture		1				1	
	- Flakes & Frags		3				3	
	- Pendant		1				1	
	- Unidentified		1				1	
	Serpentine - Bead				1		2	
	- Celt				1		1	
	- Flakes				2			
	- Frag				1		1	
	- Polished Artifact				1		1	
	Totals			12		8		20
Total Lithic Artifacts				**1458**		**282**		**1740**
* The sum of artifact types exceeds the total number of artifacts, owing to the classification of several artifacts into more than one category.								

Table 1. Lithic Artifacts of NW Yucatán
[Ciudad Caucel and Costa Maya Projects, 2007].

Table 2. Sources of obsidian artifacts from Ciudad Caucel		
Source	**N**	**%**
El Chayal	223	86.1
Ixtepeque	4	1.5
Pachuca	15	5.8
Paredón	2	0.8
Pico de Orizaba	1	0.4
San Martín Jilotepeque	1	0.4
Ucareo / Zaragoza	12	4.6
El Chayal / Ucareo	1	0.4
TOTAL	259	100

Table 2. Sources of obsidian artifacts from Ciudad Caucel.

Summary and Conclusions

The analysis of the combined collections of ceramics and lithic artifacts from Ciudad Caucel and the Costa Maya survey provide a whole new perspective on the development of complexity in northern Yucatán. Adding to the information presented in earlier reports, we now have an impressive array of features that are beginning to flesh out the beginnings of early society in the northern lowlands. Our surveys attest to a heavy settlement density in Middle Preclassic times, with a three-tiered hierarchy of towns, villages, and hamlets. These early Yucatec Maya had a sophisticated level of technology, as exhibited in their ceramic and lithic artifacts, and were involved in extensive long distance exchange networks that spread across early Mesoamerica. The hierarchical settlement pattern, monumental architecture, widespread evidence of the ritual ballgame, and material culture and trade all clearly attest to a level of complexity far beyond that of a simple village-farming way of life. This evidence points to significant social differentiation (if not stratification) and political organization on the general level of a chiefdom in the broad sense of the term. This is not all that surprising, given that this society overlapped in time and interacted with the late Olmec culture of the lower Gulf coast.

A major issue that remains unsolved is the earlier history of northern Yucatán. To date, we have found no evidence for an earlier – pre-1000/800 BCE – sedentary society in the northern lowlands. It is possible, even likely, that the evidence for a simpler, less complex village-farming way of life may eventually be found. On the other hand, the relatively sudden appearance of a complex culture may have been the result of colonization from elsewhere. Another possibility is that the early complexity was the result of the blending of a rustic native population with a wave of outsiders possessing a higher level of technology and socio-cultural organization. Future research will undoubtedly address these issues.

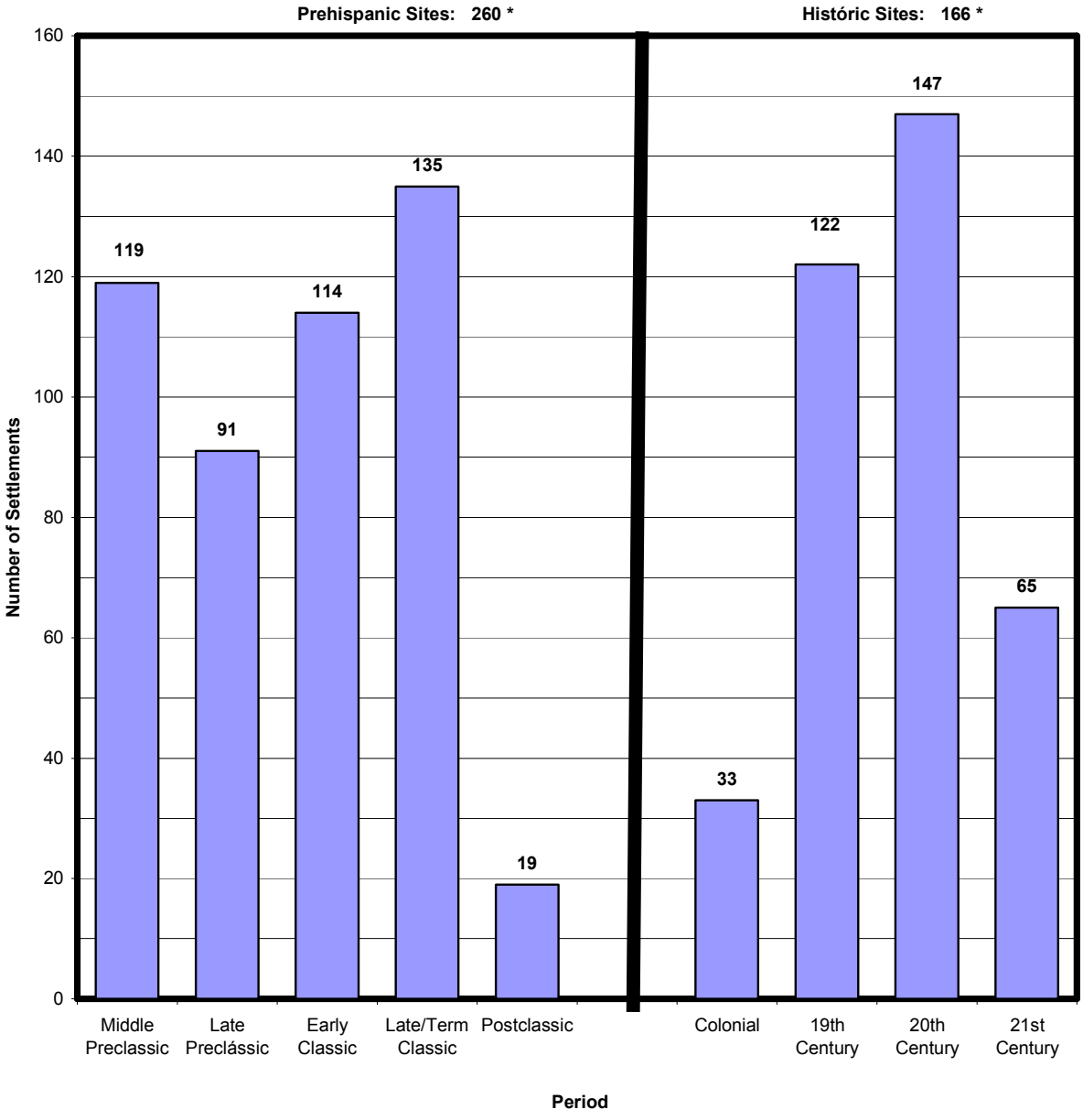

Figure 8. Distribution of Settlements by Period. * Note: Most sites have evidence of multiple occupations. 46 sites have prehispánic and histórc occupations; 51 sites have not been dated.

Figure 8. Distribution of Prehispanic and Historic Settlements by Period.

The precocious beginnings of early Yucatec society were followed by a pattern of development that parallels that of many other societies in Mesoamerica. The results of our research to date indicate that the survey area was densely occupied from Middle Preclassic times through the Late and Terminal Classic periods (ca. 1000/800 BCE to 1000 CE). Most settlements were abandoned during late Terminal Classic and Postclassic times – most likely owing in large part to overpopulation, deterioration of the environment, political mismanagement and instability, and changing climate patterns. Only 20 or so small communities were occupied when the Spaniards arrived in the 16th century. Population remained low during the Colonial period, when most of the inhabitants were settled in a few small villages, *estancias* (cattle and corn *ranchos*), and coastal ranchos. The largest Colonial settlements were the town of Hunucmá and the fortified port of Sisal. The population began to grow during the 19th century, as did the economy, with increased numbers of estancias, haciendas, exploitation of coastal resources, and, in the later part of the century, henequen haciendas. The henequen boom lasted until the mid-20th century, when most of the haciendas were abandoned, or transformed into villages. Since then, the population has been in continual decline as the majority of rural inhabitants has moved to villages or towns, and as the people of the rural settlements move to the growing city of Mérida, seeking jobs, either as permanent residents, or as weekday sojourners who return to their villages on the weekends. These changes through time are depicted graphically – in grossly approximate manner – in Figure 8.[3]

Needless to say, our results do not square with many of our original assumptions and hypotheses. In the first place, the prehispanic settlement pattern – and population – were much denser than we ever imagined. This would suggest that the soils, forest, and climatic conditions were much different during the Preclassic and Classic periods, which were in turn followed by a demographic and ecological collapse ca. 900-1000 CE. And the number and size of prehispanic coastal settlements was less than we expected. Still, there is clear evidence of commercial interaction between the coast and the interior, but there is no evidence that the sites in the interior controlled the coast during the prehispanic. Further analysis of the ceramics and investigations of possible climate changes will shed more light on these issues.

3 The Figure 8 graph records the number of settlements occupied in different periods of the historical sequence. It does not represent , or likely even approximate, the relative population of those periods. Moreover it is an incomplete sample of the number of communities , and as such, can only be seen as a gross measure of settlement density.

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