29 THE CHAN CHICH ARCHAEOLOGICAL PROJECT AND THE BELIZE ESTATES ARCHAEOLOGICAL SURVEY TEAM, 2013 SEASON

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The 2013 season of the Chan Chich Archaeological Project, had three main research agendas: continued plaza excavations in the Upper Plaza at Chan Chich, mapping and excavations at Structure A-5 in the Main Plaza at Chan Chich, and the initiation of an archaeological survey of the surrounding Gallon Jug and Laguna Seca parcels. Two consecutive seasons of excavations in the Upper Plaza have provided important data on the construction history of the longest-occupied group at the site. The stratigraphic sequences from the 2012 and 2013 seasons have been correlated with the sequence documented in 1997 for Tomb 2. Research at Structure A-5 demonstrated the effectiveness of Structure from Motion (SfM) mapping of both mounds and excavation units. The work also determined that the area north of Structure A-5 was a functional plaza at least by the Late Classic period. Importantly, the excavations at the structure documented multiple, though poorly dated, construction episodes. The first season of the Belize Estates Archaeological Survey Team began investigating the Gallon Jug and Laguna Seca parcels. Survey crews recorded nearly 200 structures and four new sites, in addition to revisiting sites recorded in the early 1990s. Remarkably, the 2013 survey found a completely unlooted site with a stela and structures over 5 m high.

Introduction

The Chan Chich Archaeological Project (CCAP) included investigations in the Main Plaza and Upper Plaza at Chan Chich and initiated the first season of a regional survey project. Chan Chich is approximately 4 km east of the border between Guatemala and Belize in the southwestern corner of the Gallon Jug Ranch (Figure 1). The boundary between Gallon Jug Ranch and Yalbac Ranch passes through the ruins of Chan Chich, south of the Upper Plaza. In the spring of 2013, Bowen and Bowen, Ltd. sold approximately 100,000 acres of Gallon Jug Ranch to Yalbac Ranch for sustainable logging. Yalbac Ranch renamed the newly acquired section Laguna Seca. The survey investigations investigated portions of both the Laguna Seca and Gallon Jug parcels. This article summarizes the results of the three research agendas.

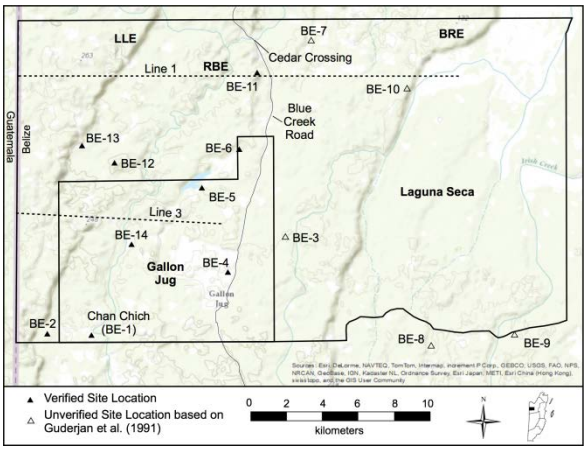

Figure 1. Map of the Gallon Jug and Laguna Seca survey area showing the location of Chan Chich and other previously recorded and newly discovered sites (see Table 3). La Lucha Escarpment (LLE), Rio Bravo Escarpment (RBE), and Booth's River Escarpment (BRE) are indicated. GIS base map by David Sandrock.

Investigations at Chan Chich

The major architecture at the site, composed of the largest structures and plazas, is centered on the Main Plaza and the Upper Plaza (Figure 2). The Main Plaza is square in plan, covers 13,080 m^2, and is the third largest plaza in the Three Rivers adaptive region (Garrison 2007:Table 6.3) and the second largest in the eastern lowlands, behind only La Milpa's Great Plaza. Structure A-5, extending 64 m from east to west, forms the northern edge of the Main Plaza, while the massive range building, Structure A-1, forms the southern boundary of the Main Plaza and the northern side of the Upper Plaza. With its tightly restricted access, the Upper Plaza, was arguably the home of the site's ruling dynasty. Structure A-15, the tallest building at the site, dominates the southern side of the Upper Plaza.

Chan Chich Upper Plaza Investigations

The 2013 season of archaeological excavations in the Upper Plaza of Chan Chich constituted the second half of a research project that began in 2012, and spanned two seasons.

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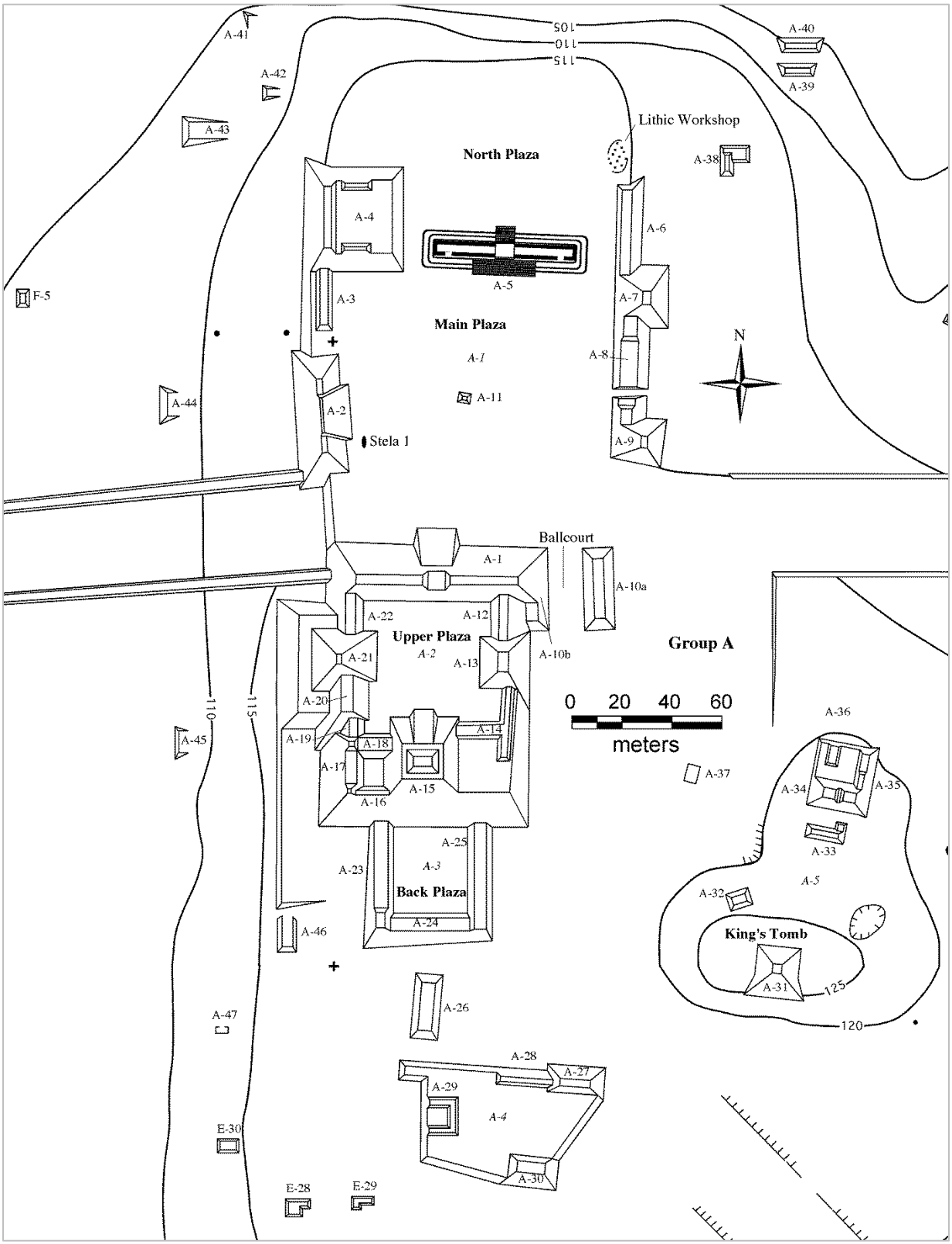

Figure 2. Map of the site core of Chan Chich.

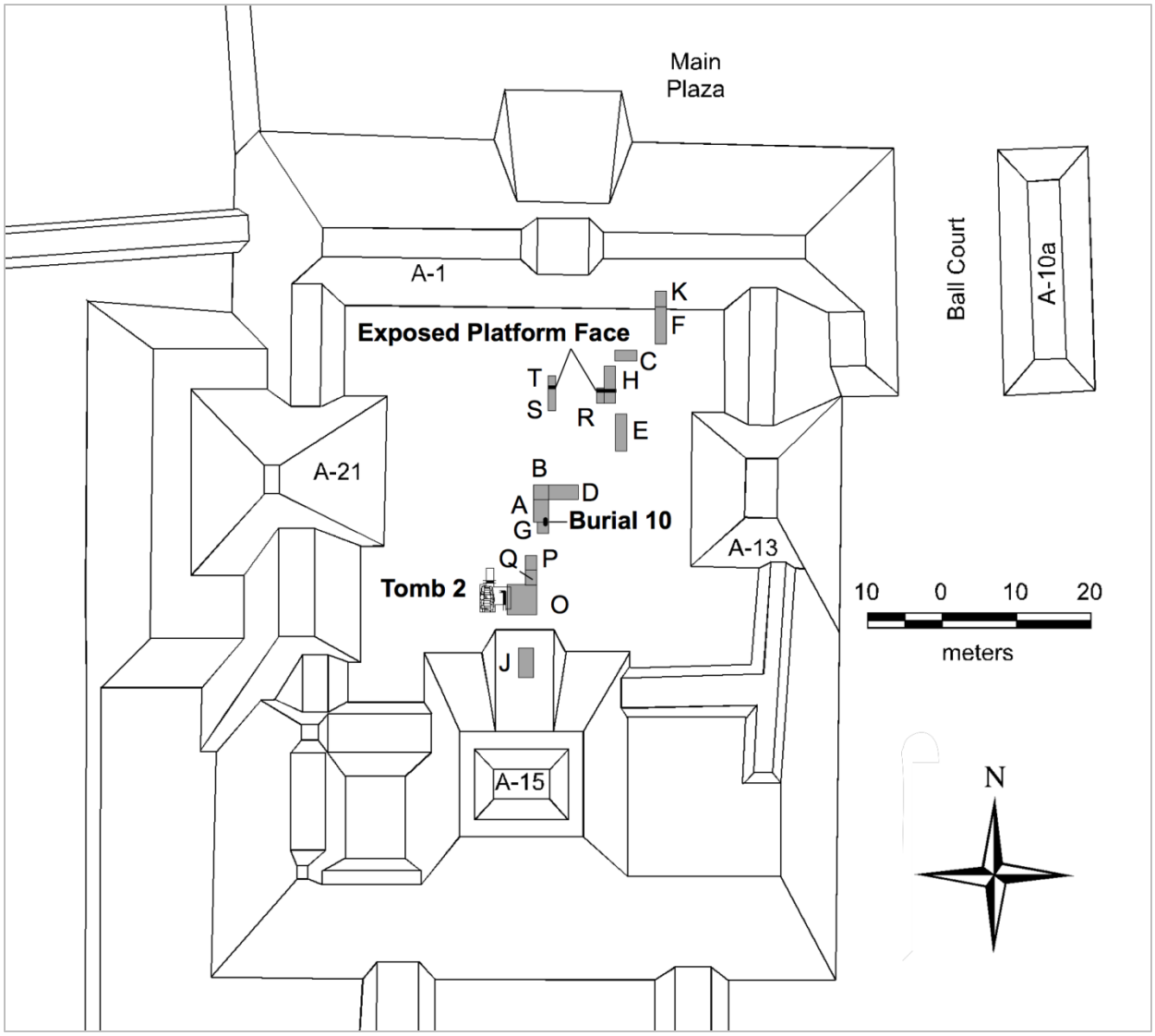

Figure 3. Map of the Upper Plaza at Chan Chich showing locations of excavation units and cultural features mentioned in the text.

The Upper Plaza is built upon a natural rise overlooking the Main Plaza of the site and offers an opportunity to explore the very early construction history here at the architectural core. Krystle Kelley directed both seasons of investigations as her thesis project, building on work conducted by the CCAP team in the late 1990s (Houk et al. 2010; Robichaux 2000). Over the 2012 and 2013 seasons, Kelley's teams conducted exploratory excavations in the plaza to better define the construction sequence and architectural evolution of the Upper Plaza.

The research design for the 2013 season was based on findings in the Upper Plaza during the 2012 season of the CCAP, specific details of which can be found in Kelley et al. (2012). Crews opened 14 new suboperations and reopened two suboperations from the previous season in 2013. Spatially, these suboperations extend from the northernmost end of the plaza to the southernmost edge, providing a nearly complete north-south cross section of the plaza architecture as shown in Figure 3. Work in 2013 specifically targeted Burial 10, which had been exposed near the end of the 2012 season but not excavated.

The 2012 excavations documented different stratigraphy in the northern end of the plaza compared to the center and southern sections, indicating an architectural break

Table 1. Stratigraphic Sequence at Northern End of Upper Plaza.

Lot Description	Lot #	CC-2-H Floors*	Elevation	Ceramic Assessment
Topsoil/Final Plaza Floor	CC-10-C-1	F6, F5	125.89 m	Late Preclassic
Dry Laid Construction Fill	CC-10-C-2	--	125.75 m	Late Preclassic
Plaster Floor	CC-10-C-3	--	124.62 m	Late Preclassic
Plaster Floor	CC-10-C-4	F4	124.49 m	Late Preclassic
Plaster Floor	CC-10-C-5	--	124.36 m	Late Preclassic
Plaster Floor	CC-10-C-6	--	124.34 m	Preclassic
Midden	CC-10-C-7	--	124.28 m	Middle Preclassic
Plaster Floor	CC-10-C-8	F2	123.90 m	--
Bedrock	--	F1	123.74 m	--

*Robichaux (1998:Figure 5-3)

somewhere between Suboperations (Subops) CC-10-C and CC-10-E (Kelley et al. 2012). Excavations in 2013 encountered this break in the form of an elevated platform buried in the northern portion of the plaza in Subops CC-10-H, -R, and -T. It is possible this platform represents a buried structure that once formed the northern edge of the Upper Plaza but was subsequently buried by a Late Classic expansion of the group. Table 1 shows the stratigraphic sequence north of the platform's face, which includes the fill of the platform, and Table 2 shows the stratigraphic sequence south of the platform.

A significant goal of the proposed research was to tie the 2012 and 2013 stratigraphy into the sequence documented by Robichaux (2000) and Houk et al. (2010) in the area of Tomb 2, a Terminal Preclassic interment in the southwestern corner of the plaza (see Figure 3). Houk et al. (2010) interpret the tomb as a chamber cut through a sequence of Late Preclassic floors and into bedrock, covered with capstones at the level of bedrock, and then capped by a low shrine. Excavation data from Subop CC-10-O, located immediately east of Tomb 2, provide a close correspondence, although excavators documented more floors in Subop CC-10-O than Robichaux (2000) encountered and Houk et al. (2010) reported in the tomb excavations (see Table 2). Most importantly, comparing the elevations of the floors recorded by Robichaux (2000) to those excavated in 2013 indicates that the floor in use, immediately prior to the creation of Tomb 2, was the compact dirt surface (see Table 2) that extends over all of the tested portion of the Upper Plaza south of the platform in Subops CC-10-H, -R, and -T.

Excavating Burial 10 required reopening the southern half of Subop CC-10-A and expanding the excavation area with Subop CC-10-G to the south. The burial cut through plaster floor Lot CC-10-A-7b and was capped by plaster floor Lot CC-10-A-6, suggesting it dates to the early part of the Late Preclassic period, making it the oldest burial documented thus far at Chan Chich. The bone recovered from Burial 10 was extremely fragmentary and very brittle, but included eight human teeth and 19 domestic dog teeth. The human teeth are from one individual of unknown age and sex. The dog teeth are likely from one animal (Norbert Stanchley, personal communication, 2013). The artifacts associated with the burial comprise a piece of mica, some ceramic sherds, lithic flakes, mussel shell, and spire-lopped jute.

Structure A-5 Investigations

Because the Main Plaza is home to Chan Chich Lodge, very little archaeological research has been undertaken on the buildings surrounding the Main Plaza. In 2013, with funding from the National Geographic Society/Waitt Grants (NGS/Waitt) program, the CCAP targeted one of these buildings, Structure

Table 2. Stratigraphic Sequence in Central Portion of Upper Plaza.

Lot Description	Lot #	Tomb 2 Floor*	Top Elevation	Ceramic Assessment
Topsoil/Final Plaza Floor	Lot 1 of Subops CC-10–A, -B, -D, -E, -G, -H, -P, -Q, and -R	N/A	125.9 m	Late Classic
Compact Dirt Surface	CC-10-A-3 CC-10-B-3 CC-10-D-3 CC-10-E-3 CC-10-G-3 CC-10-H-7 CC-10-O-2 CC-10-P-3 CC-10-Q-4 CC-10-R-4	F4	125.0 m	Terminal Preclassic/Early Classic
Plaster Floor	CC-10-A-4 CC-10-B-4 CC-10-D-4 CC-10-G-4 CC-10-H-9 CC-10-O-3 CC-10-Q-5	F3	124.83 m	Late Preclassic
Plaster Floor	CC-10-A-5 CC-10-D-5 CC-10-E-4 CC-10-G-5 CC-10-H-11 CC-10-O-4	F2	124.74 m	Late Preclassic
Plaster Floor	CC-10-A-6 CC-10-D-6 CC-10-E-5 CC-10-G-7 CC-10-O-5	F1	124.63 m	Late Preclassic
Plaster Floor	CC-10-A-7b CC-10-D-7 CC-10-G-7 CC-10-O-6	N/A	124.58 m	Middle Preclassic
Plaster Floor	CC-10-D-8 CC-10-O-7	N/A	124.52 m	Preclassic
Bedrock	--	Bedrock	124.3 m	--

*Houk et al. (2010:Figure 5)

A-5, for investigation. The building was unexcavated prior to 2013. Structure A-5 borders the Main Plaza on the north. The mound measures approximately 64 m long by 14 m wide, at its base, and is 4.5 m tall. The summit of the mound is flat and approximately 5 m wide. While Guderjan (1991:38) speculated that "collapsed vaulted rooms once faced into the plaza," the flat summit of the mound suggested that the structure could be a platform and not collapsed rooms. Investigations included mapping and remote sensing funded by the NGS/Waitt Grants program and excavations conducted by the CCAP. When the Main Plaza was cleared by hand during construction of Chan Chich Lodge in the 1980s, crews removed all of

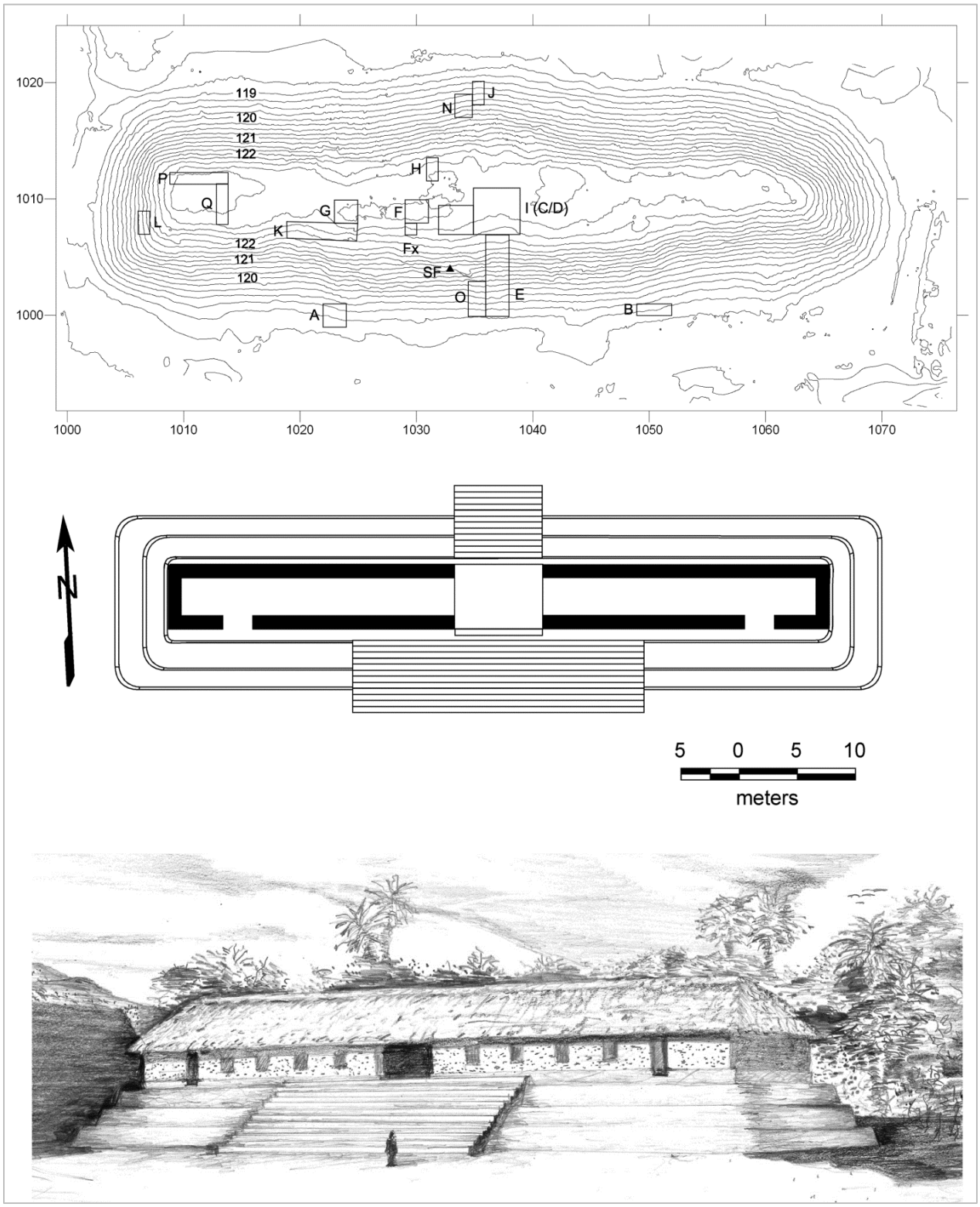

Figure 4. Topographic map of Structure A-5 produced from SfM DEM, rectified map based on topographic map and excavation data, and architectural reconstruction drawing by Gary Smith based on mapping and excavation data.

the trees from Structure A-5, except for one large tree near the mound's southwest corner. Today the mound is covered in grass, making it an excellent candidate for the remote sensing survey. Additionally, the entire mound is visible from the air, unobstructed by the jungle canopy. This proved beneficial for the Structure from Motion (SfM) mapping technique employed during the investigations.

The objective of the NGS/Waitt Grants study was to test a new technique for mapping Maya mounds and predicting the location of buried architecture (Houk et al. 2013). This study was the first to use this combination of methods to investigate a Maya building and is therefore novel. Basically, the project proposed that by combining high-resolution ground penetrating radar (GPR) data with detailed topographic/mapping data it would be possible to overlay the GPR data onto a three-dimensional model of the mound and identify buried architecture (walls, floors, benches, cavities, etc.). This technique can be applied to other hand-cleared structures at Chan Chich (and other sites), including the massive Structure A-1 on the southern side of the Main Plaza. Houk et al. (2013) describe the methodology employed in detail.

The SfM mapping utilized over 800 digital photographs, which were processed into 12,000,000 data points to create a digital elevation model of the mound (Figure 4). Crews used the same technique to document individual excavation units. The mapping data immediately clarified the final form of Structure A-5: a wide southern stairway, which faces into the Main Plaza, and a narrower northern stairway climb to the top of the mound, indicating the final phase of construction was a platform. Subsequent excavations documented a low masonry wall surrounding the perimeter of the summit. The structure likely included a perishable superstructure composed of pole and thatch (see Figure 4). Importantly, the presence of a stairway on the northern side of the building indicates that the space north of the mound was a functioning plaza, which is now referred to as the North Plaza. Previously, it was assumed that this area was an unmodified section of natural hill.

Although the intent of the NGS/Waitt grant was to use GPR data to predict the nature of buried architecture at the mound and to use excavations to test the GPR predictions, processing the data is still ongoing. Given the complexity of the methodology, the excavation data will ultimately be used to interpret the GPR data.

Excavations through the central platform's final phase documented dry-laid fill to approximately 60 cm below surface covering an eroded floor surface across a 4-x-4-m excavation block. Below this surface, excavations encountered a complex arrangement of architectural core faces, stripped of their facing stones, and crudely built construction pens, which held dry-laid fill. Excavations through the final phase of the southern stairs similarly found evidence of earlier construction phases that had been stripped of their facing stones. A buried room was encountered beneath the stairs; it had been infilled with rubble as part of a subsequent construction phase. Therefore, the preliminary interpretations of Structure A-5 are that it underwent multiple construction phases during its period of use. In at least one case, the Maya removed the facing stones from the building prior to expanding the platform. The final phase was apparently built in the Late Classic, based on ceramics in fill, and occupied into the Terminal Classic, based on ceramics on the surface. A Postclassic incensario discovered on the surface of the southern stairway demonstrates visitation to the site following its Terminal Classic abandonment; this discovery adds to the previous examples of Postclassic offerings at Chan Chich (Guderjan 1991) and elsewhere in the region (Harris and Sisneros 2012; Houk et al. 2008).

Survey Investigations

Supervised by David Sandrock, the Belize Estates Archaeological Survey Team (BEAST) conducted survey on Gallon Jug Ranch and the Laguna Seca parcel of Yalbac Ranch (see Figure 1) during the summer 2013 field season. Both of these properties are former holdings of the Belize Estates Land and Produce Company, hence the project's name. The main goal of BEAST is to update the inventory of sites on the property, building on work by Guderjan et al.

Table 3. Updated Inventory of Sites on Gallon Jug and Laguna Seca.

BE Number	Site Name	Original Source
1	Chan Chich	Guderjan (1991)
2	Kaxil Uinic (E'kenha)	Guderjan et al. (1991)
3	Punta de Cacao	Guderjan et al. (1991)
4	Gallon Jug	Guderjan et al. (1991)
5	Laguna Verde	Guderjan et al. (1991)
6	Laguna Seca	Guderjan et al. (1991)
7	Quam (Qualm) Hill	Guderjan et al. (1991)
8	Wamil	Guderjan et al. (1991)
9	Sierra de Agua	Guderjan et al. (1991)
10	Gongora Ruin	Guderjan et al. (1991)
11	Ix Naab Witz	BEAST 2013 Season
12	La Luchita	BEAST 2013 Season
13	Montaña Chamaco	BEAST 2013 Season
14	Sylvester Village	BEAST 2013 Season

(1991). In 2013, BEAST surveyed two seismic lines, revisited sites previously recorded by other projects, and conducted targeted survey based on information supplied by informants.

American Seismic cut six transects in 2012 for seismic surveys related to oil exploration (see Figure 1). BEAST investigated Lines 1 and 3 during the 2013 field season. The transects cross several different environmental and topographical settings, including the La Lucha and Rio Bravo escarpments. Line 1 measures 26 km long, extending from the Booth's River marsh on the east to the Guatemalan border on the west. Line 3 is 12 km long and also extends to the Guatemalan border. The project also revisited several sites recorded by Guderjan et al. (1991) to assess their current conditions, verify their maps, and update their locations. The survey team assigned BE (for Belize Estates) numbers to larger sites, defined as those with four or more structures, at least one of which is 4 m or taller, not within 1 km of another recorded site, and to named sites recorded by Guderjan et al. (1991).

During the 2013 field season, BEAST recorded 184 structures, not including individual structures from the four previously recorded sites that were revisited, and documented four new BE sites. An updated inventory of sites is presented in Table 3. Crews encountered the majority of structures, 99 in total, and Ix Naab Witz (BE-11) along Line 1. Most of the newly discovered structures occur in a 1.6-km long stretch beginning 1 km east of the Gallon Jug-Blue Creek road. These structures comprise a sizable and dense settlement area with structures

of varying size and form. Because BEAST did not encounter a similar mound density anywhere else in the surveyed areas, it is possible the structures are part of a larger, as yet undiscovered Maya site.

The largest newly discovered ruin is Ix Naab Witz, a site located on a 100-m tall hill, approximately 1.5 km east of the Rio Bravo and 1 km west of the Gallon Jug-Blue Creek road. The site occupies a stand of upland forest, and the surrounding areas below the hill-slope are primarily transitional forest vegetation. The site core is unlooted and comprises 15 structures around two plazas, with a connected courtyard to the north and a plazuela group to the southwest. The site has one small, uncarved stela, and the tallest mound is approximately 6 m high.

Conclusions

The CCAP succeeded in meeting its research goals for the 2013 season and laid the foundation for future avenues of investigation. Two consecutive seasons of excavations in the Upper Plaza have provided important data on the construction history of the longest-occupied group at the site. The next phase of investigations will expand beyond the plaza to relate the earliest structures in the group to the stratigraphic sequence documented in the plazas. Ideally, it will be possible to trace the evolution of dynastic architecture at the site, beginning with the versions of Structures A-15 and A-21 that are associated temporally with Tomb 2 and the compact dirt surface. Future excavations may also target the platform encountered in Subops CC-10-H, -R, and -T.

The NGS/Waitt grant-funded research at Structure A-5 demonstrated the effectiveness of SfM mapping of both mounds and excavation units. The work also determined that the area north of Structure A-5 was a functional space at least by the Late Classic period. Importantly, the excavations at the structure documented multiple, though poorly dated, construction episodes. This finding suggests that the other buildings surrounding the Main Plaza likely have more complicated constructions sequences than initially proposed.

With the initiation of BEAST, the CCAP is beginning to fill in blank areas on the map of northwestern Belize and improve our understanding of settlement patterning and density. The 2013 survey found a completely unlooted site with a stela and structures over 5 m high. Given the ubiquitous depredation that has occurred to similarly sized ruins in the region, Ix Naab Witz represents a singularly important find. Proposed work in 2014 will continue to survey cut seismic lines and attempt to locate El Infierno, a large site reported in the 1970s and suspected to lie within 1 km of the Guatemalan border (see Guderjan et al. 1991).

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