

KA'KABISH ARCHAEOLOGICAL RESEARCH PROJECT (KARP)

REPORT ON THE 2019 ARCHAEOLOGICAL FIELD SEASON

AND

2018 LABORATORY SEASON

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OVERVIEW OF THE 2019 FIELD SEASON

BY
KERRY L. SAGEBIEL AND HELEN R. HAINES

During the 2019 season of the Ka'kabish Archaeological Research Project (KARP), investigations were carried out at four operations (Ops.) at the site of Ka'kabish (Ops. 7, 19, 20, and 21) (Figure 1.1) and a survey of Settlement Zone H northwest of Ka'kabish (see Ch. 6 Figure 6.3) was completed. Survey was also conducted in Settlement Zone G northwest of the site of Coco Chan (located roughly halfway between Ka'kabish and Lamanai) (see Ch. 7 Figure 7.3) and investigations were carried out at the looters' trenches at Coco Chan. An overview of this fieldwork and findings is presented below.

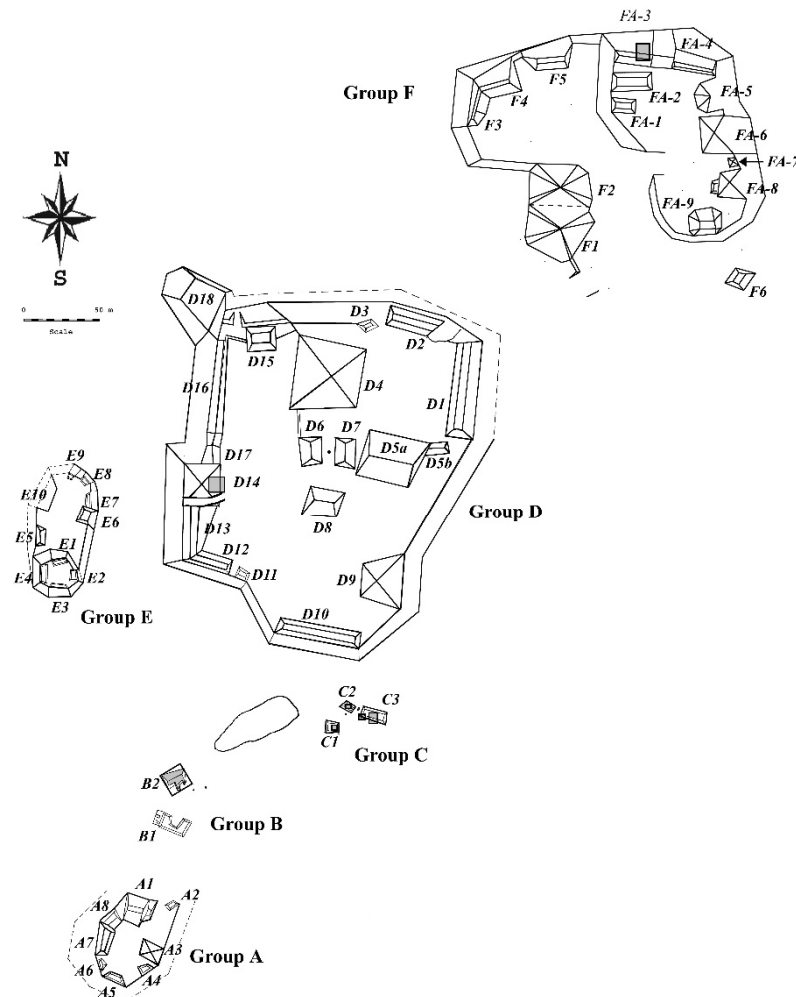


Figure 1.1. Map of Ka'kabish with approximate locations of 2019 excavations in grey

STRUCTURE D-14

Investigations at Op. 7 continued during the 2019 season. Specifically, work was conducted at Structure D-14 (Str. D-14), which is on the western edge of the large ceremonial Group D Plaza (see Figure 1.1). The goal of the 2019 field season was to excavate the central room behind the doorway found in 2017 and to look for stairs leading to the room at the top of the structure. Unfortunately, no staircase was found. It was confirmed that the final period of use for the structure was during the Early Postclassic period, and that the inner three rooms were likely inaccessible during this final period. It is still unclear how the room at the top of the structure was accessed. However, two new architectural features were revealed during the 2019 excavations: a tall, narrow ledge or bench in the central room and a corbel arched doorway between the central and northern rooms. The latter feature has not been documented thus far in the immediate region, although it is assumed that there is a matching door on the southern side of the central room. Because of the discovery of the northern room, we have new questions as to how Str. D-14 relates to the long, and as yet uninvestigated, Str. D-16 that joins it to the north.

GROUP B/BAKER GROUP

The Group B/Baker Group is south of the main core area of Ka'kabish between Group A to its south and Group C/Hingston Group to the northeast (see Figure 1.1). The group is composed of two mounds, Str. B-1 and Str. B-2. The nearby Chultun B-2 was excavated in 2012 and contained Late/Terminal Classic burials. Because Str. B-1 could not be securely defined in 2020, excavations were confined to Str. B-2 (Op. 19). Clearing excavations were conducted first to delineate the size and shape of Str. B-2. Then, a vertical trench was placed along the midline to determine its occupation history. During the clearing excavations, a bench was encountered. Within the bench was an extended burial, Burial Str. B-2/1. It was associated with four Terminal Classic ceramic vessels and two disc-shaped shell beads. The bench was likely added to the structure to contain this burial.

During the trenching of the structure, four other burials in close association were encountered with a fifth set of partial remains identified during laboratory work. Burial Str. B-2/3 was associated with most of the artifacts, including a lip-to-lip offering of two plates (Vaca Falls Red and Lamanai-style polychrome) containing human metacarpals, an Achote Black bowl, a Lamanai-style polychrome plate, a second Lamanai-style polychrome plate placed upside-down over the skull, a possible conch shell ink pot, and a possible carved greenstone pendant in the left hand. Burial Str. B-2/4 was found directly underneath Burial Str. B-2/3 and was somewhat commingled with it. Burial Str. B-2/5 was originally thought to be part of Burial Str. B-2/4 and only the legs of Burial Str. B-2/5 were excavated in 2020. A natural stone shaped like the “Ik” glyph and a cache of four obsidian blades were located close to these burials and may

also have been grave goods. Burial Str. B-2/2 presently consists of only a cranium. Burial Str. B-2/6 was tentatively separated out as a second individual in the laboratory, but it may be part of the individual Burial Str. B-2/2. These two possible burials were associated with a partially reconstructible bowl.

Artifactual evidence indicates that the platform for Str. B-2 was built in the Late Classic and the bench with its burial was added in the Terminal Classic. Artifactual evidence from an earlier structure in front and below Str. B-2 suggests that it may have been built in the early part of the Late Classic or Early Classic. Additionally, ceramic material recovered from the surface layers on and in front of Str. B-2 indicates a continued occupation into the Early Postclassic and possibly the Late Postclassic. The Baker Group, or at least Str. B-2, was abandoned sometime in the Late Postclassic with no evidence of the Terminal Postclassic or Colonial occupation noted in the nearby Group C/Hingston Group.

GROUP C/HINGSTON GROUP

The Group C/Hingston Group is a courtyard group south of the main core of Ka'kabish and is composed of three mounds, Strs. C-1, C-2, and C-3 (see Figure 1). Four nearby chultuns (Chultuns C-1, C-2, C-3, and C-4) have previously been excavated. Chultuns C-1, C-2, and C-3 contained Middle to Late Postclassic burials and Chultun C-4 contained Late Formative burials. Six excavation units were placed on Str. C-3 and one each on Strs. C-1 and C-2. These excavations were undertaken to date the mounds, to examine their construction, to examine the social status of the occupants, and to compare any burials or artifact data recovered from the mounds to the previously excavated chultun burials.

The units in the centre of Str. C-3 revealed that the structure was built on an earlier plaster floor on bedrock associated with Late Formative and Early Classic ceramics. This may indicate association with the Late Formative burials in Chultun C-4. The structure itself was built in a single construction episode in the early Late Classic period (ca. AD 600–700). The fill of the structure consisted of a large quantity of cut stone, lithic flakes, ground stone tools, obsidian, sherds, and several partially reconstructible ceramic vessels. This fill appears to have been the mined remains of a structure and its associated *de facto* refuse.

A problematic deposit was found against the front wall of the structure. It contained Terminal Classic/Early Postclassic sherds from multiple vessels, none of which were complete. Lithics, ground stone tools, and obsidian (59% of the total from the entire Hingston Group) were also found in this feature. The surface of the structure also contained Terminal Classic/Early Postclassic, Late Postclassic, and Terminal Classic/Colonial sherds. The Postclassic sherds are likely associated with the Postclassic burials in Chultuns C-1, C-2, and C-3. The Terminal Classic/Colonial sherds are the first recorded at

Ka'kabish centre, although sherds of that date are fairly commonly in the surrounding settlement zone, particularly towards Lamanai.

Str. C-2 differed from Str. C-3 in that it was made up of two sequences of plaster floors and relatively clean fill. Both construction episodes date to the early Late Classic. Unlike Str. C-3, this structure does not appear to have been reoccupied in the Terminal Classic to Colonial periods.

Burial 1 (Str. C-2/1) was found close to the surface, possibly just above a disintegrated floor, and was highly eroded. The burial appeared to be flexed and a partially reconstructible Lamanai-style polychrome plate was found at the head. A carved stone in the shape of an animal head was included in this burial. It was originally part of a larger piece, possibly a mace, as it is broken at the neck. Burial 2 (Str. C-2/2) was found just below Burial 1 in floor aggregate. It was also highly disintegrated and likely flexed. Two eroded Lamanai-style polychrome plates were found at the head and the head may have been placed between them. A second floor was encountered beneath the burials. The fill between the two floors and below the second floor contained early Late Classic ceramics. The final layer of compact dark grey soil on which the structure originated contained early Late Classic, Early Classic, and Late Formative ceramics.

Like Str. C-2, Str. C-1 contained an early Late Classic flexed burial close to the the surface (Str. C-1/1). At least one eroded and highly fragmented Lamanai-style polychrome plate was associated with this burial. An associated Late Classic orange plate, also highly eroded and fragmented, may also have been a Lamanai-style polychrome. The fill of this structure was also early Late Classic, but included a fairly large number of Late Formative and a few late Middle Formative sherds. This suggests some association with the Chultun C-4 burial. The lower structure fill contained another flexed burial, Burial 2 (Str. C-1/2). This highly eroded burial was also associated with an early Late Classic orange plate that may be an eroded Lamanai-style polychrome. No definitive plaster floors were uncovered in this structure, although the nature of the fill and aggregate is suggestive of a floor below the burials close to bedrock. Like Str. C-2, Str. C-1 also lacked evidence of occupation in the Terminal Classic to Colonial periods.

STRUCTURE FA-3

In 2019 work continued in Operation 21 at Str. FA-3. Str. FA-3 is in the Group F Acropolis (FA) (see Figure 1). The nine structures of the acropolis are located on a platform that rises three meters above the Group F plaza (Haines 2011:142; Figure 1). Str. FA-3 was looted sometime between the 2017 and 2018 seasons and early Late Classic ceramics were found on piles of back dirt left by looters. The presence of these ceramics suggested that the site was occupied during the early part of the Late Classic period, a

period for which there had been little previous evidence at Ka'kabish. Therefore, further investigation was warranted in 2019.

Work in 2019 focused on cleaning and mapping the two looters' trenches (North and South Looters' Trenches) in the structure, while collecting and recording any visible ceramics from the profiles of these trenches. The maps and drawings were produced to record the exposed features, to help understand how the structure was built, and to confirm the dates and construction sequences visible in the looters' trenches.

Ceramics from the North Looters' Trench in the upper portion of the building were a mix of Early Classic and early Late Classic sherds. The problematic deposit on Floor 2 in the North Looters' Trench contained early Late Classic partial vessels and sherds indicating that the upper part of the structure dates to the early Late Classic. The South Looters' Trench in the lower part of the building produced Early Classic sherds. Str. FA-3 appears to have had several building episodes that date from the later part of the Early Classic and early Late Classic. As with other structures investigated so far at Ka'kabish, the structure does not have architecture that dates later than about AD 700, although sherds from the surface include a few dating from the Terminal Classic through Postclassic.

SETTLEMENT ZONE H

A small milpa field 650 m northwest of Str. D-4 at Ka'kabish was surveyed in 2020 (see Ch. 6 Figure 6.3). Seven platform structures were recorded, oriented roughly north-south and east-west, in an area covering ca. 0.09 sq. km. Diagnostic ceramic, lithic, and faunal materials were collected from the debris field of each platform. Evidence from ceramics collected on the surface of the platforms suggests the area was occupied by the Early Classic. Most of the sherds are dated to the Terminal Classic to Early Postclassic periods. A single, eroded rim sherd may date to the Colonial period. A small pendant and several other large fragments of shell may indicate evidence of craft specialization in the residential area immediately adjacent to the monumental temple structures of Ka'kabish.

SETTLEMENT ZONE G

In 2020 Settlement Zone G, midway between Lamanai and Ka'kabish in an area northwest of the minor civic-ceremonial centre of Coco Chan (see Ch. 7 Figure 7.3), was surveyed. Forty-nine platform structures, oriented roughly north-south and east-west, were recorded in an area covering ca. 0.675 sq. km. Diagnostic ceramic, lithic, and faunal materials were collected from the debris field of each platform. Ceramic materials suggest the area was occupied in the Late Formative period. There is evidence of continued occupation in the Early Classic and Late Classic periods. Most of the sherds date to the

Terminal Classic and Early Postclassic periods. There are fewer structures with evidence of occupation in the Late Postclassic period. Three structures yielded ceramics dated to the Colonial period. One of the most interesting features of Settlement Zone G—and the areas surrounding Coco Chan—is the distribution of Colonial Period settlement. Lamanai periodically served as a *congregación* or *reducción* centre under friars Bartolomé de Fuensalida and Juan de Orbita and these mounds may be evidence of these Spanish Colonial actions.

COCO CHAN

Ceramics were collected from the looters' backdirt from trenches in the major structures at Coco Chan to get preliminary dates for the site. Twenty-six sherds were collected from seven looters' trenches in five buildings. All structures had evidence of likely Formative ceramics. Two structures yielded Early Classic sherds. No sherds from the Late or Terminal Classic were collected. Str. 1 Looters' Trench 3 yielded five sherds from an Early to Middle Postclassic censer. Str. 7 Looters' Trench 1 yielded a fragment of a Late Postclassic censer typed as Chen Mul Modeled.

|

CONTINUING EXCAVATIONS OF THE STRUCTURE D-14 PALACE
BY
LESLEY SINOPOLI, KIERAN WAY, AND HELEN R. HAINES

Structure D-14 (Str. D-14) is nestled on the western edge of the large ceremonial Group D plaza (see Ch. 1 Figure 1.1). From the exterior, the mound appears to be roughly 20 m north to south and 17.5 m from east to west (Dermarker 2012). Str. D-14 is part of an interconnected unit, with Structures D-12 and D-13 (Str. D-12 and Str. D-13). There is significant damage to the southern side of Str. D-14 where it joins Str. D-13. This damage is understood to be the result of bulldozing in the 1980s that created a road for logging (Haines 2008). Str. D-14 also sustained damage by repeated looting that resulted in five trenches being dug into the building: one each on the western and northern sides, two on the eastern side, and a fifth running north-south under the front of the building connecting the two tunnels on the eastern side (Dziki 2018a, 2018b; Haines 2008). Comprehensive mapping of the building and these trenches completed by Claude Belanger and Gabriel Dziki in 2016 revealed a complete set of buried structures (Dziki 2018b) (Figure 2.1).

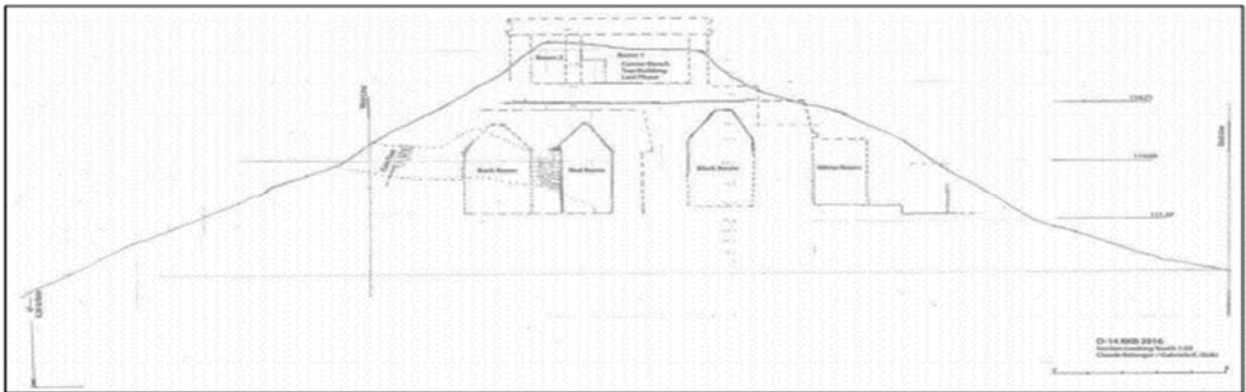


Figure 2.1. Section line of Str. D-14 showing locations of rooms (C. Belanger)

Prior to the 2019 field season previous investigations on the eastern face of structure, between the two looters' trenches (Units 1, 2, 4, 6, 8, and 11), exposed five terrace steps that were on average 60 cm in height and were roughly spaced a metre apart (Dermarker 2012; Dziki 2018b; see Figure 2.2). Additional units (3, 5, 7, and 9) were excavated to expose the northern section of the substructure at the level of the plaza floor (Dziki 2018b). Unit 10 exposed the width and depth of the central doorway. It also recovered a cache of vessels in the centre of the door below the floor and along the primary building axis (Dziki 2018b).



Figure 2.2. Photograph showing (L-R) excavation area, looters' trench, and chute used for removing matrix.
(Sinopoli 2019)

The aim of the 2019 field season was to excavate the central room behind the doorway found in 2017. The expectation of this excavation was that it would expose stairs leading to the room at the top of the structure.

EXCAVATION SUMMARY

Excavation methods for the 2019 field season varied from previous field seasons in that excavations were located on the slope of the structure. To ensure the stability of the structure, and safety of the crew, excavations were conducted in a series of terrace-like steps. A combination of hand-picks, shovels, rock hammers, and trowels were used to excavate the area. To overcome the problem of safely getting the excavated matrix down the side of the structure to be screened, galvanized zinc sheeting was formed into a 'U' shape and attached to stakes to create a very efficient chute. A wheelbarrow with a 6 mm inch screen over it was placed at the bottom of the chute to collect and screen the material. Units did not follow the previously used pre-constrained measured squares, but rather conformed to the shape of the exposed architecture and features.

UNIT OVERVIEW

Unit 14

This unit as stated above was opened directly above the doorway found in 2017 with the intent of clearing the collapsed debris from the room. It was initially identified as Unit 11; however, it later was discovered that this unit number had been used previously in 2018. Consequently, this unit was relabeled post-field season as Unit 14. The area was excavated in three large levels.

Level 1 consisted of the humus layer: a dark grey brown soil full of loose leaf-litter and many roots. The level also contained numerous rocks ranging from small pebbles to 8–10 cm in size. Several larger cut stones, likely fallen from the room at the apex of the structure, were also recovered. Very few artifacts were found in this level. Material found included a single piece of obsidian and a Postclassic arrowhead. This level was closed when the soil changed colour to a lighter grey.

The matrix of Level 2 was lighter in colour, a pale grey brown changing to a whiter colour and was clearly collapsed building fill. Numerous large, roughly cut rocks 30 by 50 cm and up to 20 cm thick were recovered in the fill (Figure 2.3). Artefacts were still few in number but larger in size. This level closed when a layer of darker coloured soil was encountered close to the floor of the room.

Level 3 consisted of a thin layer of dark soil right on top of the floor. Numerous large ceramic sherds were found spread across the floor of the room. Both the level and unit were closed at the plaster surface of the room.



Figure 2.3. Photograph of Unit 12 showing unexcavated southern wall and stone ledge feature on western wall of room. Damage visible in lower right of photograph is from looters' trench (Haines 2019).

Unit 14 was just over 2.5 metres long from doorway to wall and 2 metres wide—as wide as the doorway. It extended from the doorway on the eastern side into the room where it exposed a low wall along the back (western) side of the room. Contrary to expectations, no staircase was found in the room, raising questions as to the access point for the room previously identified at the top of the structure (Dziki 2018a).

Unit 12

This unit expanded Unit 14 northward into one of the looters' trench on this side of the structure. As the looters' trench initially began lower in the front of the structure and then angled upward as it pierced the structure, work on this unit not only involved removing the material above the trench but also filling in the portion of the trench below the floor to stabilise the structure.

Once the humus layer was removed, rather than continuing to excavate this area in stratigraphic levels from above, the area was excavated by standing to the south of the wall, in Unit 14, and collapsing the material above into the trench. This was done due to concerns for the safety of the crew.

The dimensions of the unit were roughly 2.5 m wide and 2.5 m long. The unit consisted of the northern portion of the room and exposed the western, northern, and inner side of eastern wall of the room (the exterior wall had been exposed when the portion of the looters' trench outside the structure collapsed). These excavations revealed two unexpected architectural features. The exposed stone that formed the western wall of Unit 14 was revealed to be a ledge-like feature approximately 60 cm wide and 60 cm high that ran along the western wall immediately opposite the doorway. It ended roughly 30 cm north of the door where it turned westward and connected with the actual rear wall of the room (see Figure 2.3).

Along the northern wall was a beautiful corbel arched doorway, the first of this style at Ka'kabish (Figure 2.4). The arched doorway with steps up appears similar in design, albeit not as long, as the arched doorways found at Cahal Pech (Figure 2.5). The door in Str. D-14 was roughly 60 cm wide and contained only two steps that led to another room. The lower portion of the door and first step initially had been cleared by looters. The room to the north of the door was excavated as Unit 13.



Figure 2.4. Photo of corbel door at Ka'kabish (Haines 2019).



Figure 2.5. Cahal Pech corbel arched doorway (Sinopoli 2017).

Unit 13

The method of excavation used in this room was the same as that for Unit 14. Level 1 was consistent with Level 1 in the previous two units in terms of the nature of the matrix. The level was closed when the soil changed colour and leaf litter and roots were no longer present. Very few ceramics and lithics were found; what ceramics were recovered from this level were highly eroded.

As with Level 1, the matrix and rock inclusions encountered in Level 2 mirrored that found in Unit 14. Unlike Unit 14, however, no dark brown soil was found on the floor surface. Level 2 was arbitrarily closed roughly 15 cm above the plaster floor of the room. This unit stretched the depth of the room east to west (roughly 2.5 m) but extended only 1 m north. While walls were cleared on the eastern, southern, and western sides of the area, the northern extent of the room has yet to be determined. The rear (western) wall of the room appears to line up with that in Unit 12.

ARTIFACTS

Ceramics

A total of 454 sherds was recovered during the 2019 excavations (Table 2.1). Most pieces were recovered from the collapse that filled the centre room (Unit 14) and the northern room (Unit 13). Considerably fewer pieces were recovered from the mixed matrices in Unit 12; however, this can be attributed to a significant portion of this area having been previously cavitaded out by looting activities leaving a significantly smaller square metric area to search.

Table 2.1. Total ceramic material by unit and level.

UNIT	LEVELS				TOTAL
	1	2	3	Mix	
14 (centre room)	92	124	18		234
12 (centre room/looters' trench)				53	53
13 (northern room)	15	149	3		167
Grand Total	107	273	21	53	454

Level 1

Almost 25% of the ceramic sherds recovered came from Level 1 (Table 2.2). These pieces were a mix of Classic and Terminal Classic/Early Postclassic period material, with the odd Formative period sherd. Two small fragments of a chalice, likely a Lamanai orange type, were recovered in this layer.

Table 2.2. Ceramic material in Level 1.

TYPE/VARIETY	LATE FORMATIV E	FORMATIV E	CLASSI C	EARLY CLASSI C	LATE/TERMINA L CLASSIC	TERMINAL CLASSIC/ EARLY POSTCLASSIC	IND .	TOTA L
Level 13								
Classic polychrome			2					2
Eroded						1	9	10
Indeterminate red							1	1
Lamanai orange						2		2
Level 14								
Achote Black					1			1
Aguila Orange				1				1
Classic black			1					1
Classic red			1					1
Eroded		2				1	75	78
Indeterminate brown							1	1
Indeterminate orange							1	1
Indeterminate red							2	2
Lamanai orange						1		1
Lemonal Cream					1			1
Sierra Red	1							1
Striated							3	3
Grand Total	1	2	4	1	2	5	92	107

Level 2

Most of the ceramic material was recovered from Level 2 in Units 13 and 14 (Table 2.3). The material was a mix of Classic and Terminal Classic/Early Post-Classic period ceramics, with a few Formative period sherds. The types include Late Classic Tinaja Red and Lemonal Cream pieces as well as Late Classic/Terminal Classic period Lamanai orange sherds. Ceramic forms recovered included bowls, jars, plates, and vases.

Table 2.3. Ceramic material in Level 2.

TYPE/VARIETY	EARLY MIDDLE FORMATIV E	LATE FORMATIV E	CLASSIC	EARLY CLASSIC	LATE CLASSIC	LATE/ TERMINAL CLASSIC	TERMINAL CLASSIC/ EARLY POSTCLASSI C	IND.	TOTAL
Unit 13									
Classic orange			2						2
Classic polychrome			1						1
Consejo Group	1								1
Eroded								114	114
Indeterminate black								1	1
Lemonal Cream						2			2
Sierra Red		1							1
Striated								20	20
Tinaja Red						7			7
Unit 14									
Balanza Black				4					4
Classic black			2						2
Classic cream			4						4
Classic polychrome			2						2
Eroded								61	61
Indeterminate orange								2	2
Indeterminate red					1			1	2
Lamanai orange							9		9
Martins Incised					1				1
Striated								12	12
Tinaja Red						8			8
Unslipped								17	17
Grand Total	1	1	11	4	2	17	9	228	273

Level 3

Material from Level 3 in Units 13 and 14 was largely from the Classic and Postclassic periods (Table 2.4). One Formative period sherd also was recovered. The ceramics included Tinaja Red jar and plate fragments as well as Terminal Classic/Early Postclassic Lamanai orange plate and bowl fragments. One piece stands out as particularly unusual: an indeterminate red-on-buff tall hollow foot (Figure 2.6). The base of the foot appears to have been intentionally broken off as it shows signs of having been chipped at

the join of the wall and the foot. The piece is not local, and most closely resembles Early Classic striped vessels from Santa Rita Corozal; however, it has been suggested that it more closely resembles ceramics from the Copán area (Arlen Chase 2019 personal communication).



Figure 2.6. Indeterminate red-on-buff foot from Str. D-14.

Table 2.4. Ceramic material in Level 3.

TYPE/VARIETY	FORMATIVE	EARLY CLASSIC	LATE/ TERMINAL CLASSIC	POSTCLASSIC	TERMINAL CLASSIC/ EARLY POSTCLASSIC	IND .	TOTAL
Unit 13							
Indeterminate red-on-buff				1			1
Lamanai orange					2		2
Unit 14							
Balanza Black		1					1
Eroded						4	4
Lamanai orange					1		1
Striated						6	6
Tinaja Red			3				3
Unslipped	1					2	3

Total	1	1	3	1	3	12	21
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Unit 12 Mixed Level

As noted, Unit 12 consisted of a single mixed layer due to the looters' trench. Regardless, the pattern of material did not differ considerably from the levels in the other two units (Table 2.5). The identified ceramics consisted of a mix of Late Classic to Terminal Classic/Early Postclassic materials, most of which were Tinaja Red and Lamanai orange. What is notable is the presence of additional Lamanai orange chalice fragments.

Table 2.5. Ceramic material in Unit 12 Mixed Level.

TYPE/VARIETY	LATE CLASSIC	LATE/ TERMINAL CLASSIC	TERMINAL CLASSIC/ EARLY POSTCLASSIC	IND.	TOTAL
Unit 12					
Alexanders Unslipped	1				1
Eroded				37	37
Indeterminate orange				1	1
Lamanai orange			4		4
Striated				3	3
Tinaja Red		7			7
Grand Total	1	7	4	41	53

Lithics

Lithic material consisted of a few pieces of obsidian: small flakes or blades. Several pieces of broken metates and manos were recovered. One of the metate pieces and one of the mano pieces were made from granite, which is an imported material, likely from the Maya Mountains. One lithic of note was a small Postclassic notched point recovered from Level 1 in Unit 14 (Figure 2.7). Final analysis of the lithic material has yet to be completed.



Figure 2.7. Postclassic side-notched point (Way 2019)

SECURING THE STRUCTURE

There was no simple way to backfill Str. D-14 so it was decided that a zinc roof would be built over the tops of the units and large rocks would be stacked up in front. Two steel beams 6.1 m long were laid north to south across the top of the structure to form a support frame and were dug into the southern wall to secure them. Seven 4.28 m beams were laid across the cross beams and bolted into place (Figure 2.8). Sheets of zinc roofing were bolted into place to form a roof. Additionally, wood poles were placed on the underside of the beams as additional braces, and poles also were used to support the arc of the doorway into Unit 14. Plastic sheeting was laid over the zinc roof, which was then covered with buckets of backfill dirt.



Figure 2.8. Construction of zinc roof over excavation area (Haines 2019).

SUMMARY

Contrary to expectations, excavations into the main room of Str. D-14 did not yield the anticipated staircase. Instead, as is often the case at Ka'kabish, the room posed more questions than it provided answers. While we have confirmed that the final period of use for the structure was most probably during the Early Postclassic period, and that the inner three rooms were likely inaccessible during this final period, we still do not know how the room at the top of the structure was accessed. Moreover, two new, and unexpected, architectural features were revealed during the 2019 excavations: a tall, narrow ledge or bench in the central room, and an arched doorway between the central and northern rooms. The latter feature has not been documented thus far in the immediate region, although it is assumed that there is a matching door on the southern side of the central room. Due to the discovery of the northern room, we also have new questions as to how Str. D-14 relates to the long, and as yet uninvestigated, structure that joins it to the north. Future investigations are planned for this structure.

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EXCAVATION OF RESIDENTIAL STRUCTURE B-2 IN THE BAKER GROUP

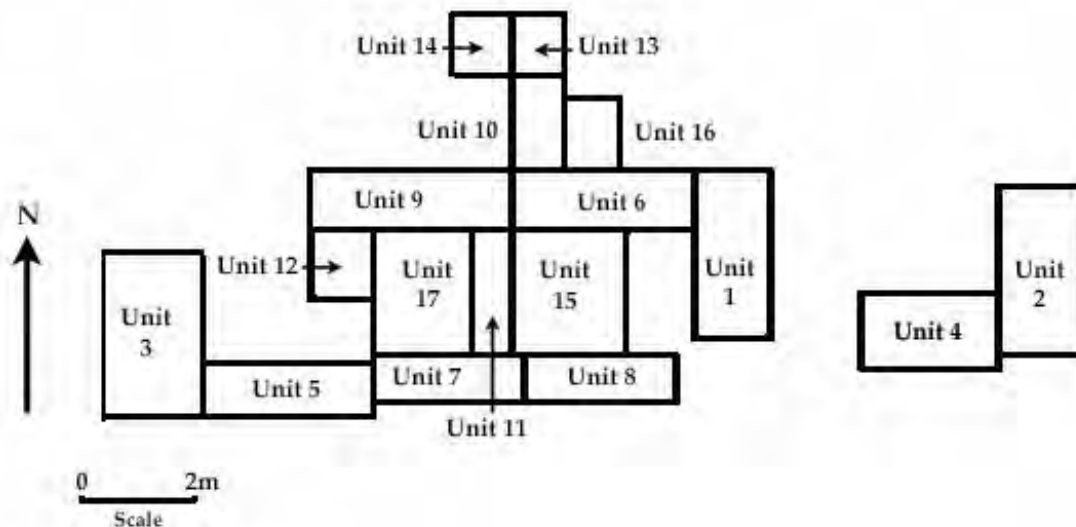
BY

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The Baker Group (Group B) is a residential group in the southern region of Ka'kabish, immediately southwest of the Hingston Group (Group C) (see Ch. 1 Figure 1.1). It consists of two platform structures on a north-south line. There are also two chultuns clearly situated within the group (Chultuns B-1 and B-2), with a third chultun located to the southwest between the Baker and Fenton Groups (Group A). Chultun B-2 has two chambers; the western chamber, excavated in 2012, yielded a series of Late/Terminal Classic burials indicating that the final use of the chultun was as a mortuary crypt, likely for the inhabitants of the Baker Group (Carlos 2018; Gonzalez 2013).

The initial plan for the field season was to uncover both platform structures Structure B-1 (Str. B-1) and Structure B-2 (Str. B-2). However, the location of Str. B-1 could not be clearly defined and was, therefore, left for a future season. The excavation strategy for Str. B-2 was horizontal clearing of the platform structure to delineate the size and shape. Initial units were placed in the southeastern and southwestern corners and the southern projection of the platform (Figure 3.1). Following this, a vertical trench was placed along the midline to determine the occupation history.

Figure 3.1. Arrangement of Units 1 to 17.



METHODS

Data from the structure will form part of the M.A. thesis for Benjamin Lightner, and excavation was conducted as part of the ANTH 3000y course for the Trent University field school with a combination of undergraduate students and Belizean archaeology crew members. All materials were screened through quarter-inch mesh. The artifact collection strategy for ceramics consisted of retaining all materials quarter-size or larger or pieces that were diagnostic. All lithics, obsidian, shell, and bone were collected. Materials were first separated by feature (if applicable) and then by type. Significant finds were sketched, mapped, and photographed *in situ* when possible. Photographs were taken at the closing of all levels. A main datum for Group B was established along the eastern edge of the operation on a tree root on the main path with a calculated elevation of 104.600 masl. Three additional datums were placed in locations central to groups of units.

During the field season, burials were initially numbered by unit (i.e. Burial 18-1 was the first burial in Unit 18). Post-field season these burials were re-numbered using the site-system which identifies sequential burials by site location, such as by structure number (i.e. Burial 18-1 is now Burial Str. B-2/1 and the burial originally identified as Burial 19-1 is Burial Str. B-2/2 as it was the second burial discovered).

RESIDENTIAL STRUCTURE (UNITS 1, 6, 9, AND 15)

Level 1 of Units 1–17 consisted of a 4–6 cm humus layer. Two factors were used to close this level in each unit: change in soil consistency and color and/or coming down on a residential wall. This layer was poorly sorted and heavily disturbed by vegetation. Ceramics recovered in this level were highly eroded. No significant finds were located across the structure.

Unit 1 was placed on what appeared to be a southern projection of the platform structure on a north-south orientation, crossing the long axis of the structure. Level 1 was closed after the appearance of a residential wall along the northern unit wall. The remainder of this unit was excavated as Level 2 and was closed after uncovering a plaster floor. The plaster floor was well preserved along the residential wall with increasing deterioration farther from it. The plaster became indistinguishable from the soil approximately halfway through the unit. Significant finds within this level include a lanceolate point (Figure 3.1) associated with a stone formation oriented north-south. Additionally, a flower-shaped carved shell bead (Figure 3.2) was found while screening. The residential wall consisted of 4–5 courses of cut stone layered in a pattern similar to a modern brick building (Figure 3.3). Preservation of the wall was good, with a minimal number of stones displaced or missing. The projection and depression in the

southern wall of the platform were found to be the result of disturbances. It is unclear what caused this, but the shape of the platform was adjusted as a rectangle in all subsequent depictions.

Unit 6 was placed on an east-west axis to the west of Unit 1, following the residential wall. The unit encompassed a 2 m doorway along the northern wall. The plaster floor continued throughout the unit and served as the basis for closing the unit at Level 2. Unit 9 was a continuation of Unit 6 westward and exposed more of the interior of the wall and the plaster floor. However, at approximately the halfway point, a set of three courses of larger cut stones was located running north-south through the unit. While the eastern portion of Unit 9 was cleared in two levels to the floor, as per Unit 6, the western portion of the unit (beyond the stones) was arbitrarily closed. The close of Level 1 in this area was at a depth of 5 cm below the top of the stones and was the result of us identifying this feature as the front of a bench. A subsequent unit (Unit 18) was placed to excavate the interior of the bench.



Figure 3.0.2. Lanceolate point from Unit 1.



Figure 3.0.3. Shell bead from Unit 1.



Figure 3.0.4. Internal Stone 'Brick' Wall, North Wall in Unit 9.

Unit 15 was laid to the south of Unit 6 to clear the midline of the structure to the plaster floor. No notable artifacts were collected from this unit, save for a non-human bone, which was located immediately below the humus layer. This was likely not associated with the occupation of the structure. A southern doorway was located in the residential wall in line with the northern doorway. The unit was closed at the surface of the plaster floor that formed the interior of the room: the same stopping point as the other units. Material from Level 2 was most probably the result of collapse with some material possibly being left on the floor during abandonment.

NORTHERN WALL (UNITS 10, 13, 14, AND 16)

These units were placed in an attempt to define the northern extent of the platform structure and the thickness of the residential wall on the northern side. Unfortunately, neither aspect could be discerned. There was no clear edge to the platform, and the cut stones of the wall at this section were pushed forward and displaced to the point of instability. We maintained the interior corner of the structure through reinforcing the area with stakes driven into the plaster floor.

ABOVE AND IN FRONT OF BENCH (UNITS 11, 12, AND 17)

These units were used to locate the western wall of the residential structure and clear the bench to the same depth as noted in Unit 9 (5 cm below top of bench wall). A large tree was located in the southwestern corner of Unit 12. The decision was made to not remove the tree and excavations proceeded around it. Non-human bones were located near the tree immediately below the humus layer and were not

likely a result of occupation. Unit 11 was located between Units 17 and 15 and focused on finding the southwestern, interior corner of the room where it abutted the bench and the front doorway of the residential structure.

BENCH (UNIT 18)

A separate unit, Unit 18, was created that merged Units 12 and 17 to excavate the interior of the bench. As the humus level in this area largely had been removed during the excavation of Units 12 and 17 and the defining of the upper surface of the bench, Unit 18 consisted of a single level: the fill of the bench to the plaster floor seen in the surrounding units.

Examination of the construction of the north-south bench wall, along with the walls on the northern and western side, indicated that the bench was a later addition into the room. The northern wall, first identified in Unit 9 continued unabated across the northern side of Unit 18, while the stones that formed the front of the bench were both clearly different in style (large and chunky as opposed to small cut blocks) and were badly abutted to the northern wall.

A burial (Burial Str. B-2/1) was laid supine on an east-west line, with the head to the east abutting the bench wall, in the approximate centre of the bench. Roots from the tree in the southern corner had disturbed the feet of the individual; however, the remainder of the individual was undisturbed. The individual was accompanied by four ceramic vessels: a Vaca Falls Red plate, a Tinaja Red pyriform vase, an Achote Black bowl, and a Carro Modeled vase. All of these are established Terminal Classic types and correspond with our estimates of the building's occupation period. Additionally, two disc-shaped shell beads were found within one of the vessels. The internment of this individual was likely the reason for the addition of the bench into the structure. No other burials or notable artifacts were located. See further discussion of Burial Str. B-2/1 below.

MIDLINE VERTICAL TRENCH (UNIT 19)

To trace the occupation history of the structure, a vertical trench 1 x 2 m was placed in the midline of the structure, overlapping Units 8 and 15. The unit consisted of three levels. The first level consisted of the plaster floor that formed the living surface of the room and the closing point of Units 8 and 15 (as well as the rest of the units). Examination of the plaster floor in profile revealed that it had at least one re-plastering episode suggesting that the area had been intruded into in the past (Figure 3.5). Level 2 was comprised of small fill (up to 15 cm). Level 3 was comprised of large ballast fill (16+ cm), that was laid immediately upon bedrock.

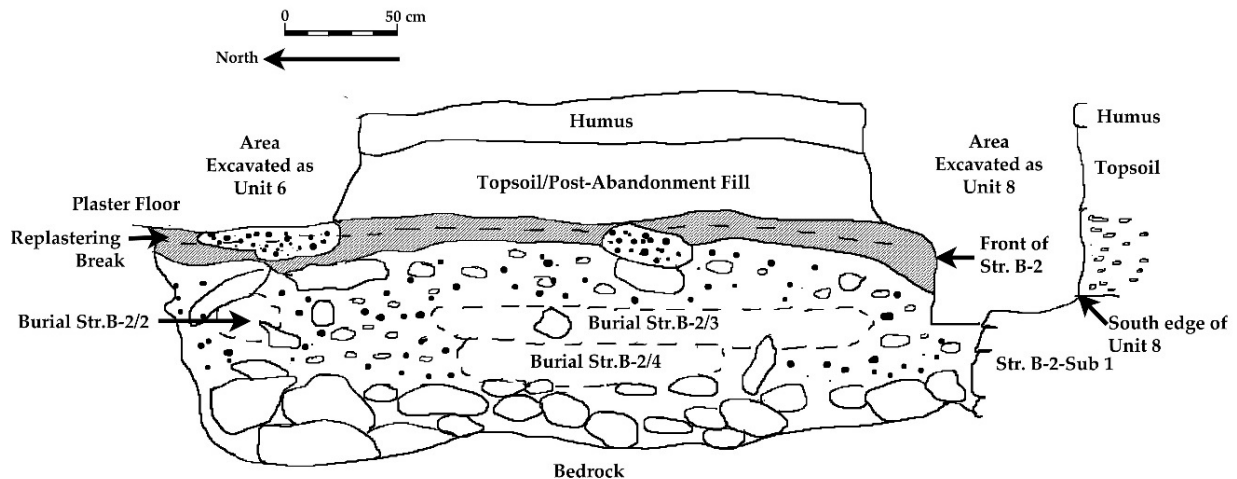


Figure 3.5. Eastern wall profile, Unit 19.

Within these levels, five burials (Burials Str. B-2/2 through Burials Str. B-2/6) were located with associated grave goods. The majority of the burials were oriented on a north-south axis with the head to the south. Only one individual was oriented east-west with the head to the west. One Tinaja Red bowl was found in close proximity to Burials Str. B-2/2 and Str. B-2/6. These burials were left partially unexcavated due to time constraints with the intention to return the following field season. They were tagged with a nail and flagging tape.

Burial Str. B-2/3 had two lip-to-lip plates (Vaca Falls Red and Lamanai-style polychrome), containing what appeared to be human metacarpals, and an Achote Black bowl located at its feet. A Lamanai-style polychrome plate was inverted and placed over the skull and a second Lamanai-style polychrome plate was located nearby. A conch shell ink pot (Figure 6) was recovered approximately 5 cm above the torso of Burial Str. B-2/3, and a fragment of what appeared to be a carved greenstone pendant (Figure 7) was found in the left hand of this individual.

Burial Str. B-2/4 was located directly underneath Burial Str. B-2/3 and, due to the nature of the surrounding matrix, the remains of the two individuals could possibly be commingled. Burial Str. B-2/5 was the only burial oriented east-west. Only the legs of the individual were excavated, with the intention of returning the following field season. The burial was marked with a nail and flagging tape. A natural stone shaped like the “Ik” glyph of 15 cm by 10 cm was found to the west of the torsos of Burials Str. B-2/3 and Burial Str. B-2/4 and to the north of the feet of Burial Str. B-2/5. The unit was covered with a zinc sheet before backfilling the operation.



Figure 3.6. Possible conch shell ink pot from Burial Str. B-2/3.

(L. Exterior; R. Interior)



Figure 3.7. Possible greenstone pendant from Burial Str. B-2/3.

PLATFORM STRUCTURE (UNITS 2, 3, 4, 5, 7, AND 8)

Units 2 (southeast) and 3 (southwest) were placed at the assumed corners of the platform structure. Large cut facing stones were located within each unit and correspond with the termination of the slope. Excavations within these two units consisted of Level 2 on the exterior of the structure, and Level 3 within the fill of the structure. Despite this delineation, it is possible that Levels 2 and 3 are not secure contexts, as the facing stones were not located until 3–5 cm into the construction fill.

Unit 4 was placed to the west of Unit 2 in an attempt to trace the front of the platform. The top course of facing stones within this unit had been disturbed, resulting in a mixed context for Levels 2 and 3, similar to Unit 2. The goal of Unit 5 was the same as Unit 4, though adjacent to Unit 3 and moving

east. The remains of the plaster floor were located in this unit, thus justifying the closing of the level and unit. This unit only consisted of material from the exterior of the structure, though the western half of the plaster floor was highly deteriorated. The unit was leveled at the same depth as the plaster floor, resulting in minimal, if any, mixing of contexts. At this point, the face of the platform could be clearly defined.

Units 7 and 8 continued to uncover the upper surface of the substructure stones along the southern edge of the platform to the east of Unit 5. Level 2 in both Units 7 and 8 was closed when they encountered the plaster/top of the substructure stones. A separate level (Level 3) was excavated immediately in front of the substructure to fully expose the front of the platform facing stones. This level was closed at the bottom of the stones where highly deteriorated patches of plaster were encountered. Although the material from Level 2 (on the substructure platform) and the material from Level 3 (in front of the substructure platform) were deemed contemporaneous, it is possible the some material included in Level 2 may come from behind the substructure stones (i.e. from the construction fill of the platform), due to the deterioration of the plaster surface and disturbance by tree roots. Unit 7 was closed at this point.

As Unit 8 crossed the midline of the structure, with the highest likelihood of offertory materials being located here, excavations continued in this unit, albeit restricted to the area in front of the platform. This excavation revealed that the substructure platform for Str. B-2 was constructed as a single course of large stones approximately 35 cm high, which had been heavily plastered.

Below the plaster floor in front of the substructure platform, a cache of four fine obsidian blades was located. The blades were in contact with one another, indicating they could have been bundled together with a perishable material. Based on their position, it possible that these blades may be associated with either Burial Str. B-2/3 or Burial Str. B-2/4. The goal of this test pit was to go to bedrock; however, we were unable to achieve this due to the discovery of an additional structure immediately to the south (Str. B-2-sub 1), separated from Structure B-3 by only a 3–5 cm gap (Figure 3.5).

Str. B-2-sub 1 consisted of four courses of finely cut large facing stones that ran the length of the southern side of the excavation area. While no clear plaster floor was discernable on its upper surface, the matrix shifted to a lighter, chalkier consistency, suggesting the area had initially been plastered. Unit 8 was covered with a zinc sheet at the top of the facing stones to ease future excavations of Str. B-2 Sub 1.

BURIALS

Osteological remains of interments were mapped and removed, with each bone or bone cluster wrapped individually in aluminum foil. These were then labelled with the bone name or designated label (per map) as could be discerned in the field. Upon dry cleaning of each bone, they were reassessed for accuracy of the label, pathologies, age, and sex.

Burial Str. B-2/1

This burial, originally identified in the field as Burial 18-1, was located in Unit 18 resting on the original plaster floor of the room, which had been contained within and below the bench. As noted previously, the bench was a later inclusion in the structure and, based on the location of the bench facing stones abutting and almost on top of the skull, it was likely constructed for the internment of this individual. Due to the shallowness of the bench and consequent proximity of the burial to the ground surface, the overall preservation of the remains was low.

The burial was of an individual in an extended position on an east-west orientation. The head was to the east and abutted the interior of the bench wall. The entirety of the skeleton was extremely fragile and highly fragmentary, with the only partially preserved bones being one tibia and metatarsals. This could have been due to their position beneath the roots of the tree in the southwestern corner of the unit; however, this is speculative. Identification of bones was, therefore, made by anatomical position *in situ*. Given the size of the individual, they were likely an adult, but the lack of diagnostic markers prohibits confirmation. Sex could not be determined at this time. One upper incisor was found during lab analysis.

Burial Str. B-2/2

This burial consists at present solely of the cranium. However, evidence of postcranial remains is present in the northern wall of Unit 19, contained within Level 2, suggesting the body may extend on a north-south axis. As such it was given a burial identification number in the field and was initially identified as Burial 19-1. Lack of sutural fusion indicates that this individual was likely a subadult or young adult. The presence of deciduous teeth lends to the former.

Several teeth and a mandible were also located either in association or directly below the cranial vault. Post-excavation lab analysis led Lightner to believe that these were from another individual, thus requiring a separation into another burial (Burial Str. B-2/6). However, due to the nature of the loose rubble core material it is likely that material from the skeleton may have been displaced during decomposition. Further osteological analysis may conclude that the remains currently classified as Burial Str. B-2/2 and Burial Str. B-2/6 are in fact the same person.

Burial Str. B-2/3

This burial, initially identified in the field as Burial 19-2, was the most intact and well-preserved of the five burials, presenting a fully articulated skeleton in a supine position. The majority of long bones and many of the smaller bones were removed without issue, thus allowing for a thorough analysis. Vessel 4 was discovered inverted over the skull, which included 75% of the cranium and mandible. Cranial sex markers for this individual (mastoid process, supraciliary arch, orbit shape, mandibular robustness, and frontal slope) suggest the individual was male. Partial fusion of sutures and the eruption of third molars place this individual as a young adult in the 20- to 30-year-old range. There is minimal wear on the teeth; however, hypoplasia and calculus are present to a limited extent. The postcranial skeleton is free of disease, injury, or any other pathology, save for a lesion on a costal rib. There are no indications of repetitive motion or significant patterns of wear on any of the recovered remains. Height estimates place this individual at approximately 160 cm, though it should be noted that this figure is based off an 80% recovery of long bones.

Burial Str. B-2/4

This burial, originally identified as Burial 19-3, was located approximately 7–10 cm below Burial Str. B-2/3, resulting in the possibility that remains from the two individual may be commingled due to the loose nature of the core fill. These remains were less well preserved than those associated with Burial Str. B-2/3 and, as a result, little can be said in terms of classifying the remains. Further, bones that could be definitively separated from Burial Str. B-2/3 were fragmentary, likely a result of the later interment activities associated with Burial Str. B-2/3.

Burial Str. B-2/5

This burial, initially identified as Burial 19-4, was only partially excavated in the 2019 field season. Only the lower extremities were recovered, with the remainder being tagged for future excavations. This burial is oriented east-west and is one of the burials associated with the possible Ik stone.

Burial Str. B-2/6

Currently, this burial is limited to teeth, a humerus, and partial mandible. However, remains that could potentially be related to this burial are still *in situ*, marked for further excavations. The recovered remains were identified in the field as Burial 19-5.

SUMMARY

Excavation of Str. B-2 yielded both expected and surprising results. As expected, the platform proved to support a residential structure. What was unexpected, based on its low elevation and distance from the site core, was the presence of a well-constructed low wall made from relatively uniform sized cut “bricks”, which would have served as the base for a perishable super-structure. The only other area at the site where this type of architectural brick-work has been noted is in sections of the ultimate construction of the presumptive palace in the site core (Str. D-14), where it forms the entire outer wall of the northern wall of the structure. Of note is that the nearby Group C/Hingston complex, which is both located closer to the site core and contains a larger and higher mound, did not yield evidence of formal cut stone as part of the superstructures.

Also unexpected was the discovery of a second, earlier structure, Str. B-2-sub 1, in front and below Str. B-2. Taking into account the deterioration of the plaster surface, the upper level of Str. B-2-sub 1 is at the same approximate level as the plaza space in front of Str. B-2. An examination of the fill of Str. B-2 suggests that this earlier building was buried in a single construction episode that saw the residential area expanded northward to accommodate the construction of Str. B-2.

Ceramic evidence suggests that the expansion of the platform and construction of Str. B-2 may have occurred towards the end of the Early Classic or more likely in the Late Classic. The scattering of Early Classic and Late Formative ceramics in the lower excavation levels, resulting in a “mixed grab bag” of material (*sensu* Culbert and Kosakowsky 2019:2), may be remnants from the construction and/or occupation of the lower Str. B-2-sub 1. Future excavations are required to securely ascertain the nature and construction history of this lower structure.

The two primary burials interred in Str. B-2 (Burials Str. B-2/3 and Str. B-2/4) most likely date to the Late Classic period, or early Terminal Classic period, placing some of the occupation, if not the construction of the building, to this period. Based on the mortuary offerings included with Burial Str. B-2/1 the bench was added to the structure during the Terminal Classic period. Additionally, ceramic material recovered from the surface layers on and in front of the structure indicate a continued occupation of the area into the Early Postclassic and possibly the Late Postclassic period. The Baker Group, or at least Str. B-2, was abandoned sometime in the Late Postclassic with no evidence of the Terminal Postclassic or Colonial occupation noted in the nearby Group C/Hingston Group.

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THE HINGSTON GROUP SUMMER 2019 EXCAVATION
BY
TAMARA MOORE

The Group C/Hingston Group is a courtyard group south of the main core area of Ka'kabish (see Ch. 1 Figure 1.1) and is composed of three mounds, Structures (Strs.) C-1 (9 m x 7.75 m), C-2 (6.25 m x 5.6 m), and C-3 (15.25 m x 6.5 m) with two previously excavated chultuns between them. Eight units in total were excavated (Figure 4.1) with six on Str. C-3 and one each on the other two mounds. Units 1, 2, and 4 were all placed in the interior of Str. C-3, and so can be summarized together as the layers, and the material culture found in them, is of the same kind. The same is true for Units 5 and 6, placed on the southwestern corner. Unit 3 was placed at the front of Str. C-3 and contained a problematic deposit. Units 7 and 8 were the only excavations undertaken on their respective mounds and will be discussed separately.

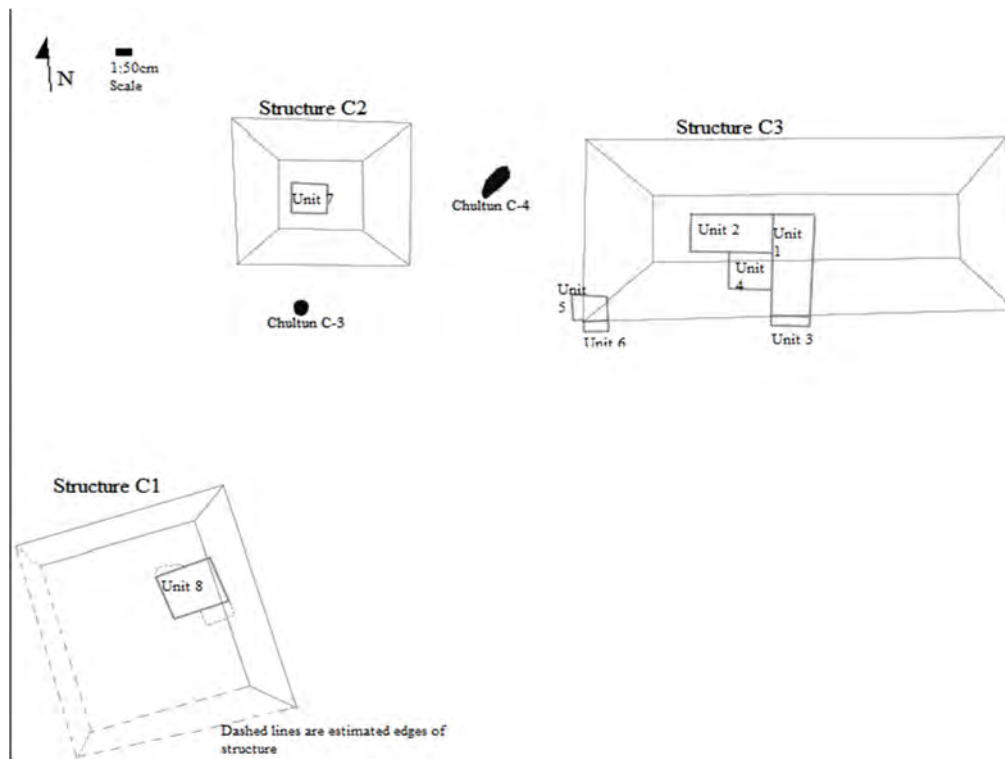


Figure 4.1. The Hingston Group structures and units.

STRUCTURE C-3

Units 1, 2, and 4 were all placed on the inside of Str. C-3, and so share similar natural/cultural layers, excavated levels, and material culture. Unit 3 was placed in the front centre of the structure to more fully uncover the problematic deposit found there. Units 5 and 6 were placed on the southwestern corner of the mound to define the extent of the structure.

Unit 1 (4 m x 1.5 m) was placed roughly in the centre of the structure, running from the southern edge of the structure to just past the mid-centre line. Unit 2 (3 m x 1.5 m) abutted the northern edge of Unit 1 and ran to the west. These units were placed in this manner due to the frequency of diagnostic architecture and artifacts that are found in the centre of Maya structures. Unit 4 (1.5 m x 1.5 m) was placed in the juncture between Units 1 and 2 to uncover a construction wall seen in Unit 2. Within the building, there were three natural layers; Unit 1 was excavated in seven levels, Unit 2 in six levels, and Unit 4 in four levels.

From the excavations undertaken on this mound, we can tell that Str. C-3 was built in a single construction event during the early part of the Late Classic period (roughly AD 600–700). Use in the Postclassic is evident from the problematic deposit in the front centre of the building, as well as on the corner. The top layers of the mound also represent some ephemeral Postclassic and Colonial period occupation.

Inside of Structure C-3

There were three layers present inside of Str. C-3. Levels 1 of Units 1 and 2 (and the start of Level 2 of Unit 2) went through the first layer (the humus), which was composed of soil and organic material typical of a rainforest floor (Figure 4.2). Artifacts found within this layer include ceramic sherds and lithic (chipped and ground stone) finds. Most of the ceramics were from uncertain time periods, though identifiable sherds included forms from the Late Classic, Postclassic, and Colonial periods, the latter of which is a first at Ka'kabish. The lithics included flakes, shatter, two bifaces, one uniface, one cobble tool, and one mano found in Unit 2 Level 2.

The second layer inside of this mound was a grey/brown aggregate with 5–10 cm rocks. This layer was excavated as Level 2 in Unit 2, and the start of Level 2 in Unit 1. Ceramic sherds were also found in this layer, with the greatest identifiable types being a mix of Postclassic and Late Classic types. Four bifaces, one cobble tool, and one mano were found, the rest of the lithics were shatter or flakes.

The third layer took up most of the mound fill and was excavated as Levels 5–7 in Unit 1, Levels 4–6 in Unit 2, and Levels 3–4 in Unit 4. This layer was filled with large 10–20 cm rocks, many of which

had cut faces and were likely taken from older buildings within Ka'kabish and represent the construction core of the structure.

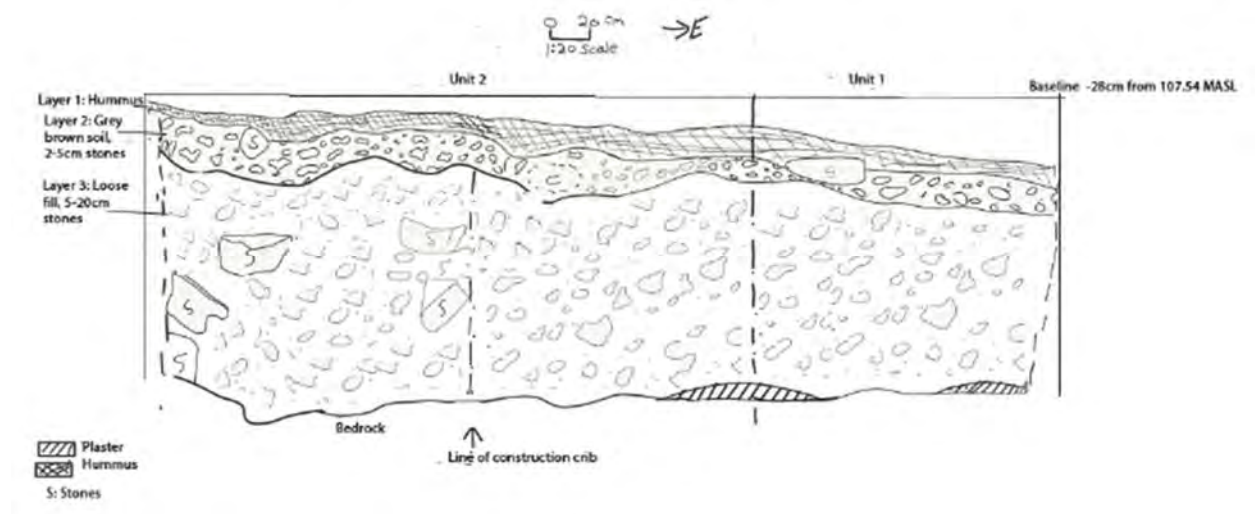


Figure 4.2. Units 1 and 2 northern profile walls.

During excavation of this layer, the top of a wall was seen running north to south in the approximate centre of Unit 2, and so separate levels were created to excavate the fill east (Level 5) and west (Level 6) of the wall (Figure 4.3). Unit 2 Level 4 was a small ceramic concentration (Figure 4.4) that was seen west of this wall and did not have a separate layer from Level 6.

It was originally believed that this wall could be stone masonry that was part of the superstructure of the building, but that was not the case. Once Level 5 was excavated it was seen that the wall was composed of rough and cut stones stacked loosely together. Unit 4 was created to clear more of the wall to the south to confirm that this conglomeration was the same for the entire feature, which it was (Figure 4.4). Once more of the wall was seen, it was concluded that this was a construction pen wall used to hold back the fill during the substructure construction, and so the context on either side of the wall was the same.

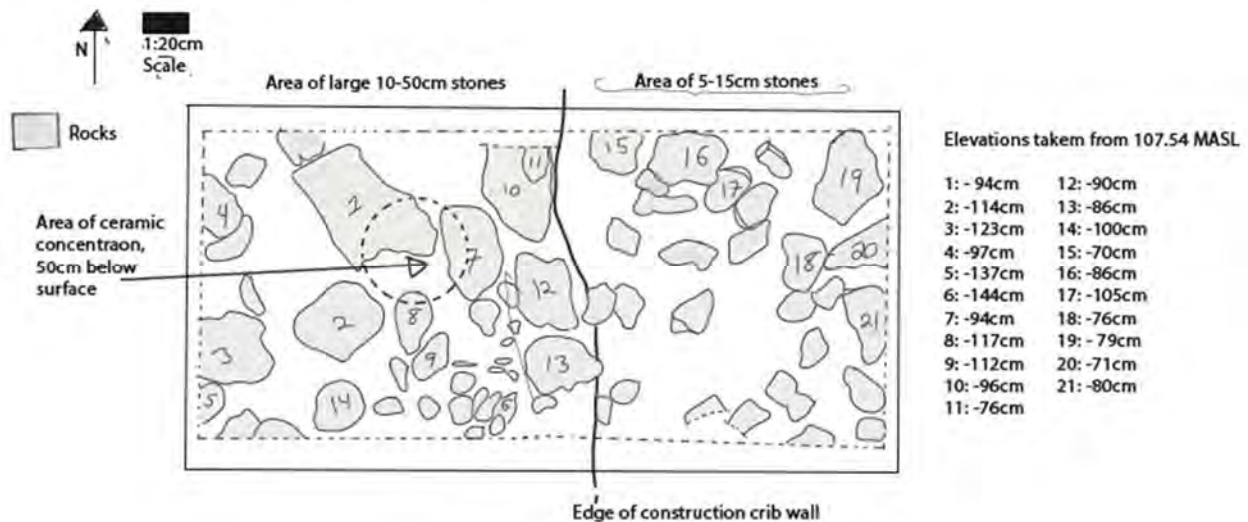


Figure 4.3. Unit 2 Level 3 (closing) showing the placement of the wall.

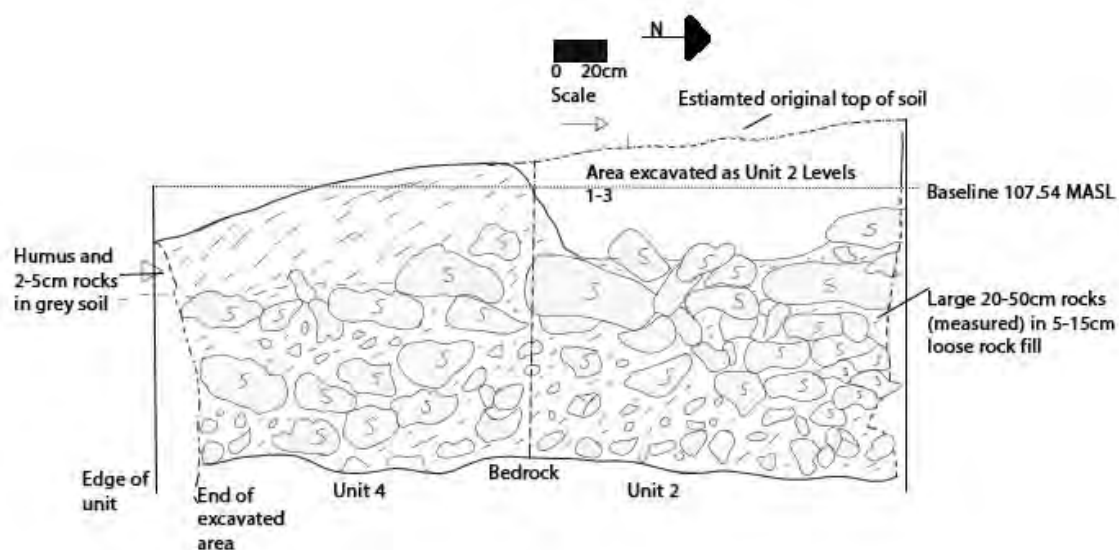


Figure 4.4. Units 2 and 4 showing the construction pen wall.

Layer 3 took up most of the sequence of Str. C-3 and represents a single construction event. The most identifiable ceramics from this layer date from the Late Classic Period, with minor inclusions of older forms and types. The lithics from this layer represent roughly 1/5 of the total chipped stone found, five of the eight manos, and two of the five metates found throughout the entirety of the Hingston Group.

Additionally, two unknown ground stone items were found in this layer. Eight pieces (seven blades and one chunk) of obsidian were found in this layer, with the remainder of the obsidian coming from the front (Unit 3) and the corner (Unit 5) of Str. C-3.

A thin veneer of plaster existed in spots on the bedrock inside of the structure, which had inclusions of ceramic sherds from the Late Formative/Early Classic periods as well as from the Late Classic (Figure 4.5). The substructure was built on top of this plaster floor, so I have interpreted that to indicate that this part of the Hingston Group had some occupation or use before any of the three structures were built and is possibly associated with the burial in Chultun C-4 (dated to the Late Formative).

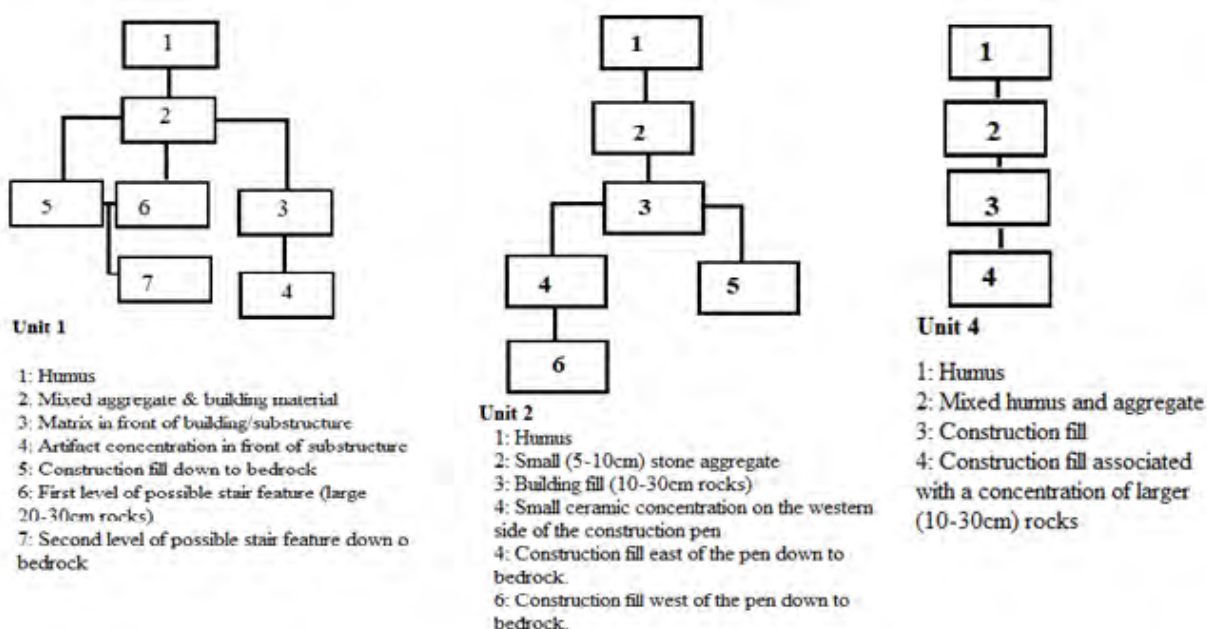


Figure 4.5. Harris Matrices for Units 1, 2, and 4.

Outside of Structure C-3

The areas outside of Str. C-3 were excavated as Unit 1 Levels 3 and 4 and Unit 3 in the front of the building. Levels 3 and 4 for Unit 1 were excavated in an area roughly 10 cm wide in front of the stone substructure, and it was in those layers that the first ceramics of the problematic deposit were seen. Unit 3 (1.45 m x 0.5 m) was placed to the south of the initial 10 cm wide excavation, so Levels 3 and 4 of Unit 1 are the same context as Unit 3 Levels 2 and 3.

Units 5 (1.5 m x 1 m) was placed on the southwestern corner of Str. C-3 to clearly define the corner of the building. Some cut stones were seen on the southern edge of Unit 5, and so Unit 6 (1 m x 30

cm) was initiated to follow those cut stones, which revealed the extent of the corner. These units were composed of four layers that were excavated in three levels for Unit 5, with Unit 6 having an additional level to excavate through the plaster/stone mix down to bedrock.

The first two layers (humus and humus/aggregate mix) of Unit 3 were excavated as Level 1 to more quickly get to the ceramic concentration that had been previously seen. The few identifiable sherds recovered from this layer were dated to the Postclassic period. No ground stone tools or obsidian was found in these layers, with the only other lithics being shatter (nine pieces) and a single possible preform blade. The third layer was part of Level 2 excavations and was composed of brown/grey soil with 5–10 cm rocks (Figure 4.6). Ceramics found in this level again were dated to the Postclassic. Eighteen pieces of lithic shatter and two flakes were found, as were three obsidian blades, but no ground stone tools.

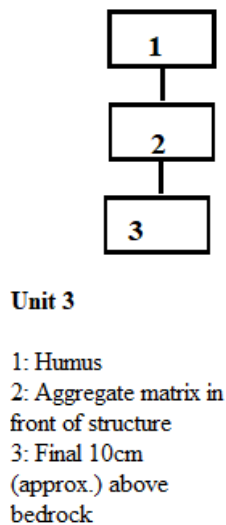


Figure 4.6. Harris Matrix for Unit 3.

The fourth layer is when the ceramic concentration (problematic deposit) was located and was excavated as Unit 3 Level 3. The problematic deposit began roughly 60–64 cm below the datum point of 106.1 masl and ended once bedrock was hit (roughly 74 cm below the same datum point). The sherds found here were from multiple vessels, none of which were complete (Table 4.1). Along with the ceramic sherds, lithics, ground stone tools, and obsidian (17 of the Hingston Group’s 29 total) were found in this feature. There are several different possible interpretations of this deposit, and so it has been deemed a “problematic deposit” rather than a “smash and trash” as was recorded in the field.

Table 4.1. Materials found in the Problematic Deposit.

MATERIAL TYPE	CATEGORY	TYPE	NUMBER OF ARTIFACTS	TOTAL
Ceramics	Alexanders Unslipped	rim/jar	1	65
	early Late Classic orange	body/jar	1	
	early Late Classic orange/black mottled	body/indeterminate	3	
	early Late Classic red	rim/jar	1	
		body/plate	2	
	eroded	rim/bowl	3	
		rim/plate – Lamanai form	10	
		partial vessel/bowl	1	
		rim/jar	2	
		rim/vase	2	
		rim/dish	1	
		pedestal base/indeterminate	2	
		body/indeterminate	24	
		Classic red	body/indeterminate	
	pedestal base/indeterminate		1	
	rim/jar		1	
	rim/indeterminate		1	
	indeterminate red	body/indeterminate	5	
unslipped	rim/jar	1		
Lithics	chipped stone	biface	3	96
		flake	17	
		shatter	74	
		utilized	1	
	ground stone	mano	1	
		metate	0	
Obsidian	blade	proximal	4 (?)	13
		medial	7	
		distal	1	
	chunk	proximal	(?)	
		medial		
		distal		
(?) Refers to obsidian found in the same Unit/Level as the problematic deposit, and so may have been part of it, but recorded separately.				

Units 5 and 6 were excavated at the southwestern corner of Str. C-3. The material culture found within each layer did not differ greatly and so will be presented as a whole rather than broken down by layer (Figure 4.7). Compared to the other units, there were very few ceramic sherds found here (only 195), and even fewer (22) were able to be dated. Of those 22 sherds, the majority were from the Terminal Classic/Early Postclassic period, and so are more in line with what was previously seen outside of the structure (Unit 3) rather than what was found inside of it. Formal lithic tools were only found in Unit 5 Level 2 and included a single biface, two pieces of a metate, and a single obsidian blade. The rest of the lithic finds in these units were either flakes or shatter.

The importance of these units was adding to the understanding of the architectural form of Str. C-3. Also, in addition to the problematic deposit, it shows that activity was still occurring in the Hingston Group into the Postclassic after the building itself was no longer being used.

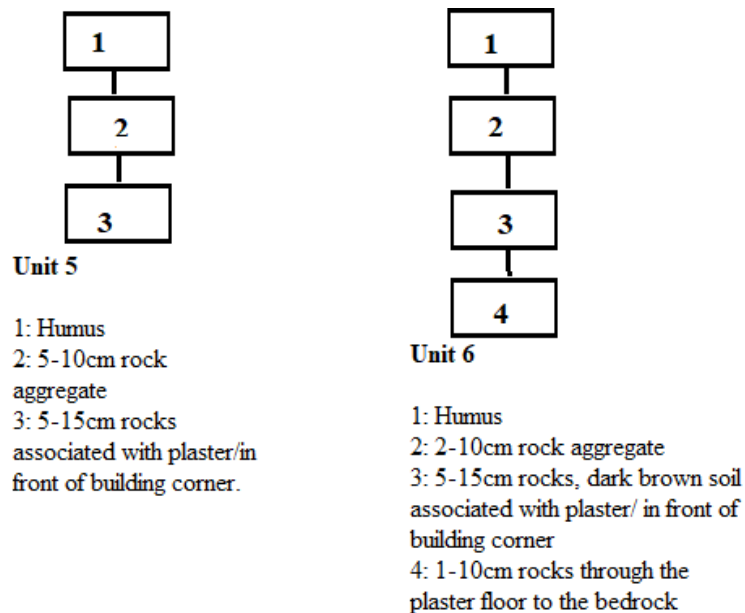


Figure 4.7. Harris Matrices for Units 5 and 6.

STRUCTURE C-2

Unit 7 (originally 1 m x 1 m) was laid out in the estimated centre of Str. C-2 as a single vertical unit in order to determine the chronological and architectural sequence, which could then be compared to the information that had been gained from Str. C-3. While excavating this unit, two burials were found, which will be discussed later.

Six layers were found in this structure (Figures 4.8 and 4.9) and it was excavated in seven levels that were decided on by changes in soil color and matrix as well as changes in rock size/density. When excavation of Level 3 was being done, a possible plaster floor was seen in the unit's profile walls, and so the decision was made to end that level so that there was a separate context for this possible floor. No different kinds of materials or different dates for ceramics were gained from this separation, and so Levels 4 and 5 can be considered a single context, and so the levels roughly correspond to the natural layers.

The first layer of this structure was made of organic materials that are common to the floor of a rainforest. No material culture was found in this layer. The second layer was composed of a dark soil with 5–10 cm rocks, and it was in this layer that Burial 1 (Str. C-2/1) was found in the southeastern corner at a depth of 29–43 cm below the datum point (106.59 masl), while the topsoil in the corner was 32 cm from the same datum point. The original dimensions of the unit did not fully cover the entirety of the burial, so the unit was extended by 20 cm on the southern and eastern edges and remained at 1.2 m x 1.2 m for the remainder of the levels.

Besides the materials that were associated with Burial 1, an additional 28 ceramic sherds were found in this layer, with the identifiable majority dating to the Late Classic. This differs from the top layers of Str. C-3, which had ceramics dated to later periods of occupancy. This suggests that this building was not returned to in the same way that Str. C-3 was.

Layer 3 was a plaster floor aggregate mix and was excavated as Level 3. Burial 2 (Str. C-2/2) was found in this layer, roughly in the centre of the northern wall of the unit with ceramics and bones being 39–50 cm below 106.59 masl. All the material culture from this layer was associated with the burial.

Layer 4, a grey/white soil with 10–15 cm rocks, was excavated as Levels 4 and 5, since, as was stated above, the existence of a possible floor seen in the profile while excavating led to the decision to separate the levels in case of different contexts. Once these levels were fully excavated, it was possible to see that they had the same context and were part of the same layer. This layer was between the two possible plaster floors. Very few ceramic sherds were recovered from this layer, and most of them were in poor condition but the dateable sherds are Late Classic. The only other material culture recovered from this layer was a single mano (the only ground stone tool for this structure), along with minimal amounts of lithic shatter.

The fifth layer, Level 6, in Str. C-2 was a slightly loose greyish soil, which may have been a plaster floor. If this was a plaster floor, it was highly disintegrated and broken, which led to its identification only through the profile wall. More ceramics were found in this layer than in Layer 4, though again, the majority were not diagnostic and those that are were dated to the Late Classic. Lithic flakes, as well as shatter, was found in this level, but neither were very numerous.

The final layer was a compact dark grey soil, and so was easily differentiated from the previous layer. Most diagnostic ceramics from this layer were again dated to the Late Classic, though a few sherds were dated to the Early Classic and Late Formative, with flakes and shatter also present.

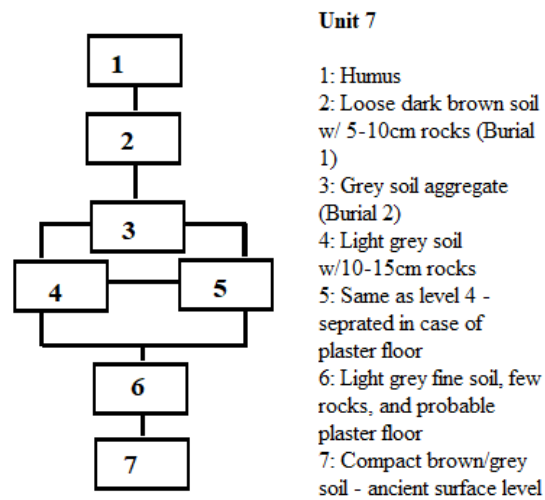


Figure 4.8. Harris Matrices for Unit 7.

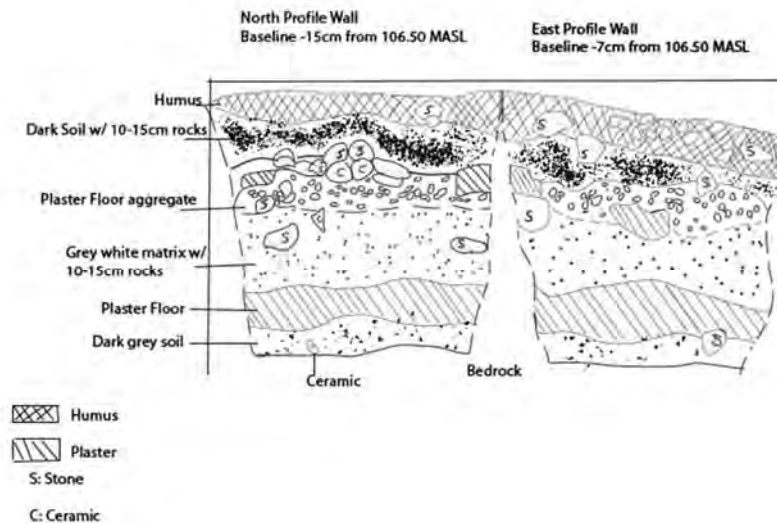


Figure 4.9. Unit 7 Profile walls.

Burial Str. C2/1

Due to the burial's proximity to the surface, the bones of the individual were badly preserved, with fragments no longer than 10 cm recovered, though numerous teeth were found (Figure 4.10). The ceramics (also highly eroded) included rim pieces that were able to be conjoined into a single plate, associated with this burial (Table 4.2). From its proximity to the concentration of teeth, it stands to reason that the plate was placed above or below the individual's head. From the location of the other bone fragments, it is most likely that this was a flexed burial. A single carved stone in the shape of an animal head was included in this burial, which was a unique find for the Hingston Group (Figure 4.11).

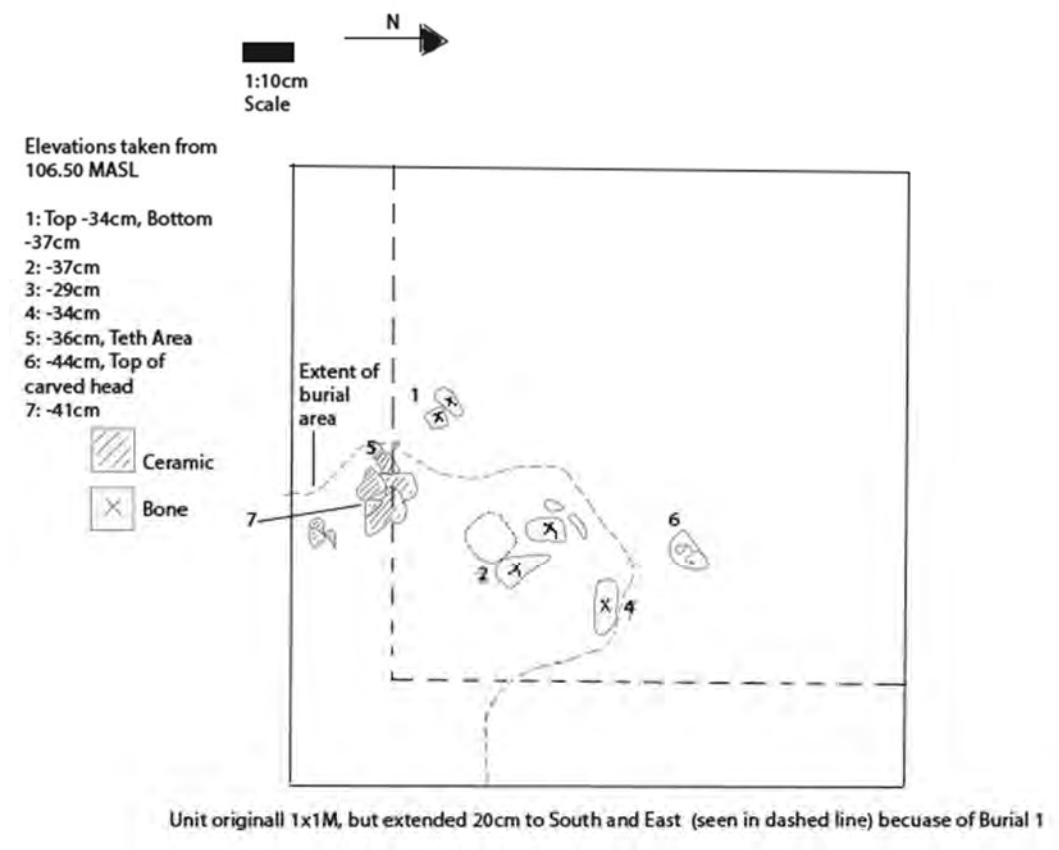


Figure 4.10. Burial Str. C-2/1 plan map.

Table 4.2. Burial Str. C-2/1 finds.

MATERIAL	TYPE		CONDITION/NOTES
Human Remains	teeth	LM ¹ , LP ⁴ , LI ² , LI ¹ , RI ¹ , RI ² , RC ¹ , RP ³ , RP ⁴ , RM ¹ , LM ₂ , LP ₃ , LP ₄ , LI ₁ , LI ₂ , RI ₁ , RC ₁ , RP ₄ , RM ₁ , RM ₂ , RM ₃	All incisors are flat at approximately the same place, which exposes the pulp channel. This may be a modification.
	bones	possible tibia fragment	All bones found were small fragmentary pieces. A single long bone piece found, which is possibly a tibia.
Lithics	biface		one
	flake		one
Ceramics	partial vessel/plate		Classic red – Lamanai form
	body/indeterminate sherds; body/plate		Puletan Red-and-unslipped, Classic red or early Late Classic orange
	rim/indeterminate		eroded
Other	carved rock		Small rock carved into the shape of an animal



Figure 4.11. Carved stone 'coatimundi' head from Burial Str. C-2/1.

Burial Str. C-2/2

Like Burial Str. C-2/1, the bones that survived in Burial Str. C-2/2 were highly fragmented and small, as were the ceramic sherds (Figure 4.12). There were fewer teeth found with this burial, though the area where they were located still corresponded to the ceramic sherds. Along with the teeth, possible skull and rib fragments were also found, with their placement supporting the idea that the individual's head was placed between two vessels, and that it, too, was a flexed burial.

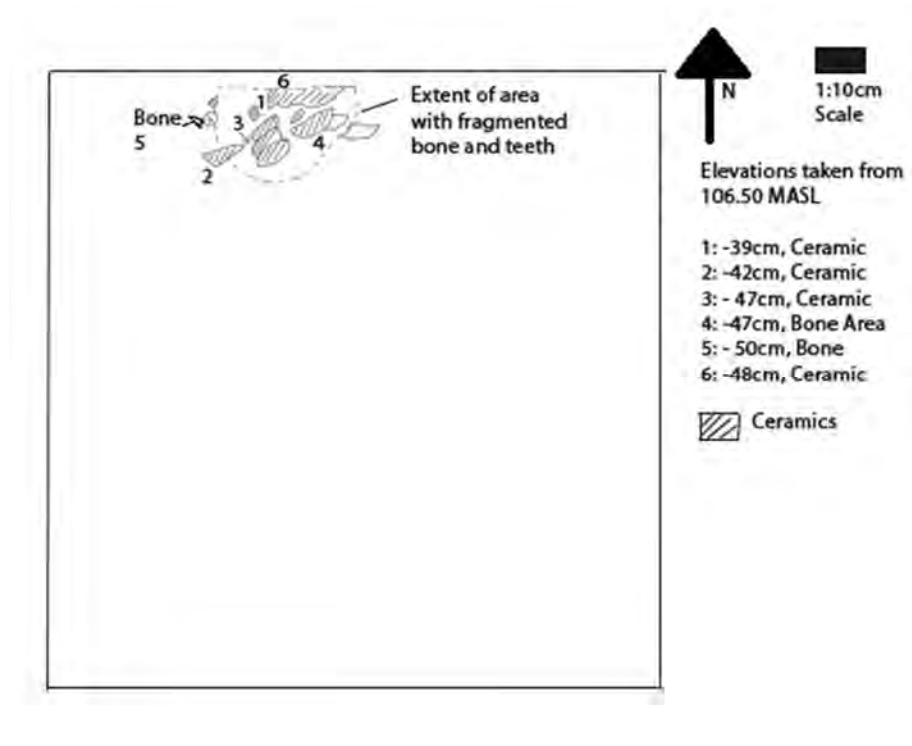


Figure 4.12. Burial Str. C-2/2 Plan Map.

Additional ceramics and bones were seen in the northern profile wall after the level was excavated, which were removed after the rest of the unit had been fully excavated (Table 4.3). From the location of those bones and ceramics, it was possible to see that this burial was placed within, or just on top of the plaster floor aggregate that makes up Layer 3 of the structure. This means that both burials in Str. C-2 were placed in the house fill above any possible plaster floors, and likely occurred relatively close to each other in time.

Table 4.3. Burial Str. C-2/2 finds.

MATERIAL	TYPE		CONDITION/NOTES
Faunal Remains	teeth	Molar cusp, RP ⁴ /LP ⁴ , RC ¹ , RP ³ , LC, RI.	Nine teeth found in total. No modification.
	bones	Possible skull and rib fragments	Fragmentary/small bone pieces that were highly eroded.
Lithics	shatter		Two pieces of shatter lithic found.
Ceramics	partial vessel/plate		Lamanai form, conjoining pieces possible
	body/indeterminate		Eroded sherds, some are early Late Classic orange
	rim/indeterminate		early Late Classic orange
	ridge/plate		
Other			No special finds

STRUCTURE C-1

Unit 8 (1.5 m x 2 m) was placed in Str. C-1 near the northeastern corner of the structure. It was placed lengthwise east-west. It is made of five layers and was excavated in five levels that roughly correspond to each of the natural layers. Two burials were also found in this structure (Levels 1 and 4); Burial Str. C-1/1 had a 0.5 m x 1 m extension added onto the southeastern corner to uncover the full burial, which was not taken past Level 1. Burial Str. C-1/2 ran underneath the northern profile wall, and so a chunk was undercut through that wall to recover the entirety of the remains.

As with the other structures, the first layer excavated was composed of organic material and soil typical of a rainforest floor (Figures 4.13 and 4.14). Burial Str. C-1/1 was found in the southeastern section of the unit roughly 92–102.5 cm below 105.602 masl, while the soil surface at the original southeastern corner was roughly 79 cm below the same datum point. All the ceramics from Layer 1 were associated with Burial Str. C-1/1 (Table 4.4) and were either dated to the Late Classic or were not dateable. Outside of the burial area, additional lithic flakes and shatter were found. No ground stone tools were found in this layer, or in the rest of Unit 8.

The second layer was a dark brown aggregate, with dateable ceramic sherds from this layer mainly being from the Late Classic, though there were four sherds that date to the Late Middle Formative and the Late Formative/Early Classic Periods. Chipped stone finds included shatter, flakes, and a single biface tool. Layer 3 (dark grey aggregate) also had several sherds from the Late Middle Formative and the Late Formative/Early Classic periods. These layers were the only ones in this structure, and the entire Hingston Group, to have ceramic sherds that were this old. Neither layer had a significant number of

these sherds in comparison to those from the Late Classic, and so likely represent either older vessels that were still being used by the inhabitants, or older/broken pottery simply used as part of the construction fill.

Layer 4 (light grey aggregate) was filled with large (10–50 cm) rocks that were mainly found along the northern wall of the unit. The presence of these rocks was the differentiating point between Levels 3 and 4, as it was thought that they might be an architectural feature. Once they were cleared enough to fully see and map them, it was clear that these were not a purposeful architectural feature. Likely, these large rocks were used as part of the building core, or possibly as a construction pen like in Str. C-3, and they had slumped into the placement where we saw them. Once these rocks were removed, Burial Str. C-1/2 was found in the northwestern/central section of the unit, with a range of 115–128 cm below 105.602 masl.

The ceramics from this layer, including those from the burial, were badly eroded and fragmented. There were several vessels, or parts of vessels, that while *in situ* their shape and form were visible, but once excavated were reduced to small sherds that cannot be conjoined. Due to their eroded nature, any decoration that may have been useful in inferring the status of the interred individual was no longer present. As was seen in the previous layers, there were some sherds that were dated to the Late Formative/Early Classic Period, but most of the sherds (many directly from Burial Str. C-1/2) were from the Late Classic Period. Only lithic flakes and shatter were found in this layer.

The fifth and final layer in Unit 8 was a compact light grey/brown soil and was fully excavated down to the limestone bedrock. There were some plaster inclusions in this layer though they were only identifiable in the profile wall after excavation was complete, and did not represent a solid layer, unlike what was seen in Str. C-2. It is probable that there was a plaster floor in this structure, and it was badly damaged and eroded due to natural processes, as well as the large rock core used in the layers above this possible floor. The limited number of artifacts suggests that this area was not heavily used prior to the construction of the plaster floor within the structure.

Burial Str. C-1/1

Due to its proximity to the ground surface, Burial Str. C-1/1 was highly eroded and fragmentary, with few remains preserved and only teeth being diagnostic (Figure 4.15). The area where the concentration of teeth was found was not as closely associated with the ceramic sherds as what was seen in Str. C-2, though their distance may be a result of soil movement rather than different choices in burial styles. All these ceramics were dated to the Late Classic (Table 4.3).

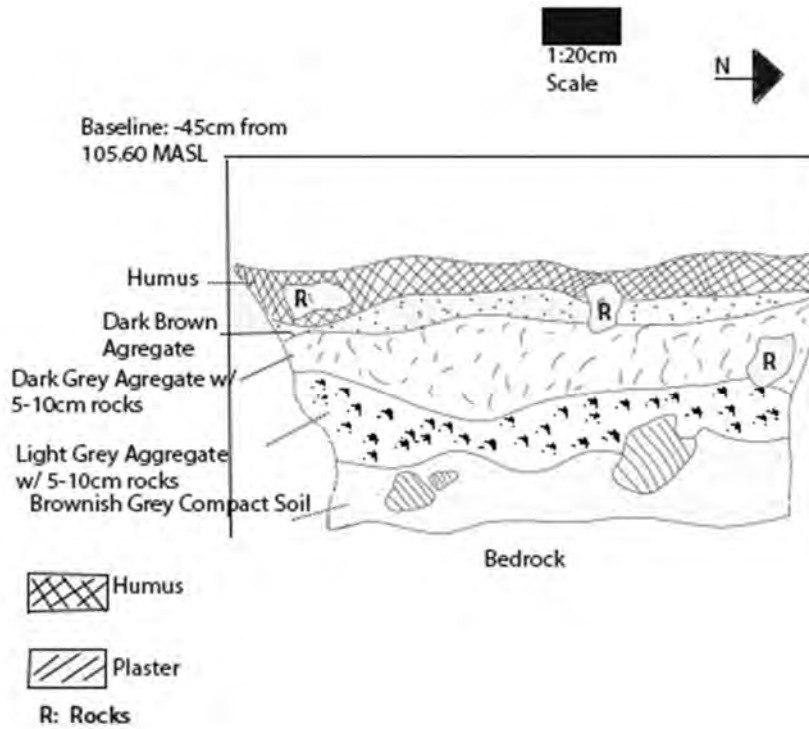


Figure 4.13. Unit 8 profile of western wall.

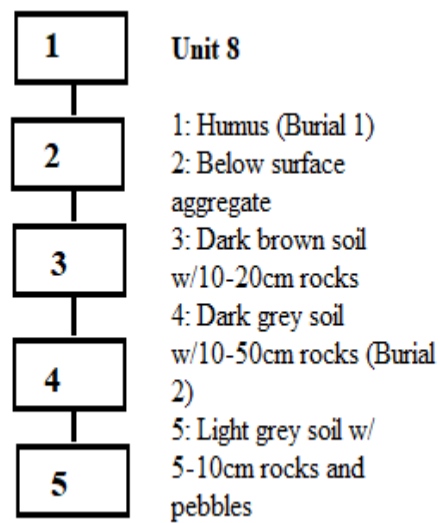


Figure 4.14. Unit 8 Harris matrix.

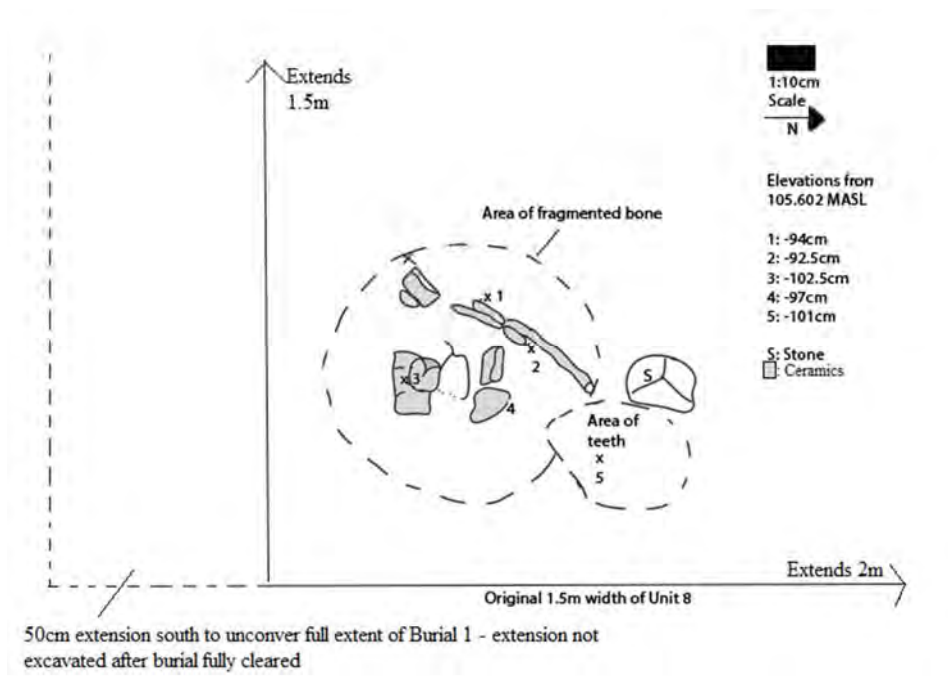


Figure 4.15. Burial Str. C-1/I plan map.

Table 4.4. Burial Str. C-1/I finds.

MATERIAL	TYPE		CONDITION/NOTES
Human Remains	teeth	RP ₃ , LI ₂ (crown highly worn, with a cavity present).	Two teeth found in this level, 3 more found in the level below, but are probably from this burial. No modification.
	bones	No diagnostic fragments	Bones were highly fragmented, small, and eroded
Lithics	biface		One biface found
	flake		One flake found
	shatter		Three pieces found
Ceramics	body/indeterminate, body/jar, body/plate		Heavily eroded sherds. Early Late Classic orange and red is present, as well as striated sherds.
	rim/plate; rim/jar		The plate is early Late Classic orange, the jar is Alexander Unslipped/Striated Zibal-esque
	base/jar; ring base/indeterminate		Eroded
	shoulder/jar		early Late Classic red/striated Zibal-esque
Other			No special finds

Burial Str. C-1/2

This burial had the most human remains of all four burials (Table 4.5), and while *in-situ* identification of many of the bones was possible, they were highly fragmented and did not retain their form once excavated. These identifiable bones, as well as areas where bones were clustered tightly together, were mapped and excavated separately to allow for greater analysis. Two leg bones (Bones 13 and 14 in Figure 16) were found in the northeastern corner and extended underneath the northern profile wall. A chunk of that wall was removed to be able to fully excavate those bones. The large rocks above the burial, as well as extensive tree roots through it, contributed to the fragmentary nature of the remains.

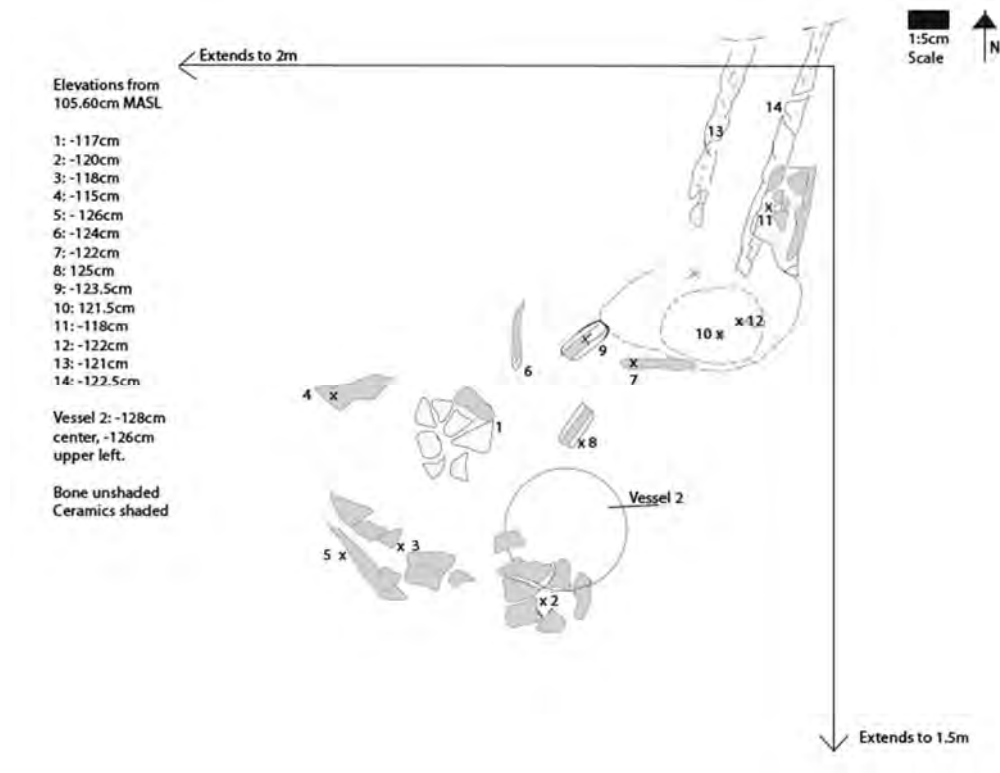


Figure 4.16. Burial Str. C-1/1 plan map.

Table 4.5. Burial Str. C-1/2 finds.

MATERIAL	TYPE		CONDITION/NOTES
Faunal Remains	teeth	RC ₁ , RM ₂ , RP ³ , RC ¹ , M ¹ , and a premolar root.	Not modified. Five or six teeth.
	bones	General finds include skull and long bone fragments. Cluster/bone 14 = femur, fibula, foot bones. Bone 9 & 7 = Distal portion (<i>not the end</i>) of Ulna. Cluster 10 = ribs, phalanges and other hand bones, radius, vertebra. Cluster 13 = includes femur fragments. Bone 6 = rib. Cluster 11 = possible fibula, upper humerus, vertebrae fragment.	Finds excavated as numbered clusters/individual bones, that were also mapped. Believed to be a flexed burial. Bone was highly fragmented and eroded. Cluster 11 includes a small bone fragment with a circular hole through it, though the eroded natural makes it impossible to determine if it was purposeful or not.
Lithics	shatter		Eleven pieces associated with burial, nine pieces from the same level
	flake		Two pieces, found in the associated level, may be part of the burial.
Ceramics*	rim/plate, rim/jar		The plate is early Late Classic orange, the jar is Puletan Red-and-unslipped.
	body/plate, body/indeterminate		From plate is early Late Classic orange, the indeterminate body sherds are early Late Classic red.
	shoulder/jar		Sherds include Classic red, Puletan Red-and-unslipped, and Sierra Red.
	neck/jar		Puletan Red-and-unslipped
	rim/jar		Puletan Red-and-unslipped
Other			No special finds.
<i>*General Level 4 ceramics may have been included in this table.</i>			

CONCLUSIONS

Str. C-3 was the largest of the three mounds in the Hingston Group and had the most extensive excavation undertaken. It was built in a single construction phase and, contrary to assumptions, did not include any cut stone masonry or plaster floors. It was the only mound that was found to have obsidian artifacts and held all the ground stone tools except for a single mano found in Str. C-2. The construction of this building was placed on top of a previously existing plaster floor and was undertaken during the early part

of the Late Classic (ca. AD 600). Activity continued on and around this structure into the Postclassic, with an ephemeral occupation layer occurring in the Colonial period.

Str. C-2 contained three construction events, seen through the two different possible plaster floors within the structure. These events likely occurred very close to each other, as the material culture did not change significantly through the layers and have also been dated to the early part of the Late Classic. Two burials were found in this structure, both above or in the upper plaster floor and were very close to the surface. Both were likely flexed burials that included ceramic vessels, with Burial Str. C-2/1 including a carved rock in the shape of an animal head.

Str. C-1 was built in two construction events, with a single possible plaster floor differentiating these phases. Similar to Str. C-2, these construction events were likely close to each other in time, since the majority of the identifiable ceramic sherds from the entirety of this building were dated to the same time period. Earlier (Middle Formative, Late Formative, and Early Classic) sherds were found, though in only small numbers that do not signify use during these time periods. Two burials, also likely flexed, and ceramics were also found in this building, both above the possible plaster floor, though Burial Str. C-1/1 was much closer to the surface than the second burial.

Previously it was assumed that during the Late Classic the rest of Ka'kabish was experiencing an occupation and construction hiatus. So far, the Hingston Group and Str. FA-3 (both examined in 2019, see also Ch. 5) are the only areas in the city and its settlement zone that have evidence of use during that time period. So far, the Hingston Group has the only Colonial Period ceramics in the Ka'kabish site centre. This, in turn, has created a longer occupation history for Ka'kabish, with different possible interpretations for why construction was occurring during the time when the rest of the city was being abandoned or undergoing a lack of construction.

Before the field season began, it was assumed that this courtyard group may have been occupied by lesser-status nobles or higher-status commoners, based on the size of the mounds, the proximity to the core, and copper finds from the Chultun C-3 burial (Carlos 2018). The indicators of higher status (i.e. decorated ceramics, cut stone masonry, formal crypts, etc.) were not seen, and the material culture (i.e. low-quality ceramics, simple architecture features, etc.) found is more indicative of commoners. Further research into the residential areas needs to be undertaken to form further comparisons and to create a better understanding of the processes and sequences of occupation and abandonment at Ka'kabish.

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INVESTIGATIONS AT STRUCTURE FA-3 (OPERATION 21)

BY

GABRIELA K. DZIKI

Structure FA-3 (Str. FA-3) is in the Group F Acropolis (FA) (see Ch. 1 Figure 1.1). The nine structures of the acropolis are located on a platform that rises three meters above the Group F plaza (Haines 2011:142; Figure 5.1). Str. FA-3 was looted sometime between the 2017 and 2018 seasons and early Late Classic ceramics were found on piles of back dirt left by looters. The presence of these ceramics suggested that the site was occupied during the early part of the Late Classic period, a period for which there has been little evidence at Ka'kabish. Therefore, further investigation was warranted in 2019.

The 2019 Operation 21 (Op. 21) investigations at Ka'kabish focused on mapping and recording the two looters' trenches in the structure, while collecting any visible ceramics from the profiles of these trenches. The South Looters' Trench is a 10 m long trench that cuts through and under the structure exposing the phases of construction. The North Looters' Trench (aka The Top Looters' Trench), on the other hand, came at Str. FA-3 from above, exposing what looks like a room of the super structure. Op. 21 excavators were the author and an undergraduate students, Adele Davis, and volunteer Wayne Hingston. Work on the North Looters' Trench included a crew of workmen: Jaime Yanes, Gavino Can, Elmer Cardenas, Charlie Diaz, and Greg Rodrigues.

SOUTH LOOTERS' TRENCH

Work on the South Looters' Trench (Figure 5.2) took most of the field season. Both the eastern and western profiles of the trench were first cleaned to determine which one would give the clearest profile to map in order to understand the structure sequence. In the end, it was determined that the eastern profile showed a more defined sequence between the different levels of the structure. Figure 3 is the drawing of the eastern profile of the trench. Each level or context was assigned a letter and number. Letters were given based on kind of deposit (A = aggregate, B = ballast, C = core, D = humus and collapse, F = floor, L = limestone). Below, the report discusses the labelled contexts in contextual order.



Figure 5.1. A photo of the South Looters' Trench at Str. FA-3 before profile mapping.

Level D1

This level mostly consists of the collapse of the room found in the North Looters' Trench of Str. FA-3. This level sits on top of Floor 1 (F1). The matrix is very light in colour with some cut stones mixed with crushed limestone.

Level D2

D2 is the slightly darker mix of collapse and humus to the south of D1 and above Floor 1. It extends to roughly where Floor 1 ends in a step.

Level D3

D3 is located to the south of D2. It stretches from the Floor 1 step out to the end of the looters' trench. It is a dark and very loose humus layer.

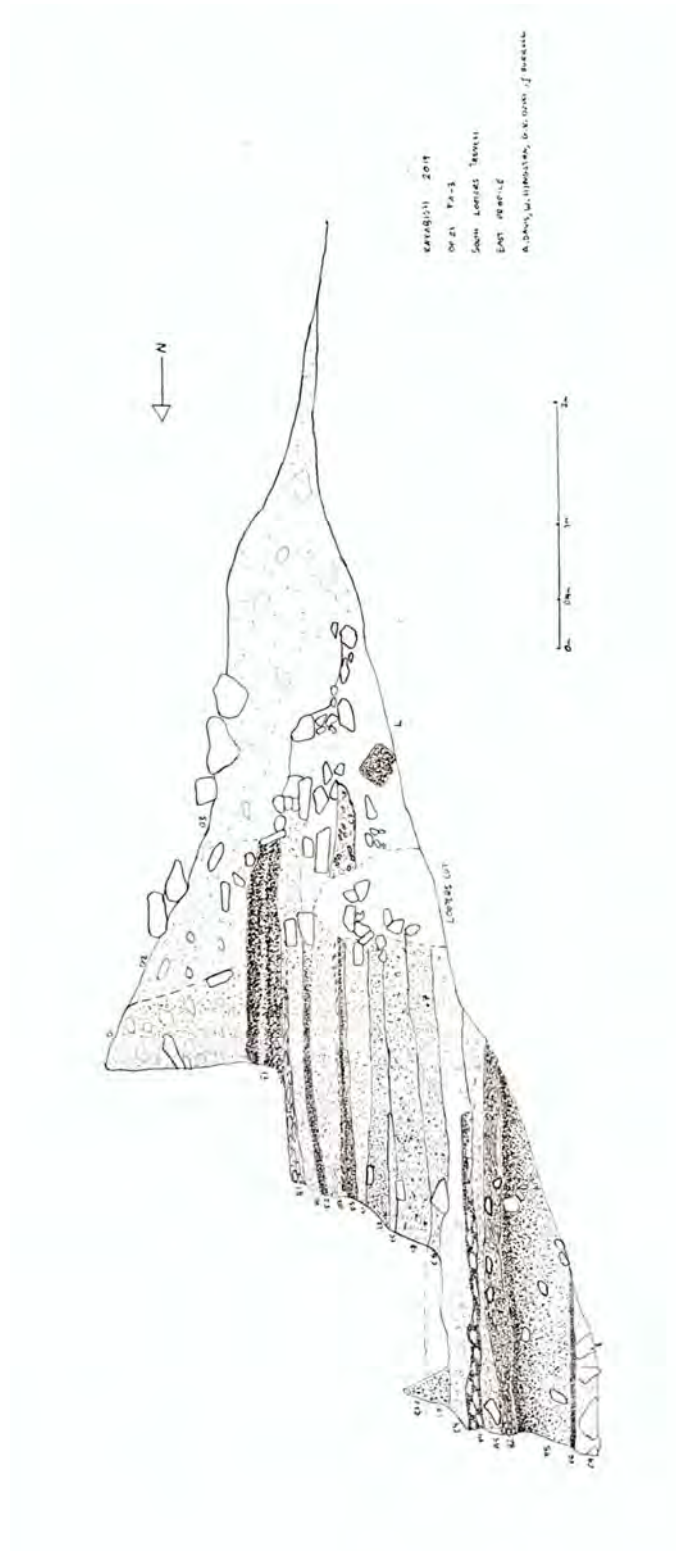


Figure 5.2. Eastern profile of KKB Str. FA-3 South Looters' Trench. Each level is labelled.

Floor 1

This floor is most likely the same floor found inside the room in the North Looters' Trench as an elevation taken between the two showed only 2 cm difference. Floor 1 (F1) is 30 cm thick on average and is compact white limestone. It ends at 4.8 m from the northern wall of the looters' trench in a slanted stone creating a possible step.

Level B1

This is the ballast for Floor 1. The level consists of dark soil mixed with 5–10 cm rocks with smaller ones filling the spaces between the large ones. The level seems to disappear about 3.8 cm from the southern wall of the trench, which could be destruction from building collapse.

Level A1

A1 is the aggregate below the ballast. It is a medium grey soil of 5–10 cm stones. It is directly on top of Floor 2 (F2). The level ends about 5.2 m out from the trench's northern wall and there are some cut stones that resemble a terrace step at its southern end.

Floor 2

Floor 2 (F2) is a thin floor (roughly 5 cm), yellow in colour, and extends out 3.6 m from the northern wall of the trench before becoming more destroyed and less clearly visible.

Level A2

A2 is the aggregate of Floor 2; a clear ballast layer was not visible. It is between Floor 2 and 3. It is a medium grey, fairly compact soil mixed with 0–1 cm stones. It ends at a looters' cut into the profile about 4 m from the northern wall of the trench.

Floor 3

Floor 3 (F3) is light grey and 6–7 cm thick. This floor could be a "construction" floor rather than an actual one. It disappears at the looters' cut at 4 m from the northern wall of the trench.

Level C1

This level is Core 1 (C1) and consists of medium grey soil mixed with 0–1 cm stones. There are also some larger stones (5–10 cm) in this level. This level disappears at the looters' cut in the eastern profile at about 4 m from the northern wall of the trench. C7 appears after the looters' cut at about the same level as C1.

Level C7

This is the only clear level on the southern side of the looters' cut into the eastern wall. It starts at about 4.6 m from the northern wall of the trench and ends at 5.4 m. This "boat-shaped" level is dark grey with some 1–5 cm stones mixed in. It disappears into some ~15 cm long rocks found in Level L.

Level C2

C2 is another core level below C1. It was separated from C1 based on the change in colour and stone size. It is a light grey, fine, compact soil with a few 5–10 cm stones mixed in. This core level disappears into the eastern wall looters' cut at about 4 m out from the northern wall of the trench.

Level C5

C4 is a very narrow (~6–7 cm) core level that is technically found in C2 but was deemed a separate level due to the change in colour. This "cut" in C2 forms almost a boat shape at the bottom of the C2 level, ending about 2.6 m from the northern wall of the looters' trench. It consists of very dark, coarse soil. C3 is directly below it.

Level C3

C3 seems to be another core level although the difference between C2 and C3 is not clearly visible. The only clear distinction between the small C5 level and C3 is a very distinct change to a much lighter colour. About 3 m from the northern wall of the trench, there is a small concentration (20 cm x 10 cm) of charcoal. This level disappears into the eastern wall looters' cut at about 4 m from the northern wall.

Level C3.2

This level is visible at the very top of the "ceiling" on the northern end of trench. It is most likely the same as C3 however we decided to make it a new level due to the unexcavated 1.1 m between it and C3 proper.

Level C6

C6 was difficult to distinguish from C3. It is a fine grey soil with a mix of small 0–3 cm stones and some 5–10 cm stones. One large (30 cm in length) stone is visible in the level. The level disappears into the looters' cut in the eastern profile about 4 m south from the northern wall of the trench.

Level C8

This is a small level visible in the “ceiling” on the northern end of the trench below C3.2. It is most likely the same context as C6 as they line up on the profile map, but they were split because of the 1 m of unexcavated soil between them. C8 is a deep dark grey/brown colour.

Level C4

Core 4 is directly above Floor 4. It is visible from the northern wall to the eastern wall looters’ cut at 4 m out. This level is grey-brown, loose soil, mixed with some 5–10 cm stones along with some smaller stones.

Floor 4

Floor 4 (F4) is very clearly visible in the northern wall of the looters’ trench out to 2.5 m where it begins to crumble and becomes impossible to see. It consists of fairly loose 5–10 cm limestone rocks with 0–1 cm stones filling the gaps.

Level A3

A3 is the aggregate for Floor 4. It is a very dark, moderately loose soil with 5–10 cm stones mixed in. The level disappears into the floor of the looters’ trench to the south.

Level B2

B2 is the ballast for Floor 4. It consists of 1–5 cm stones packed closely together with dark soil. It averages 15 cm thick and sits directly on top of Floor 5. The level disappears into the floor of the looters’ trench to the south.

Floor 5

Floor 5 (F5) is very thick (~50 cm) and can be seen in the northern end of the looters’ trench. It disappears into the trench’s floor at about 3 m from the northern wall. It consists mostly of large (10–20 cm) limestone rocks mixed with darker soil and limestone rocks of various sizes.

Floor 6

At about 4 cm thick, Floor 6 (F6) sits directly below Floor 5. It can only be seen in the northern end of the looters’ trench for 1.4 m. This compact, light grey plaster floor sits on top of C9.

Level C9

Core 9 is the last visible level in the South Looters' Trench. It consists of large cut stones surrounded by loose, light grey soil.

Level L

This level consists of thick dense white limestone and a mix of variously sized stones visible from the looters' cut into the eastern wall of the trench to where the looters' trench ends in the south. It was too destroyed to make out distinct levels and is likely collapse.

NORTH LOOTERS' TRENCH

The looters also came at structure FA-3 from the top, creating the North Looters' Trench. During the 2019 field season, we focused on cleaning the back dirt and leaves, along with the profiles of the visible room, in order to map and draw the already exposed architectural features. Figures 4–6 show each of the profiles mapped, while Figure 7 shows the plan map of the trench. A small unit was opened to clean up the eastern profile for mapping and to recover ceramics visible on top of the floor of the room (Figure 5.7). The ceramics found on Floor 2, like the ceramics found in the eastern profile, were from the early Late Classic period. In the end, the profile was divided into five levels. Below, the stratigraphy of the eastern profile is discussed.

Unit 1

Level 1

The humus layer was excavated as a single layer to look for Postclassic occupation. The level was closed when the colour changed as the collapse layer was reached. A pillar became visible in the southwestern corner and cut stones became visible along the southern line of the unit. No datum was used as we measured from the top of the structure.

Level 2

The southwestern corner was not excavated because of the pillar. This level had many large stones, including some cut stones up to 0.5 m in length, and 0.4 m wide. This appeared to be collapse.

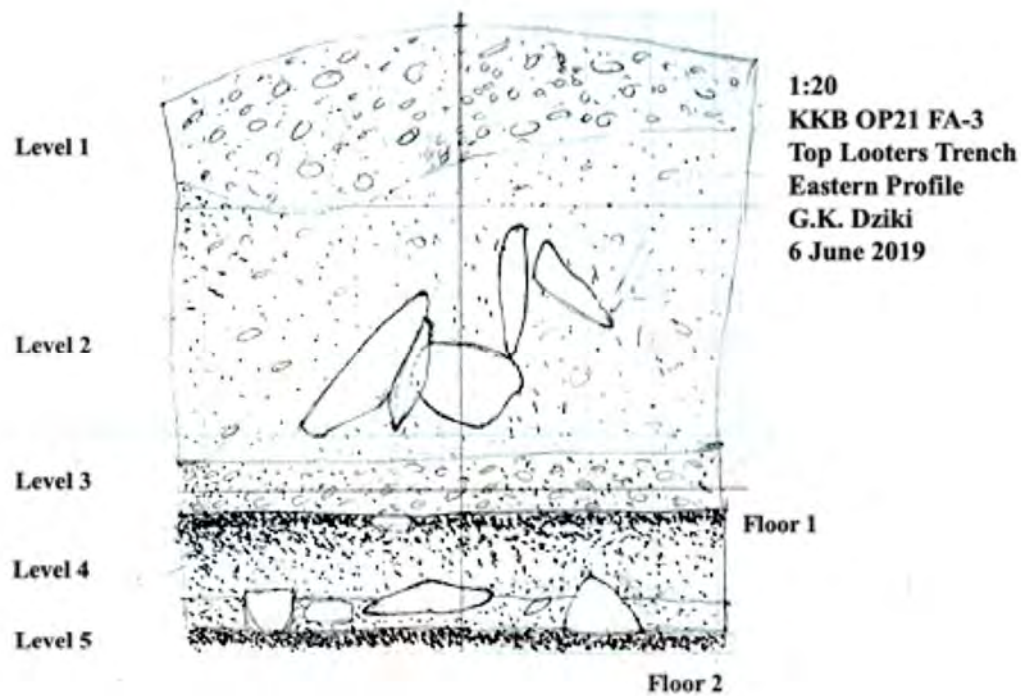


Figure 5.3. Drawing of the eastern profile of the Str. FA-3 North Looters' Trench.

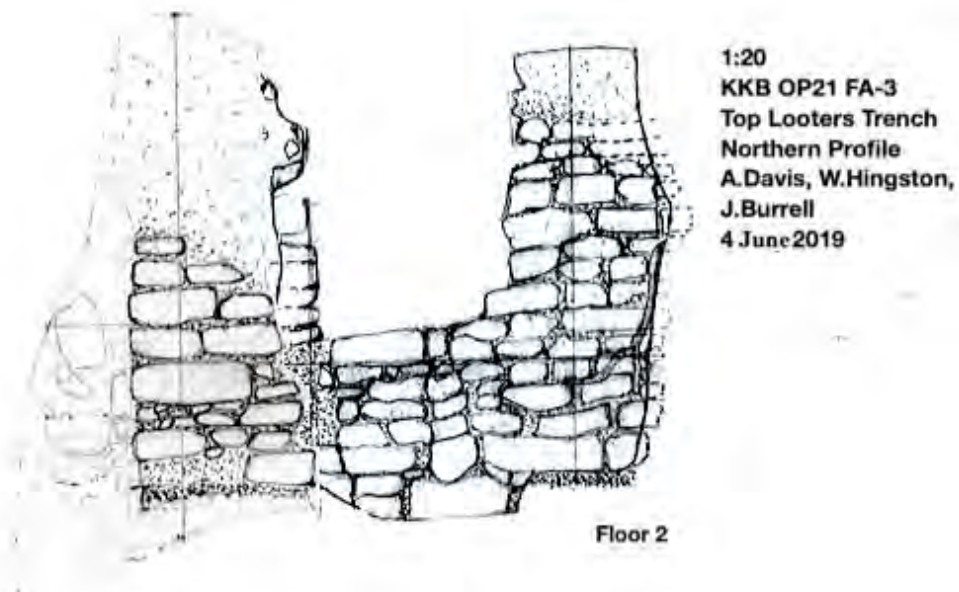


Figure 5.4. A composite drawing of the southern profile of the Str. FA-3 North Looters' Trench, including the northern wall and pillar.

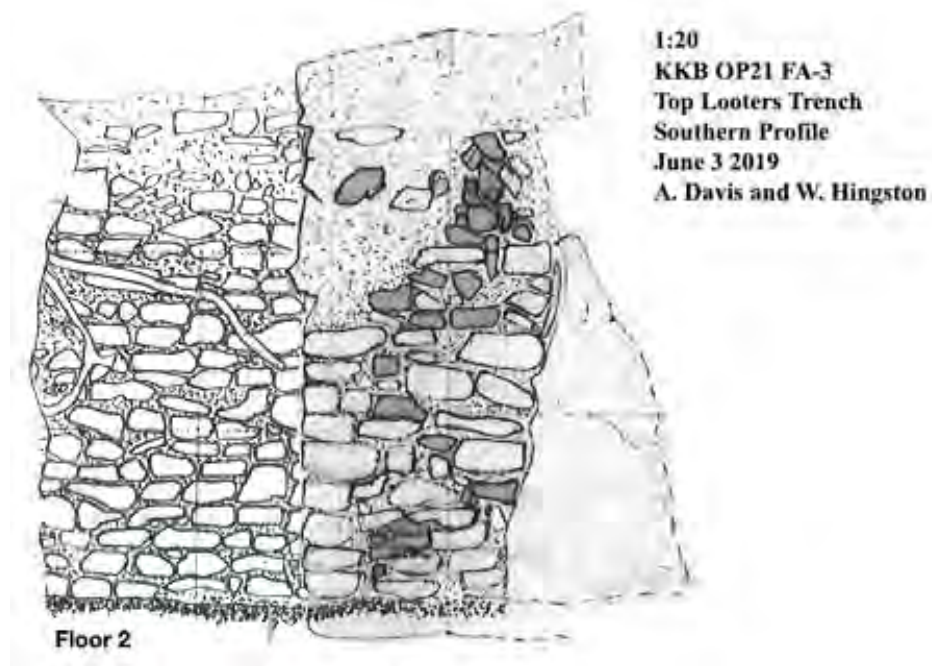


Figure 5.5. A composite drawing of the southern profile of the Str. FA-3 Top Looters' Trench, including the southern wall as well as the pillar.

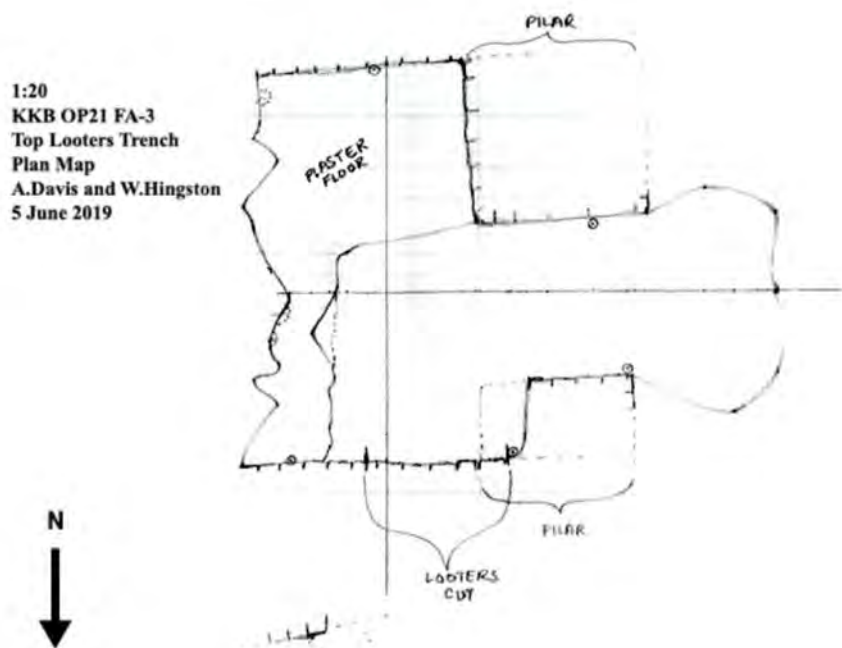


Figure 5.6. A plan map of the Str. FA-3 North Looters' Trench.

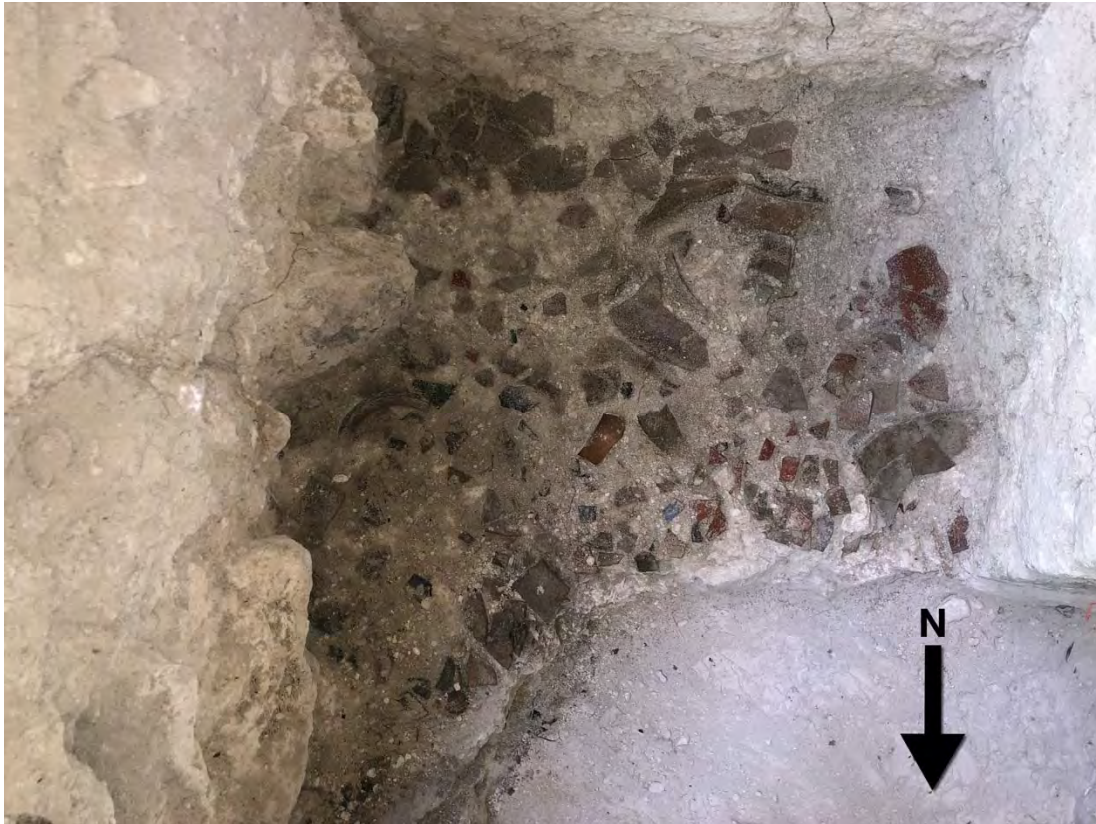


Figure 5.7. A photo showing the ceramics covering Floor 2 found in the Str. FA-3 North Looters' Trench.

Level 3

Level 3 was collapse that ended at a floor that had not been visible in the walls of the looters' trench. It was 28 cm above the floor visible in the looters' trench. The floor was not visible in the southern part of the unit.

Level 4

This was the fill between the two floors. This level consisted mostly of dense limestone rocks.

Level 5

This level consisted of the large ceramics that laid on top of the second floor that was originally visible in the sides of the looters' trench.

SUMMARY

The purpose of the 2019 investigations into Str. FA-3 was to clean and map both the South and North Looters' Trenches. The maps and drawings were produced to record the exposed features as well as to help understand how the structure was built.

There are six floors visible in the South Looters' Trench eastern profile, with Floor 3 possibly being a construction floor. Although the eastern profile of the South Looters' Trench was fully mapped, it is important to note that, since we did not excavate any farther than the looters did, it is impossible to know how many earlier construction phases FA-3 has.

Floor 2 of the North Looters' Trench (on which the ceramics were found) seems to be the same as Floor 1 visible in the South Looters' Trench. This was based on measurements taken from an arbitrary datum. The pillars that are visible in the drawings of the North Looters' Trench were put in after the room was built, as the southern and northern walls of the room clearly run behind them. No doorway was visible in the room. It is likely to be found in future excavations into the structure.

Analysis of ceramics from the deposit on Floor 2 in the Top Looters' Trench, the different levels visible in the eastern profile of the South Looters' Trench, and the surface of the building shows that the majority of the ceramics date to the Early Classic and early Late Classic periods. The South Looters' Trench in the lower part of the building produced Early Classic sherds, whereas, the Top Looters' Trench in the upper portion of the building had a mix of Early Classic and early Late Classic sherds. These finds accord well with the initial collection of sherds from these looters' trenches in 2017.

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SURVEY OF SETTLEMENT ZONE H AT KA’KABISH
BY
ALEC MCLELLAN

The author and a team of archaeologists surveyed a small milpa field 650 m northwest of Str. D-4 at Ka’kabish. This field, was on the southside of the road that runs from San Filipe to Indian Church Villiage, bisecting Ka’kabish in the process. During the course of the survey we discovered seven platform structures, oriented roughly north-south and east-west, in an area covering ca. 0.09 sq. km.

Diagnostic materials (ceramic, lithic, and faunal) were collected from the debris field of each platform. Evidence from ceramics collected on the surface of the platforms suggests that while the area was occupied by the Early Classic (AD 250–600), the majority of occupation may date to the Terminal Classic (AD 800–1000) to Early Postclassic periods (AD 900–1250). A single artefact also may date to the Colonial period (AD 1500–1700). Equally, interesting are several large fragments of marine shell and a small pendant; these objects may indicate evidence of craft specialization in the residential area immediately adjacent to the monumental temple structures of Ka’kabish.

METHODS

The field was originally named after the landowner (and referred to in original notes as F2-SW), but to respect the owners it has been renamed Settlement Zone H. After obtaining permission from the landowner, archaeologists walked in 5-meter intervals across the open and ploughed agricultural field. The field was mostly cleared of vegetation, except for some patches of grass, which reduced visibility by 30–40%. Figures 6.1 and 6.2 show two platforms (Str. H4 and Str. H3) in Settlement Zone H. The field had been ploughed previously using mechanical equipment and, like many of the adjacent fields, likely had been initially cleared using bulldozers dragging large chains across the surface to uproot trees. .

RESULTS

Archaeologists discovered 7 structures, 4 of which were orthogonally arranged in groups of 2 (referred to as a Type 2 arrangement) (Ashmore *et al.* 1994: 265) (Figure 6.3). The remaining three structures were isolated and under 2 m tall (Type 1). The average size of structures in Settlement Zone H ($N = 59.79$ sq m) is relatively low compared to other areas of settlement between Ka’kabish and Lamanai (Table 1) (see McLellan 2020).



Figure 6.1. Str. H4 in Settlement Zone H.



Figure 6.2. Str. H3 in Settlement Zone H.

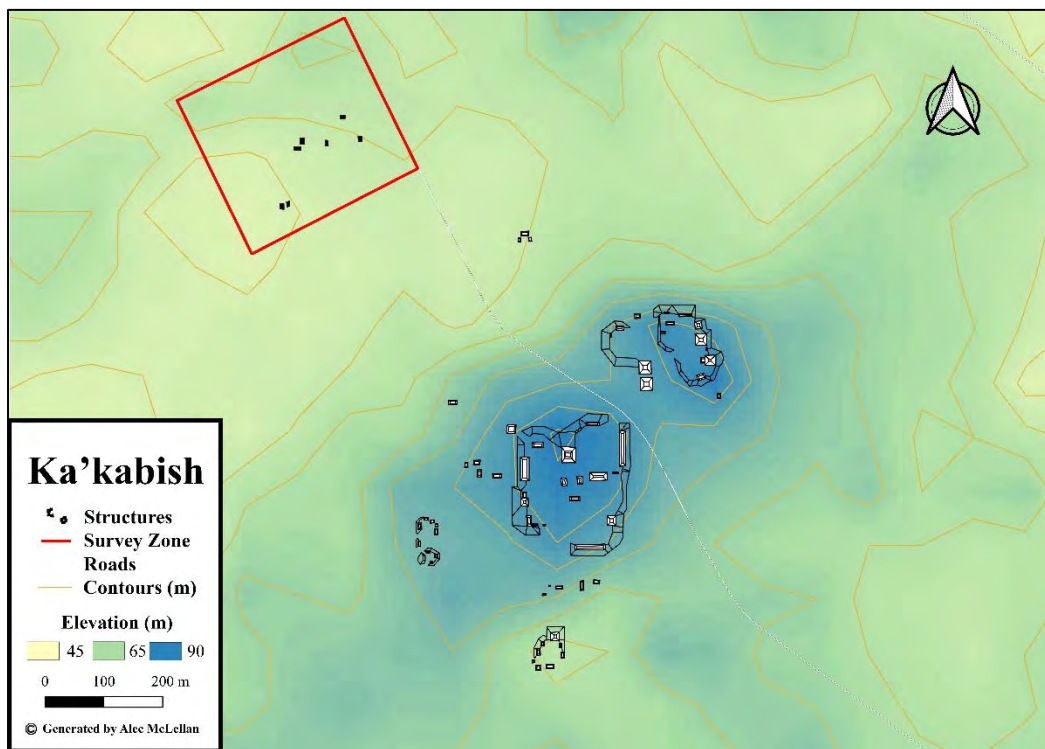


Figure 6.3. Map of Ka'kabish and Settlement Zone H (highlighted in red).

Table 6.1. Survey perimeter, survey area, and number of structures at Settlement Zone H.

SETTLEMENT ZONE H			
SURVEY PERIMETER	1200 m	1.2 km	
SURVEY AREA	90,000 sq. m	0.090 sq. km	9 ha
NUMBER OF STR.	7		
AVERAGE SIZE OF STR.	59.79 sq. m		

Ceramics

Dr. Kerry Sagebiel analyzed the ceramics collected in Settlement Zone H. In total, the team recovered 207 sherds. Figure 6.4 shows the number of sherds (diagnostic and undiagnostic) found at each structure. Table 6.2 shows the most common types of ceramics found in Settlement Zone H. Diagnostic ceramic suggests the area was occupied by the Early Classic (AD 250–600). Most of the sherds are dated to the Terminal Classic (AD 800–1000) to Early Postclassic periods (AD 900–1250). A single, eroded rim, with a tall neck and red paste, may date to the Colonial period (AD 1500–1700).

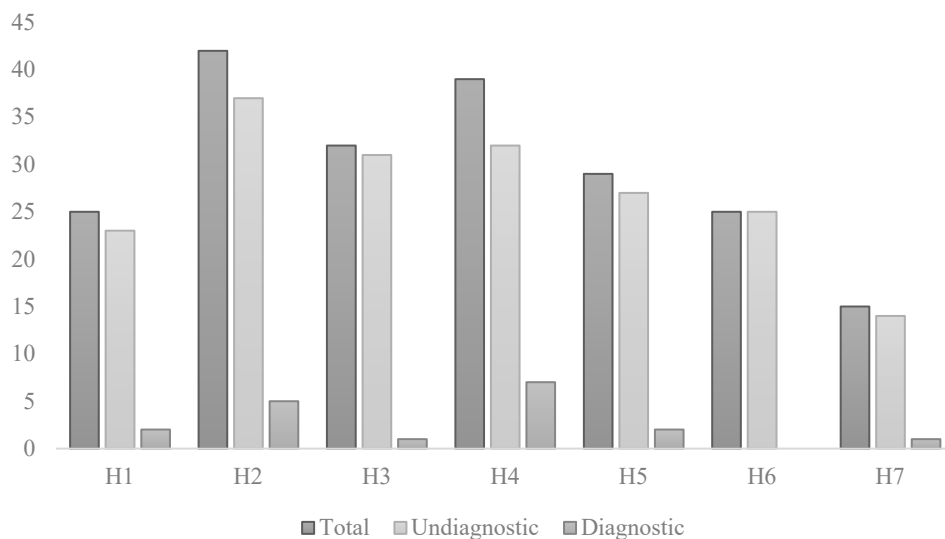


Figure 6.4. Number of sherds at structures in Settlement Zone H.

Table 6.2. Common types of ceramics in Settlement Zone H.

SETTLEMENT ZONE H	DIAGNOSTIC SHERDS						
TYPES*	A	B	C	D	E	F	G
NUMBER	4	2	1	1	1	1	6
PERCENTAGE	25%	13%	6%	6%	6%	6%	38%
Total	16						
100%	100%						

*A = Dumbcane Striated, B = Aguila Orange, C= Alexanders Unslipped, D = Lemonal Cream, E = Red Neck Mother, F = Tinaja Red, G = Other

Lithics

The lithic assemblage from Settlement Zone H is similar to many other residential areas in the Ka'kabish-Lamanai corridor and is mostly comprised of manos, metates, and formal chipped stone tools, such as handaxes and bifaces.

Fauna

It is extremely rare to find faunal materials in surface collections of domestic structures between Ka'kabish and Lamanai (McLellan 2020). At Str. H7, we recovered a shell pendant (Figure 6.5) and several unworked fragments of shell in the debris field of the structure. It is possible that this structure represents the first evidence of residential craft specialisation at Ka'kabish.



Figure 6.5. Shell pendant found at Str. H7.

Discussion

Because of low visibility in some areas of Settlement Zone H, it is recommended that the zone be resurveyed at a later date when there is less vegetation coverage. It is likely that more structures will be identified in the survey zone. The structures in Settlement Zone H are comparatively small (59.79 sq. m.). Settlement Zone A, which is ca. 550 m southeast of Ka'kabish (a comparable distance to Settlement Zone H), has an average structure size of 124.58 sq. m. In the Lamanai-Ka'kabish corridor, structures are generally smaller farther from the monumental architecture of the major centres (McLellan 2020). The relationship between distance from the centre and structure size suggests that settlement does not extend much farther north of Ka'kabish.

CONCLUSION

While previous ad hoc investigations of the area to the north-west of Ka'kabish have occurred in the past as the forest has been cleared, these inspections have focused solely on the identification of larger cleared courtyards (Groups K, L, and M). This is the first opportunity we have had to apply systematic survey techniques on a ploughed field in this area. For the most part the results were unsurprising in that residential occupation spanning the Late Formative through the Early Post-Classic was present throughout the field. This finding corresponds with previous results noted in surveys of the areas to the east and south east of Ka'kabish (McLellan 2012, 2020; McLellan and Haines 2013). What was surprising was the presence of craft production using marine shell, and future research, work should continue east and west of Settlement Zone H to look for more evidence of craft specialisation.

Equally surprising was the suggestion that the area may have had Colonial period occupation. Previously, Colonial period material outside of Lamanai has only been found around the site of Coco Chan (see Chapter 7). The material discovered in Settlement Zone H, along with ephemeral occupation also detected on Structure C-3 in the Hingston group this year (see Chapter 4), suggests that the occupation history of Ka'kabish is even longer than previously considered. More concerted efforts to survey west and north-west of the site is clearly warranted.

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THE PRECOLUMBIAN MAYA CENTRE OF COCO CHAN
BY
ALEC MCLELLAN

The author and other archaeologists surveyed a field—named Settlement Zone G—midway between Lamanai and Ka’kabish in an area northwest of the minor civic-ceremonial centre of Coco Chan. The team discovered 49 platform structures, oriented roughly north-south and east-west, in an area covering ca. 0.675 sq. km. Diagnostic materials (ceramic, lithic, and faunal) were collected from the debris field on the surface of each platform. Preliminary analysis of the material suggests occupation in the area spanned the Late Formative (400 BC–AD 300) through to the Early Post-Classic period (AD 900–1250), with the majority of the material dated to the Terminal (AD 800–1000) and Early Post-Classic periods. Several structures also were found with material dated to the Colonial period.

METHODS

After obtaining permission from the landowner, archaeologists walked in 5-meter intervals across the open and ploughed agricultural field. The field was originally named after the landowner, but to respect the owners it has been renamed to Settlement Zone G. The survey zone was only recently cleared (within six months) of forest and low-lying vegetation. Prior to the survey, the area was ploughed and weathered, providing optimal visibility. Figures 7.1 and 7.2 show a number of residential platform structures arranged in *plazuela* groups in Settlement Zone G.

RESULTS

Most of the structures are found in the northeastern and southeastern portions of the settlement zone closer to the monumental architecture of Coco Chan (Figure 7.3). The average size of the structures (85.2 sq. m) in Settlement Zone G is similar to many other areas of settlement between Ka’kabish and Lamanai (McLellan 2020). Most of the structures are comprised of Type 3 arrangements: 2–4 mounds orthogonally arranged; all less than 2 m tall (Ashmore *et al.* 1994: 265). Based on the absence of structures in the northwestern and southwestern portions of the field—and the absence of structures in Settlement Zone C (north of Settlement Zone G) (McLellan 2020)—it is likely this represents the northern and western edges of settlement at Coco Chan.



Figure 7.1. Three platform structures (Str. G22, G23, and G24) in Settlement Zone G.



Figure 7.2. Multiple platform structures in Settlement Zone G.

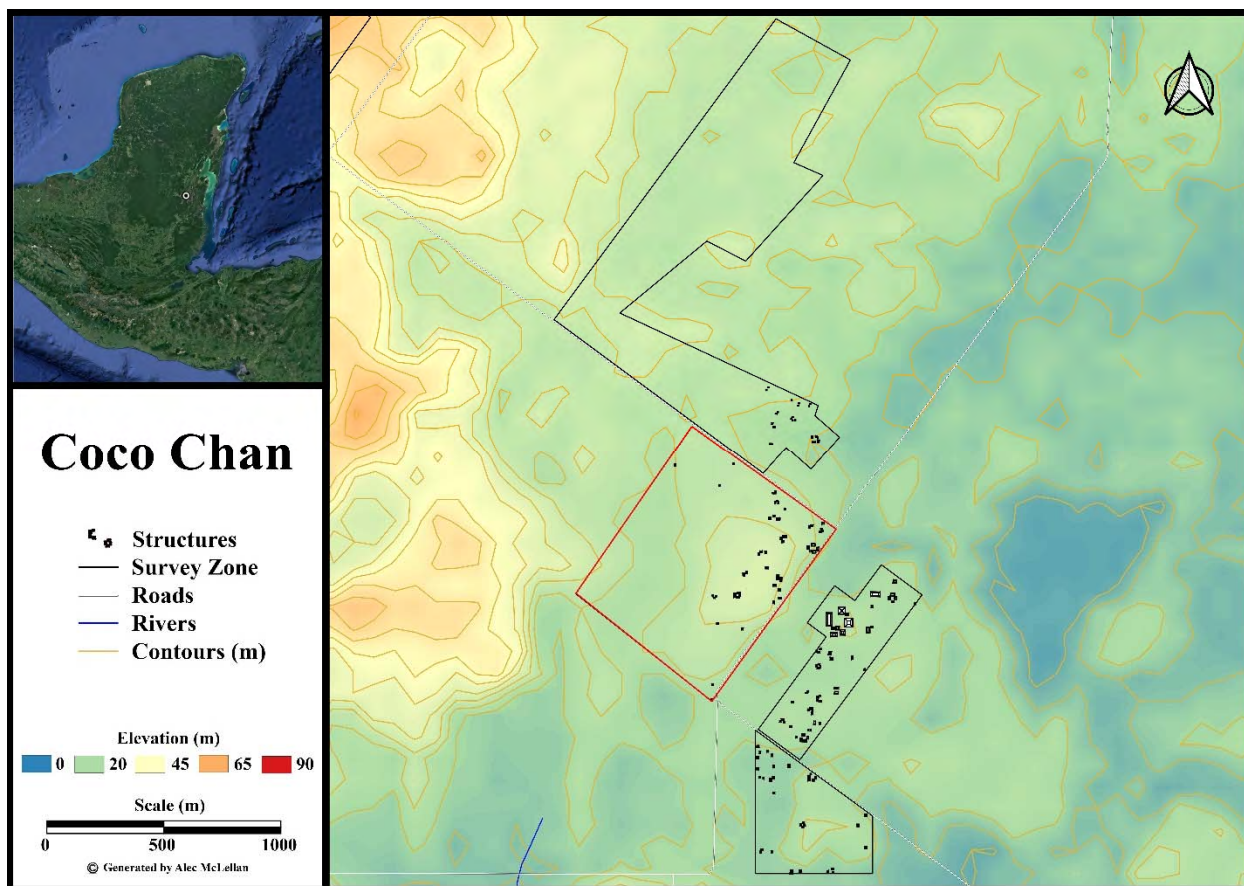


Figure 7.3. Map of the civic-ceremonial centre of Coco Chan (Settlement Zone G is highlighted in red).

Table 7.1. Survey perimeter, survey area, and number of structures at Settlement Zone G.

SETTLEMENT ZONE G			
SURVEY PERIMETER	1200 m	1.2 km	
SURVEY AREA	675,000 sq. m	0.675 sq. km	67.5 ha
NUMBER OF STR.	49		
AVERAGE SIZE OF STR.	85.2 sq. m		

Ceramics

Dr. Kerry Sagebiel analyzed the ceramics collected in Settlement Zone G. In total, the team recovered 523 sherds. Figure 7.4 shows the number of sherds (diagnostic and undiagnostic) found at each structure. Table 7.2 shows the most common types of ceramics found in Settlement Zone G.

Ceramic materials suggest the area was occupied in the Late Formative period (400 BC–AD 300). There is evidence of continued occupation in the Early Classic (AD 250–600) and Late Classic (AD 600–900) periods. Most of the sherds are dated to the Terminal Classic (AD 800–1000) and Early Post-Classic periods (AD 900–1250). There are fewer structures with evidence of occupation in the Late Post-Classic period. Settlement Zone G has several structures (N = 3) dated to the Colonial period in the Lamanai-Ka’kabish corridor.

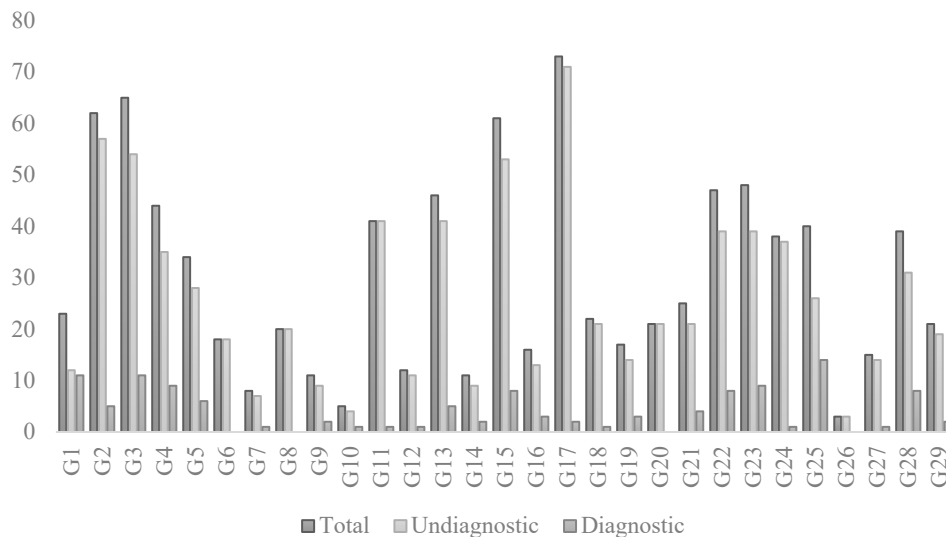


Figure 7.4. Number of sherds at Structures 1–29 in Settlement Zone G.

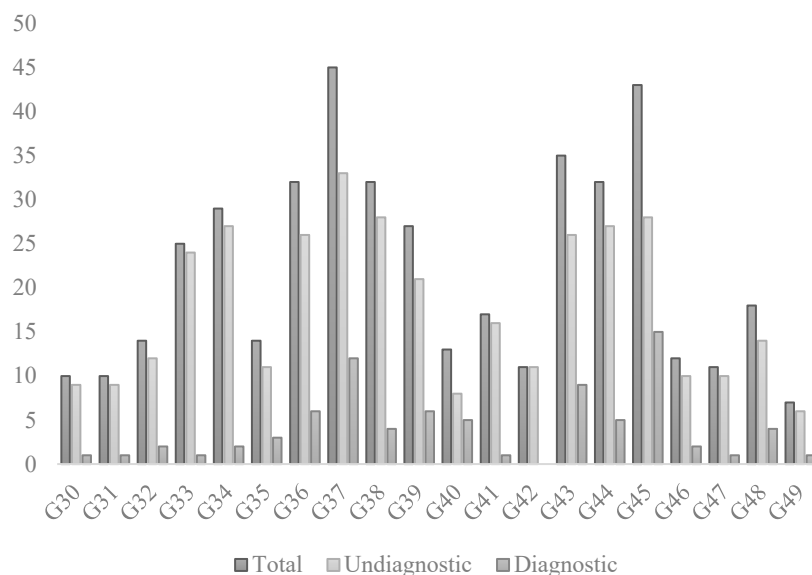


Figure 7.5. Number of sherds at Structures 30–49 in Settlement Zone G.

Table 7.2. Common types of ceramics in Settlement Zone G.

SETTLEMENT ZONE G	DIAGNOSTIC SHERDS							
TYPES*	A	B	C	D	E	F	G	Total
NUMBER	40	25	18	18	11	8	80	200
PERCENTAGE	20%	13%	9%	8%	6%	4%	40%	100%

*A = Lamanai Orange, B = Aguila Orange, C = Dumbcane Striated, D = Red Neck Mother, E = Alexanders Unslipped, F = Sierra Red, G = Other

Lithics

The lithic assemblage from Settlement Zone G is similar to many other residential areas in the Ka'kabish-Lamanai corridor and is mostly comprised of manos, metates, and formal chipped stone tools, such as handaxes and bifaces.

Fauna

Similar to many other areas of settlement between Ka'kabish and Lamanai, we did not identify any faunal materials in Settlement Zone G.

Discussion

One of the most interesting features of Settlement Zone G—and the areas surrounding Coco Chan—is the distribution of Colonial Period settlement. Figure 7.6 shows a map of the structures that have been dated to the Colonial Period (including Settlement Zone C, D, E, and F) (McLellan 2020). Lamanai periodically served as a *congregación* or *reducción* centre under friars Bartolomé de Fuensalida and Juan de Orbita. The clergy and bureaucrats of Spain forced the resettlement of thousands of Maya families from seemingly scattered and random domestic arrangements to orderly and organized spaces (literally “congregating” populations of “reduced” natives). The presence of Spanish Colonial (1450–1700) artifacts so close to Lamanai may show that the Maya resisted Spanish policies of reduction and continued to live in an area of Spanish control.

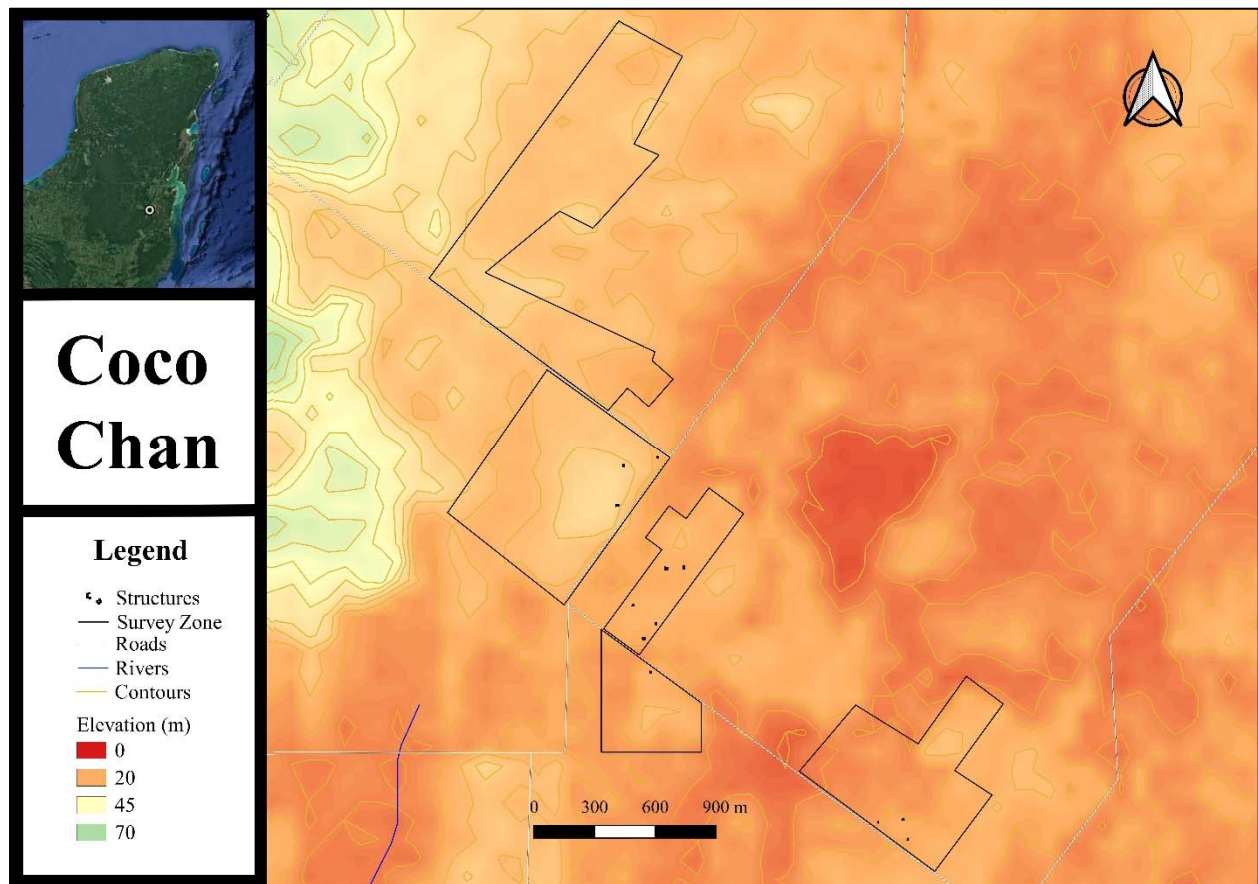


Figure 7.6. Map of Colonial Period occupation surrounding Coco Chan.

CONCLUSIONS

Our investigations at Coco Chan are yielding surprising new results that contrast dramatically with the original interpretation of the area. Initially identified by Baker in 1994 as part of a larger survey of the area by the Maya Research Program, this initial survey yielded “no evidence whatsoever for [Post-Classic] occupation” (Baker 1995: 117), and that the settlement area (including Coco Chan) was abandoned during the Late Classic period. This assumption was based on an analysis of only 186 sherds collected from a total of 25 mounds scattered between Ka’kabish and Lamanai.

Work in 2019 focused largely on the Settlement Zone G to the north-west of Coco Chan. Here 49 mounds were mapped and 523 sherds were collected. While this new sample indicated occupation in from the Late Formative period (400 BC–AD 300) through the Early Classic (AD 250–600) and into the Late Classic (AD 600–900) periods, we do not see any marked abandonment of the area at this time. Rather we see a possible increase in occupation during the Terminal Classic (AD 800–1000) and Early Post-Classic periods (AD 900–1250) as most of the sherds are dated to these later periods. Although fewer structures yielded evidence of occupation in the Late Post-Classic period, Settlement Zone G has several structures (N = 3) dated to the Colonial period.

As with the findings from Settlement Zone H (see Chapter 6), the discovery of occupation extending into the Terminal and Early Post-Classic periods was not surprising as it mirrors results noted in surveys of the area between Coco Chan and Ka’kabish (McLellan 2012, 2020; McLellan and Haines 2013). However, the presence of Colonial period material on several of the housemounds was unexpected. The possibility that Coco Chan, like Ka’kabish may have a longer history than previously understood, warrants further investigation, and archaeologists should continue to document structures surrounding the civic-ceremonial centre of Coco Chan, especially immediately north and east of the monumental architecture.

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ANALYSIS OF CERAMICS FROM THE KARP 2019 FIELD SEASON

BY

KERRY L. SAGEBIEL

During the 2019 season of the Ka'kabish Archaeological Research Project (KARP), ceramic sherds were recovered from four operations at the site of Ka'kabish and from a survey of Settlement Zone H northwest of Ka'kabish. Sherds were also collected from Settlement Zone G northwest of the site of Coco Chan (located roughly halfway between Ka'kabish and Lamanai) and from looters' trenches at Coco Chan. Operation 7 at Structure D-14 (Str. D-14) was a continuation of previous clearing excavations, the purpose of which was to define the architectural configuration of Str. D-14. Operation 19 at Structure B-2 (Str. B-2) in the Group B/Baker Group included clearing excavations to delineate the walls of the structure and a vertical trench to investigate the occupation sequence of the structure. Operation 20 at the Group C/Hingston Group included excavations into Structures C-1 (Str. C-1), C-2 (Str. C-2), and C-3 (Str. C-3). These excavations were carried out to determine the date of occupation of the structures and to get some insights into the status of the occupants. Operation 21 at Structure FA-3 (Str. FA-3) focused on mapping and recording the two looters' trenches in the structure, while collecting any visible ceramics from the profiles of these trenches. Ceramics were collected from the surface in Settlement Zone H and Settlement Zone G in order to date the occupation of the mapped structures. Ceramics were collected from the looters' trenches at Coco Chan to get preliminary dates for the structures at that unexcavated site.

METHODS

Sherds equal to or greater than the size of a United States quarter (ca. 2.5 cm), as well as smaller sherds with diagnostic features (e.g. decoration, appendages), have been collected from all excavated contexts at Ka'kabish. Some special contexts, particularly the chultuns and problematic deposits (e.g. Operation 8 in the Group D South Plaza), had 100% of sherds collected. Once in the laboratory, bags of sherds were logged into the logbooks with their provenience information and checked that they had correct labels and tags. The sherds were washed with plain water (soaking was avoided) and soft toothbrushes, unless fugitive paint or other decoration was present, in which case, they were left alone or gently dry brushed. They were dried on ¼-inch mesh screen along with their associated bags and tags. Once dry, they were re-bagged with new bags and tags as necessary. The sherds were also labeled (for full discussion of laboratory procedures see Gomer and McCollum 2012). The sherds were then ready to be analyzed.

Analysis followed the type/variety/mode method of analysis (Gifford 1976; Sagebiel 2005; Smith et al. 1960). An initial analysis separated the sherds into proposed types and varieties and was used to date the lots. A second, more-intensive analysis of diagnostic sherds (e.g. rims, bases, handles, painted body sherds) has emphasized attribute analysis, particularly of form and visual paste characteristics. In 2019 these analyses were conducted by the author.

The ceramic complexes were renamed and presented at the Belize Anthropological and Archaeological Symposium in 2014 (Sagebiel and Haines 2014). Updated names and dates were presented at the Belize Archaeological Symposium in 2019 (Haines et al. 2019). The names and dates have been further revised and presented here (Table 8.1). These complexes should be considered working complexes, as they will undoubtedly be revised further in the future.

Table 8.1. Ka'kabish Ceramic Complexes.

COMPLEX	TIME PERIOD	DATES
Mormoops	early Middle Formative	800–600 BC
Noctilio	late Middle Formative	600–400 BC
Rhogeesa	Late/Terminal Formative	400 BC–AD 300
Desmodus	Early Classic	AD 300–600
Lasiurus	Late Classic	AD 600–700/750
Trachops	Terminal Classic	AD 700/750–950/1000
Vampyressa	Early Postclassic	AD 950/1000–1200/1250
Centurio?	Middle Postclassic?	AD 1200/1250–1350?
Molossus	Late Postclassic	AD 1350–1500
Eumops	Terminal Postclassic/Colonial	AD 1500–1700

CERAMICS FROM STR. D-14

Operation 7: Units 1–11

Previous work at Str. D-14 suggests that there is an early component that dates to the Early Classic, given the number and preservation of Early Classic sherds recovered from looters' trenches and limited excavations carried out in 2011 (Table 2) (Dermarker 2011). The work done at Str. D-14 in 2017 was focused on removing overburden to reveal the latest architectural elements of the structure. However, a cache of six Terminal Classic/Early Postclassic vessels was recovered in a looters' trench (Unit 10). And, a depression feature (Unit 9) in front of the structure containing Late Postclassic sherds was excavated as well (Sagebiel 2018).

The ceramics recovered from the overburden in 2019 contained a mix of sherds from nearly all time periods represented at Ka'kabish from the early Middle Formative to the Late Postclassic, only the Terminal Postclassic/Colonial period is missing. The ceramics from these earlier seasons include several comals (which may have been restricted to use in ritual or elite contexts [Masson 2000:180]), many

Terminal Classic/Early Postclassic Lamanai/Zakpah orange chalices on pedestal bases, eroded gouged-incised vase sherds, cream slipped gouged-incised vase sherds, sherds from coarse pink-paste censers of indeterminate form, an animal effigy or whistle, probable Late Postclassic red jars with strap handles, and eroded Terminal Classic pyriform vases.

Operation 7: Units 12, 13, and 14

The overburden removed in 2019 is ceramically consistent with that excavated in previous years. Unit 14 (originally Unit 11) Level 1 consists of many eroded sherds with most of the identifiable sherds dating to the Terminal Classic/Early Postclassic. Notable sherds include an incised vase sherd on coarse yellow paste (Figure 8.1). An additional sherd was found in Level 2 and two more in Unit 12 mix. Although difficult to tell, these may belong to the same vessel. An eroded chalice, a Lamanai/Zakpah orange bowl, and a Lamanai/Zakpah orange jar with exteriorly bolstered rim contribute to the Terminal Classic/Early Postclassic date. Level 2 is similar and has several cross-fits with Level 3. These include a Lamanai/Zakpah orange thin-walled bowl, thick pink-paste sherds that are blackened and likely from a censer, and a Tinaja Red jar with an exteriorly bolstered rim. A possible Martins Incised (Belize Valley Group) vase sherd was also recovered. Level 3 sherds are unremarkable except for those that cross-fit with Level 2.



Figure 8.1. Incised vase sherds from Str. D-14.

Unit 12 was considered mixed and not broken out into levels. Some of the sherds are likely from the same vessels found in Unit 14. These include the eroded incised vase sherds, thick pink-paste censer sherds, Lamanai/Zakpah orange thin bowl sherds, Lamanai/Zakpah orange chalices, and a Lamanai/Zakpah orange bolstered jar rim.

Unit 13 sherds are less well preserved than those in Units 12 and 14, however, they are broadly similar in types and dates. Level 1 has a small sample with Lamanai/Zakpah orange sherds, including a

chalice. Level 2 has the most sherds, but most are eroded. The identifiable sherds include more thick pink-paste censer sherds as well as Late Classic/Terminal Classic sherds like Tinaja Red and Lemonal Cream. Level 3 consists of one Lamanai/Zakpah orange plate sherd, one Lamanai/Zakpah orange bowl rim, and one tall hollow foot that is almost certainly not local (Figure 8.2; see also Ch. 2 Figure 2.6). The paste, form, and slip are all unlike anything yet seen at Ka'kabish. This foot is specular hematite red-on-buff and has a thick striped pattern. The base is broken, and the wall/foot join is intentionally chipped. It is similar to Early Classic vessels at Santa Rita Corozal; however, Arlen Chase says it looks more like Terminal Classic or Postclassic vessels from the Copán area (personal communication 2019).



Figure 8.2. Sherds from Unit 13 Level 3.

Conclusions

The ceramics from Str. D-14 continue to indicate an Early Classic component that is likely followed by a Terminal Classic/Early Postclassic component and/or use (Table 8.2). The cache of vessels and the prevalence of comals, censers, a figurine, chalices, and at least one probable imported sherd indicates that this was likely a structure used by elites and for ceremonial purposes. This use likely extended, at least in a limited way, into the Late Postclassic.

Table 8.2. Ka'kabish Ceramic Complexes.

UNIT	LEVEL	CERAMIC DATE	NO. OF SHERDS	YEAR OF EXCAVATION
vaulted room	construction fill	Early Classic	3	2007
western looters' trench	surface	Early Classic	1	2007
looters' backdirt	looters' backdirt	Early Classic	2	2011
1	1	Terminal Classic/Postclassic	13	2011
1	2	Terminal Classic/Early Postclassic	37	2011
1	3	Terminal Classic/Early Postclassic	213	2011
1	4	Indeterminate	15	2011
2	1	Terminal Classic/Early Postclassic	5	2011
2	2	Late Classic	36	2011
2	3	Terminal Classic/Early Postclassic	68	2011
2	5	Early Classic	7	2011
2	6	Early Classic	6	2011
2	7	Early Classic	5	2011
2	8	Early Classic	5	2011
2	9	Early Classic	7	2011
3	1	Early Classic	11	2017
3	3	Indeterminate	1	2017
4	1	Terminal Classic/Early Postclassic	10	2017
4	2	Terminal Classic/Early Postclassic	73	2017
5	1	Early Classic	3	2017
5	2	Late Classic/Terminal Classic	3	2017
5	3	Terminal Classic/Postclassic	30	2017
6	3	Terminal Classic/Early Postclassic	27	2017
7	2	Indeterminate	7	2017
7	3	Terminal Classic/Early Postclassic	52	2017
8	1	Early Classic	2	2017
8	2	Postclassic/Late Postclassic?	139	2017
8	4	Late Classic/Terminal Classic	4	2017
9	2	Indeterminate	15	2017
9	3 Depression Feature	Late Postclassic	318	2017
10	1	Terminal Classic/Early Postclassic	13	2017
10	2 Cache	Terminal Classic/Early Postclassic	57	2017
10	3	Terminal Classic/Early Postclassic	9	2017
10	Terrace 5	Terminal Classic/Early Postclassic	8	2017

UNIT	LEVEL	CERAMIC DATE	NO. OF SHERDS	YEAR OF EXCAVATION
11	1	Terminal Classic/Early Postclassic	8	2017
11	2	Indeterminate	4	2017
12	mix	Terminal Classic/Early Postclassic	53	2019
13	1	Terminal Classic/Early Postclassic	15	2019
13	2	Late Classic/Terminal Classic	149	2019
13	3	Terminal Classic/Early Postclassic	3	2019
14	1	Terminal Classic/Early Postclassic	92	2019
14	2	Terminal Classic/Early Postclassic	124	2019
14	3	Terminal Classic/Early Postclassic	18	2019

CERAMICS FROM STRUCTURE B-2 IN THE GROUP B/BAKER GROUP

Operation 19: Units 1, 6, 9, and 15

Level 1 in Units 1, 6, 9, and 15 were the humus layer of Str. B-2. The sherds from these levels were highly eroded. Those that could be identified included Late Classic/Terminal Classic jars, like Dumbcane Striated; Terminal Classic/Early Postclassic jars like Red Neck Mother; Postclassic collared jars; and possible Late Postclassic red paste jars with triangular rims.

Level 2 in these units ended either at a plaster floor or the bench and consisted of post-abandonment collapse and infilling. These levels included Late Classic/Terminal Classic types and forms like Cambio Unslipped jars, Dumbcane Striated, Lamanai-style polychrome plates, Lemonal Cream jars, Roaring Creek Red plates, and Vaca Falls Red plates; Terminal Classic/Early Postclassic types and forms like Achote Black and Tinaja Red pyriform vases, Ones Impressed bowls, Cubeta Incised sherds, Water Witch Stamped sherds, Subin Red bowls, Red Neck Mother jars, and eroded chalices and pedestal bases; Postclassic forms like collared jars; and possible Late Postclassic forms like red paste triangular rim jars and coarse black paste bowls and plates. Early Classic and Late/Terminal Formative sherds were also in the mix.

Operation 19: Units 10, 13, 14, and 16

These units were placed around the northern doorway to try and define the northern wall and platform edge. They were only two levels each with relatively few, eroded sherds recovered. Those that are diagnostic include Late Classic/Terminal Classic Dumbcane Striated and Lemonal Cream sherds and a Terminal Classic/Early Postclassic Lamanai-style/Zakpah Orange chalice rim. A couple of Early Classic sherds were also recovered.

Operation 19: Units 11, 12 and 17

These units were placed to clear the top of the bench and to locate the western wall. These units contained many eroded sherds. Diagnostic sherds include Terminal Classic/Early Postclassic types and forms like Red Neck Mother and eroded pedestal bases; Postclassic forms like collared jars; and possible Late Postclassic forms like red paste triangular rim jars and plates. A few Early Classic sherds were also recovered.

Operation 19: Unit 18

Unit 18 merged Units 12 and 17 that were over the bench and consisted of the interior of the bench to the plaster floor of the structure. Within the bench was an extended burial (Burial Str. B-2/1) associated with four highly eroded Terminal Classic vessels (Table 8.3) and two disc-shaped shell beads. Other sherds in the fill include Late Classic/Terminal Classic Dumbcane Striated and Lemonal Cream sherds and Terminal Classic/Early Postclassic Red Neck Mother and Postclassic collared jars. The four Postclassic sherds (out of total of 527) are likely from the upper part of the bench and/or were accidentally mixed in.

Table 8.3. Vessels from Burial Str. B-2/1.

VESSEL NO.	TYPE	FORM	DIAMETER CM	HEIGHT CM	DESCRIPTION
1	Vaca Falls Red	Plate	44	8	Outcurved with slightly everted rim and round lip; interior is slipped red, exterior is unslipped; interior break with slight exterior ridge; ring/pedestal base of 1.3 cm height
2	Tinaja Red	Vase	7	Indeterminate	Pyriform vase with direct, slightly thickened rim and beveled-in lip; exterior and interior are slipped red; pedestal base of 3.1 cm height
3	Achote Black	Bowl	16	11.5	Bowl with vertical sides, direct rim, and pointed lip; slipped black on interior and exterior; flattened base with round corners
4	Carro Modeled	Vase	9	Indeterminate	Vase with vertical sides and small exteriorly bolstered rim; a series of modeled wide, low horizontal bands extends around the exterior

Operation 19: Unit 19

This unit was a trench placed over Units 8 and 15 along the midline of the platform. Level 1 contains Late Classic/Terminal Classic types like Dumbcane Striated and Tinaja Red. In Levels 2 and 3 at least four, and possibly five, sets of human remains were recovered. Burials Str. B-2/3, Str. B-2/4, and Str. B-2/5

were somewhat commingled. Burial Str. B-2/4 was located immediately beneath Burial Str. B-2/3 and Burial Str. B-2/5 was originally thought to be part of Burial Str. B-2/4. Only the leg bones of the latter burial were excavated in 2020. All the vessels are fairly eroded and were highly fragmented when uncovered. In the field, some were thought to be more than one vessel. Upon reconstruction in the lab, some “vessels” were combined into a single vessel and a few additional partial vessels were recognized. In type and form, the burial vessels are more typical of the Late Classic than the Terminal Classic.

The reconstructible vessels were primarily associated with Burial Str. B-2/3 (Table 8.4). Two lip-to-lip plates (Vaca Falls Red and Lamanai-style polychrome) and an Achote Black bowl were located at the feet of Burial Str. B-2/3. A Lamanai-style polychrome plate was inverted and placed over the skull (Figure 8.3) and a second Lamanai-style polychrome plate was located nearby. A Tinaja Red bowl was associated with the Burial Str. B-2/2 cranium and other skeletal remains identified in the lab and labeled as Burial Str. B-2/6.

Table 8.4. Vessels from Burials Str. B-2/3, Str. B-2/2, and Str. B-2/6.

BURIAL NO.	VESSEL NO.	TYPE	FORM	DIAMETER CM	HEIGHT CM	DESCRIPTION
Str. B-2/3	1	Achote Black	Bowl	16	9.2	Slightly outflared bowl with direct rim and beveled-in lip, interior and exterior slipped black (mottled), round base
Str. B-2/3	2	Vaca Falls Red	Plate	36	6	Lip-to-lip with Vessel 8 at the feet of Burial Str. B-2/3; Outcurved plate with slightly everted rim and round lip, interior and exterior slipped red with rootlet marking, interior/exterior angle/break, short ring base, 2 mend holes
Str. B-2/3	3	Lamanai-style polychrome	Dish	47	11	Inverted over the head of Burial Str. B-2/3; Round dish with direct rim and square lip; interior is red-and-black on orange with a design around the rim and a flower or quincunx design in the centre; exterior is unslipped; small possible kill hole
Str. B-2/3	8	Lamanai-style polychrome	Dish	31	7.1	Lip-to-lip with Vessel 2 at the feet of Burial Str B-2/3; Round dish with direct rim and pointed lip; interior is red-and-black on orange with a design around the rim and in the centre; exterior is unslipped;

BURIAL NO.	VESSEL NO.	TYPE	FORM	DIAMETER CM	HEIGHT CM	DESCRIPTION
						slightly flat base; probable kill hole
Str. B-2/3	9	Lamanai-style polychrome	Dish	25	7	Outflared dish with direct rim and beveled-out lip, traces of black and red on the interior, exterior is unslipped, round base
Str. B-2/2 and Str. B-2/6	Concentration 3	Tinaja Red	Bowl	30	12	Round bowl with direct rim and round lip, interior and exterior slipped red, round base



Figure 8.3. Burial Str. B-2/3 Vessel 3 Lamanai-style polychrome plate.

Operation 19: Units 2, 3, 4, 5, 7, and 9

Units 2 and 4 were placed on the southeastern corner of the structure platform. Level 1 in both units contains Late Classic/Terminal Classic types like Cambio Unslipped jars, Late Classic/Early Postclassic types like Red Neck Mother jars, and possible Late Postclassic red paste jars. Mixed in are Early Classic and Formative sherds. Unit 2 Level 2 contains mostly eroded sherds with one Late Classic/Terminal Classic Dumbcane Striated jar. Unit 4 Level 2 contains the same Late Classic through Postclassic types as

the levels just described. However, Level 3 was a mix of Late Classic/Terminal Classic, Early Classic, and Late Formative sherds and Level 4 contains only a small sample of Early Classic material.

Units 3 and 5 were placed at the southwestern corner of the platform. Unit 7 was then added to the east to continue defining the edge of the platform and the platform floor. Level 1 in these units contains highly eroded ceramics. The sherds include Late Classic/Terminal Classic types like Dumbcane Striated, Cambio Unslipped, Achote Black, Lemonal Cream, and Lamanai-style polychrome; Terminal Classic/Early Postclassic Red Neck Mother jars; and Postclassic collared rim jars. Unit 3 Level 2 contains Dumbcane Striated and a Late Postclassic torch/parentheses jar rim as well as Late Formative types like Sierra Red and Puletan Red-and-unslipped. A late Middle Formative Joventud Red bottle rim is also in this collection. Level 3 consists mostly of eroded sherds with a Late Classic/Terminal Classic Subin Red bowl rim. Unit 5 Level 2 contains Late Classic/Terminal Classic Cambio Unslipped and Tinaja Red jars and a Postclassic collared rim jar. Unit 7 Levels 2 and 3 are mostly eroded with a few Late Classic/Terminal Classic types such as Dumbcane Striated with a few Early Classic sherds.

Unit 8 continued adjacent to Unit 7 to the east to the midline of the structure and, in the process, uncovered an obsidian blade cache. It also encountered a buried platform edge on the south where excavations were halted for the season. Level 1 contains Late Classic to Postclassic types and forms such as Dumbcane Striated, Subin Red, a pedestal base, a comal, a large basin, and a collared rim jar. Levels 2 and 3 contain mostly eroded sherds and Late Classic to Early Postclassic types such as Cambio Unslipped, Lemonal Cream, Dumbcane Striated, and Red Neck Mother; and Postclassic collared jars and red paste jars and plates. Early Classic and Formative sherds are mixed in as well.

Conclusions

Most of what was recovered in Str. B-2 excavations was from collapse and consists of sherds dating mostly to the Terminal Classic and Early Postclassic (Table 8.5). Sherds dating to the undifferentiated Postclassic and as late as the Late Postclassic suggest some occupation through that period. No Terminal Postclassic/Colonial era ceramics were recovered, as in the nearby Group C/Hingston Group, suggesting the Baker Group was not utilized during that time. The admixture of Early Classic and Late Formative ceramics in a few of the lower levels suggest that earlier platforms, such as the one encountered in Unit 8, may date to these earlier time periods.

The burials in the platform of Str. B-2 (Unit 19) may date to the end of the Late Classic Lasiurus ceramic phase (ca. AD 750) because of the presence of Lamanai-style polychrome plates and relatively plain Tinaja Red and Achote Black bowls, although the Vaca Falls Red plate is more typical of the Terminal Classic. The bench burial (Unit 18) likely dates to the Terminal Classic Trachops phase (AD

750–950/1000) because of the lack of polychromes and the presence of a Vaca Falls Red plate, a Tinaja Red pedestal base vase, and a Carro Modeled vase. These are more typical of the Terminal Classic.

Table 8.5. Ceramics from Group B/Baker Group.

UNIT	LEVEL	CERAMIC DATE	NO. OF SHERDS
Surface	Surface	Terminal Classic/Early Postclassic	21
1	1	Terminal Classic/Early Postclassic	32
1	2 Feature 2	Terminal Classic/Early Postclassic	21
1	2	Terminal Classic/Early Postclassic, Postclassic	695
1	7	Late Classic	23
2	1	Terminal Classic/Early Postclassic	76
2	2	Late Classic/Terminal Classic	70
3	1	Indeterminate	5
3	2	Late Postclassic	231
3	3	Late Classic/Terminal Classic	53
4	1	Terminal Classic/Early Postclassic, Postclassic	135
4	2	Terminal Classic/Early Postclassic, Postclassic	94
4	3	Late Classic/Terminal Classic	23
4	4	Early Classic	19
5	1	Terminal Classic/Early Postclassic, Postclassic	174
5	2	Terminal Classic/Early Postclassic	45
6	1	Terminal Classic/Early Postclassic, Postclassic	99
6	2	Terminal Classic/Early Postclassic, Postclassic	310
7	1	Terminal Classic/Early Postclassic	246
7	2	Late Classic	96
7	3	Late Classic/Terminal Classic	114
8	1	Terminal Classic/Early Postclassic	160
8	2	Late/Terminal Classic; Postclassic	351
8	3	Terminal Classic/Early Postclassic, Postclassic	183
9	1	Terminal Classic/Early Postclassic	23
9	2	Terminal Classic/Early Postclassic	55
9	3	Terminal Classic/Early Postclassic	45
10	1	Late Classic/Terminal Classic	45
10	2	Late Classic/Terminal Classic	50
11	1	Late Classic	38
11	2	Early Classic	62
11	3	Indeterminate	52
12	1	Postclassic	21
12	2	Postclassic	48
13	1	Indeterminate	5

UNIT	LEVEL	CERAMIC DATE	NO. OF SHERDS
13	2	Indeterminate	5
14	1	Indeterminate	1
14	2	Early Classic	48
15	1	Terminal Classic/Postclassic	83
15	2	Terminal Classic/Early Postclassic, Postclassic	7003
16	1	Indeterminate	8
16	2	Terminal Classic/Early Postclassic	59
17	1	Indeterminate	10
17	2	Terminal Classic/Early Postclassic	151
18	1	Terminal Classic/Early Postclassic	527
19	1	Late/Terminal Classic	56
19	2	Late/Terminal Classic	226
19	3	Late/Terminal Classic	466

CERAMICS FROM GROUP C/HINGSTON GROUP

Structure C-3

Operation 20: Units 1, 2, 3, and 4

Units 1, 2, and 4 were adjacent to one another on Str. C-3. The humus levels (Level 1) included one Terminal Postclassic/Colonial bowl rim in Unit 1. Other likely Late Postclassic sherds included red bowl and jar sherds and a black bowl rim. A Postclassic colander censer sherd was found in Unit 2. The humus layers, however, contained a large quantity of Late Classic sherds as well as Late Formative sherds. Level 2 in these units contained similar sherds with another Terminal Postclassic/Colonial bowl rim in Unit 2 and Late Postclassic jar bodies in Unit 1.

The lower part of Unit 2 Level 2 and Level 3 was building fill. Level 2 contained Late Classic sherds, including a couple of partial vessels. These were initially thought to be Early Classic, but after analysis of all the sherds from Str. C-3, it became clear that the majority were likely from early in the Late Classic. This determination was largely based on the forms of the vessels, although the slips are somewhat similar to Early Classic types. These are currently unnamed but consist of orange, red, black, brown, and cream slipped sherds. The forms include round bowls with thick walls, direct rims, and round or square lips, slipped orange on the interior and unslipped on the exterior; red dishes with exterior ridges (a couple with vertical incisions); and unslipped jars with folded rims (like Alexanders Unslipped) or triangular rims (like Zibal Unslipped). Polychromes include a cream-polychrome (Juleki Cream-polychrome?) outcurved dish with a beveled-in lip and glyph-like elements on the interior; a buff-

polychrome (Sibal Buff-polychrome?) round bowl with direct rim, beveled-in lip, with thick red lines and black rim on the interior, and unslipped on the exterior; and a bichrome bowl with vertical sides, round base, direct rim, square lip, with a red/orange exterior and black interior. These levels included Early Classic and Late Formative sherds, nearly all of which are eroded. Unit 1 Levels 5 and 6 were lower building fill. The sherds in them were very similar to those in the upper levels.

Unit 2 Level 4 was a partial Late Classic bowl. It is thick-walled, incurved, with a direct rim, and round lip with the interior slipped orange and an unslipped exterior. Unit 2 Levels 5 and 6 were construction fill consisting of the same kinds of ceramics as found in Levels 2, 3, and 4. These included orange and cream jar body sherds, folded rim (Alexanders?) and triangular rim (Zibal?) unslipped and striated jars, a black-on-orange resist sherd (similar to Egoista Resist), a black vase rim with pointed lip, a dark red bowl rim with a beveled-in lip, and a partial orange-slipped bowl. This bowl has a thin slip and is round with a direct rim and square lip.

Unit 4 Level 3 was also construction fill. It contained relatively few sherds, but they are Late Classic. Of note is a red plate ridge with vertical incisions.

At least four partially reconstructible bowls were found in the fill of Str. C-3. None of them appear to be caches. The fill consists of some cut stone and a significant number of flaked and ground stone tools as well as obsidian. It is possible that this fill is from a nearby structure that was torn down, perhaps with the inclusion of *de facto* refuse.

Unit 1 Levels 3 and 4 and Unit 3 were excavated outside the structure. Unit 1 Level 4 was part of a problematic deposit that was further excavated as Unit 3. Many of the sherds in this level are eroded, including a partial round bowl with a direct rim and square lip. Other sherds included red jar and plate sherds and an unslipped folded rim jar.

Unit 3 was excavated outside the structure to reveal more of the problematic deposit located in Unit 1 Levels 3 and 4. The Level 1 humus layer had a likely Late Postclassic red jar with a strap handle and a possible Postclassic gouged-incised sherd of fine pink paste. Level 2 contained a Postclassic colander censer sherd and three Postclassic collared jar rims. Level 3 contained mostly eroded sherds but included one Terminal Postclassic/Colonial jar rim and a Terminal Classic/Early Postclassic Red Neck Mother jar rim. The bulk of the problematic deposit was in Level 3. It contained mostly eroded Terminal Classic/Early Postclassic sherds, including collared jar rims, chalice rims, pedestal bases, and pyriform vases.

The construction fill of Str. C-3 is Late Classic, possibly toward the earlier end of the Late Classic (ca. AD 600) given the similarity of the sherds to Early Classic types. One of the more interesting aspects of the fill is the inclusion of at least four partially reconstructible bowls indicating that the fill had not undergone many formation processes. The problematic deposit in front of the structure had Terminal

Classic/Early Postclassic sherds that are similar to others from the upper humus layers of the structure. The upper levels of the structure also contained Late Postclassic and Terminal Classic/Colonial sherds indicative of activity on its surface during that time.

Operation 20: Units 5 and 6

Operations 5 and 6 were excavated to define the southwestern corner of Str. C-3. Level 1 of Unit 5 contained a Terminal Classic/Early Postclassic Red Neck Mother jar rim. Level 2 contained a Postclassic collared jar, several Lamanai/Zakpah orange rims, and an eroded pyriform vase rim. Level 3 contained possible Late Postclassic red-paste sherds from a basin, a possible censer, and a torch/parenthesis-rim jar as well as Lamanai/Zakpah orange sherds. Unit 6 Level 1 sherds are eroded. Level 2 included Lamanai/Zakpah orange sherds. Level 3 is mostly eroded with one Late Formative sherd. Level 4 contained a Red Neck Mother sherd. All the sherds from this exterior corner are similar to the sherds found in Unit 3 on the front of Str. C-3 and from the surface of the structure indicating continued use through the Terminal Classic to Late Postclassic.

Structure C-2

Operation 20: Unit 7

Unit 7 was placed in the centre of Str. C-2. Unit 7 Level 2 contained a highly disintegrated burial (Burial Str. C2/1). The burial was flexed with a plate and a carved animal head as offerings. Although too eroded to be certain, it is likely that the partially reconstructible vessel found near the head of the individual is a Late Classic “Lamanai-style” polychrome plate. It is a slightly incurved dish with a direct rim, round lip, and interior break with some red slip still visible. Other sherds include a Late Classic orange bowl rim and an eroded black bowl rim.

Level 3 contained a second burial (Burial Str. C-2/2), also highly disintegrated and likely flexed. Two likely Lamanai-style polychrome plates were found near the head. Both are the same form as the plate described above. Late Classic orange sherds were also found in this level.

Levels 4 and 5 were each between plaster floors. They contained relatively few sherds dating to the Late Classic and Early Classic. Level 6 was a degraded plaster floor containing Late Classic red, orange, and black sherds. Level 7 was the original ground surface and had Late Classic orange as well as Early Classic, Terminal Formative, and a possible Late Formative Mars Orange sherd.

Structure C-1

Operation 20: Unit 8

Unit 8 was placed in Str. C-1 near the northeastern corner of the structure. Burial Str. C-1/1 was found in this level. One, and possibly two, plates were associated with this burial. At least one is possibly an eroded Lamanai-style polychrome plate. The second one may be a Late Classic orange plate (although it, too, could have been polychrome). Both are highly eroded and fragmented. A folded rim jar (Alexanders?) and a triangular rim jar (Zibal?) were also found in this level.

Level 2 contained a few sherds from the vessels mentioned above. It also contained a fairly large number of Late Formative sherds, including a Sierra Red dish and an eroded Formative cup as well as a late Middle Formative Joventud Red sherd. Level 3 was similar with Late Classic red and orange sherds and Sierra Red and Joventud Red sherds. Both levels were structure fill.

Level 4 was also structure fill and contained Burial Str. C-1/2. A Late Classic orange (or polychrome?) plate may have been associated with this burial but is too highly eroded to be definitive. Other sherds include a Terminal Formative/Early Classic Puletan Red-and-unslipped jar and a Late Formative Sierra Red jar. Level 5 continued to bedrock with only a few sherds, including more Puletan Red-and-unslipped jar sherds.

Conclusions

Group C/Hingston Group is the only group excavated so far at Ka'kabish that has ceramic evidence for construction and occupation in the Late Classic (ca. AD 600–700/750). The group likely dates to the early part of the Late Classic given the similarity of the ceramics to Early Classic types. The burials in Strs. C-1 and C-2 are very similar in that they contained highly eroded and fragmented Late Classic plates as offerings, some of which may have been over or underneath the heads of the individuals. It is possible that all these plates were Lamanai-style polychromes, but they are so eroded it is difficult to tell; some may have been monochrome red or orange. Unlike Str. C-3, there was no ceramic evidence of use or occupation of Strs. C-1 and C-2 after the Late Classic (Table 6).

Str. C-3 also was built and occupied in the Late Classic. One of the more interesting aspects of the fill is the inclusion of at least four partially reconstructible bowls that were likely inadvertently added as part of the fill. The presence of these partial bowls, cut stone, ground stone, chipped stone, and obsidian artifacts suggests that the remains of a nearby structure and associated *de facto* refuse were used as fill for Str. C-3. Unlike Strs. C-1 and C-2, Str. C-3 has evidence of occupation during the Terminal Classic/Early Postclassic, Late Postclassic, and Terminal Classic/Colonial periods with sherds from these time periods found across the upper levels and in a problematic deposit in front of the structure.

The presence of Late Formative sherds in the lowest levels of all three structures fits well with the evidence from Chultun C-4 of Late Formative burials. Similarly, the evidence of Terminal Classic to Colonial period sherds on the surface of Str. C-3 fits with the evidence of Late Postclassic burials in Chultun C-3 and suggests that those individuals lived at Ka'kabish and were not brought in from elsewhere for burial.

Table 8.6. Ceramics from Group C/Hingston Group.

UNIT	LEVEL	CERAMIC DATE	NO. OF SHERDS
20	Surface	Late Classic/Terminal Classic	7
1	1	Colonial	144
1	2	Terminal Classic/Early Postclassic	57
1	4	Late Classic	54
1	5	Late Classic	50
1	6	Indeterminate	9
2	1	Postclassic	97
2	2	Colonial, Late Classic	183
2	3	Late Classic	107
2	4	Late Classic	2
2	5	Late Classic	70
2	6	Late Classic	107
3	1	Postclassic	49
3	2	Postclassic	79
3	3	Colonial	92
3	3 Feature 2 Level 2	Terminal Classic/Early Postclassic	160
3	3 Feature 2 Level 3	Late Classic	69
4	1	Postclassic	29
4	2	Indeterminate	9
4	3	Late Classic	30
5	1	Terminal Classic/Early Postclassic	30
5	2	Terminal Classic/Postclassic	50
5	3	Postclassic	85
6	1	Indeterminate	12
6	2	Postclassic	49
6	3	Late Formative	37
6	4	Postclassic	17
7	2	Late Classic	50
7	3	Late Classic	19
7	4	Late Classic	8
7	5	Late Classic	8
7	6	Late Classic	47

UNIT	LEVEL	CERAMIC DATE	NO. OF SHERDS
7	7	Late Classic	30
8	1	Late Classic	184
8	2	Late Classic	71
8	3	Late Classic	16
8	4	Late Classic	402
8	5	Classic	5

CERAMICS FROM STR. FA-2

In 2017, 12 Early Classic sherds were collected from the looters' trench in Str. FA-2 (Sagebiel 2017). In 2019 six more Early Classic sherds and two Late Formative sherds were recovered from the same looters' trench supporting an Early Classic date for Str. FA-2. This fits well with additional evidence from nearby Str. FA-3 as detailed below.

CERAMICS FROM STR. FA-3

A total of 288 sherds were collected from the backdirt of the South Looters' Trench in 2017; the majority were Early Classic (Sagebiel 2018). This contrasted with the 81 mostly early Late Classic sherds found in the backdirt from the North Looters' Trench into the same structure (see Sagebiel 2018, Table 7). This was the first collection of early Late Classic (ca. AD 600–700 or Tepeu 1) ceramics found in a relatively unmixed context at Ka'kabish. In order to investigate this critical period in 2019 the two looters' trenches in Str. FA-3 were cleaned and profiled and any visible ceramics were collected to date the construction phases.

Once again, the South Looters' Trench yielded almost exclusively Early Classic sherds. These sherds included various bichrome and polychrome types, incised types, and forms such as flanges and ring bases, although, as in 2017, a number of dishes and plates had ridges rather than flanges suggestive of the early Late Classic. The North Looters's Trench was, in fact, higher in the building and revealed later construction episodes. As seen in 2017, the sherds from the North Looters' Trench included some Early Classic sherds, but many sherds are more typical of the early Late Classic (ca. AD 600–700). The partially reconstructible vessels on Floor 2 consisted of early Late Classic types and forms (currently unnamed), such as, red slipped jars with tall necks and round bowls, orange slipped round bowls, black slipped outflared bowls and plates, striated jars with everted or folded rims and thinned lips (Alexanders Unslipped?), striated jars with horizontally everted rims and square lips (Zibal Striated?), and a possible Juleki Cream-polychrome vase with likely pseudoglyphs (Figure 8.4).



Figure 8.4. Possible Juleki Cream-polychrome vase from North Looters' Trench in Str. FA-3.

Conclusions

Str. FA-3 appears to have had several building episodes that date from the later part of the Early Classic (Tzakol 3, or late Desmodus Complex, ca. AD 500–600) and early Late Classic (Tepeu 1, or early Lasiurus Complex, ca. AD 600–700) (Table 8.7). As with nearly every other structure investigated so far at Ka'kabish, the structure does not have architecture that dates later than about AD 700, although sherds from the surface include a few dating from the Terminal Classic through Postclassic. The evidence from Str. FA-3 and Group C/Hingston Group in 2019 suggest that occupation and construction continued at Ka'kabish centre through about AD 700, which is about a century later than initially thought. However, major construction is still lacking after about AD 700 even as there is evidence of occupation and/or use of Ka'kabish centre through the Colonial period.

Table 8.7. Comparison of Formative, Early Classic, and early Late Classic types from all contexts in the South and North Looters' Trenches.

TYPE AND DATE (DIAGNOSTIC SHERDS)	SOUTH LOOTERS' TRENCH RIMS/TOTAL SHERDS	TOP LOOTERS' TRENCH RIMS/TOTAL SHERDS
Late Formative		
Sierra Red	1/1	
Early Classic		
Candelario Appliqued	1/1	1/1
Puletan Red-and-unslipped	0/3	0/1
Aguila Orange	9/62	1/2
Nitan Composite	1/1	
Pita Incised	1/1	
Boleto Black-on-orange	0/2	
San Blas Red-on-orange	1/1	
Dos Arroyos Orange-polychrome	8/14	1/8
Early Classic red	0/13	0/4
Caldero Buff-polychrome	1/1	
Indeterminate buff-polychrome	0/1	
Balanza Black	5/12	
Pucte Brown	2/11	
Santa Teresa Incised	0/1	
Early Late Classic		
Unslipped and striated		12/917
Black slipped		4/10
Cream slipped		0/3
Classic cream polychrome/Juleki Cream-polychrome		1/1
Orange slipped		4/38
Red slipped		9/431

CERAMICS FROM SETTLEMENT ZONE H

Settlement Zone H (originally F2-SW) is located 650 m northwest of Ka'kabish. It was surveyed in 2019 and seven small structures were mapped. All ceramic rim sherds and potentially diagnostic body sherds (large and/or with decoration) were collected. Most of the 207 sherds were undiagnostic. The ceramic dates ranged from the Formative to the Colonial period, with the majority dating to the Terminal Classic and Early Postclassic (Table 8.8). A few sherds date to the Early Classic. Two possible Late Postclassic and one Colonial sherd were also collected. In particular, the sherds associated with Mound 7 where there is possible shell manufacturing date to the Early Classic.

Table 8.8. Ceramics from Settlement Zone H.

MOUND NUMBER	CERAMIC DATES	NO. OF SHERDS
1	Late Classic, Late Classic/Terminal Classic	25
2	Early Classic, Late Classic/Terminal Classic, Late Postclassic?	42
3	Formative, Terminal Classic/Early Postclassic, Late Postclassic?	32
4	Late Classic/Terminal Classic, Terminal Classic, Terminal Classic/Early Postclassic	39
5	Late Formative, Terminal Classic/Early Postclassic	29
6	Early Classic, Colonial	25
7	Early Classic	15

CERAMICS FROM SETTLEMENT ZONE G

Settlement Zone G (originally CC-F2) is just northwest of the minor centre of Coco Chan and was surveyed in 2019. A total of 49 mounds were mapped and surface collections were made on and around them. All rims and diagnostic body sherds (large and/or decorated) were collected for a total of 523 sherds. Most of the diagnostic sherds date to the Late Formative, Early Classic, Late Classic, Terminal Classic, and Terminal Classic/Early Postclassic. A few sherds date to the Late Postclassic and Colonial periods (Table 8.9).

Table 8.9. Latest sherd dates for mounds in Settlement Zone G.

MOUIND NUMBER	CERAMIC DATES	NO. OF SHERDS
1	Terminal Classic/Early Postclassic	23
2	Colonial	62
3	Terminal Classic/Early Postclassic	65
4	Late Postclassic	44
5	Early Classic/Late Classic	34
6	Terminal Classic/Early Postclassic	18
7	Early Classic	8
8	Postclassic	20
9	Postclassic	11
10	Terminal Classic/Early Postclassic	5
11	Terminal Classic/Early Postclassic	41
12	Late Classic	12
13	Terminal Classic/Early Postclassic	46
14	Terminal Classic/Early Postclassic	11
15	Early Classic	61
16	Terminal Classic/Early Postclassic	16
17	Terminal Classic/Early Postclassic	73
18	Colonial	22
19	Terminal Classic/Early Postclassic	17
20	Indeterminate	21
21	Terminal Classic/Early Postclassic	25

MOUIND NUMBER	CERAMIC DATES	NO. OF SHERDS
22	Postclassic	47
23	Terminal Classic/Early Postclassic	48
24	Late Classic/Terminal Classic	38
25	Terminal Classic/Early Postclassic	40
26	Late Postclassic	3
27	Terminal Classic/Early Postclassic	15
28	Postclassic	39
29	Terminal Classic/Early Postclassic	21
30	Terminal Classic/Early Postclassic	10
31	Terminal Classic/Early Postclassic	10
32	Terminal Classic/Early Postclassic	14
33	Terminal Classic/Early Postclassic	25
34	Late Classic/Terminal Classic	29
35	Terminal Classic/Early Postclassic	14
36	Terminal Classic/Early Postclassic	32
37	Colonial	45
38	Terminal Classic/Early Postclassic	32
39	Colonial	27
40	Late Classic	13
41	Terminal Classic/Early Postclassic	17
42	Early Classic	11
43	Terminal Classic/Early Postclassic	35
44	Terminal Classic/Early Postclassic	32
45	Terminal Classic/Early Postclassic	43
46	Colonial	12
47	Terminal Classic/Early Postclassic	11
48	Terminal Classic/Early Postclassic	18
49	Early Classic	7

CERAMICS FROM COCO CHAN

Ceramics were collected from the looters' backdirt from trenches in the major structures at Coco Chan to get preliminary dates for the site. Twenty-six sherds were collected from seven looters' trenches in five buildings (Structures 1, 2, 3, 4, and 7) (Table 8.10). Twelve of the sherds are Formative with 10 of those dating to the Late Formative. All structures had evidence of likely Formative ceramics. Str. 3 Looters' Trench 1 had the most Late Formative sherds (N = 7). At least three, and possibly five sherds, date to the Early Classic. Str. 7 Looters' Trench 2 had the most with two Early Classic sherds. No sherds from the Late or Terminal Classic were collected. Str. 1 Looters' Trench 3 yielded five sherds from a Postclassic censer with a tall neck, small exterior bolster, and modeled flange. These chalice and jar form censers are somewhat more common in the Early to Middle Postclassic. Str. 7 Looters' Trench 1 yielded a fragment of a Late Postclassic modeled censer with a flange element that has modeled feathers or fangs/teeth. These are usually typed as Chen Mul Modeled.

Table 8.10. Ceramics from Coco Chan.

LOT	STRUCTURE	LOOTERS' TRENCH	CERAMIC DATE	NO. OF SHERDS
1	1	2	Formative	1
2	1	3	Late Formative	2
2	1	3	Early Classic	1
2	1	3	Early/Middle Postclassic	5
3	2	1	Terminal Formative/Early Classic	1
4	3	1	Indeterminate	2
4	3	1	Late Formative	5
5	4	1	Late Formative	2
6	7	1	Early Classic?	1
6	7	1	Late Postclassic	1
7	7	2	Indeterminate	2
7	7	2	Late Formative	1
7	7	2	Early Classic	2

SUMMARY

The excavations, survey, and mapping projects completed in and near Ka'kabish during the 2019 season continued to help flesh out its occupation history. Although no Formative deposits were excavated in 2019, sherds from the lower levels of excavations in both the Group B/Baker Group and Group C/Hingston Group suggest occupation in the area just south of the Group D Plaza during that time, which fits with evidence from burials in Chultun C-4. Settlement Zone H just to the northwest of Ka'akbish centre has evidence of Early Classic occupation, possibly associated with shell working. Significantly, work at both the Group C/Hingston Group and Str. FA-3 indicate that Ka'kabish was thriving with construction of elite and minor elite dwellings up until ca. AD 700 or into the early Late Classic/Lasiurus phase. The burials in the Group C/Hingston Group demonstrate use of Lamanai-style polychrome plates in burials during this period. The inclusion of partial vessels and other partial objects in the fill of Str. C-3 is an interesting case of well-preserved secondary deposition of *de facto* refuse as construction fill.

The above evidence indicates that what was thought to be an early Late Classic “hiatus” may have been more of a later Late Classic “pause”. There still seems to be something of a gap ceramically with most of the “later” Late Classic ceramics dating to the Terminal Classic/Early Postclassic. The date of this “hiatus/pause” could begin as early as AD 700 and last as late as AD 900. The excavations at the Group B/Baker Group show that minor elites resumed building residential structures in the site centre during the Late and Terminal Classic. The sequence of burials in Str. B-2 provides some evidence of changing ceramic repertoires as polychrome vessels fell out of use in the Terminal Classic.

There is continued evidence of elite use during the Terminal Classic/Early Postclassic of Str. D-14, including imported ceramics. Evidence from the problematic deposit and surface of Str. C-3 in the Hingston Group indicates likely occupation there from the Terminal Classic to the Colonial periods, supporting the evidence of Late Postclassic burials in Chultun C-3.

Settlement Zone G near Coco Chan confirms occupation from the Late Formative to Colonial periods in the area between Ka'kabish and Lamanai evident from earlier surveys. The looters' trenches at Coco Chan provide evidence of likely construction in the Late Formative and Early Classic with possible pilgrimage/veneration activities in the Postclassic period.

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OSTEOLOGICAL ANALYSIS OF POSTCLASSIC MAYA AT KA'KABISH, BELIZE

**BY
GRANT SMITH**

This report provides a description of results obtained following an osteological analysis of human skeletal material recovered from Chultuns B-2, C-1, C-2, and C-3 at Ka'kabish, Belize. Preliminary osteological analyses were conducted on the human skeletal material from Chultuns B-2 and C-1 (Verdugo 2014). Human skeletal material was transported from Belize in September 2019 and stored in a secure location within the osteology teaching room at Trent University in DNA C231. Following university protocol for the handling of human remains, the osteological analysis took place at Trent University in the summer of 2019. The human remains are presently stored at Trent University in order to examine the diet of the individuals recovered from the chultuns through the biochemical approach of stable isotope analysis (see Smith n.d.).

METHODOLOGY

Typical osteological analyses, depending on the objective of analysis, employ methodologies for the purpose of determining age, sex, stature, pathology, or cultural modification for specific individuals within a particular skeletal assemblage. Unfortunately, as is typical of skeletal assemblages from the Maya area, preservation of human remains from the chultuns at Ka'kabish are poorly preserved and highly fragmented. Moreover, the chultuns contained several individuals whose remains were commingled. The commingled context and fragmentary state of the human remains made associating specific elements to certain individuals very difficult if not impossible. Since this was the case, the aim of the osteological analysis was not to reconstruct osteobiographies of specific individuals, but to obtain as much diagnostic information as possible from the skeletal assemblages provided. Methods employed were aimed at determining the minimum number of individuals (MNIs) and age estimates, along with examining skeletal and dental pathology through macroscopic analysis. Poor preservation and commingling of human remains precluded an examination of sex and stature.

The documentation of the human skeletal material followed standard protocol for the recording of complete and commingled skeletal remains (Buikstra and Ubelaker 1994). Inventories, including both human skeletal material and dentition, were compiled for each chultun following guidelines established by Buikstra and Ubelaker (1994). One chultun at a time, the human skeletal remains were removed from boxes and sorted by their associated level/lot number. Siding, identification, and ageing of elements were

conducted following methodological approaches from Bass (1971), Buikstra and Ubelaker (1994), Schaefer et al. (2008), and White et al. (2011).

Before the number of individuals was estimated for a single chultun, the MNI was determined for each level. The MNI for each level was established by confirming any overlap in the same type of element. When the MNI of a level was uncertain, field reports were reviewed to infer the association between levels. Teeth were not considered in establishing the MNI, as the majority were loose teeth, and thus could not be associated with a specific individual. Additionally, in certain instances, the number of teeth recovered in a chultun exceeded the number of teeth that would be expected for the established MNI. Age estimates assigned to elements were based on age categories provided by Buikstra and Ubelaker (1994) and included: old adult (50+ years); mature adult (35–50 years); young adult (20–35 years); subadult (1–18 years); infant (Inf, <1 years); and fetal (F, <2 months). When specific age ranges could not be inferred, elements were simply assigned as adult or subadult.

Skeletal and dental pathology was visually inspected with the aid of a 15x hand lens. All bony manifestations identified on the skeletal elements were carefully described according to the degree of preservation, the location of lesions, and the type of bone response. Potential pathological conditions assigned to a given element were formulated based on descriptions of pathology described by Aufderheide and Rodriguez-Martin (2011) and Ortner (2003). Documentation of dental pathology involved the recording of the degree of dental wear, and presence/absence of dental caries and calculus. Modified teeth were assigned a type (i.e. filing, drilling) provided by Buikstra and Ubelaker (1994) and designated an alphanumeric classification type following Romero (1970).

MNI AND AGE ESTIMATES

The chultun burials (B-2, C-1, C-2, and C-3) at Ka'kabish were comprised of multiple individuals of various age groups. A total of 29 individuals were identified among the four chultuns. The age groups represented within the chultuns included perinatal (N=3), infant (N=2), subadult (N=7), and adult (N=17) individuals. Due to poor preservation and fragmentation of elements, age estimates were largely assigned based on morphology comparisons with cast collections and observable epiphyseal lines. Specific age ranges (i.e. young adult, mature adult) were difficult to obtain, as in many instances there were no observable epiphyses to make a strong assessment of age. Additionally, the commingled context of the chultuns made it difficult to find associations between elements and thus provide a more accurate age estimate for the number of individuals determined in a chultun. Dental wear would have assisted in establishing more accurate age estimates, but many teeth were loose and could not be confidently

associated with specific maxillae and/or mandibles. For an overview of the MNI and age estimates provided for each chultun see Table 9.1.

Table 9.1. Summary of established MNI (N=29) and age estimates for each chultun. Age categories for adults were acquired from Buikstra and Ubelaker (1994) and subadult, infant, and perinatal age categories from Schaefer et al. (2008).

CHULTUN	MNI	AGE ESTIMATES
B-2	6	2 young adults (20–35 years) 3 subadults (5+ years) 1 infant (<1 years)
C-1	11	4 adults (no specific age) 2 older subadults (15–18 years) 1 young subadult (2+ years) 1 infant (9 months ±3) 2 late fetal (7–12 months) 1 early fetal (4–6 months)
C-2	6	6 young adults (20–35 years)
C-3	6	1 young adult (20–35 years) 4 adults (no specified age) 1 subadult (15–18 years)

DENTITION

A total of 506 teeth including both permanent (N=479) and deciduous (N=27) were recorded among all chultuns: Chultun B-2 (72/506), Chultun C-1 (251/506), Chultun C-2 (37/506), and Chultun C-3 (146/506). The majority of teeth recorded were loose, meaning they were not associated with either a maxilla or mandible. The number of teeth by tooth type for both permanent and deciduous teeth can be seen in Table 9.2 and Table 9.3.

Table 9.2. Total number of permanent teeth by tooth type among all chultuns.

Maxillary	I1	I2	Canine	P1	P2	M1	M2	M3
	38	38	43	30	23	22	18	24
Mandibular	I1	I2	Canine	P1	P2	M1	M2	M3
	26	25	24	43	46	30	25	24

Table 9.3. Total number of deciduous teeth by tooth type among all chultuns.

Maxillary	I1	I2	Canine	M1	M2
	2	0	0	4	2
Mandibular	I1	I2	Canine	M1	M2
	2	3	7	4	3

DENTAL MODIFICATION

Six types of dental modifications (A5, B2, C4, C5, C6, F4) were identified among the four chultuns (Figure 9.1). Only 8.5% of all teeth recorded (43/506) exhibited dental modification. No instances of dental inlay were observed, only dental filing. The highest frequency of dental modifications was identified in Chultun C-1 (32/43), followed by Chultun B-2 (6/43), and Chultun C-3 (5/43). None of the teeth in Chultun C-2 (37/43) exhibited dental modifications. The most common dental modification type was C6 (20/43), followed by C4 (10/43), F4 (7/43), A5 (3/43), C5 (2/43), and B2 (1/43). Both maxillary (33/43) and mandibular (10/43) modified teeth were identified. The highest frequency of modified teeth was maxillary central incisors (22/43).

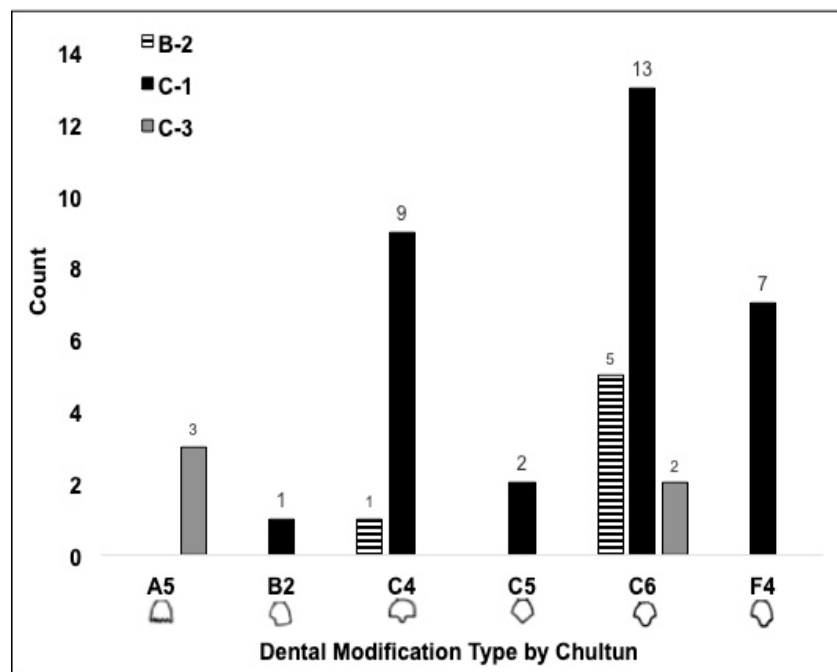


Figure 9.1. Frequency of dental modification type by chultun. Alphanumeric designations based on Romero (1970) dental modification classifications.

DENTAL PATHOLOGY

Dental calculus and caries were observed on teeth from each chultun. Sixty four percent (327/506) of the teeth exhibited dental calculus and 6.1% (31/506) of the observed teeth exhibited dental caries. The highest rate of dental calculus was documented among incisors (21.5%, 109/506) and the lowest rate for canines (8.8%, 45/506). The highest rate of dental caries was recorded for molars (3.1%, 16/506) and the lowest rates for incisors/canines (0.98%, 5/506). Dental calculus and caries rates for each chultun were calculated using the total number of teeth from the respective chultuns. For example, calculus rates for Chultun B-2 were calculated based on 72 teeth, and 251 teeth for Chultun C-1. The highest rate of calculus was recorded for Chultun C-1 (79.6%, 200/251) and the lowest for Chultun C-3 (30.1%, 44/146). Among all teeth recorded with dental calculus (N=327), 77.6% (254/327) showed minimal calculus development, followed by 15.5% (51/327) with moderate development, and 6.7% (22/327) with severe development (see Table 5.4). Dental carie rates were the highest in Chultun C-2 (8.1%, 3/37) and the lowest in Chultun C-1 (4.7%, 12/251). If more than one dental carie was observed on a single tooth it was counted in the recorded carie frequencies. Among all teeth with dental caries (N=31), the majority were identified on the occlusal surface (45.1%, 14/31), followed by the cemento-enamel junction (CEJ) (32.2%, 10/31), smooth surfaces (13.3% 4/31), interproximal surfaces (3.2%, 1/31), and below the CEJ (3.2%, 1/31). In one instance, the origin of the dental carie could not be determined due to the presence of a large cavity (3.2%, 1/31).

SKELETAL PATHOLOGY

Several bony expressions indicative of pathology were observed on the skeletal assemblages from the chultun burials. Interestingly, the majority of the bony manifestations formed on the skeletal tissue of individuals from Chultun C-2. Long bones from Chultuns C-2 and C-3 exhibit skeletal lesions consistent with infectious disease (periostitis, osteomyelitis, osteitis) and metabolic disorders (scurvy, rickets, osteomalacia). Without complete skeletons, the bony expressions identified on the skeletal tissue from individuals in Chultuns C-2 and C-3 cannot be confidently correlated with a systemic condition. Moreover, poor preservation and commingling of the human remains impeded my evaluation of the skeletal distribution of bone changes, and thus precludes a differential diagnosis for most of the observed pathology. A differential diagnosis was attempted for a single individual from Chultun C-2. The congenital defect of sacroccygeal agenesis/dysgenesis was proposed as a possible etiology for the observed pathology on elements from this individual (see Smith et al. 2019).

CONCLUDING REMARKS

Poor preservation is often a limiting component of bioarchaeological research in the Maya area. However, the osteological analysis of human remains from Ka'kabish demonstrates that an examination of health among the ancient Maya human can be explored when multiple lines of evidence (osteology, archaeology, paleopathology) are drawn together. Disarticulated and commingled skeletal assemblages should not be avoided in archaeological investigations, as valuable information regarding the lives of past populations can be obtained from them.

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I

OVERVIEW OF THE KARP 2018 LABORATORY SEASON

BY
HELEN R. HAINES

After 10 years of field work, consisting initially of survey work in 2007 and 2009, and then a combination of excavation and expanding survey into the settlement zones from 2010–2017, we decided to focus our efforts in 2018 on reviewing the status of our laboratory and exploring our impacts on the local Mennonite community (see Chapter 11). As such, no official field season took place and no field school was offered. Work in Belize was conducted solely by Dr. Haines and Dr. Sagebiel. Dr. Haines was in country for eight weeks, from the 20 June to 8 August, while Dr. Sagebiel joined her for a two-week period from 9 to 20 of July.

LABORATORY WORK

Work in the laboratory largely focused on cleaning and sorting the storage facility at Dr. Haines's property in Indian Church Village. This storage facility consists of a large 2.5 m x 6 m shipping container that houses both our excavated material and field equipment (Figure 10.1). The excavated materials are kept in lidded zinc boxes (30 cm x 30 cm x 45 cm) originally designed by Dr. Elizabeth Graham for the



Figure 10.1. Inside of storage facility showing zinc boxes.

Lamanai Archaeology Project (Figures 10.1 and 10.2). Within the zinc boxes the materials are stored by material type (i.e. ceramics in one box), the objects are placed in double plastic bags by Lot and individually tagged.



Figure 10.2. Dr. Elizabeth Graham with zinc storage box custom-made in Shipyard, Orange Walk District.

Although a comprehensive Box List is maintained, noting which lots are in which sequentially numbered box, part of the 2018 lab work was to review this list and ensure that it was still accurate. During the process of inspecting each box it was noted that, although they are secure against small rodents and lizards, they were not impervious to ants and other insects. Consequently, several of the bags had to replace as did the accompanying tags, which had become soiled.

Once the materials had been secured and the locations verified, analysis was completed on material (specifically lithics and faunal), that had not been completely recorded in previous years. Additionally, some of these materials were pulled for further analysis and export. Materials selected for export consisted of faunal and human skeletal material recovered from the four Postclassic chultuns (i.e. Chultun B-2, Chultun C-1, Chultun C-2, and Chultun C-3).

These materials were exported to Trent University, Durham, where they were sorted and allocated to specialised researchers. The human skeletal material was sent to Trent University Peterborough to be analysed by Mr. Grant Smith under the supervision of Dr. Jocelyn Williams. The results from his analysis form the central component for his Master's Thesis (see Chapter 9; Smith n.d.). Faunal material was sent to Mr. Norbert Stanchly for zoological analysis. The combination of these two avenues of study—in conjunction with on-going lithic analysis by Dr. Helen Haines, copper analysis by Dr. Aaron Shugar, and previous ceramic analysis by Dr. Sagebiel (2014, 2015, 2016)—will provide us with a fuller view of the socio-economic practices and health of the Postclassic population at Ka'kabish.

CONCLUSION

The 2018 summer season proved exceptionally productive despite the lack of field excavations. Not only were backlogged collections addressed, but it provided time to focus on collections management issues. It also highlighted the need for the creation of a Master Database to house and collate the artefact information gathered thus far from the excavations at Ka'kabish as well as the surrounding areas. Moving forward, strictly lab-based field seasons will be instituted every third or fourth year. These future seasons, unlike the 2018 season, may include Senior Thesis or Master's research students depending on the on-going research goals.

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OVERVIEW OF THE 2018 AND 2019 PUBLIC ARCHAEOLOGY RESEARCH IN SHIPYARD
BY
HELEN R. HAINES

Starting in 2007, the research conducted under the auspices of the Ka'kabish Archaeological Research Project (KARP), has sought to document the extent of the ancient Maya occupation of the area. This research includes not only the extant structures at the core of Ka'kabish, but also the courtyard and residential structures that extend away from the city centre. The site was first identified in the late 1980s by Dr. Pendergast. Accessing the site originally involved a tortuous drive of almost three hours along a logging trail that linked the New River Lagoon to the interior (Pendergast personal communication). Consequently, outside of Lamanai, little archaeological research was conducted in the area prior to the inception of KARP.

Today, travel between the two sites takes less than 30 minutes via a dirt road created in the early 1990s. This road, which connects the town of San Filipe to the village of Indian Church, bisected Ka'kabish and destroyed several cultural features. It, and subsequent arterial roads, also have negatively impacted the cultural heritage of the region by increasing access to the land. The cultural heritage of the area is in danger of destruction due to agricultural development largely, but not exclusively, through the continued expansion of the farming-based Mennonite community of Shipyard.

Efforts to address the on-going destruction of cultural sites have been compounded by a lack of information about the level of knowledge, or sentiments towards, Maya cultural heritage, by the local Mennonite groups. Moreover, there appears to be deep misunderstanding about archaeology in general as expressed directly to myself by members of the local communities. The population of this area, self-described as "Old Colony" Mennonites, adhere to a conservative lifestyle and are reluctant to engage with outsiders. However, over the past decade, and through our engagement with community members for professional and personal reasons (i.e. requesting permission to access land, purchasing supplies and equipment, hiring them to build a house), we have noted a shift in the attitudes of some of the local farmers. Members of the community frequently now contact us or send messages through our local Belizean team-members if we are out of the country, when they find what they think are sites of interest. This sharing of information, however, is still done largely, post-clearing or during ploughing, when material remains "become visible" (i.e. cut-stones or scatters of ceramic pieces on the surface of the fields). Moreover, it is only people with whom we have an already established social connection (currently a small percentage of the population) that appears comfortable in reporting material to us, and even here misconceptions still exist as to what happens to the artefacts.

The 2018 break from excavations offered the opportunity for a pilot study to establish the feasibility of conducting new public archaeology research in the Shipyard and Indian Creek Mennonite communities. The goal of this new research would be to assess the understanding of, and attitudes towards, ancient Maya history, cultural heritage preservation, and their understanding of Belize's laws regarding the discovery, destruction, ownership, or sale of artefacts, among the members of the Mennonite Shipyard and Indian Creek communities. The importance of public archaeology outreach to these communities was made clear as over the roughly three decades since Ka'kabish was first discovered these communities expanded dramatically (Figure 11.1). Funding for this research was obtained through Trent University SSHRC Explore Grant programme.

OVERVIEW OF SHIPYARD RESEARCH

Discussions with Dr. Morris of the Institute of Archaeology, NICH, established that as this project fell under the rubric of "public archaeology" it, therefore, fell under the supervision of the Institute of Archaeology (IA) and not the Institute of Social and Cultural Research (ISCR), and could be conducted under the same IA permit issued for other work at Ka'kabish.

To conduct this preliminary research, I employed the assistance of Mr. Jaime Yanes, Indian Church Village. Mr. Yanes has worked for me since the inception of the KARP and conducted the first survey/assessment of the area with me in 2006. He also is well-known and respected in the Mennonite community as he frequently serves as a driver for them and has assisted me as an interpreter and as a character reference; the latter point being particularly important due to my status as a "white foreign outsider".

Although I have worked in this area of Belize for almost 30 years and interacted with the Shipyard community closely for the past 10 years, with Mr. Yanes assistance, I was able to learn a great deal about the Mennonite communities of which I was previously unaware. Most pertinently, I learned about the internal socio-political organisation, and social schisms, within the community. With his help, and that of friends in other, more progressive Mennonite communities, I learned that Shipyard is subdivided into numerous "camps" (small clusters of homesteads), each with their own church and overseen by an Elder who generally also serves as the Pastor. These communities are unified and governed by a dual Mayoral system, with each of the positions lasting for two-year terms and staggered so that people are elected to the position in alternating cycles.

With Mr. Yanes help, I learned who I needed to approach, and I subsequently was able to contact and discuss the proposal with several Elders of the community, as well as the two Mayors of Shipyard.

Over the course of the preliminary study, I determined the best types of questions to ask, the format to use to ask the questions (i.e. numbered scale as literacy is low), and the language to use on the questionnaire

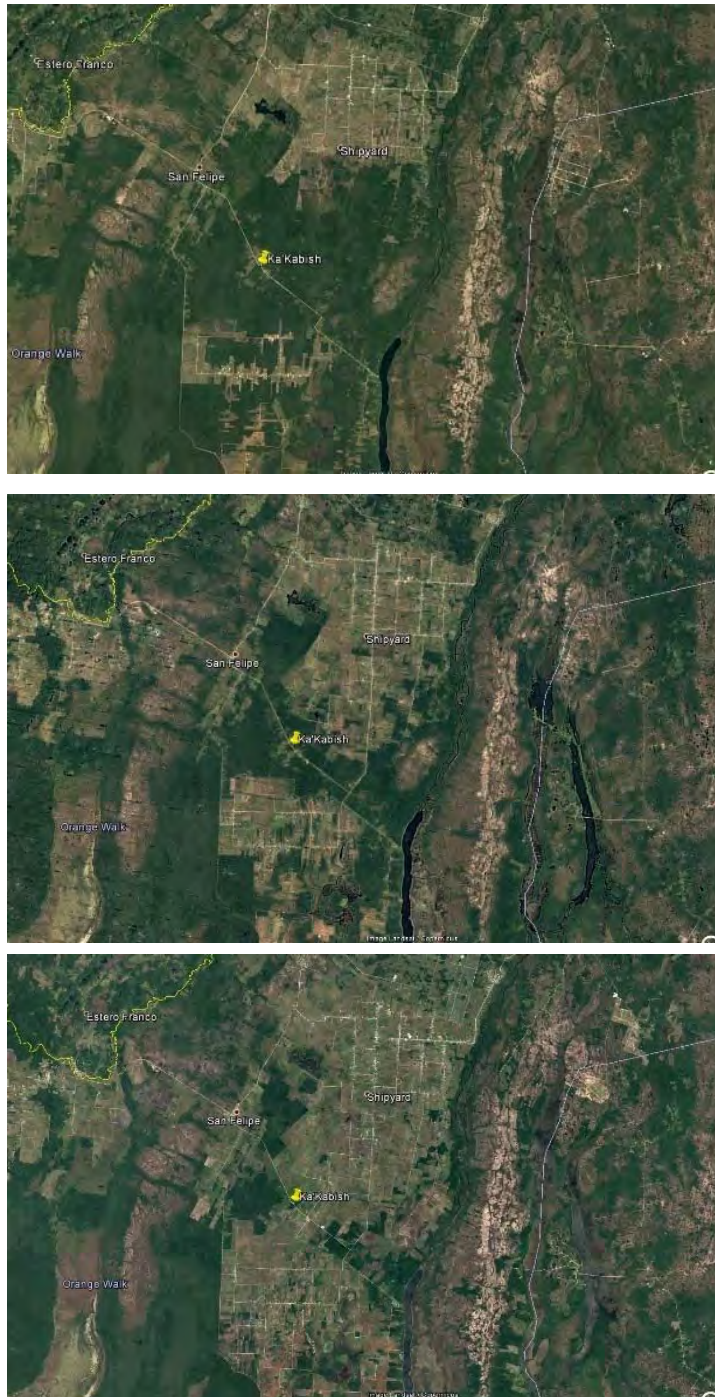


Figure 11.1. Google satellite photos of Ka'kabish area showing difference in forest coverage

(although they speak low German and speak/read Spanish, High German is the most respected language). In discussion with the Mayors, the format for delivering the survey was also established: I would give it to the Mayors who would distribute it to the Pastors who would administer the questionnaires to their parishioners at a community meeting. I could not participate directly in administering the survey due to my being neither a community member nor male (only men attend the community meetings).

More significantly, I learned that the research I wanted to do was not only acceptable to the Mayors and Elders but desirable as they perceived it as being helpful to them. They saw the outcome of the proposed survey as a means for them to not only gauge the interest/education of their community members, but also as a means by which they could gain more information from the government without having to interact directly with government agents (something they are reticent to do).

Based on the success of the pilot study, I initiated a full-scale research project in collaboration with Dr. Beth Visser, Department of Interdisciplinary Studies and Psychology, Lakehead University. Along with being a close colleague, Dr. Visser has an established career focusing on cognitive abilities and psychological testing and measurement. During the 2018–2019 academic year we applied for Research Ethics Board (REB) approval for this research and funding through the SSHRC Insight Grant program. While the SSHRC grant application was unsuccessful, we did secure REB approval in May 2019, and approval from NICH was secured in June 2019. Research activities, which are detailed below, commenced in early July and are currently on-going.

RESEARCH METHODOLOGY

The approved research is using anonymised questionnaires, written in High German and read aloud at community meetings by the Elders, to assess the Mennonite community's understanding of, and attitudes towards, ancient Maya history and cultural heritage preservation, and their understanding of Belize's laws regarding the discovery, destruction, ownership, or sale of artefacts. These surveys were distributed to the Mayors of Shipyard in July 2019 and were expected to be completed and collected during the 2020 field season.

Based on data collected, we plan to develop a variety of different learning modules to provide information noted on the surveys as being desired. These modules will be developed in collaboration with the community Elders and NICH to ensure that the information is correct and in the appropriate format for use by the community. The objective of these modules is to address knowledge gaps identified, and information sought, by the community and then return to the area in subsequent years to assess the success of the disseminated information as well as the success of the process. The results of this work fuel two interlinked pedagogical research objectives:

- 1) Evaluating the results of a community-based educational intervention; and
- 2) Understanding the process for working with marginalize and distrustful populations when developing new education modules.

The first objective will be achieved through developing education models to fit their community needs that also conform to the community standards, then re-surveying the community to test the effectiveness of the of the teaching. The second objective will be achieved through careful documentation of the steps, and potential mistakes, that occur over the course of the project. Research on the process of disseminating information to communities will be shared as it is applicable to other public archaeology projects that work to increase community awareness and involvement in cultural heritage protection (see Thomas).

CONCLUSIONS

While the initial response to the research has been quite positive, the results of the survey distributed in 2019 have yet to be collected or analysed. This work was planned for the 2020 field season which was regrettably put on hold due to the Covid-19 pandemic, which saw the cancellation of all travel and field research activities. We received an extension of the REB approval and plan to continue this work in 2021 when we hope to resume research in Belize.

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