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## 26 **ARCHAEOLOGICAL RESEARCH IN SOUTHERN BELIZE AT UXBENKÁ AND IX KUKU'IL**

Amy E. Thompson and Keith M. Prufer

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*A decade of archaeology research at Uxbenká and five years of archaeological investigations at Ix Kuku'il have resulted in an understanding of the prehistory of these ancient political centers and established a tradition of engaged archaeology in Santa Cruz (Uxbenká) and San Jose (Ix Kuku'il). Over the course of 1000 years Uxbenká and Ix Kuku'il were initially settled during the end of the Late Preclassic and beginning of the Early Classic, developed into regional centers as foci of ritual and political events throughout the Early and Late Classic periods, and gradually declined through the Terminal Classic. The chronological sequences of Uxbenká and Ix Kuku'il were developed from multiproxy datasets including radiocarbon dates and ceramic analyses, as well as hieroglyphic texts at Uxbenká. Community-based and collaborative archaeology has been a goal of the Uxbenká Archaeological Project (UAP) and resulted in rotational labor programs and Archaeology Days in Santa Cruz and San Jose.*

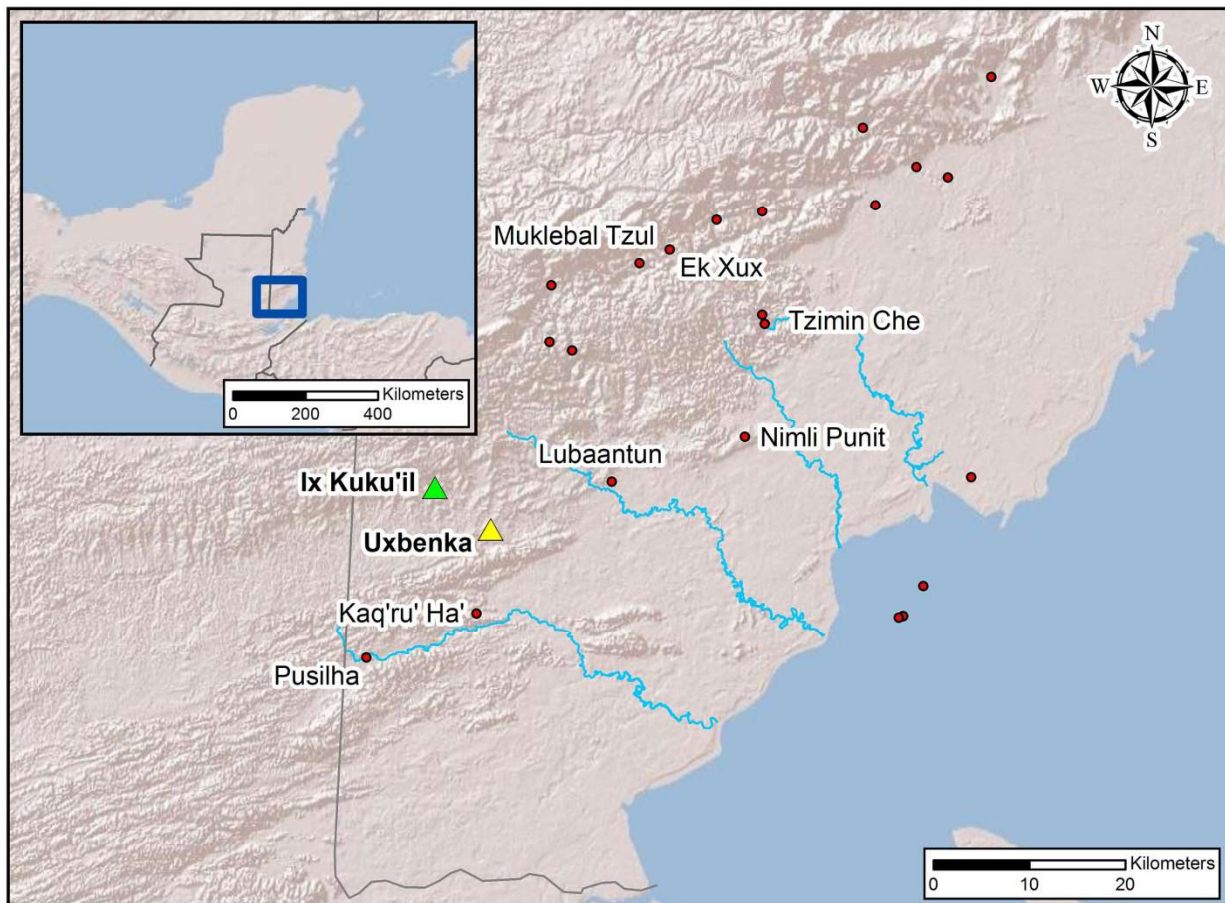
### **Introduction**

Southern Belize is home to over 22 important ancient Maya centers some that have been investigated for nearly a century, others of which are poorly known. Research in the region has included reconnaissance projects and surveys as well as multi-year studies of individual centers. The Uxbenká Archaeological Project (UAP) conducted research at Uxbenká between 2005 and 2015, and at Ix Kuku'il from 2013 to 2018. More than a decade of interdisciplinary research has resulted in nearly two dozen publications of applied medical and environmental anthropology (Baines 2011; Baines 2016; Baines and Zarger 2012; Baines and Zarger 2016; Parks 2010), paleoclimatology and paleoecology (Baldini 2016; Jamison et al. 2016; Kennett et al. 2012; Lachleitner et al. 2016; Ridley et al. 2015; Walsh et al. 2014), human behavioral ecology (Cortez 2016) and archaeology (Aquino et al. 2013; Culleton 2012; Culleton et al. 2012; Jordan and Prufer 2014, 2017; Kalosky and Prufer 2012; Moyes and Prufer 2013; Moyes et al. 2016; Nazarroff et al. 2010; Prufer and Kennett in press; Prufer et al. 2011; Prufer et al. 2015; Prufer et al. 2017a; Prufer and Thompson 2014, 2016; Thompson et al. 2013; Thompson et al. 2018; Thompson and Prufer 2015, 2016, Trask et al. 2011). The UAP focused on developing high precision models for the growth and decline of these sites, which were statically located near to important trade routes and on highly productive agricultural lands. They are also the oldest known Maya

political centers in the region (Prufer et al. 2017).

### **Regional Background of Southern Belize**

Southern Belize includes over a dozen large centers located along the Bladen Branch, Snake Creek, Esperanza Creek, and Trio Branch rivers in the eastern Maya Mountains (Dunham and Prufer 1998; Prufer and Kindon 2005; Prufer and Kennett in press) as well as sites in the southern foothills of the Maya Mountains, coastal plains, and along the coast. The larger region is geographically circumscribed, creating a natural sub-region within the Maya Lowlands often referred to as Southern Belize. The formidable main divide of the Maya Mountains lies to the north and northwest, pine barrens and swampy low forests are present to the northeast between the Maya Mountains and the coast. The Caribbean Sea bounds the southern Maya Mountain region to the east while the south is demarked by the low, swampy *bajos* of the Sarstoon and Temash rivers (Hammond 1975; Leventhal 1990, 1992). The region is characterized by rich, highly productive soils due to a 25 km long natural formation of interbedded shales, sandstones, and mudstones. This natural geologic feature, the Sepur Formation (Keller et al. 2003), is intermixed with the limestone Campur Formation forming the Toledo Beds (Wright et al. 1959). The Toledo Beds run from the southwest to the northeast along the foothills of the Maya Mountains. Most of the Classic Period Maya centers in the sub-region including Ix Kuku'il,



**Figure 1.** A regional map of archaeological sites in the Toledo District with the location of Ix Kuku'il and Uxbenká emphasized among other ancient Maya centers that are mentioned in the text. The inset map shows the location of large map compared to major centers in the Maya region.

Uxbenká, Lubaantun, Uxbentun, Xnaheb, and Nimli Punit are situated on the Toledo Beds (Figure 1). While only 6% of the total land area in Toledo is categorized as the Toledo Beds (Dunham 1990: 169), at least six important centers were founded on the Toledo Beds during the Classic Period, illustrating the importance of productive agricultural landscapes in settlement decision-making.

The first populations arrived in the New World by 15,000 BC, gradually moving across the North and South American continents. By 9000 BC populations made their way through Central America (Acosta Ochoa 2012; Chatters et al. 2015; Prufer et al. 2017b) and the southern Belize region (Posth et al. 2018). Recent research has suggested ephemeral but continuous populations in southern Belize throughout most of the Archaic (8000 – 2000

BC) and Preclassic Periods (2000 BC – AD 250) through the remains found in rockshelters (Prufer et al. 2017b). The first masonry architecture in the region occurs at the end of the Late Preclassic Period (ca. AD 250) (Prufer et al. 2011, Culleton et al. 2012; Prufer and Thompson 2016) with increased populations in the region circa AD 400 documented both by site core studies at Kaq'ru' Ha' (Novotny 2015), Pusilha (Braswell and Prufer 2009), and Nim Li Punit (Leventhal 1990), as well as extensive settlement studies at Uxbenká (Prufer et al. 2017a) and Ix Kuku'il (Thompson et al. 2018). Populations in the region continued to increase during the Late Classic (AD 600 – 800) including the centers of Lubaantun (Hammond 1975), Xnaheb (Dunham 1990), Tzimin Che (Wanyerka 2009), and Uxbentun (Hammond 1975). During the mid-8<sup>th</sup> century AD political

disintegration slowly diffused throughout the region as evidenced by terminal monument dates (Ebert et al. 2014) and radiocarbon dates that indicate the cessation of monumental building construction by AD 830 (Aquino et al. 2013; Culleton et al. 2012). Hinterland populations continued until after AD 1000, although ceramic styles have not shown significant shifts among Late and Terminal Classic forms or types. There is little evidence of Post Classic populations on mainland sites in southern Belize (Braswell and Prufer 2009; McKillop 2004; Prager et al. 2014; Prufer et al. 2011; Wanyerka 2009).

Southern Belize consists of 22 polities that include Kaq'ru' Ha', Ix Kuku'il, Lubaantun, Nim Li Punit, Pusilha, Uxbenká, Muklebal Tzul, and Ek Xux (Figure 1). Several sites contain elaborately carved hieroglyphic inscriptions recording associations with distant centers such as Tikal, Altun Ha, and Copan (Helmke et al. 2018; Wanyerka 2009) as well as comparable architectural styles (Leventhal 1990) and construction materials, suggesting similar histories (Braswell and Prufer 2009). Limited ceramic studies suggest that southern Belize polities interacted with neighbors in the Petén, Belize Valley, and the coast although differences in ceramic assemblages and site core architectural density indicate a general lack of unified political integration in the region (Braswell and Prufer 2009).

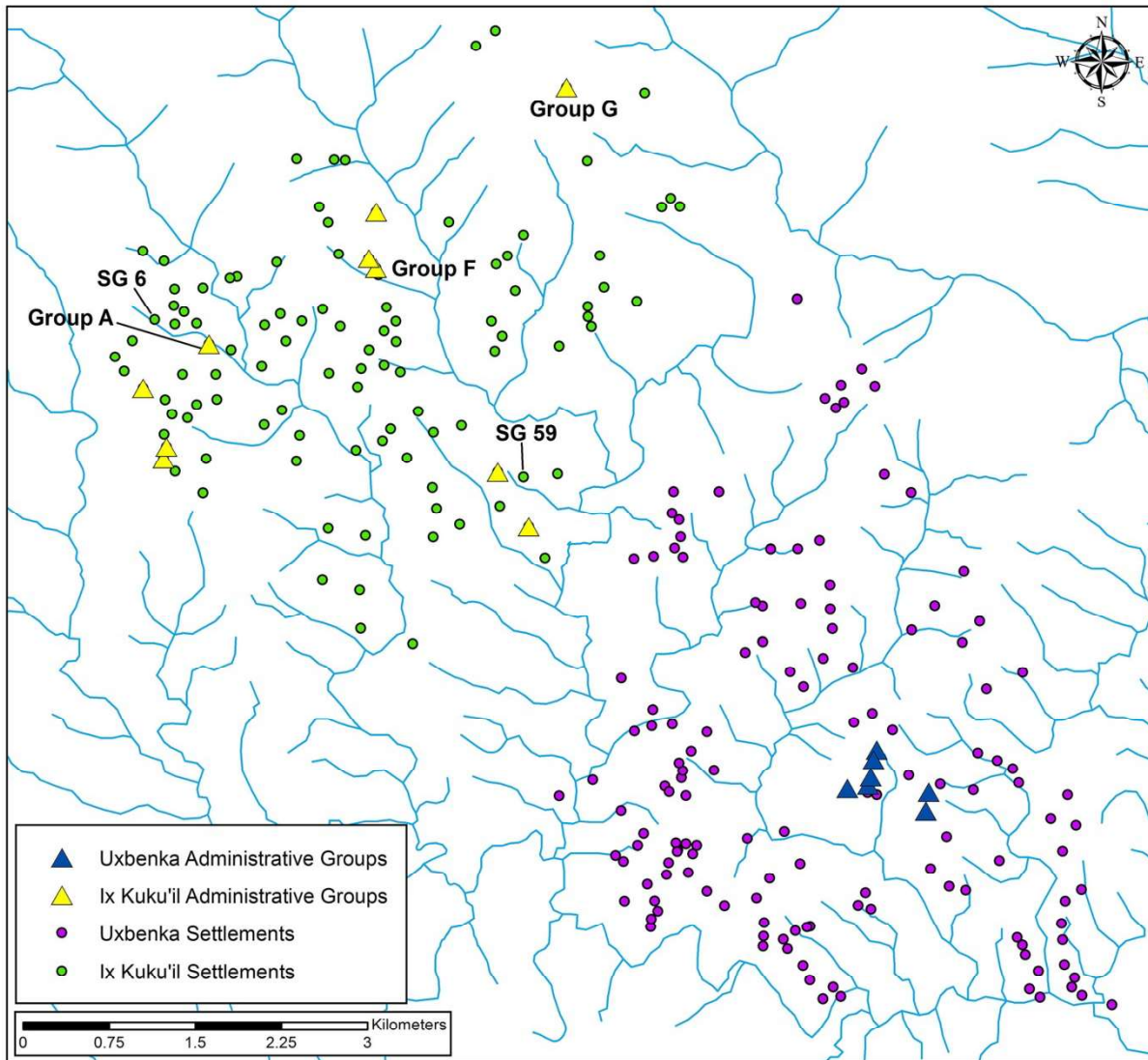
### **Archaeological Investigation and Findings at Uxbenká and Ix Kuku'il**

Uxbenká and Ix Kuku'il are situated on the lands of the modern Mopan villages Santa Cruz and San Jose, respectively. The landscape is characterized by hilly topography with elevations of approximately 250-300 meters above sea level (masl) at Uxbenká and 300 – 450 masl at Ix Kuku'il and is part of the Toledo Beds. Rivers and tributary streams weave across the landscape and freshwater springs (*cuxlin ha*) are abundant, providing easy access to water for both modern and ancient occupants of the landscape.

Like many other regions, the basic chronology for southern Belize was first sorted out based on ceramics (Hammond 1975) and monuments (Wanyerka 2009). Archaeological investigations at Uxbenká and Ix Kuku'il have

focused on using radiocarbon dates and ceramic types, as well as monument dates to build a precise chronology for the settlements and the site core. A robust AMS database of 120 dates for Uxbenká and the surrounding landscape (Culleton et al. 2012; Prufer et al. 2017a; Prufer and Thompson 2016) and more than 30 dates from Ix Kuku'il bracket the occupation of these two sites. At Uxbenká ceramic types do not conform to traditional time periods employed in the Petén and elsewhere (Jordan 2014). Typical Late Preclassic/Protohistoric ceramics such as Sierra Red have been found in contexts directly dated to the Late Preclassic and first half of the Early Classic (AD 100 – 400); this is the Early Classic I phase. Early Classic II phase is characterized by Santa Cruz Red, Balanza Black, Turnifo Striated, and orange polychromes and dates from AD 400 – 600. Everted rim Santa Cruz Red may be a part of the EC I phase although there is not enough contextual data to confirm this. Late Classic ceramics are not further subdivided into smaller phases at Uxbenká and date to AD 600 - 800. Belize Red is a marker for the Terminal Classic (Post AD 830) for the region (Jordan and Prufer 2014).

As a geopolitical center Uxbenká thrived for nearly a millennium from Late Preclassic through the Terminal Classic periods with residual populations living on the landscape before prior to and after its rise as a monument bearing polity. The earliest evidence for human occupations on the Uxbenká landscape dates to the Paleoindian period based on excavations at a small rockshelter (Prufer et al. 2017b). Radiocarbon dates from agricultural fields suggest agricultural modifications to the Uxbenká landscape beginning in the Middle Preclassic (Culleton 2012). A single Olmec-style jade spoon was reportedly found in an Early Classic tomb at the site (Healy and Awe 2001) indicating the presence of heirlooms suggesting ties with Middle Preclassic communities. Ephemeral hinterland populations lived on simple platforms and 7% of dated households were occupied by AD 1, and the initial settling of the site core started during this time as well. The first cut stone architecture in the core was built during the transitions from the Late Preclassic to Early Classic period. The



**Figure 2.** Settlement map of Uxbenká and Ix Kuku'il showing the distributions of core and residential architecture across the landscape.

period from AD 150 - 400 represents the largest investment in the site core architecture and expansion of the built environment and is partially characterized by the presence of Sierra Red ceramics (Jordan 2014). Populations continued to expand after AD 400 and peaked after AD 600 before declining after AD 800 (Figure 2). Nearly 50% of dated household have pre-AD 600 occupations and 98% of dated households have AD 600 - 800 occupations. Several radiocarbon dates indicate a smaller AD 800 - 1000 occupation and a Post-classic cache was found at the base of Stela 7 (Jamison et al. 1991).

Ix Kuku'il's Stela Plaza is located 6.3 km northwest of the Uxbenká Stela Plaza. Settlements between the political centers decreased near the Ku Blanco river, which may have formed a boundary between the communities. Ix Kuku'il's eleven site core groups are distributed across the landscape, suggesting heterarchical nodes of power (Figure 2). The main Stela Plaza, Group A, is located at a lower elevation (325 masl) and is surrounded by a natural river, the *Yax Ha*, and anthropogenically modified watercourses creating a moat-like feature around the ceremonial core. Group A has a single stela and

**Table 1.** Multiproxy chronologies of ancient Maya centers in southern Belize.

Site Name	General Dates of Occupation	Hieroglyphic Texts or stylized monuments	Ceramic Typologies	Radiocarbon Dating	Source
Uxbenka	AD 1 - 800	X	X	X	Prufer et al. 2017
Ix Kuku'il	AD 1 - 1000		X	X	
Kaq'ru' Ha'	AD 300/400 - 760/830		X	X	Novotny 2015
Nimli Punit	AD 400 - 850/900	X	X		Prager et al. 2014
Pusilha	AD 571 - 900	X	X		Irish and Braswell 2015:277; Prager et al. 2014
Xnaheb	AD 780 - ?	X			Dunham 1990
Lubaantun	AD 750 - 900	X	X		Hammond 1975

a 10 m tall eastern triadic structure (Thompson and Prufer 2016). Nearby settlements are at higher elevations, capable of looking down on top the activities occurring within the Stela Plaza, suggesting possible corporate power relationships at the site. Few excavations have occurred in the site core areas of Ix Kuku'il as research agendas focused on the development and decline of the settlement system. Excavations in Group G suggest that the area was constructed during the Early Classic and continued to be occupied into the Terminal Classic (calAD 776-966). A Late Classic ceramic lip-to-lip cache was excavated in Group F. A radiocarbon date from the construction fill suggests that Group F was a primarily Late Classic construction.

Initial analysis of Ix Kuku'il suggested that the site dated to primarily the Late Classic (Thompson and Prufer 2016), however new research and analysis of material culture at Ix Kuku'il suggests that it was occupied for nearly 1,000 years. The earliest evidence of permanent occupation at the site dates to 65 BC, based on a directly-dated burial in the floor of a household in SG 59. Additional C14 data provides evidence of small populations on the landscape during the Late Preclassic/Early Classic, however, no Sierra Red ceramics typical of the EC I phase in the region have been identified at Ix Kuku'il. By AD 425, increased populations are evidenced by stone architecture and Early Classic ceramic types (i.e., Santa Cruz Red, Balanza Black, Turnifo Striated) at more than

30% of households. Ix Kuku'il's landscape continued to be infilled between AD 600 - 800; 100% of datable households had Late Classic ceramic types (per Jordan 2014) including Remate Red, Chacluum Black, Turneffe Unslipped, and Puluacax as well as Louisville polychromes such as Zacatal (Thompson and Prufer 2016). Small populations continued to reside on the Ix Kuku'il landscape and final occupations of hinterland households date to around AD 900 - 1000. Ix Kuku'il chronology is based primarily on settlement survey data, which is biased towards AD 600 - 800 occupations based on ceramic analysis of surface artifacts, and excavations of households; few excavations have occurred in the site core.

### Chronologies in Southern Belize

Chronological sequences among the other southern Belize sites varies from robust dynastic history recorded at Pusilha (Prager 2013) to a single carved monument date and a small sample of diagnostic pottery at Xnaheb (Table 1). Nim Li Punit was founded around AD 400 - 450 (Daniels and Braswell 2014; Prager et al. 2014) based on hieroglyphic dates (Leventhal 1990; Wanyerka 2009) and ceramics. While the ceramics include Tzakol sphere types indicating an Early Classic occupation at the site, carved monuments only contain Late Classic (post AD 700) dates (Prager et al. 2014: 250). Similarly, Kaq'ru' Ha' was founded during the second half of the Early Classic and occupied throughout the Late and Terminal Classic based on both

radiocarbon and ceramic chronologies. However, Sierra Red forms were identified at Kaq'ru' Ha' indicating a possible EC I occupation (Novotny 2015). Pusiha, like the other regional sites, has both Early and Late Classic pottery. Conversely, Pusiha's earliest dated monument indicates that the site had geopolitical rulers by AD 571. However, only a small portion of the ceramics date to the Early Classic. An abundance of Late Classic pottery had been identified and site core areas including the Gateway Acropolis and Moho Plaza remained in use through the Terminal Classic and into the Postclassic (Prager et al. 2014). This trend is opposite of Uxbenká and Ix Kuku'il, where little evidence for Terminal Classic exists within the site cores, but several Terminal and even Early Postclassic radiocarbon dates have been documented among the settlement groups.

Several sites in the region appear to have only Late Classic occupations, although additional excavations in hinterland settlement areas could prove otherwise. Lubaantun was occupied only during the Late Classic period. Three ball court markers were dated stylistically to the end of the Late Classic (AD 780-790) (Wanyerka 2009) as was the pottery (Hammond 1975). Hammond noted large amounts of Late/Terminal pottery in deep stratigraphic units in the site core suggesting that the site was not constructed until that time. Like Lubaantun, Xnaheb dates to the latter half of the Late Classic Period based on a single carved monument date (Dunham 1990; Dunham et al. 1989; Jamison 2001; Leventhal 1990; Wanyerka 2009).

A few trends within the southern Belize chronologies are clear: 1) populations were living in southern Belize earlier and later than ceramics and long count dates account for, 2) the use of radiocarbon dating can improve our intra- and inter-site chronological sequences, and 3) as outlined by Jordan and Prufer (2014: 319), "Over-reliance on single proxy chronologies can be detrimental to our understanding of cultural processes and hinder comparisons". Land clearing and low-level populations were present by 300 BC (Culleton et al. 2012) but pottery associated with those contexts is not diagnostic. Sierra Red ceramics are found at Uxbenká but

are not always in association with radiocarbon dates (the exception is at Ix Kuku'il where Late Preclassic/Early Classic radiocarbon dates exist but Sierra Red has not been documented). The use of radiocarbon dates in conjunction with ceramic typologies facilitates more accurate and expansive chronological narratives for both individual sites and the region as whole. For example, diagnostic post AD 830 (Terminal Classic) pottery such as Belize Red is not ubiquitous at Ix Kuku'il (in fact only a handful of sherds were identified in the five years of research at Ix Kuku'il) and no Postclassic sherds were present, but radiocarbon dates from 30% of the excavated areas date to calAD 765 - 1045 (i.e., the late Late Classic and Terminal Classic period), suggesting that radiocarbon dates provide a more robust chronology, particularly for households. Peak populations occurred in southern Belize in the Late Classic period, but chronologies vary by site (see Prufer et al. 2017a). Much earlier and later populations were present in the region including Paleoindian and Archaic (Posth et al. 2018; Prufer 2018) and Late Postclassic and historical (Prufer and Kennett in press).

### **Community Based Archaeology in Southern Belize**

Archaeology as a discipline began with curiosities for the past (Trigger 2006) and has developed into a sometimes rigorous scientific field incorporating interdisciplinary approaches to understand past environments, landscapes, and societal trajectories. Some recent studies incorporate indigenous archaeologies, which link cultural patrimony to materiality (Wobst 2010), into archaeological research and interpretations (Bruchae et al. 2010; Colwell-Chanthaphonh 2012). From 2005-2010 the Uxbenká Archaeological Project (UAP) collaborated with Santa Cruz community members to develop the Uchben'kaj K'in Ajaw Association (UKAA), a community-based non-profit organization. While over a dozen UAP co-PIs, graduate students, and post-doctoral researchers have had advisory and consultative relationships with the UKAA, the leadership roles, decision-making, and legal authority of the group rests solely with the membership of the organization (all legal residents of the village of



**Figure 3.** UAP engaged community-based archaeology and collaboration. (A) Santa Cruz woman looking at Ancient Maya pottery finds at Archaeology Day in 2014. (B) San Jose village members who toured the Ix Kuku'il Stela Plaza and visited excavations at Settlement Group 6 in 2015.

Santa Cruz) which they vest to a regularly elected board of UKAA executives, as a registered not-for-profit entity under the Companies Act of Belize. The UKAA was formally registered in 2007 and is responsible for overseeing and management and development on the lands of Uxbenká as community property in order to protect the cultural and natural heritage of the Maya people (per the UKAA Management Plan). From 2007-2015 the UKAA managed a rotational labor system to provide workers for the UAP survey and excavation fieldwork, and to assist with gathering data for a decade long climate monitoring project (Kennett et al. 2012; Ridley et al. 2015a, 2015b). The goal of this system was to distribute the resources brought into the community by researchers to members of each family in the village. Engagement of the UAP with the UKAA included Saturday classes for children to learn about local archaeology (Parks 2010) which evolved into environmental and archaeological lessons (Baines 2016), a summer Agro-Ecology program for youth (Cortez 2016), and the NSF funded TEACHA educational program (Baines and Zarger 2012). Additionally, for several years a local Archaeology Day was hosted by the UAP and

UKAA to show all community members the archaeological finds from that field season (Figure 3a), and celebrate traditional cultural heritage with marimba music, dancing, and the consumption of locally produced cacao drink and tamales.

In 2013 when archaeological investigations began at Ix Kuku'il, we took a similar approach to working with the community as had been developed in Santa Cruz. We, Prufer and Thompson, met with the village leadership of San Jose including the Greek Creek Farmer's Cooperative (GCFC) since the Stela Plaza (Group A) of Ix Kuku'il is located on the GCFC land (Thompson and Prufer 2016). While a community-based organization was not created, the same model was applied: community leaders would select who would work with Thompson, using a rotational labor program to provide the opportunity to work for as many people as possible. However, San Jose is a larger village (approximate population: 1000) so rather than give every man the opportunity to work, we agreed to give larger family groups the opportunity to work, thus distributing the economic opportunity throughout the village and not allowing a single family to gain more wealth than other families.

Community engagement was an active component of research in San Jose. We hosted a local Archaeology Day, showing artifacts and survey and excavation pictures to the community, having snacks, and archaeology themed coloring activities for the children. Additionally, Thompson hosted a site visit field trip which included a tour of the main Stela Plaza of Ix Kuku'il (Figure 3b) and visiting a small household excavation unit at Settlement Group 6. One particular excavation (SG 59) was close to the village and many community members inquired about the excavations and what we were finding. We encouraged people to visit the excavation site during the day to see how we conducted archaeological research and ask questions to the archaeologists, both local assistants of the week and Thompson. People were especially curious about a burial that was found at that particular site and nearly 30 people stood around the excavation unit watching the process of archaeological documentation and removal of the interred, commoner individual. Standers-by commented on how small the unit was (they expected larger excavations), how we were excavating on a small "ruin" and not a large one, and that there were no grave goods with the individual. That single experience showed community members what archaeology truly is – how slow and deliberate the process of documentation and excavation is, and that not all archaeology is full of grandiose temples or elaborate pottery and other artifacts. Directly involving the community and being transparent about archaeological methods and findings encourages the preservation of the cultural heritage and preserving the past for the future.

### **Conclusions**

Ix Kuku'il and Uxbenká are Classic Period Maya centers on the southern Belize landscape. Archaeological research at Uxbenká and Ix Kuku'il indicate that the area has been an active landscape for Maya communities for thousands of years. These two political centers developed and declined over a millennium. The UAP radiocarbon database and ceramic analyses indicate that multi-proxy chronologies create a more robust understanding of the cultural processes of communities of the past, even extending the occupations of each site by several

hundred years. The UAP has consulted and collaborated with the modern Maya community of Santa Cruz and San Jose to encourage a community-based archaeology.

*Acknowledgements* We thank the Belize Institute of Archaeology for permission to conduct research at Ix Kuku'il and Uxbenká. This research was funded by grants from the National Science Foundation (BCS-DDIG-1649080, Thompson and Prufer; BCS-0620445, Prufer; HSD-0827305, Prufer), the Explorer's Club of New York Exploration Fund (Thompson), and the UNM Roger's Research Award (Thompson) as well as the Alphawood Foundation (Prufer). We are grateful to the contributions of numerous individuals who conducted fieldwork related to this study. We are grateful for Jillian M. Jordan who created the UAP Ceramic Typology and Type Collection, which acted as a reference for dating the Ix Kuku'il and Uxbenká ceramics. Thank you to Erin Ray for providing useful comments and feedback. Appreciation must be given to the Bardalez family and the Coh family for providing Thompson with a place to call home in Big Falls and San Jose, respectively. This research would not have been possible without the support and collaboration of the people and leadership of the Mopan Maya communities of Santa Cruz (Uxbenká) and San Jose (Ix Kuku'il), and specifically the Uchben'kaj K'in Ajaw Association (UKAA) and the Green Creek Farmer's Cooperative of San Jose.

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