ADAPTIVE MANAGEMENT IN THE MAYA FOREST

PARTNERSHIP AT EL PILAR

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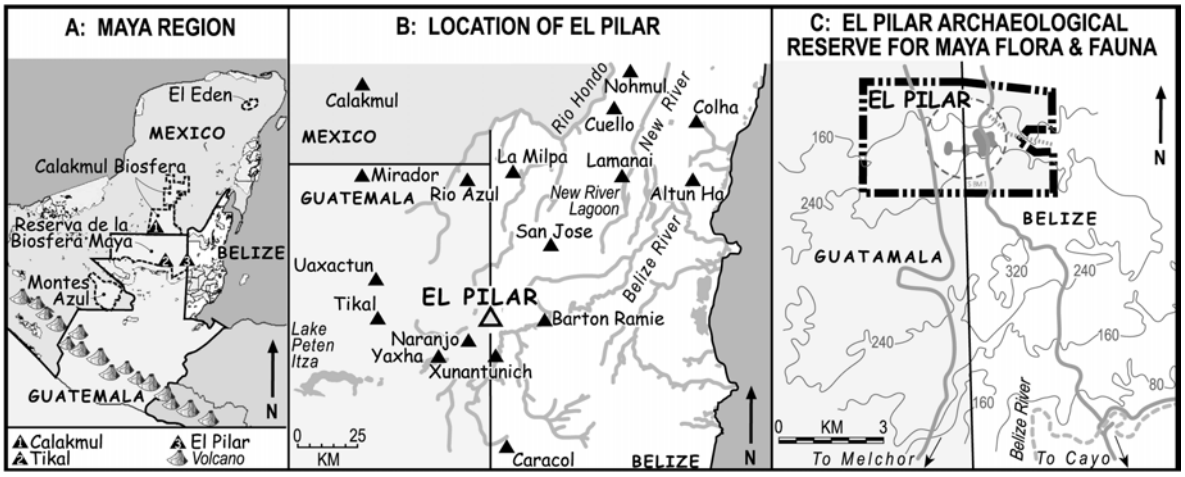
In the Shade of the Maya Forest

Beneath the lush canopy of the Maya forest, the Maya Center of El Pilar prospered for 1,700 years, reaching its zenith around the year AD 700. Over the course of centuries, since as early as 700 B.C., the center gradually grew to become the primary administrative center in the Belize River area, replete with sweeping plazas and tall temples. This ancient Maya city has been the subject of a long-term investigation by the BRASS/El Pilar Program. As a model of a just and lasting partnership, El Pilar is also important for the alliance among the constituents of government authority, community participation, and academic research. This symbol still needs nourishment and support. This year's report focuses on the achievements of the project, the research potentials of the archaeology, and the challenges that lie ahead.

Studies reveal that the Maya population density during the Maya Classic Period was from three to nine-times the region's current level. Yet, today, the Maya forest stands as an enduring monument to the resourcefulness of the Maya. Although it withstood millennia of Maya occupation, today the Maya forest is at risk.



Regional, local, and site-specific areas of concentration in the Maya forest

The Maya forest is ranked second of 25 resources at risk by Conservation International, an internationally known non-profit organization. Contemporary political lines cut the regional forest landscape: new roads slice through the forest, paving the way for human migration into the world's last terrestrial frontier, and political boundaries overlay ancient monuments. This is the context of the shared heritage of El Pilar.

In this respect, El Pilar is as a model and the program a vision for open communication for all that own their future. A path of collaborative conservation was embarked upon in 1992 in order to protect the natural and cultural resources at El Pilar. The *El Pilar Archaeological Reserve for Maya Flora and Fauna* in Belize and the *Monumento Cultural El Pilar para la Flora y Fauna Mayas* in Guatemala were established by the respective governments to safeguard the shared resources at El Pilar. Integral to the protection of El Pilar was the explicit participation of the community in the planning for El Pilar. Along with research and education on ancient Maya land use, the innovative, cross-border, inclusive management process was designed collectively with government, community and experts with the aim to build a lasting and effective base for the conservation of the Maya Forest.

Expanding Networks ~ Connecting Communities to Conservation

Investigations at El Pilar form the essential foundation of the promotion of El Pilar as a new protected area in Belize. From the outset, the BRASS/El Pilar Program, along with the Government of Belize's Department of Archaeology, was concerned that the developments at El Pilar translate into real opportunities for surrounding communities such as Bullet Tree Falls. An expanding network of collaborators connected AdEP and the El Pilar Program to the tourist world. Coordinating with the non-government organization Help for Progress has promoted the wider partnership base with a focus on the potentials for the rural sector to participate and benefit from ecological-archaeological tourism.

As El Pilar began to feature more prominently in the tourist world, Amigos de El Pilar and the BRASS/El Pilar Program inaugurated an annual *Fiesta El Pilar* to encourage revival of local culture and Maya history and visitors to the site. The transformation of the Fiesta El Pilar into a local venue was demonstrated this year. Management needs have continued to be a concern of the BRASS/El Pilar Program, and the program continues to provide for two additional caretakers to maintain the grounds and maintain the network of trails that incorporated the site's various ecological zones and Maya monuments.

This season the program resulted in the publication of the first trail guide to the site's six formal trials that incorporate the residential sector, highlighting the excavations and consolidations at the Tzunu'un Maya house and forest garden, the public plazas, featuring the information posts at Plaza Copal, and the restricted areas of the north with the consolidated rooms of Jobo. This guide was first distributed in photocopy version in 1995, it was part of the program materials for the 1997 Mesa Redonda Mexico, and the text was included in the 2000 field report to the Depart of Archaeology. The final publication is an important facet of the planning process and is designed not only as a guide to the special resources at el Pilar, but also as a promotion of the partnership philosophy of conservation that the El Pilar model represents (Appendix I).

In addition, as for each year, the program continues its training local guides to work at the site. This year we sponsored a full day workshop attended by 7 guides, each with specific interests that represent the varied tourism potentials of El Pilar. All were enthused with the new

guide book and brought their specific knowledge to the workshop discussions (Appendix II & III). We included a picnic lunch prepared by Amigos de El Pilar that was appreciated by all the participants. We were able to introduce the guides to the Be Pukte, the Masewal Forest Garden maintained by Heriberto Cocom, and to the main features of El Pilar.

We also began a education outreach program. This included lectures and tours with the local primary school children and teachers, promotion of local arts and crafts with the primary school students, forest garden education with Heriberto Cocom, and a collaboration with Sacred Heart Junior College. For a number of years we have offered special volunteer programs during the field season. This year we launched a lecture program linked together with the effort to develop a local ecological archaeology concept that would promote a new conservation and tourism for the Cayo area. Coordinated with Help for Progress, this innovative program was detailed for the Fall semester.

The field activities of the 2002 season followed in a decade long tradition of partnership and sharing. Working with HfP is focused on enlivening the rural component and fostering local development that is in line with the agricultural needs of the nation. Collaboration in the promotion of Fiesta El Pilar engenders interest and respect for the long-standing cultural traditions that emanate from the rural sector of society. Development of the El Pilar Archaeological reserve hinges on the ongoing research and education program of the BRASS/El Pilar Team. This season's focus on animal monitoring, survey consolidation, and education are significant parts of the model, a model that promises to build a long-term commitment to conservation in the Maya forest.

Historical Roots ~ A Creative Partnership

The recognition of the community role in the conservation of cultural and natural resources was a significant foundation of the El Pilar model. From the outset, with the support of the local area representative in 1993, the community participation was wholly endorsed. When the BTIA worked to define the El Pilar Archaeological Reserve, Commissioner Topsey of the Department of Archaeology was an outspoken collaborator and with his support, the concept of the reserve became a reality. Later, with the strong support of Commissioner John Morris, the 1996 binational workshop called the "Encuentro El Pilar" moved the international component of the vision forward. Recognizing that the local communities are their constituents and are implicitly, if not explicitly, managers of cultural and natural resources, representatives from Belize and Guatemala pledged support of the ideals of collaboration and partnership. Jointly, it was agreed to develop parallel management schemes for the administration of El Pilar, incorporating an innovative management partnership with local communities.

Through the initiative of the El Pilar Program and Around El Pilar AdEP, local communities have been gaining awareness of El Pilar and the opportunities it presents for local development. AdEP sponsored events such as local workshops, BBQ's, an essay contest, the Fiesta El Pilar, and community outreach have integrated people into efforts surrounding El Pilar.

To increase the effectiveness of the El Pilar Program and AdEP and to advance their goals within the community, Help for Progress (HfP), a Belizean NGO committed to improving rural life in the Maya Forest, was enlisted by the BRASS/ El Pilar Program to work with AdEP in 1998. In respect to reserve management, regional program advocates were formally incorporated into the El Pilar Program as well. In Belize, Anselmo Castaneda, a conservationist with an agronomy background, focuses on local and regional environmental issues. In Guatemala, José Antonio Montes, an international attorney, concentrates on legal and political

processes. These bodies constitute an important element of the El Pilar institutional framework (Appendix I).

The official development of contiguous reserves at El Pilar was the highlight of the 1998. In Belize, Statutory Instrument was signed into law by Minister Henry Young of the Ministry of Tourism and the Environment, officially protecting the El Pilar Archaeological Reserve for Maya Flora. In Guatemala, the *Monumento Cultural El Pilar* was declared as a protected area within the Reserva de la Biosfera Maya by Consejo Nacional de Areas Protegidas (CONAP), the government agency that oversees the Maya Biosphere Reserve and El Pilar. The cross-border aspect of the El Pilar archaeological reserves is unique in the region. Now that both the governments of Belize and Guatemala recognize El Pilar as two contiguous areas protecting one cultural resource in two countries, the next step would be to develop a strategy for managing the reserves.

To work out this point, The BRASS/ El Pilar Program organized a second Mesa Redonda El Pilar (MRII). Held in Placencia, Stann Creek, Belize in 1998, the MRII brought together the growing network to further the unique program of research and development at El Pilar. The MRII provided government counterparts in cultural and natural resources with a forum in which they could work together proactively. Participants drafted a management plan for El Pilar that included short and long-term goals related to law, community participation, and tourism.

A gratifying number of villages in Belize and Guatemala participated in the proceedings of the MRII. The clear accord between AdEP and the government representatives at the MRII was underscored by the latter's approval of the community's role in reserve management planning, a role that they suggested would be enhanced by university level training aimed at building local management capacity. Not only was AdEP an effective participant in the MRII, endorsing the drafted management plan, they relayed the results of the proceedings to the residents of surrounding communities.

The development of the contiguous reserve was followed in 1999 by the endorsement of parallel management plans. The Protected Areas Technical Evaluation Committee El Pilar (PATEC-EP) was formed and held six meeting to finalize the draft management plan for El Pilar. The committee was made up of prominent policy makers including John Morris, Joseph Palacio, Elias Awe, Eugene Ariola, Rafael Manzanero, Eugenio Ah, Natalie Rosado, Evarista Avella, Paul Francisco, and Anselmo Castañeda. The group reaffirmed the importance of ensuring that local communities receive direct and long-term benefits from El Pilar, describing in the PATEC-EP notes that, "in order to promote the advantages that can be derived from El Pilar's location, an alliance has been formed between the Amigos de El Pilar and the site, the El Pilar Program, and internationally." The PATEC committee finalized and endorsed the innovative management plan, the first of its kind for the DoA, serving as an example for the management plans for archaeology yet to be developed in the region.

Heroes of the Maya forest ~ A Community Commitment

Around El Pilar, communities have shown that they play an important role as guardians of the forest. Key member of the Amigos de El Pilar were initially users of the area now designated as the reserve. For example, when a group of displaced farmers threatened to burn land in the reserve in 1996, AdEP gathered the signatures of over 100 community members who sought the protection of El Pilar. AdEP then went to Belmopan to meet with government leaders and vent their concerns. Through this effort, and the subsequent action of the DoA, the

government acted with AdEP to stop the destruction of the reserve. In this case, the community acted as a government advocate to ensure that national regulations be enforced at El Pilar.

Yet the AdEP commitment goes much deeper. Carmen and Betty Cruz as well as Heriberto Cocom each had personal investments at El Pilar. The Cruz had a small home at the site, now maintained for the overflow support of the caretaking at El Pilar as well as for the Intermittent participation of groups, like Raleigh, who work short term on site. Cocom's place is marked by his care of an ancient Maya aguada and his careful planting of economically important trees. These are now gifts to the reserve and part of the rich heritage of El Pilar. These families, as well as others, are heroes who gave up their personal stake to support the protection of El Pilar.

Efforts this year were similarly launched when it was recognized that trees at El Pilar, assets of the people of Belize, were being cut for timber that would benefit only a few. AdEP and supporters of their concerns collected hundreds of signatures and sent them to the Prime Minister 's office. They asked for strong protection of El Pilar, demonstrating a single mind on this topic. And it was the heroes of AdEP who sought to report transgressions in the course of 2002 first to Forestry and then to the DoA when trees were downed without concern for the protection of the heritage values at El Pilar. Further, they accumulated many signatures in support of protecting El Pilar that they forward to their government. These are strong representations of collaboration and faith in their partnership with the government.

Our work at El Pilar over the past years has followed the premise that the community participation in the conservation of El Pilar is essential to the conservation of the resources of the region and in the development of the rural sector (Appendix II). We have included leaders in traditional cultivation as integral members of the forest garden projects at El Pilar, and worked to build their following locally and regionally. Education programs in the community attempt to draw upon their wisdom. These have provided the staple to compile the pamphlets and books that promote their knowledge of the areas. In addition, we have incorporated youth into our team, teaching them the survey methods and the maintenance strategies we have supported at the site. Also, we work closely with Amigos de El Pilar in their program developments, in particular the fiesta el Pilar. The 2002 season is no exception. Our concentration this season was primarily on the maintenance program at the site and the development of didactics for the site (Appendix III). We also were able to expand our residential excavation with the collaboration with Grinnell College, a five-year program (2002-2006) to develop a deeper understanding of the nature and culture of El Pilar for the education and interpretation at the reserve.

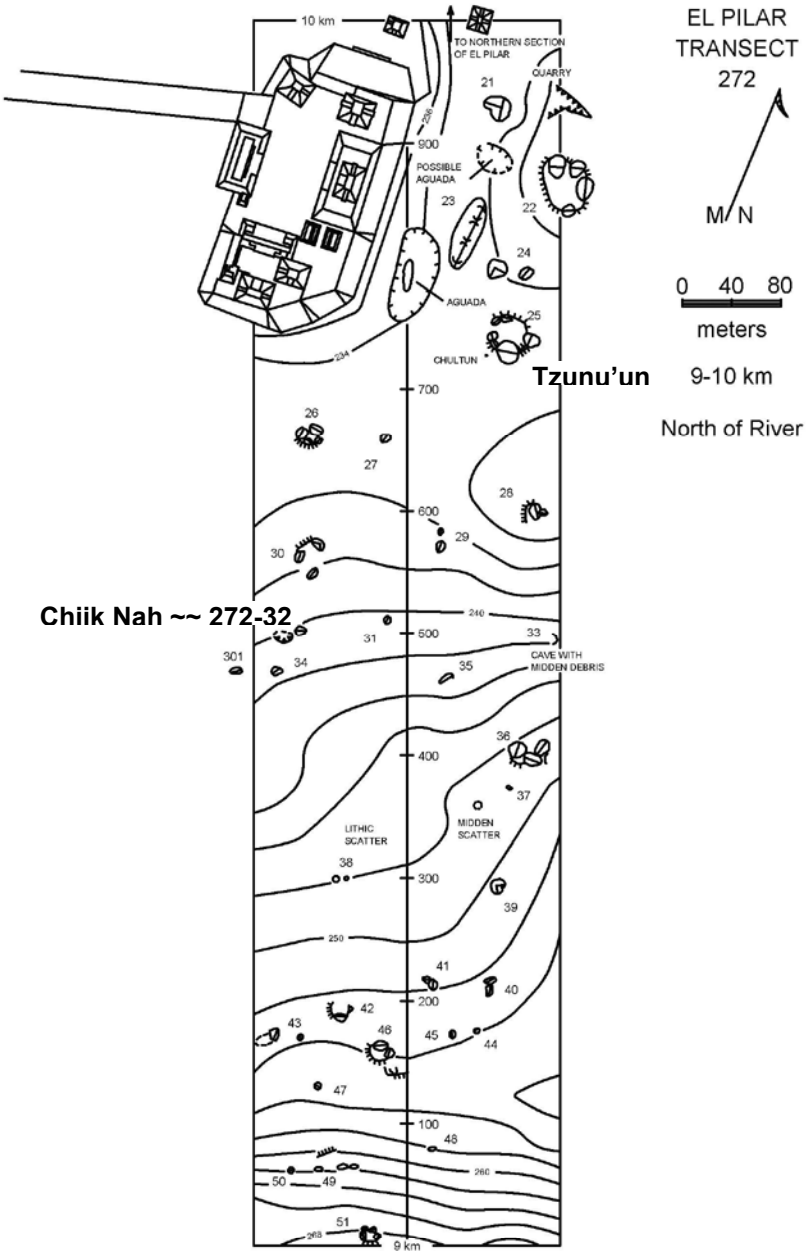
Continuing Investigations ~ Excavations at Chiik Na

Contribution by Kathryn Kamp and John Whittaker
Grinnell College

Excavations at Chiik Nah, a small Maya residential unit at El Pilar, was the undertaking of collaborators from Grinnell College, Iowa. a six-person research team from Grinnell College headed by anthropology professors Kathryn Kamp and John Whittaker[1] excavated a small house mound at El Pilar. Chiik Nah is a single house mound only about 250 meters south of the monumental architecture of Plaza Axcanan in the ceremonial core of El Pilar and about 300 meters southwest of the center of Tzunu'un, a previously-excavated elite residential area.

[1] Student excavators were Melissa Badillo (Department of Archaeology), Zerifeh Eiley (University of Belize), April Kamp-Whittaker (Earlham College), Jennifer Thornton (Grinnell College), and Alexander Woods (Grinnell College).

Figure 1: Location of Site 272-32--Chiik Nah



Chiik Nah was originally located during the 1984 survey of a 250 meter by 10 km transect between the center of El Pilar and the Belize River (Figure 1). At that time the mound was designated as 272 (the transect number)-32 (the site number). We have christened it Chiik Nah,

a Maya phrase meaning "house of the Coati" in honor of an abandoned pet that was befriended by the El Pilar site guards and frequented the excavation area during the early part of the excavation season until it mysteriously disappeared. The mound at Chiik Nah is about 0.5 meters high and about 5.5 meters in diameter. For excavation and mapping purposes, we included a surround of about 10 meters in all directions from the center of the mound in the site definition.

Chiik Nah was partially cleared with small trees and shrubs removed. Larger trees were left standing, in order to coincide with the project's effort to preserve the forest environment. Using an electronic distance meter (EDM) and back sights from EP12, a previously established control point in the parking lot to the south of Tzunu'un, two new control points (temporarily designated 32CP 4 and 32CP5) were set up within the site limits and marked with cement posts. These control points were then used to set up a 4m north-south grid over the site. Posthole tests were conducted along the grid to determine artifact distribution throughout the site. No postholes were dug on the house mound itself to avoid damaging possible architectural features. Posthole tests were dug to bedrock with posthole diggers and spades. All excavated soil was screened through 1/4-inch mesh. Based on the data collected from the posthole tests, two 2m by 2m test trenches (TT1 and TT2) were opened in areas near but not on the mound with relatively high artifact counts. TT1 and TT2 were respectively located to the northeast and to the southwest of the mound. Later, 2m by 2m test trenches (TT3 and TT4) were opened on the mound itself (Figure 3). TT3 was located on the southeast corner of the mound to define the mound's edge. TT4 was completely located on the mound, directly north of TT3. A 1m balk separated TT3 and TT4. All test trenches were set up on even UTMs to facilitate mapping.

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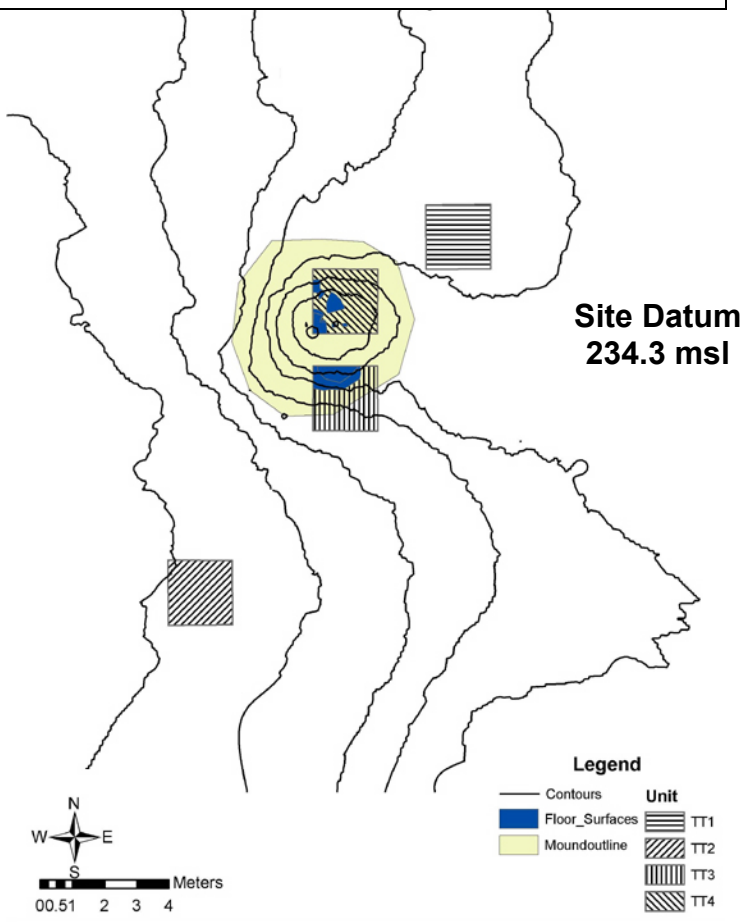
Map of Site 272-32~ Chiik Nah



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Test trenches were dug by teams of two to three people using trowels and hand picks. Hand picks were necessary due to the very hard clay loam that was encountered during excavation. Test trenches were dug down to bedrock according to natural strata, which were further subdivided into 10 cm arbitrary levels. Chert and obsidian stone tools, chert cores, and large potsherds found *in situ* were point provenienced using an EDM. Levels and architectural features such as floors were also mapped using the EDM. All features, levels and point-provenienced artifacts were further recorded on sketch maps.

Fill was screened using 1/4-inch mesh, but due to slow and careful digging more artifacts were found in situ than in the screen. In addition, a soil sample from TT1 was water screened. Only a few small flakes were found, indicating that our standard 1/4 inch screening was sufficient, and it was extremely difficult to process the clay fill through a fine screen, so no further water screening was done. Samples of soil and plaster from cultural surfaces found in TT2, TT3 and TT4 were collected for pollen testing.

Site 272-32 was used as an agricultural field, within the last 10 years. Charcoal from burning the field burning was still evident, but was not collected. No charcoal was found in undisturbed contexts. One simple bucket-and-sieve flotation was performed on a sample of fill from TT4. There were many fresh rootlets, but no useful carbonized plant remains. Bone and other organic material was apparently not preserved in the mound. Only lithics and potsherds survived both the burning and the humid tropical environment. Many of the lithics collected showed evidence of burning such as spalling and heat fracture. Also, some of the wear on the lithics may have come from historic disturbance rather than prehistoric use. The potsherds collected did not appear damaged by burning, but were heavily corroded and soft. The heavily corroded appearance may have been caused by the dissolution of limestone temper. The basic soil conditions resulted in a thick patina on the lithics and may have affected the preservation of other artifacts as well.

Stratigraphy and Temporal Sequence

Test Trenches 1 and 2 were located to investigate surfaces around the mound, while 3 and 4 were situated to explore the contents of the mound. No surfaces were identified in TT1, but an irregular cobble surface was found in TT2, and TTs 3 and 4 each exposed a plaster floor. Unfortunately, the relationship between the floor surfaces in each trench is not clear, and we did not have time to excavate the areas between the trenches in hopes of clarification.

Test Trenches 1 and 2: Test Trench 1, located northeast of the mound, contained few artifacts, only 174 sherds and 374 lithics, including both tools and debitage. Under the upper few centimeters of humus, the soil became increasingly clayey and hard, with many roots and small limestone rocks. The sterile substrate, composed of decaying limestone, began about 30 cm from the surface.

Test Trench 2 was 5 m southwest of the south edge of the mound. The basic profile was very similar to that in Test Trench 1. Artifact density was even sparse, with only sherds and 191 lithics. The decaying limestone bedrock began at about the same depth as in TT1; however, in the northern half and more patchily over the rest of the test trench, lying directly on the sterile substrate, was a discontinuous expanse of tightly packed potato sized limestone lumps. This surface was unplastered, but appeared to have been prepared.

Test Trench 3: Test Trench 3 (Figures 4 and 5) was on the south edge of the mound. Beneath the entire excavation was the same sterile subsoil (104): decaying yellow limestone with clay, which after about 10-15 cm gives way to more solid soft limestone.

Outside the mound area, the fill above sterile 104 is yellowish clay loam with rocks, becoming rockier and darker higher up. Stratum 113 was excavated as this fill south of the floor 110/114, with Stratum 108 as gravelly fill over most of the unit and over the floor area, and 107 as darker fill around the apparent edge of the mound before the floor was exposed. Stratum 107 is equivalent to 106, 105, and 102 in the northern part of the TT, over the mound, and no visible distinction can be made.

Under the mound area in the northern part of the test trench, a layer of tightly packed limestone cobbles and lumps in clay (114) were laid directly on the sterile 104, which may have been artificially flattened first. This 114 apparently served as a substrate for a plaster floor (110), which was about 2-4 cm thick, with a well smoothed, level surface. It survived over the NW 1/3 of the test trench, and although there was no apparent border of larger rocks, the arc of the edge is close to what might be expected from the surface appearance of the mound, and we believe it is the edge as constructed. Above the floor was the gravelly fill 108, which appeared continuous with material outside the boundary of the mound. Above this were fill units designated 106, 105 and 102, which in retrospect seem largely undistinguishable, except that they become increasingly dark and humic nearer the surface. Stratum 101 was the mound surface.

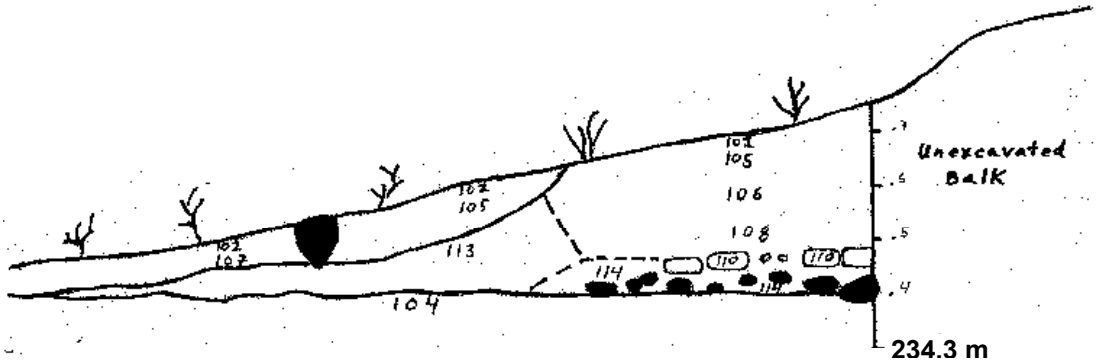
Test Trench 4: Test Trench 4 (Figures 4 and 6) was fully within the apparent bounds of the mound, but the floor surface we encountered was only in the SW 1/3 of the trench. As in Test Trench 3, the sterile 104 was remarkably flat, possibly artificially flattened. In the SW corner, a rocky clay fill (119) lay directly on this. It was thicker, looser, and much less organized or packed than the possibly equivalent 114 under floor 110 in TT3. In the extreme corner, there was a substantial pocket of completely loose rock, with very little clay matrix. We designated it Stratum 116, but eventually felt that it represented an area of root or burrow disturbance of 119. Above 119 was a plaster surface, or rather two. Stratum 115 was a poorly surfaced yellow plaster some 4 cm thick. In the corner, some 25 cm of Stratum 119 intervened between plaster 115 and sterile 104, but the 115 plaster formed a sloping arc, poorly preserved, that came down to the sterile 104 in the middle of the test trench. Plaster remnants rested directly on sterile 104 or with no more than a cm or two of clay intervening. Unfortunately, the plaster was only traceable in patches, never with good surfaces. While cleaning the south profile, we cut a strip 10 cm wide about 5 cm deep into the 104, and exposed a dark round stain 10 cm in diameter right against the profile, and just outside the arc of plaster 115. Excavating the stain carefully with fingers (fill was wet clay), recovered no artifacts, but produced a cone-shaped hole about 10 cm deep. The form and position suggest a posthole. Further scraping of the sterile 104 along the contact with plaster 115 failed to reveal any other similar features.

Directly on top of 115 in the corner of the trench was 111, another plaster, 4 cm thick, much whiter than 115 and with a nicely smoothed, level surface. It appeared that small discontinuous bits of this plaster extended at the same level over the sloping part of 115, at least

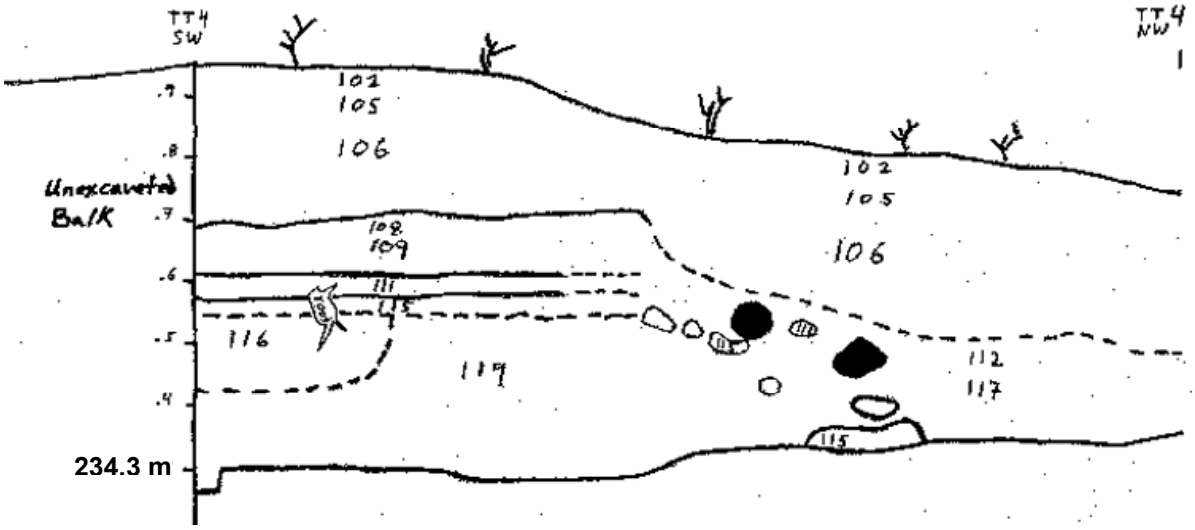
as seen in the profiles to the south and west. Our initial interpretation was that 111 represented a replastering of the 115 floor, either as repair, or a later occupation. Alternatively, 115 could be a substrate prepared for the finished floor 111, although it is not clear why 115 should slope down and 111 appears to continue more horizontally. Possibly at the edges of the floor we are seeing a surface marked by plaster bits from both plasters, and the sloping 115 also is eroded remnants of both, either forming a sloping edge as constructed, or slumped and eroded.

We designated the fill over the floor 111 as Stratum 109. Above 109 some fill was designated 108, essentially equivalent to that in TT3, but later we felt that we had been seeing a sort of transition between 109 and 106, the upper fill of the mound, which was distinctively humic and rocky, darker and looser than fill below. Stratum 106 was recognized over the whole trench, and the very top fill over the whole unit was 102 or 105, but there is no real distinction among them.

Outside the area marked by the extent of plaster 115, the fill over sterile 104 was labeled 117, and is essentially similar to 113 in TT3. Above that we recognized 112, but this now appears arbitrary, and 112 and 109 are essentially continuous.

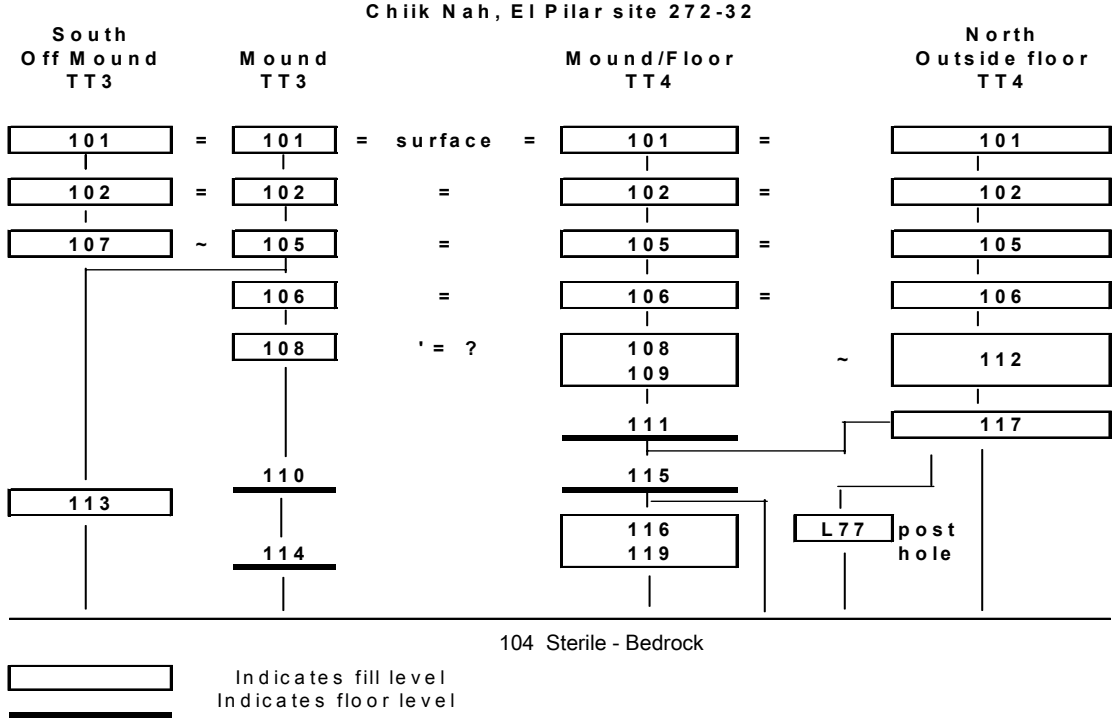


Test Trench 3, West Profile. Chiik Nah, El Pilar Site 272-32.
Scale: 1 cm= 10 cm



Test Trench 4, West Profile. Chiik Nah, El Pilar Site 272-32.
Scale: 1 cm= 10 cm

Figure 4: Harris Diagram Showing Strategraphic Relationships
Chiik Nah, El Pilar site 272-32



Stratigraphic Interpretation of the Mound

The big unanswered question is the relationship between the floors in TT3 and TT4. The top of the 110 floor in TT3 is only about 10 cm below the top of the plaster 115 in TT4, and 14 cm below the plaster of 111. However, the plaster of 110 is white like the plaster of 111, not the yellower plaster of 115, and although the absolute difference in elevation is not great, the surfaces of both 110 and 111 were flat over the extent observed, making it unlikely that there is a slope concealed in the balk. Additionally, the cobble substrate 114 under 110 is thinner and much more organized than the 119 fill under 115, and the edge of floor in TT3 shows none of the slope of 115 in TT4. Presumably this means that somewhere in the balk, one floor must cut the other, or form a continuous surface. The fact that in both test trenches the apparent floor edges form rather tight arcs, suggests that several small floors might be incorporated into one smallish mound.

In any case the mound began as a floor or floors built on a clean sterile surface, and covered by a build-up of clay loam and limestone rock, with midden debris as well. The material over the floors presumably derives from wall structures; they could have been stone and clay in a wooden crib framework. The refuse component is fairly sparse; most of the sherds are small and isolated. The lithic material suggests that debitage and tools were incorporated in fill or structures rather than produced on the spot. There is little small debitage, and nothing to suggest that any of the artifacts are in situ on an interpretable living surface

Ceramic Analysis

Methods of Analysis All potsherds larger in diameter than a quarter were collected and washed. In the lab, potsherds were initially sorted by presence or absence of ash temper. Ash tempered and non-ash tempered sherds were further sorted according to the vessel part

represented: rim, neck, body, base or foot. Body sherds with decorations or waxy slip were separated into their own category. The number and weight of sherds in each category were recorded for every excavation level.

The next stage of analysis focused on potentially diagnostic sherds. These sherds included rims, necks, decorated and waxy body sherds, bases, flanges and feet. All rim sherds and other diagnostic sherds were assigned a unique number and information was recorded on the following characteristics:

1. Vessel Part: Rim, neck, body, base, flange, feet or indeterminate vessel form.
2. Slip: Presence of slip on the exterior, interior, or both exterior and interior.
3. Decoration: Incised designs, fingernail impressions, appliqué, or painting.
4. Paste: Coarse, fine, Mars Orange, or ash paste.
5. Vessel Form: Jar, bowl, plate, vase, or indeterminate.
6. Diameter: Rim diameters in cm, when possible.
7. Period: Sherds were classified according to time period (i.e. Early Classic, Late Classic, etc.), based on BRASS type collections and spot checks by Anabel Ford.

In general the sherds recovered at Chiik Nah were small and in poor condition. What were initially seen as good-sized sherds in the ground often broke into tiny fragments, even when excavated with a brush, or threatened to dissolve during washing. Because of the limited scope of excavations and poor preservation of sherds at the site there were few potentially diagnostic sherds. A total of 264 potentially diagnostic fragments, primarily rims, were examined, but less than half of these were assigned a temporal designation. Preliminary analyses of the sherds revealed occupation in the area from the Late Pre-Classic through Late Classic. Heaviest occupation appears to have been during the Early and Late Classic. The Terminal Classic sherd was encountered on the surface and is the traditional pie-crust jar found throughout the central Maya region.

PERIOD AS DETERMINED BY CERAMICS

Period	Frequency	Percent
Preclassic	4	1.5
Middle Preclassic	1	0.4
Late Preclassic	10	3.8
Early Classic	26	9.8
Late Classic	65	24.2
Terminal Classic	1	0.4
Indeterminate	158	59.8
Total	**264**	**100.0**

The distribution of paste types correlates well with what might be expected. Thus, the ash temper characteristically found in Late Classic contexts is fairly abundant, while Mars Orange is present, but rare. The following are the data:

CERAMIC PASTES

PASTE TYPE	Frequency	Percent
Coarse	171	64.8
Fine	58	22.0
Ash	34	12.9
Mars	1	.4
Total	264	100.0

The ceramic distributions must be viewed in the context of the formation processes that have occurred at Chiik Nah. There were no truly sealed proveniences excavated. The floor levels tended to be discontinuous, broken by roots, animal burrows, and the collapse of the floor surface that occurred after abandonment.

Again, because of the very small size of many of even the best sherds, it was not possible to securely identify a vessel form for many of the ceramics. The vessels found at Chiik Nah are primarily bowls and jars (see below); plates occur, but are quite rare. This type of ceramic distribution is typical for a non-elite domestic context:

VESSEL FORM

Form	Frequency	Percent
Bowl	56	21.2
Jar	47	17.8
Plate	16	6.1
Indeterminate	145	54.9
Total	264	100.0

The Overall picture of the ceramic assemblage fits with the nature of the site: domestic vessels with generalized purposes. The occupation is focused in the Classic Period, with increasing proportions over time from the Preclassic. It is interesting that there is a strong presence of Early Classic, something that is scarce in the non-central areas of the region. The location of Chiik Nah within the city settlement conforms to the interpretations of increasing centralization at that time. Occupation in the late Classic is consistent with the interpretation of increased land use during the height of the Maya civilization.

Lithic Analysis

Methods of Analysis Lithic debitage was washed in the field and then sorted into flakes and shatter. These two categories were weighed and counted, at which point the shatter was discarded. The shatter category is hard to compare to normal archaeological use of the term, as it included not only the usual angular fragments from tool manufacture, but also angular fragments resulting from extensive heat fracturing of chert tools and unworked nodules. Flakes and identified tools were cataloged, boxed, and shipped back to Grinnell for further analysis. In Grinnell, debitage was sorted by size, presence of cortex, evidence of burning, and type of flake (hard hammer flake, biface thinning flake, or indeterminate).

Thick flakes with large bulbs of percussion and large flat platforms were viewed as the result of hard hammer percussion. Thin flakes with diffuse bulbs of percussion, lipped platforms, and multiple flakes scars on the exterior surface were classified as biface thinning flakes. Thin or medium flakes with missing platforms and/or lacking other recognizable indicators were classified as indeterminate. A large number of flakes with irregular damage on

the edges were recognized in the debitage. They could not be considered formal tools, and in the rocky and trampled context of the mound we felt that we could not distinguish between accidental damage and possible use wear without microscopic inspection. Even excluding such flakes, our assemblage contained a surprisingly high number of tools. For comparison, we also examined samples of lithic assemblages from two other sites, the LDF Chert Site in the center of El Pilar and 272-136, the Latón residential complex some 4.5 km to the south.

Local chalcedonic chert was used as for the vast majority of tools at El Pilar. This chalcedony ranges from a translucent brown, to grey, to a sort of purplish color, but patinates to a thick opaque white. The material from Chiik Nah was so heavily weathered that it was difficult to recognize as chalcedony, as unbroken pieces appeared at first to be some sort of white chert. Despite reports to the contrary, a lot of this chalcedony is quite high-grade knapping material and seemed to be quite adequate for both household needs at Chiik Nah (272-32) and biface production at the LDF Chert Site of El Pilar (272-005).

Debitage

To sample the debitage of Chiik Nah, we carefully examined the debitage from Test Trenches 3 and 4. The debitage analysis included 681 pieces (9547 gm) of shatter and 1471 flakes (13115 gm), a 1:2 ratio. The following table shows the distribution of flake types by size categories for a total of 1149 flakes from Test Trenches 3 and 4:

Flake Type By Size Category					
Size	**Less Than 2 cm**	**2 cm to 4 cm**	**4 cm to 6 cm**	**Greater than 6 cm**	**Total**
Cortical					
Hard Hammer	10	173	132	18	**333**
Biface	5	31	7	1	**44**
Indeterminate	40	152	28	1	**221**
Total	55	356	167	20	**598**
Non-Cortical					
Hard Hammer	10	132	44	4	**190**
Biface	23	94	3	0	**120**
Indeterminate	75	155	11	0	**241**
Total	108	381	58	4	**551**
Total					
Hard Hammer	20	305	176	22	**523**
Biface	28	125	10	1	**164**
Indeterminate	115	307	39	1	**462**
Grand Total	**163**	**737**	**225**	**24**	**1149**

Most of the material came from fill above the floors, and there is no obvious reason to subdivide the assemblage temporally. Most of the material derives from deposits above the floors, both because there was much more fill there, and because artifacts in general were sparse under the floors. About 15% of the 240 tools showed signs of burning, and about 23% of the flake assemblage. Almost 75% of the burned tools were from the upper fill on the mound, which also had a higher percentage of burning (21%) than other groups of strata both lower, and off the mound. This suggests to us that much of the burning is from the action of field fires on exposed

mound material; however, it could also be argued that the architectural fill used on the mound suffered more prehistoric burning than surrounding materials.

The assemblage is dominated by simple core flaking, with only about 14% of the flakes appearing to result from biface manufacture. Most of the flakes are of a size to be usable as tools; there are relatively few small flakes and even fewer really large ones, which along with the scarcity of cores, suggests that little knapping was done on site.
The contrast with the LDF Chert Site, where most of the assemblage was recognizably biface thinning flakes and small flakes and fragments were common, is striking.

Tools

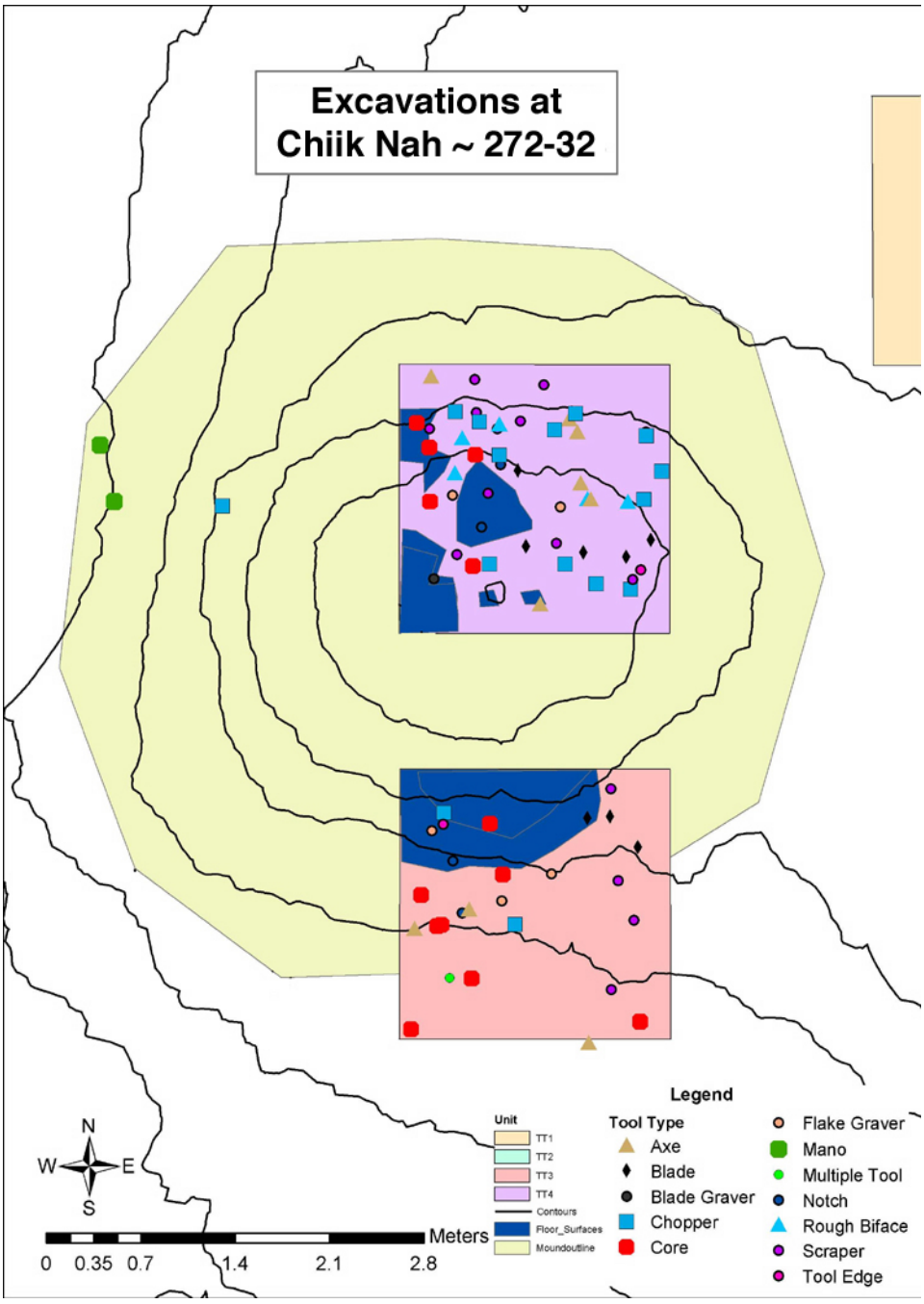
Tools from all the excavated units are included in the analysis, although most came from Test Trenches 3 and 4 (see Figure 7 for a map of the locations of tools with point proveniences). Information recorded for tools included type, weight, dimensions, blank form, and presence or absence of burning. Burning was identified by the presence of heat spalls, pot-lid fractures, crazing, and discoloration. The following blank forms upon which tools were made were distinguished: Hard hammer flakes, Biface thinning flakes, Indeterminate flakes, Blades, Macroblades, and Other. The "other" classification was usually used for tools made directly from nodules or fragments of nodules. In one case a tool was made on a piece of a broken axe and the classification "axe" was used for its blank form.

1. *Scraper*: These are arbitrarily distinguished from the large number of flakes with minor retouch or edge damage by requiring them to have more than 2 cm of steep, orderly retouch on at least one edge.
2. *Notch*: Notches have an apparently purposeful creation of a notched scraping edge. Often gravers (below) were made by removing two notches to form a spur, which at times made it difficult to distinguish which property was desired, the notch or the spur.
3. *Tool Edge*: This classification is given to tools that possess an edge of some sort, but are too irregular to classify as a chopper, scraper or graver. They are usually flakes with a short length of apparently purposeful steep retouch.
5. *Multiple Tool*: These are tools possessing several small irregular used edges.
6. *Flake Graver*: These consist of small, mostly unifacial spurs produced in a number of ways on small to medium sized chert flakes. The classification of flake graver has priority over classifications multiple tool and notch, as these spurs were sometimes included on the end of flakes possessing several irregular retouched edges, and were often formed by the removal of two large notches from either side of the intended spur. Flake gravers are found on a wide variety of flakes in a variety of sizes and forms, making it difficult to describe the "typical" flake graver.
7. *Shaped Graver*: These distinctive tool forms are characterized by small points on a flake worked around the entire circumference with steep, c. 90 degree, unifacial retouch. This tool is of a size held comfortably between the thumb and forefinger or hafted in a socket, and other analysts have called these drills. We make no classificatory distinction between them, but several different forms appear consistently. Most are a "tear drop" or "corn kernel" form , but some have one or both shoulders sharply defined below the point. Most have well knapped shoulders indicating that it was a deliberate feature the tool. Of final note is their uniformity in size. Most are within a few millimeters of each other in length and width. The typical shaped graver is about 22mm long, 10mm wide, and 3mm thick.

8. *Blade graver*: Only one specimen was found at 272-32, but in examination of the tools from 272-136 they can be recognized as a distinct tool form. Blade gravers are long, narrow tools created by steep, unifacial retouch on a thick, narrow flake or macroblade segment. When whole, they are c. five or six times as long as they are wide, almost as thick as they are wide, and often display heavy battering or stepping on the sides.
9. *Edge Dulled Flakes*: These flakes are distinctive oval pieces, usually 3-6 cm in diameter, severely dulled with bifacial buffering around much of the perimeter. Although relatively uniform in size and shape, edge-dulled pieces were categorized by the presence of this extensive dulling, not their oval shape. Such pieces are often called wedges. None were found at Chiik Nah, but they were common at 272-136.
10. *Prismatic blade*. These tools are classified by small narrow flakes with multiple parallel scars. These are counted as tools even when not retouched. Only obsidian examples were found at 272-32, while they appear in other collections in both chert and obsidian.
11. *Axe*: These tools are ovoid, relatively thick bifaces with finished edges, often showing dulling or damage to a bit at the wider end. These are sometimes called "general utility bifaces" in some of the literature, and "Biface ovates" for Tikal.
12. *Chopper*: Heavy-duty tools with a relatively straight, battered edge, usually bifacial, are classified as choppers. Relatively unbattered choppers proved difficult to differentiate from cores in the field.
13. *Rough Biface*: These bifaces exhibit the presence of irregular edges, lack of symmetry, or extreme thickness and may be considered unfinished due to their asymmetrical form.
14. *Core*: Any piece of material possessing several relatively large flake removals and showing no signs of use.
15. *Prismatic Blade Core*: These are small cores with multiple small blade removals. None were recorded at Chiik Nah, but they are recognized in the collections from 272-136.
16. *Ground Stone*: The ground stone is not included in the tool statistics. Two fragments of manos were found on the surface of the mound outside of the two test trenches. Both were fire-cracked; one was limestone, the other granite.

Frequency of Tool Types (Chert unless noted)

		Frequency	Percent
Small Tools	Scraper	71	29.6
	Notch	26	10.8
	Tool Edge	11	4.6
	Multi-Purpose	9	3.8
	Flake Graver	48	20.0
	Shaped Graver	6	2.5
	Blade Graver	1	.4
	Prismatic Blade (obsidian)	14	5.8
Large Tools	Axe	13	5.4
	Chopper	14	5.8
	Core	20	8.3
	Rough Biface	7	2.9
Total		**240**	**100.0**



Summary of Excavation Results

The Chiik Nah residential type at El Pilar represents what was probably a common residential unit in the local area. This small mound represents the collapsed of a sequence of constructions. None of the constructions of Chiik Nah would have been large enough to shelter more than a small family, but the collections suggest that it may have served other domestic purposes. The previously excavated domestic structures in the BRASS area exhibit considerable variability in the details of construction from consolidated cobble foundations to major faced limestone buildings. Chiik Nah appears to be well within the range of extant variation with raised foundations, floor ballast fill, and plaster surfaces. The artifacts are all of a type that might be

expected of a household; generalized in strategies of use more common at the lower end of the economic spectrum, despite the mound's close proximity to the El Pilar ceremonial core. This phenomenon of economic integration has been noted elsewhere at El Pilar and in the Maya area as well.

At this point, it is difficult to specify the economic strategy of occupations at Chiik Nah. The generic quality of the assemblage suggests ordinary series of activities. Tools found at the site do not point to any specialized craft activities. Some were undoubtedly used for basic domestic activities, while others probably served as agricultural implements.

The soils at Chiik Nah are clayey, hard to work, and not especially optimal for agriculture. On the other hand, they are not unsuitable either, as suggested by the recent evidence of maize agriculture in the area. The occupation concentrates in the Classic Period, with little evidence of earlier and later occupation.

Little doubt, the growth of El Pilar in the vicinity influenced occupation in this zone. The survey map shows several other small mounds in the vicinity. Nearby sites in more productive soil areas evidence higher settlement density and larger residential units. This is suggestive of a pattern of land use where the best soils are occupied before other areas. Such a pattern is consistent with regional patterns of the availability of well-drained ridges and settlement density between Northern Belize and the central Petén. Further, the pattern of occupation between Chiik Nah and Tzunu'un mirrors the pattern of land use expansion and contraction noted for the Belize River area in the surveys where the areas of clayey soil dominant in the marl based foothills were last occupied in the late Preclassic and were the first abandoned in the Terminal Classic. It may be the pattern of occupational preference is a cross-scale pattern. This will need to be tested.

The site of Chiik Nah is a single-structure residential unit is close to the center of the site, as are the other units in its vicinity. While the other units are unexcavated, it is not known whether they were contemporaneous to Chiik Nah, but given the BRASS survey data where 98% of the residential units had Late Classic occupation, we can assume that most had some degree of contemporaneity at least for that time period. Another possibility is that the other dispersed nearby structures formed an informal functional unit with the Chiik Nah. More data from this residential sector of El Pilar will help build a clearly picture of the residential activities around the ancient Maya city.

A Heritage of Investments at El Pilar

El Pilar has accumulated major archaeological and park assets of great value to archaeological understanding that benefit the local community, to the regional tourism industry, and to the future development opportunities that are both sensitive to the needs of the local area as well as to the worldwide concern of resource conservation. The research and development of the BRASS/El Pilar Program has built a vital investigative base for the illumination of El Pilar's place in the world of the ancient Maya while incorporating the needs and interests of the local community. Combining the field surveys and excavations with the trail development and site improvements have produced an unique destination for Belize and the Mundo Maya. The involvement of the community in the process of research and development has linked the local constituents to the annual explorations at the site and the cultural and natural resources of the site. This is a new heritage for the community. Our experimental model that this program has promoted over the past decade promises to bring the culture and nature of the Maya forest into a new dimension as we collaborate to build sustainable alternatives for the future.

Appendix I: Collaborative Organization
El Pilar Partners

El Pilar Team Organization:
El Pilar Program
~ UCSB Main Office: Anabel Ford Director ~ ford@marc.ucsb.edu
1. Coordinate interdisciplinary research as well as activities, agendas and meetings for El Pilar
2. Assist in and manage team research, development, and coordination for El Pilar and the Maya forest internationally.

~ Belize Advocate: Anselmo Castañeda Regional Environment ~ mbcbelize@btl.net
1. Presentation of the El Pilar conservation model in the context of the analyses of Mesoamerican biological corridors.
2. Promotion of the El Pilar model among key government and NGO officials involved in culture and nature.

~ Guatemala Advocate: José Antonio Montes International Law ~ jamontes@guate.net
1. Regional and international analyses of legal and political structure for management of shared cultural and natural resources.
2. Research and drafting of legal position papers for regional distribution and formal documents for agreements.

Community Participation
~ Amigos de El Pilar: Lakin/Chikin (Belize/Guatemala)
1. Community based organization promoting local participation in the management and benefits related to the conservation of resources at El Pilar.
2. Actively involved in expanding participation in conservation, especially the youth
3. Maintain cross-border community projects at El Pilar.

Community Accompaniment
NGO Program Partners: Community and Conservation Management
~ Help for Progress/Belize: Elias Awe, Rick August, Melanie Santiago ~ progress@btl.net
1. Asset building for rural community development in the Maya forest.
2. Social and environmental advocacy for community programs.
3. Linkage empowerment between rural communities and local government as well as local and international NGOs

~ Canan K'aax/ Guatemala: Mario Mancilla, Ramon Zetina ~ simbiosis@itelgua.com
1. Resource conservation management and environmental research in coordination with community participation.
2. Environmental research inventory, monitoring.
3. Management linkage for communities and resource conservation.

Appendix II: Timeline for El Pilar

El Pilar and the Maya World

700 BC ~ Middle Pre-Classic Period

The first public monuments established at El Pilar and earliest occupation of Tzunu'un Maya House with the forest garden

250 BC ~ Late Pre-Classic Period

Plaza Copal completed around same time of public monuments at Tikal
Major occupation in the El Pilar area
Development of Plaza Axcanan

250 AD ~ Early Classic Period

Construction at Plaza Jobo
Tikal emerges as a major power

600 AD ~ Late Classic Period

Major construction at Xikna Pyramid
Full occupation of El Pilar

900 AD ~ Terminal Classic Period

Continued construction at El Pilar

1000 AD ~ Early Postclassic Period

Abandonment of El Pilar

1250 AD ~ Late Postclassic Period

Occupation in the River Valley

1550 AD ~ European Contact

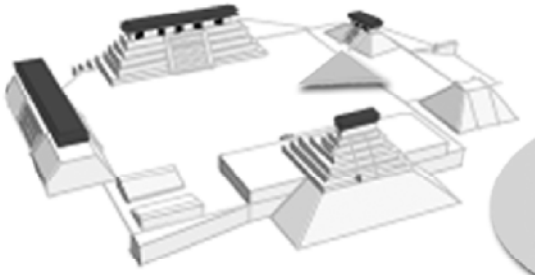
Cortez crosses the Petén

Life Returns to the Forest

- **1972** El Pilar recorded by the Dept. of Archaeology (Topsey & Palacio)
- **1983** Formal Archaeology visit to El Pilar (Awe, Morris, Ford)
- **1984** Belize River Archeological Settlement Survey map of the site
- **1993** BRASS/El Pilar Program begins excavations with full time caretaker
- **1994** Master map of the site core completed w/ Pilar Poiniente in RBM
- **1995** Official boundaries of El Pilar established in Belize
- **1995** Model Maya House created at Tzunu'un and El Pilar is listed in 100 Sites in Peril ~ World Monument Watch
- **1996** Excavation and careful consolidation at Jobo and Tzunu'un
- **1997** El Pilar certified as a Monumento Cultural in Guatemala and family shrine discovered at Tzunu'un
- **1998** Tzunu'un is consolidated with family shrine for visitors to enjoy
- **1999** Outreach education developed as part of BRASS/El Pilar Program
- **2000** Tzunu'un Trail Guide showcasing the Forest Garden
- **2001** Design of El Pilar Trail Guide
- **2002** Educational collaboration at SHJC and Tourism Workshops

Appendix III: Didactics for El Pilar

Welcome to Plaza Copal



A model of what Plaza Copal may have looked like during the height of El Pilar's power, around 800 AD. You are by the yellow arrow, entering from Plaza Duende.

Plazas, like Copal, are an integral part of sites throughout Mesoamerica. These open, easily accessible plazas were important public areas, and served as ceremonial centers and meeting places. Other more enclosed plazas, such as Axcanan to the south, represent exclusive areas within centers of power. Plazas have often been cleared to provide a full view of the monuments. But would the plaza be a comfortable meeting place for celebrants in the heat of the midday sun? More information about the trees can be found at Axcanan.

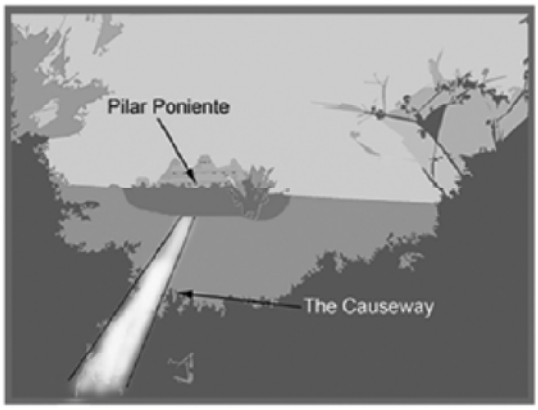
The Ball Court

Envisioning the ball court with reconstruction from Caracol

At Maya sites, distinct parallel mounds suggest the place where a ball court once stood. The structures you see were not for spectators, but were part of the playing field. We know the game involved bouncing a rubber ball off of these structures without using hands or feet, but little is known about the system of scorekeeping. The games may have been played for enjoyment, ceremonial purposes, or political reasons. One ceremony involved re-enacting a scene from the Popol Vuh where the hero twins, Huanhpu and Xbalanque, defeat the lords of the underworld. Legends also say that games were sometimes played with captives who would be sacrificed after the game.

Pilar Poniente

Approximately 800 meters to the west of Plaza Copal is the plaza complex of Pilar Poniente. This western area of El Pilar lies in what is now Guatemala.
The two sides of El Pilar were joined by a causeway that runs almost due west of this point as shown on the right.
The causeway is from the surrounding area and was plastered over in much the same way as many of the Plaza's were. The causeway is still visible and the trail leading west from here runs a short way along its route.
Pilar Poniente is covered in thick jungle, and will be developed in the future.



Western View from Plaza Copal

Plaza Copal

Artist's Impression of the Nohoch-Aak temple after further work

Plaza Copal was established in a major phase of development during the Late Pre-Classic period (250 BC - 250AD). This represents an incredible focus of work and effort, demonstrating the power and importance of El Pilar as a regional center.
The buildings around the plaza were repeatedly re-modeled over nearly two millennia and reached their final appearance in the late classic period (600-900AD).
The western temple, Nohoch-Aak is seen on the left in an artist's impression of how the temple may look in the future after further development.

Temples of the Maya

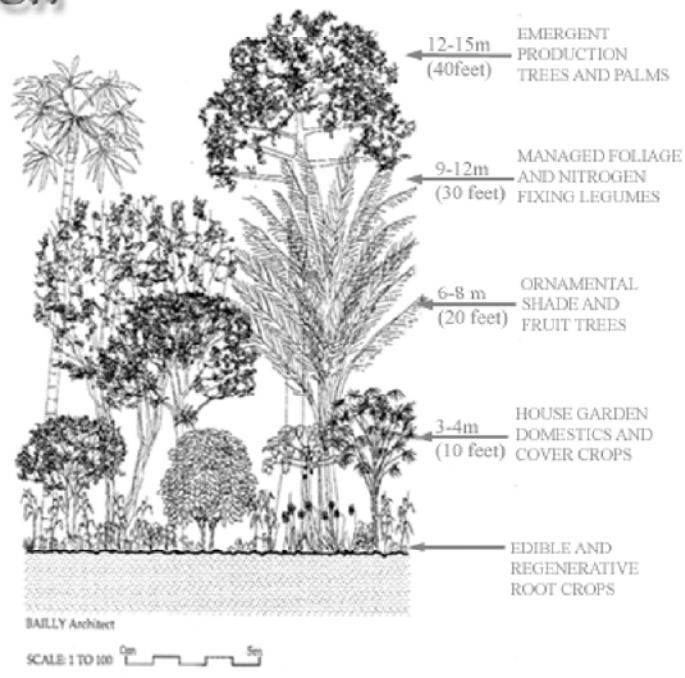
The majestic temples of the Maya still rule over the forest, a thousand years after they were abandoned. Archaeological research has focused on these ceremonial centers, but where were the living places of the Maya populace? At El Pilar, we present both the power elite and the domestic household.

Maya temples were designed and built, then redesigned and rebuilt, over and over again in many phases of construction, creating layers, much like an onion. For example, Xikna was remodeled over 1700 years. Temples are grouped around plazas and usually face the cardinal directions N, E, S, W.

Produced by BRASS / El Pilar
Designed by Keir Strickland

Maya Forest Garden

- The Maya lived on this land for thousands of years, supporting a population far greater than today's.
- They did this without the intensive cultivation of a single crop and without plowing or clearing the land.
- The Maya Forest Garden at El Pilar demonstrates how the ancient Maya may have worked the land in the forest that is so rapidly dissappearing.
- We propose that the Maya practiced a resilient and highly diverse polycultivation of trees, shrubs, herbs and grasses and that their traditional cultural practices cultivated the Maya forest.
- For further information you may wish to read the Tzunu'un Forest-Garden Trail Guide, available at the BePukte Cultural Center.



FOREST-GARDEN POLYCULTURE OF MAYA LOWLANDS
BELIZE RIVER ARCHAEOLOGICAL SETTLEMENT SURVEY, CAYO, BELIZE

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