




2019

**RESILIENCE AND ADAPTATION IN A WORLD SYSTEM
PERIPHERY: LONG-TERM PERSPECTIVES FROM THE LAKE
ATITLAN BASIN, HIGHLAND GUATEMALA 600 BC – 1600 AD**

Gavin R. Davies

University of Kentucky, grdavies3@gmail.com

Author ORCID Identifier:

 <https://orcid.org/0000-0002-5734-3640>

Digital Object Identifier: <https://doi.org/10.13023/etd.2019.158>

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

Recommended Citation

Davies, Gavin R., "RESILIENCE AND ADAPTATION IN A WORLD SYSTEM PERIPHERY: LONG-TERM PERSPECTIVES FROM THE LAKE ATITLAN BASIN, HIGHLAND GUATEMALA 600 BC – 1600 AD" (2019). *Theses and Dissertations--Anthropology*. 39. https://uknowledge.uky.edu/anthro_etds/39

This Doctoral Dissertation is brought to you for free and open access by the Anthropology at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Anthropology by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Gavin R. Davies, Student

Dr. Scott R. Hutson, Major Professor

Dr. Sarah M. Lyon, Director of Graduate Studies

RESILIENCE AND ADAPTATION IN A WORLD SYSTEM PERIPHERY:
LONG-TERM PERSPECTIVES FROM THE LAKE ATITLAN BASIN,
HIGHLAND GUATEMALA
600 BC – 1600 AD

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Arts and Sciences
at the University of Kentucky

By
Gavin R. Davies
Lexington, Kentucky
Director: Dr. Scott R. Hutson, Professor of Anthropology,
Lexington, Kentucky
2019

Copyright © Gavin R. Davies 2019
<https://orcid.org/0000-0002-5734-3640>

ABSTRACT OF DISSERTATION

RESILIENCE AND ADAPTATION IN A WORLD SYSTEM PERIPHERY: LONG-TERM PERSPECTIVES FROM THE LAKE ATITLAN BASIN, HIGHLAND GUATEMALA 600 BC – 1600 AD

The Lake Atitlan Basin of highland Guatemala boasted fertile soils and was rich in natural resources, making it an attractive area for permanent settlement. However, the region lacked a number of important items, such as salt, cotton, and obsidian, all of which had to be obtained through trade. Good agricultural land was also scarce in certain parts of the lake and the steep hillslopes were easily eroded, making it necessary for communities to maintain access to emergency supplies of corn. Lake Atitlan's communities were therefore highly dependent on exchanges with neighboring groups who occupied contrasting ecological zones, especially those in the Pacific Coast. However, the Pacific piedmont was a corridor of interregional trade and a source of valuable goods such as cacao; factors which made it a focus of political contestation and instability. Additionally, the lower coast appears to have been vulnerable to episodes of drought, prompting periodic migrations to higher altitudes.

All of these factors must have made it challenging for the communities of Lake Atitlan to maintain access to the resources they needed, and therefore to sustain their way of life. And while there is currently no evidence to suggest a collapse or abandonment of the lake, the majority of the existing data comes from a small number of sites concentrated near the southern shore and the lack of rural settlement data makes it impossible to assess the impact that broad scale political, economic, and environmental changes had on the general population of the lake and their internal organization.

The Lake Atitlan Archaeological Project (PALA) set out to rectify this situation by generating systematic settlement and ceramic data for an important sub-region of the lake, namely the southwestern shore. The current dissertation combines the data generated by this project with data from previous investigations, to provide a more comprehensive synthesis of the cultural-historic development of the lake and to place this development in its broader Mesoamerican context.

Drawing on resilience and world systems concepts, the two main questions that I set out to answer in this dissertation are: How did Lake Atitlan's socio-cultural systems adapt to broad scale fluctuations in the Mesoamerican world system, and, did these adaptations succeed in producing a more resilient society?

KEYWORDS: Resilience, World Systems, Highland Maya, Guatemala, Lake Atitlan

Gavin R. Davies

04/24/2019

RESILIENCE AND ADAPTATION IN A WORLD SYSTEM PERIPHERY:
LONG-TERM PERSPECTIVES FROM THE LAKE ATITLAN BASIN,
HIGHLAND GUATEMALA
600 BC – 1600 AD

By
Gavin R. Davies

Scott R. Hutson

Director of Dissertation

Sarah M. Lyon

Director of Graduate Studies

02/20/2019

DEDICATION

This dissertation is dedicated to the memory of my friend, colleague, and mentor John J. McGraw, whose passion, kindness, and generosity was an inspiration and whose light continues to shine through his work and the people he touched.

ACKNOWLEDGMENTS

Funding for the Lake Atitlán Archaeological Project (PALA) was provided by a generous grant from the National Science Foundation (NSF) (BCS1458535). Additional funding was provided by the University of Kentucky (UK), through the Susan Abbott Jamieson, O' Dear and Latin America Travel grants programs.

This dissertation and the research that it describes, would not have been possible without the unwavering patience and professionalism of my advisor, Scott Hutson and the support of my other committee members from the UK, who were: Chris Pool, Rusty Barrett, and Dick Jefferies. I also owe a debt of gratitude to several former graduate students from UK and give special thanks to Ryan Anderson and Veronica Miranda, for keeping me focused throughout my first few years, and to Erin Sears, for encouraging me to follow my passion for highland Guatemala and for making it all possible by introducing me to Marion Popenoe de Hatch and Tomas Barrientos of the Universidad del Valle de Guatemala (UVG).

The archaeology department of UVG (including Tomas Barrientos, Carlos Alvarado, Matilde Ivic de Monterroso and Shintaro Suzuki), provided me with vital support when I was getting started and I applaud their continued commitment to the preservation of Lake Atitlan's cultural heritage. Without their dedication, there would almost certainly be fewer archaeological sites left to study and little knowledge about the prehispanic past of this incredible region.

I am especially grateful to Tomas Barrientos who has supported my interests in the lake since our first meeting in 2011. With regards to the current project, I am especially grateful to him for recommending Marielos Corado to serve as my co-director, without whom the project may not have gotten off the ground and almost certainly wouldn't have landed safely. Maria's commitment to the project, even after the funds had been exhausted, is a testament to her professionalism and her love for the lake and its people.

I am also grateful to Tomas for the loan of his only total station, for providing me with access to Edwin Shook's site records, and for providing me with four of his licenciatura students (Pablo Estrada, Marissa Lopez, Sara Fuentes, and Kat Huwart) to assist with our fieldwork. All four students made important contributions to our

investigations at Pan Alujaay and San Juan Antigua and assisted us in the laboratory during a particularly busy phase in the project.

During the artifact analysis we were honored to receive the input of Dra. Marion Popenoe de Hatch, who kindly visited us at our lab in San Pedro and provided important insights on the ceramic collection. We are also extremely grateful to Dr. Shintaro Suzuki, for travelling to San Pedro to analyze the human remains, and to the archaeology department for allowing us to study their in-house ceramic collections. I also thank Edgar Carpio Rezzio of the Universidad de San Carlos for his assistance with our obsidian identifications and for providing us with samples of each of the Guatemalan sources.

In San Pedro La Laguna, the project received vital logistical support from the Center for Scientific and Cultural Research (CICC) and the Museo Tz'unun Ya' in San Pedro la Laguna. In 2015, the director of the CICC, Domingo Yojcom Rocche, who was kindly recommended to us by Ajpub Pablo Garcia Ixmata, generously provided us with space in his new center to install our temporary laboratory. His support was key to establishing relationships with the local authorities and the communities in both San Pedro and San Juan la Laguna. We are also extremely grateful to Clemente Peneleu and the staff at the Museo Tz'unun Ya' who housed our laboratory for the last few months of the project and provided support and encouragement.

In the field, we were assisted by the Matzar brothers, Juan and Antonio, whose unwavering enthusiasm and intimate knowledge of the local community, its people and its geography, made them the most highly qualified field assistants anyone could ever wish for. For putting us in touch with the Matzar brothers, and also for his generous sharing of ethnohistoric documents, and his unparalleled knowledge of Tz'utujil history and culture,, I also thank John Prybot, the original Juan Gringo. Other people who provided support for the project in San Pedro included Doña Andrea Rocche Chavajay, Felipe Chavajay, Josué Quiacain, Francisco Quiacain, Vicente Cumes and Chepity Puac Aju.

In the community of San Juan, we were ably assisted by the Cholotio brothers (Carlos and Miguel) and received important help from several individuals associated with the Rija'tzuul Na'ooj Community Library there. Special thanks go to Jose Mendoza, Israel Quic and Andres Hernandez. I was also extremely fortunate to be assisted in San Juan by James

Loucky, whose intimate knowledge of the town and its people led to some important contacts and discoveries.

I want to thank several individuals who generously gave their time as volunteers and several additional individuals who provided informal support and advice as either mentors or colleagues. The volunteers included Joseph Coombe, Lisa Berg, Efrain Cox, and Hari Castillo. The advisors and mentors included Barbara Arroyo, Oswaldo Chinchilla, Arthur Demarest, Janine Gasco, Wendy Kramer, George Lovell, Chris Lutz, John McGraw, Matthew Restall, Eugenia Robinson, Mike Saunders, and Brent Woodfill.

Finally, I want to thank the over 60 private landowners who kindly granted us permission to conduct research on their land, when nothing compelled them to do so. I hope that you will continue to give us your trust and that you will continue to permit us to study your ancestors and your culture, in this unique and awe-inspiring place.

We want to dedicate this work to the memory of our friend and colleague John J. McGraw who was a high level academic who always gave us support and positive energy. His passion and efforts to study the culture of the Tz'utujil Maya is still a great inspiration.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	iii
LIST OF TABLES.....	x
LIST OF FIGURES	xii
CHAPTER 1. INTRODUCTION.....	1
1.1 LAKE ATITLAN AND THE SOUTHERN MAYA REGION	2
1.2 THEORY	5
1.3 THE LAKE ATITLAN ARCHAEOLOGICAL PROJECT (PALA).....	7
1.4 OVERVIEW OF DISSERTATION	10
CHAPTER 2. RESILIENCE AND WORLD SYSTEMS.....	12
2.1 COMPLEX ADAPTIVE SYSTEMS	12
2.2 RESILIENCE.....	13
2.3 WORLD SYSTEMS.....	19
2.4 WORLD SYSTEM RESILIENCE	22
CHAPTER 3. THE LAKE ATITLAN BASIN	23
3.1 NATURAL ENVIRONMENT AND RESOURCES	30
3.2 SUBSISTENCE	36
3.3 SUMMARY	38
CHAPTER 4. ANTECEDENTS AND ARCHAEOLOGICAL SYNTHESIS	40
4.1 CHUK'MUK AND CHUITINAMIT	40
4.2 SEMETABAJ	47
4.3 SURVEY AND RESCUE PROJECTS	49
4.4 SAMABAJ.....	50

4.5	PROJECT AREA BACKGROUND.....	50
4.6	CHRONOLOGICAL OVERVIEW	57
CHAPTER 5. SETTLEMENT SURVEY BACKGROUND AND METHODS		73
5.1	SETTLEMENT PATTERN SURVEY.....	73
5.2	SURVEY IN HIGHLAND GUATEMALA.....	74
5.3	PRELIMINARY ACTIVITIES	77
5.4	PALA SURVEY METHODS.....	80
CHAPTER 6. SURVEY RESULTS.....		87
6.1	ZONE 1. PA TZ'UNUNA'	90
6.2	ZONE 2: KO'ON.....	93
6.3	ZONE 3: CHI KAQAJAAY	95
6.4	ZONE 4: SAN JUAN LA LAGUNA	97
6.5	ZONE 5: XE' KAAK'A AAB'AJ	99
CHAPTER 7. SITE DESCRIPTIONS		100
7.1	ZONE 1: PA TZ'UNUNA'.....	100
7.2	ZONE 2 – KO'ON	145
7.3	ZONE 3. CHI KAQAJAAY	175
7.4	ZONE 4: SAN JUAN LA LAGUNA	198
7.5	ZONE 5: XE' KAAK'A AAB'AJ	215
CHAPTER 8. EXCAVATIONS: METHODS AND RESULTS		221
8.1	EXCAVATION PROCEDURES	221
8.2	STRATIGRAPHY AND CHRONOLOGY	223
CHAPTER 9. CERAMICS AND CHRONOLOGY		271

9.1	ANALYSIS METHODS	271
9.2	ATTRIBUTE ANALYSIS.....	272
9.3	COLLECTION OVERVIEW	272
9.4	NOTES ON CHRONOLOGY	273
9.5	IMPORTED CERAMICS.....	274
9.6	LOCAL CERAMICS.....	300
9.7	SUMMARY	316
CHAPTER 10. LITHICS AND ORGANICS.....		318
10.1	OBSIDIAN	318
10.2	GROUND STONE ARTIFACTS.....	327
10.3	GREEN STONE	337
10.4	ORGANIC MATERIALS	339
10.5	NOTABLE ABSENCES	340
CHAPTER 11. ROCK ART AND STONE SCULPTURE		343
11.1	ATITLAN’S MONUMENTS: RECENT HISTORY.....	344
11.2	PICTOGRAPHS	344
11.3	PETROGLYPHS / PETROGLYPHIC MONUMENTS	345
11.4	3D SCULPTURES.....	350
11.5	2D SCULPTURES.....	363
11.6	SMALL PORTABLE SCULPTURE	368
CHAPTER 12. SYNTHESIS AND DISCUSSION		371
12.1	PRECLASSIC PERIOD (C. 600 BC – 200 AD).....	371
12.2	THE EARLY CLASSIC PERIOD (C. 200 – 400 AD)	379
12.3	THE MIDDLE CLASSIC PERIOD (C.400 – 600 AD).....	380

12.4	THE LATE CLASSIC PERIOD (c. 600-800 AD)	382
12.5	THE CLASSIC TO POSTCLASSIC TRANSITION (c. 800 – 1200 AD)	384
12.6	THE LATE POSTCLASSIC (c.1200-1524 AD).....	388
CHAPTER 13. CONCLUSIONS		396
13.1	RESILIENCE AND ADAPTATION IN LAKE ATITLAN	396
13.2	CONTRIBUTIONS TO HIGHLAND MAYA ARCHAEOLOGY	399
13.3	BROADER OUTCOMES AND RECOMMENDATIONS	403
13.4	FUTURE CHALLENGES.....	406
REFERENCES		407
VITA		432

LIST OF TABLES

Table 2.1. Adaptive Cycle Phases and Variables	15
Table 3.1. Soil classes, consociations and groups within the project area based on MAGA 2006.....	33
Table 4.1. Comparison of ceramic phases developed by Lothrop (1933) and by Agua Azul project (Chinchilla et al 1994).....	45
Table 4.2. Registered Sites within the Project Area	51
Table 4.3. Chinamits mentioned in the Libro de Matrimonios de Pa Tz'ununa' from 1649.	54
Table 4.4. Chinamits making up the Postclassic Tz'utujil Kingdom and their possible home territories, based on Orellana (1984) and Carrasco (1982).....	71
Table 6.1. Sites Defined in Zone 1	92
Table 6.2. Properties investigated in Zone 2, by type.....	95
Table 6.3. Sites and corresponding parcels documented in Zone 3.....	97
Table 6.4. Sites and their corresponding parcels documented in Zone 4.	98
Table 6.5. Sites and their corresponding parcels documented in Zone 4.	99
Table 7.1. Ceramics from Pa Tz'ununa'	101
Table 7.2. Ceramics from Cruz B'ey by Type and Phase.....	109
Table 7.3. Ceramics recovered from Chuwa Kanti (FS9a and FS9b) by phase and type.....	112
Table 7.4. Ceramics recovered from FS21 by type and date.	124
Table 7.5. Ceramics recovered from FS14 (Areas A and B) by type and phase.	127
Table 7.6. Ceramics recovered from Pa'Tawal by Phase and Type.	133
Table 7.7. Ceramics recovered from Xe'Tawal (FS10).	136
Table 7.8. Ceramics from Chuwa Jul Ya' by phase and type.....	142
Table 7.9. Ceramics from Pa Q'a'm (FS19) by date and type.....	144
Table 7.10. Ceramic and obsidian counts and densities from Pan Alujaay, Areas A-E.	153
Table 7.11. Ceramics from Pan Alujaay Areas D and E, by date and type / ware.	159
Table 7.12. Ceramics from Pa Mes Alto by date and type / ware.	161
Table 7.13. Ceramics recovered from Pa Mes Bajo	165
Table 7.14. Ceramics recovered from Chi Kaqajaay, Area B.	178
Table 7.15. Ceramics recovered from Chi Kaqajaay, Area A by phase and type.	182
Table 7.16. Ceramics from Chi Kaqajaay, Area C.	185
Table 7.17. Ceramics recovered from Xe'Juyu' (FS2) by phase and type.	190
Table 7.18. Ceramics recovered from Xe'Cruz (FS1) by phase and type.	194
Table 7.19. Surface ceramics from San Juan Antigua, Area A by phase and Type	206
Table 7.20. Surface ceramics from San Juan Antigua, Area B.....	207
Table 7.21. Ceramics from San Juan Antigua, Area C, by phase and date	208
Table 7.22. Ceramics from Tzan Juyu by Type and Phase.....	212
Table 8.1. Summary of Excavations conducted for the PALA project in 2015.	222
Table 8.2. Ceramic phases and percentage of total from Operation 18a-1.....	227

Table 9.1. Comparison of Shook / Hatch and Inomata chronologies for Preclassic to Early Classic Phases at Kaminaljuyu.	274
Table 9.2. Providencia phase ceramic types identified in project area.	275
Table 9.3. Verbena and Arenal Phase ceramics identified in the project area.....	281
Table 9.4. Imported ceramics dating to the Early Classic.	288
Table 9.5. Imported ceramics dating to the Late Classic period.....	290
Table 9.6. Ceramics of the Terminal Classic / Early Postclassic Atitlan D Phase.	292
Table 9.7. Local ceramics dating to the Late Preclassic to Early Classic phases, San Juan Antigua (FS18).....	300
Table 9.8. Utilitarian ceramics in use during the Protoclassic and Early Classic periods.	303
Table 9.9. Utilitarian ceramics of Late Classic to Late Postclassic periods.	306
Table 9.10. Local ceramics dating to Late Postclassic and Colonial periods.	313
Table 10.1. Summary Data on Obsidian Artifacts Recovered During the PALA Investigations.	322
Table 10.2. Counts and provenience data for flakes / fragments.....	325
Table 10.3. Summary of Ground Stone Artifacts recovered by PALA.	327
Table 10.4. Metate types and proveniences.	328
Table 10.5. Green stone artifacts recovered by PALA.	337
Table 10.6. Excavated contexts containing animal bones	340
Table 10.7. Cotton growing towns in Pacific piedmont and distances from Santiago Atitlan	341
Table 11.1. Rock art and monuments recorded in the PALA project area.	343
Table 11.2. Full-round Monuments depicting kneeling figures or bound captives	357
Table 12.1. Sites with Preclassic evidence, showing ceramic percentages.	372
Table 12.2. Preclassic imports identified in the PALA project area and possible places of origin.	376
Table 12.3. Sites with evidence of Early Classic activity in PALA project area.	379
Table 12.4. Sites with evidence of Middle to Late Classic activity.....	383

LIST OF FIGURES

Figure 1.1. Lake Atitlan, looking east from San Pedro La Laguna, with Cerro de Oro center right (Photo by author, 2016).	1
Figure 1.2. Map of the Southern Maya Region showing location of Lake Atitlan Basin. .	3
Figure 1.3. Schematic Profile of Pacific Coast and southern Guatemalan highlands, showing elevation of Lake Atitlan, after Whitmore and Turner (1992:414, Figure 7). Reproduced with Permission.	4
Figure 1.4. Map of Lake Atitlan showing location of the PALA project area outlined in black and slope percentage, after Vivamos Mejor (2011).	9
Figure 1.5. Detail of PALA project area showing slope percentage, major sites and modern towns, after Vivamos Mejor (2011).....	10
Figure 3.1. View of Lake Atitlan and its three volcanoes, looking southeast.	23
Figure 3.2. Atitlan Volcano, viewed from Cerro Pa K'isiis, looking east.	24
Figure 3.3. San Pedro Volcano, looking west from Bay of Santiago.	25
Figure 3.4. Rio Yatza valley that connects Lake Atitlan to Pacific piedmont, looking southwest from trail near Pasajquim.	26
Figure 3.5. The façade of the 16 th century church at San Geronimo Chicochin.	27
Figure 3.6. Gentle slopes surrounding Tolimán Volcano, looking southeast from Chuitinamit, with Santiago Atitlan at center.	29
Figure 3.7. Steep slopes of San Pedro volcano, looking south from near Finca Tzantziapa.	29
Figure 3.8. Vast expanse of agricultural land surrounding Chi Kaqajaay.	30
Figure 3.9. Hydro-geological map of project area, after Nunez (2012-13).	32
Figure 4.1 The hill of Chuitinamit (foreground) with San Pedro volcano behind, looking southwest. G. Davies 2011.	41
Figure 4.2. Map of Chuitinamit, after Fox (1977).	42
Figure 4.3 The now severely disturbed site of Chuk'muk, looking west.	44
Figure 4.4 Plan of central portion of Chuk'muk, after Lothrop 1933, Figure 5.	44
Figure 4.5. Location of known archaeological sites around Lake Atitlan, adapted from original drawn by Xelani Luz.	46
Figure 4.6. Map of the site core of Semetabaj. After Alvarado Galindo and Eduardo Bustamente (2013).	48
Figure 4.7. Large earthen mound at Semetabaj. Photo by Maria Corado 2016.	49
Figure 4.8. Photo of San Pedro and San Juan, taken by William Gates in 1920s. Harold B. Lee Library, L. Tom Perry Special Collection, Brigham Young University.	52
Figure 4.9. San Pedro La Laguna c. 1940, looking northeast, with Pa Tawal peninsula top left and Catholic church center right. Probably taken by Benjamin Paul.	53
Figure 4.10. San Juan La Laguna church, with Cerro Cristalina (the Indian Nose) behind. After Aguiire (1972:106).	55

Figure 4.11. Left. Early Classic incensario recovered by the Agua Azul project. Right. Teotihuacan-style tripod vessel recovered during rescue excavations at Chuk' Mu'q. Reproduced with permission of Tomas Barrientos.....	64
Figure 4.12. Locations of Early Classic sites with ceramic connections to Chuk'muk....	65
Figure 5.1. House walls at Chuk'muk. Photo by author, 2011.....	76
Figure 5.2. Reconstruction of residential structure at Agua Tibia, Totonicapan, after Ciudad Ruiz 1984, Figure 27.....	76
Figure 5.3. Maya ceremony at the site of Chi Kaqajaay petitioning the site guardian to allow us to work at the site.	80
Figure 6.1. Location of the five survey zones in the PALA project area, on Google Earth.	88
Figure 6.2. Plan view of project area on satellite image, showing location of Zones 1-5.	89
Figure 6.3. Satellite image of Zone 1, showing all surveyed parcels except for FS17.	91
Figure 6.4. Satellite image of Zone 2 showing locations of investigated properties (red polygons).....	94
Figure 6.5. Overview of Zone 3 on Google Earth, looking northeast, showing locations of investigated properties (red polygons) and major landmarks.	96
Figure 6.6. Overview of Zone 4, looking west-southwest, Google Earth 2017.	98
Figure 6.7. Overview of Zone 5 on Google Earth, looking west-northwest.....	99
Figure 7.1. Central San Pedro La Laguna on Google Earth, showing collection locations (FS42-43 and FS46-47).....	102
Figure 7.2. General overview of Saqaribal, showing low walls and terraces.....	105
Figure 7.3. Dressed stone blocks being reused on a property adjacent to FS28.....	105
Figure 7.4. Location of Saqaribal on bathymetric map (1975), showing possible submerged plateau.	106
Figure 7.5. Parcel FS12a of Cruz B'ey, adjacent to Museo Tzunun'Ya (right side of picture).	108
Figure 7.6. Parcel 53, Cruz B'ey, directly north of the Museo Tzunun'Ya and adjacent to the Colegio Bethel.	108
Figure 7.7. Chuwa Kanti, Area A, looking northwest.	111
Figure 7.8. Overview of Xe'Tinamit (FS13) with Unit 1 in the foreground, looking east.	113
Figure 7.9. Location of Xe'Tinamit (FS13), Zone 1, San Pedro La Laguna.....	114
Figure 7.10. Las Gradadas, Zone 1, San Pedro La Laguna, looking northwest.	116
Figure 7.11. Schematic plan of Las Gradadas (FS15), Zone 1, San Pedro La Laguna.	117
Figure 7.12. General view of Chuwa Sanayi (FS16) looking south, showing eroded terrace.....	119
Figure 7.13. Schematic plan of Tzan Tinamit (FS21), showing upper terrace on left side and lower terrace on the right.	121
Figure 7.14. View from Tzan Tinamit, looking east towards Cerro de Oro.....	122
Figure 7.15. Rachaq Abaj, Area A (FS14a), showing remnants of a possible foundation or albarrada. Looking south towards center of San Pedro.	125

Figure 7.16. Schematic plan of Rachaq Abaj (FS14), showing Areas A and B and location of Tikalito.....	126
Figure 7.17. The Tikalito monument, photographed in 1978 by Chris Berhorst. Part of the Shook Collection held by the Universidad del Valle in Guatemala City.	129
Figure 7.18. Southeast facing wall of stone platform, Pa'Tawal, San Pedro La Laguna.	131
Figure 7.19. Rock outcrop with modified basins and peak of San Pedro volcano.	132
Figure 7.20. Casa Rosario portion of Xe'Tawal which has been landscaped for use as a Spanish School.....	135
Figure 7.21. San Pedro c. 1940, looking northeast, showing inundation of Xe'Tawal area.	135
Figure 7.22. Cremation urns from Xe'Tawal (FS10). Top = donated urn. Bottom = urn in Casa Rosario collection.....	137
Figure 7.23. Location of Chuwa Jul Ya' (FS17) on satellite image.	139
Figure 7.24. Schematic map of Chuwa Jul Ya', Area A (FS 17a).....	141
Figure 7.25. Aerial image of Pan Alujaay, showing investigated Areas A-E.	146
Figure 7.26. Structure A1, Pan Alujaay, looking south.	147
Figure 7.27. Structure A2, Pan Alujaay, looking west, with top of Structure A1 behind	147
Figure 7.28. Structure A3 viewed from public path, looking southeast	148
Figure 7.29. Basal platform of double pyramid (Structures A1 and A2), looking south from Area B.	154
Figure 7.30. Schematic plan of Pan Alujaay, Area C, showing collection locations.	155
Figure 7.31. Terrace wall with sloping section. Pan Alujaay, Area C, looking west.	156
Figure 7.32. Historic altar (Structure C-1) constructed partially out of prehispanic cut stones. Pan Alujaay, Area C. Looking southwest.....	156
Figure 7.33. Pan Alujaay Area D, looking south towards San Pedro Volcano. Red highlighted area indicates possible remnants of foundation or albarrada.....	157
Figure 7.34. Pan Alujaay, Area E, looking west.....	158
Figure 7.35. General view of Pa Mes Alto, looking south towards San Pedro volcano, with rock pile to left of picture.	160
Figure 7.36. Pa Mes Bajo, looking north, showing coffee trees.....	163
Figure 7.37. Schematic plan map of Pa Mes Bajo (FS6), showing piece-plot locations as blue triangles.....	164
Figure 7.38. PaCh'anay Bajo, looking east, showing large boulder in foreground and remanants of destroyed terraces in the background.....	166
Figure 7.39. Portable monument at Pa Ch'anay Bajo, now lost.....	167
Figure 7.40. Pa Ch'anay Alto, viewed from the road, looking south.	168
Figure 7.41. Location of investigated sites near Pa Ch'anay Alto.....	169
Figure 7.42. Sunken stone enclosure, Punta de Oro.	171
Figure 7.43. Location of Alta Vista (FS59) on Google Earth, 2017.....	173

Figure 7.44. Remnants of low stone platform or cimiento at Alta Vista, looking southeast.	174
Figure 7.45. Map of Chi Kaqajaay, showing location of mounds, walls and terraces. ..	176
Figure 7.46. Mound 1, Chi Kaqajaay, Area B, looking northwest.	177
Figure 7.47. Mound 2, Chi Kaqajaay (FS3), Zone 3, showing possible stela base in foreground. Looking northwest.	177
Figure 7.48. Chi Kaqajaay, Area A, looking west, southwest towards Cerro Pa K'isiis and showing possible residential terrace remnants.....	181
Figure 7.49. Schematic plan of Chi Kaqajaay, Area C, showing CSC and terrace locations.	184
Figure 7.50. General overview of Xe'Juyu', looking southeast, with dry riverbed in foreground and San Pedro-Santiago road near center of photo.	187
Figure 7.51. Schematic map of Xe'Juyu' (FS2).	188
Figure 7.52. Possible remnants of house foundation or stone enclosure.	189
Figure 7.53. Xe'Cruz, Zone 3, looking northwest, showing low terraces and anthropomorphic boulder.....	192
Figure 7.54. Schematic map of Xe'Cruz (FS1), Zone 3.....	193
Figure 7.55. Stone walled residential structure at Jaay Aba'aj, now destroyed.	195
Figure 7.56. Cornfield containing the site of Tzan Q'ana Ulew, looking southwest.	197
Figure 7.57. Center of San Juan La Laguna on Google Earth, showing location of FS27.	198
Figure 7.58. Location of Mound 1, monuments, and surveyed parcels, San Juan Antigua.	200
Figure 7.59. Mound 1 at San Juan Antigua, looking east.	202
Figure 7.60. Schematic plan of San Juan Antigua, Area A, showing CSC locations and Test pit locations.	203
Figure 7.61. Schematic plan of Parcel B, San Juan Antigua.	204
Figure 7.62. Schematic plan of Parcel C, San Juan Antigua.	205
Figure 7.63. Tiquisate Ware bowl from private collection, San Juan Antigua.....	209
Figure 7.64. Parcel FS20 (Tza'n Juyu') viewed from the street, San Juan La Laguna, looking northeast.....	210
Figure 7.65. Schematic plan of Tza'n Juyu' showing CSC locations (red circles).	211
Figure 7.66. Chi Nimaya', near the shore of San Juan La Laguna, looking northeast. ..	214
Figure 7.67. Pit excavated by construction workers, showing stratigraphy.	214
Figure 7.68. Stone head (SJ02) on coffee terrace at the site of Xe' Kaak'a Aab'aj (FS25)	215
Figure 7.69. Map showing location of sites and terrace orientations in Zone 5.	216
Figure 7.70. Stone-faced terrace located at Tzujk'abal.	219
Figure 8.1. Profile of Operation 18a-1 showing strata 1-3 over natural subsoil (strata 4).	225
Figure 8.2. North profile of Operation 18a-1.....	226
Figure 8.3. North profile of Operation 18a-2.....	229

Figure 8.4. Profiles of south, west and north walls of Operation 18a-2	230
Figure 8.5. Plan and profile of Operation 18b-1.....	232
Figure 8.6. Profiles of Operation 18b-1	232
Figure 8.7. Profile of south wall of Operation 18B-2, San Juan Antigua.....	234
Figure 8.8. North, east and south profiles of Operation 18B-2.....	234
Figure 8.9. Schematic map of Rachaq Abaj, Area A, showing the location of Op 14-1.	237
Figure 8.10. Plan and southwest facing profile of Operation 14a-1.	238
Figure 8.11. Schematic plan of Xe'Tinamit, showing unit locations and proposed extent of houselot (labelled as “viviendo”) and natural depression (labelled as “basurero”). ..	239
Figure 8.12. North wall profile of Operations 13-1 (left side) and 13-4 (right side).....	242
Figure 8.13. North profile of Operations 13-1 and 13-4.....	243
Figure 8.14. San Pedro Tan Rosado rims recovered from strata 3 and 4 of Op 13-4....	244
Figure 8.15. North facing profile of Operation 13-2.	245
Figure 8.16. North facing (left) and south facing (right) profiles of Operation 13-9 showing dark occupation layer overlying talpetate.	245
Figure 8.17. Operation 13-10 showing large boulder.....	246
Figure 8.18. Piece of bajareque, in situ at base of Operation 13-10 and comparison with bajareque construction illustrated by Wauchope (1938).	247
Figure 8.19. Posthole located beneath bajareque in Operation 13-10.	248
Figure 8.20. Surface of compact occupation layer with ceramic debris at 68 cmbd in Operation 13-12.	250
Figure 8.21. North and east profiles of Operation 13-12. Circles in strata 2 represent dung beetle pods.	250
Figure 8.22. Pan Alujaay location on Google Earth, showing investigated areas (yellow polygons) and estimated site extent (green polygons).....	252
Figure 8.23. Location of Units 3-16 in Area C of Pan Alujaay.....	253
Figure 8.24. General view of Operation 7c-3, showing relationship of buried prehispanic structure C-3 to historic altar on surface (Structure C-1).	254
Figure 8.25. E and S profiles of Operation 7c-3, Pan Alujaay, showing Structure C-3.	256
Figure 8.26. NW facing wall of structure C3, shown in Operation 7c-3, 85-145 cmbd.	256
Figure 8.27. Operation 7c-4, showing talpetate blocks encountered at 65 cmbd (left) and rubbed fill of platform C-3 encountered at 85 cmbd (right)	258
Figure 8.28. East and south profiles of Operation 7c-10.	259
Figure 8.29. Pan Alujaay, Operations 7c-7 (left) showing corner of stone foundation of Structure C-4, and Operation 7c-8 (right) showing mud-brick steps leading up to floor level of structure. Looking east.....	261
Figure 8.30. Traditional mud-brick house in central San Pedro La Laguna, showing covered porch area.	262
Figure 8.31. North profile of Operation 7c-12 showing floors 1 and 2 of Structure C-4.	263
Figure 8.32. North profile of test pit excavated within Operation 7c-12 showing floors 1 and 2 of Structure C-4.....	264

Figure 8.33. Comparison of relative percentages of different San Pero monochrome types between levels 2 and 6 of Unit 12.....	265
Figure 8.34. Comparison of feature identified in Operation 7c-6 with kitchen feature identified at Cawinal (Fauvet-Berthelot)	266
Figure 8.35. Possible temezcal revealed in Operation 7c-16, Pan Alujaay.	268
Figure 8.36. Location of Operation 7c-14, with wall of Terrace 3 in background. Looking southwest.....	269
Figure 9.1. Santa Cruz Rojo sherd with medial flange recovered from San Juan Antigua.	277
Figure 9.2. Sumpango ware sherds recovered from San Juan Antigua, Area A.....	277
Figure 9.3. Red on Buff rim sherd from Chi Kaqajaay (FS3).	278
Figure 9.4. Monte Alto Rojo from San Juan Antigua. Photo and drawing by Hari Castillo.	279
Figure 9.5. Glossy orange effigy bowl recovered from Chi Kaqajaay, Area H.	282
Figure 9.6. Glossy orange rim with Usulután decoration from Chuwa Jul Ya' (FS17).	282
Figure 9.7. Preclassic Glossy Black ceramics from FS3 and FS18.....	283
Figure 9.8. Comparison of Glossy Black everted rim fragment from San Juan Antigua, Unit 1, Level 10 and Orfeo Orange Bowl from La Lagunita.....	284
Figure 9.9. Kaminaljuyu Café Negro sherds from Operation 18A-1, San Juan Antigua. Drawings by Hari Castillo.	285
Figure 9.10. Comparison of Kaminaljuyu Café Negro sherd from Operation 18A-1, San Juan Antigua and bowls from the Robles collection, after Ciudad Ruiz y Ponce de León 1984:Figures 5g and 6d.....	286
Figure 9.11. Zoned red on orange, from Chi Kaqajaay. Photo by Joseph Coombe.	287
Figure 9.12. Mahogany, coarse incised bowl with bolstered rim..	289
Figure 9.13. Jelic Red on Cream or Orange, from Chi Kaqajaay, Area B.	291
Figure 9.14. Plumbate sherds recovered from San Juan and Chi Kaqajaay.	291
Figure 9.15. Xola Naranja recovered from Unit 10 at FS7, Area C.	293
Figure 9.16. Fortress white on Red sherds from FS7 and FS13.	294
Figure 9.17. Fortress White on Red bowl from private collection, Xe'Tawal, San Pedro.	295
Figure 9.18. Patzam Mud Rims from FS13 and FS7c. Photos and profiles by Hari Castillo.	296
Figure 9.19. Chinautla Polychrome sherds from FS7a (left) and FS7c (right).....	297
Figure 9.20. Unprovenanced Acropolis ware tripod effigy, National Museum, Guatemala City. Photo by author, 2015.	298
Figure 9.21. Mold-made handled incensario from Xe'Tinamit. Photo by Joseph Coombe.	299
Figure 9.22. San Juan Morado sherds from excavations at San Juan Antigua (FS18)..	301
Figure 9.23. Esperanza flesh neck sherd and ring base from Chi Kaqajaay.....	304
Figure 9.24. Santa Marta Ware – incensario handles. Photo by Maria Corado.....	305

Figure 9.25. San Pedro Black-Brown, comales. Top example from FS7, bottom 3 from FS13. Illustrations by Efrain Tox.....	308
Figure 9.26. San Pedro Black-Brown Globular bowls (tecomates) with incurving rims. Illustrations by Efrain Tox.....	309
Figure 9.27. San Pedro Polished Brown deep bowl with flaring walls.	309
Figure 9.28. San Pedro Polished Brown Necked Jar (Right).....	310
Figure 9.29. San Pedro Black-Brown handle forms	310
Figure 9.30. San Pedro Black-Brown composite silhouette vessels with direct or slightly outflaring rims - compare to Wauchope 1975:213, Fig 156. Probably Early Postclassic	311
Figure 9.31. San Pedro Black-Brown necked jar with in-sloping neck and rim. Illustration by Efrain Tox.	311
Figure 9.32. Apaste (left) and Olla (right) ceramic forms utilized in San Pedro La Laguna. After Dios Rosales (1949).	312
Figure 9.33. San Pedro Burnished Ware, Red on Brown and Red on White.	314
Figure 9.34. San Pedro Burnished Ware, Cream on Brown..	314
Figure 9.35. Pa K'ucha' Red and Black brown sherds from open bowls and comales..	315
Figure 9.36. Ante, body sherds from Chi Kaqajaay Area D.....	316
Figure 10.1. Fragmentary prismatic blades from Pan Alujaay.	322
Figure 10.2. Fragmentary prismatic blade core from Pan Alujaay, length = 3.4 cm.....	323
Figure 10.3. Bifacial spear point recovered from Pan Alujaay, Operation 7c-9. Photo by Joseph Coombe. Illustration by Efrain Tox.	324
Figure 10.4. Notched arrowhead from Pan Alujaay. Late Postclassic.....	324
Figure 10.5. Type 1 metate from Pan Alujaay.....	328
Figure 10.6. Type 2a metate with supports from Pan Alujaay.	329
Figure 10.7. Type 2b metate with support from Pa Mes Bajo (FS6).....	329
Figure 10.8. Type 2c metate, private collection, Xe'Tawal, San Pedro La Laguna.	330
Figure 10.9. Type 4 metate at the site of Xe'Cruz (FS 1).	331
Figure 10.10. Mano Fragments. Type 1 (left), Type 2 (center), and Type 3 (Right).	332
Figure 10.11. Stone mortar recovered from FS3, Area D.....	333
Figure 10.12. Polishing Stones. Type 1 (left), and Type 2 (Right).....	333
Figure 10.13. Donut Stones recovered during the Current Project.....	334
Figure 10.14. The Conquest of Atitlan as depicted on the Lienzo de Tlaxcala.	335
Figure 10.15. Barkbeaters from Pan Alujaay (left) and Xe'Tawal (Right).	336
Figure 10.16. Whetstones from Pan Alujaay (left) and Chi Kaqajaay (right).	336
Figure 10.17. Jade artifacts recovered from Pan Alujaay: Left = flat bead; Right = celt fragment.	338
Figure 10.18. Green stone pendant fragment from Pan Alujaay, Operation 11, level 3.	339
Figure 10.19. Map showing colonial cotton growing towns (red circles) and Tz'utujil colonies (blue circles). Adapted from original by Orellana (1993).	342
Figure 11.1. Red Pictographs at Alta Vista (San Pedro La Laguna) and Pa'Tziapa (Santiago Atitlán).....	345

Figure 11.2. San Pedro Monuments 9 and 10, Pa'Tawal, San Pedro La Laguna. G. Davies 2015.....	346
Figure 11.3. Maqueta on the Pato Poc Reserve near Chuk'muk. Photo by Chris Behrhorst 1978. and part of Shook Archive, Universidad del Valle de Guatemala.....	347
Figure 11.4. San Pedro Monument 5, Las Gradass (FS15), San Pedro La Laguna, looking northwest. G. Davies 2015.....	349
Figure 11.5. San Pedro Monument 6 located near the site of Pachanay (FS29), Zone 2, San Pedro La Laguna. Looking northeast. G. Davies 2015.....	349
Figure 11.6. The Tikalito, San Pedro La Laguna, looking southwest. G. Davies 2015.	351
Figure 11.7. Offertory in the town center of San Pedro La Laguna. G. Davies 2016	352
Figure 11.8. General overview of Monument SJ01, showing anthropomorphic figure on the left and the carved panel on the flat surface to the right. G. Davies 2011.....	353
Figure 11.9. Plan view of Relief panel, Monument SJ01. Carved, three-dimensional picture is at left edge of picture.....	354
Figure 11.10. Comparison of Pedestal Monument SP01, Saqaribal, San Pedro La Laguna and Palo Gordo Monument 21, after Termer 1973:220, Plate 103.....	355
Figure 11.11. Columns SP02 (left) and SP03 (right). G. Davies 2015.....	358
Figure 11.12. Column photographed by Chris Behrhorst on Isla de Gatos (1978). Part of Shook collection, Universidad del Valle de Guatemala.	358
Figure 11.13. Colossal head, Xe Kaka Abaj, San Juan La Laguna.	360
Figure 11.14. Monument 3 from El Baul, Cotzumalguapa and Monument 1, La Chacra, Antigua after Perrot-Minot (2001: Figure 6).	360
Figure 11.15. Comparison of SJ03 from San Juan and Mon 78 from El Baul, Cotzumalguapa.	361
Figure 11.16. San Juan Monument 4, zoomorphic basin or metate.....	362
Figure 11.17. Plain stelae SJ09 (left) and SJ11 (right) near Cerro Encantado, San Juan Antigua.....	363
Figure 11.18. Distribution of plain stelae in the Southern Maya Region, after Bove 2011,	364
Figure 11.19. Comparison of ballcourt marker from Xe'Tawal (top) and Mon. 55 from El Baul (bottom) after Parsons 1969:252, Plate 44r.....	365
Figure 11.20. Monument SP04, Saqaribal, San Pedro la Laguna.....	367
Figure 11.21. Stela 3 from Takalik Abaj after Cassier and Ichon (1978: Figure 9).....	367
Figure 11.22. Small portable sculpture in private collections in San Juan La Laguna..	368
Figure 11.23. Small zoomorphic sculptures in private collections in San Juan La Laguna.	368
Figure 11.24. Stone incensario (left).Private collections, San Pedro La Laguna..	369
Figure 11.25. Jaguar hacha. Private collections, San Pedro La Laguna.	370
Figure 12.1. Locations of sites with Preclassic and/or Early Classic ceramics	373
Figure 12.2. Map showing least cost route between Chocola and Semetabaj (red line), principle access routes to Chi Kaqajaay from Saqaribal and Finca Chicayal (yellow lines) and possible route from Chi Kaqajaay to Chocola (green line).....	374

Figure 12.3. Proposed extent of Chocoma's political territory in the Late Preclassic (black polygon) on Google Earth.....	378
Figure 12.4. Graph of ceramic percentages for Xe Tinamit, Op 12, Strata 3 and 4 at FS13, Early Classic through Postclassic phases.....	384
Figure 12.5. Changing percentages of San Pedro Monochrome types in Xe Tinamit, Op 12, Strata 2-4.	385
Figure 12.6. Scaled comparison of site layouts of Palo Gordo (left) and Chuitinamit, with orientation of Palo Gordo altered to match that of Chuitinamit.	389
Figure 12.7. Site center of Pan Alujaay showing double pyramid, G. Davies 2018.	393
Figure 12.8. Possible Kaqchikel garrison sites of Xolpacol and Pacot in the Sacapulas area, after Fox 1975:Figures 13 and 14.	393
Figure 13.1. Presentation given in the Concha, San Juan La Laguna, November 2016.	404
Figure 13.2. Presentation given in the community library of San Juan La Laguna, February 2018.	404
Figure 13.3. Cover of El Periodico, Domingo, January 21, 2018.....	405

CHAPTER 1. INTRODUCTION

The Lake Atitlan Basin, with its crystal blue waters and its three majestic volcanoes often appears, to the outsider, as an idyllic landscape (Figure 1.1), and many of the most worldly of travelers (e.g., Huxley 1934; Maudslay and Maudslay 1899; Stephens and Catherwood 1854) have struggled to find words to describe the sensory impact of seeing the lake for the first time. John Lloyd Stephens and Frederick Catherwood, who passed through the area in 1840, on their way to visit the ruins of the K'iche capital at Utatlan, however, remarked that:

“it was the most magnificent spectacle we ever saw... All the requisites of the grand and beautiful were there; gigantic mountains, a valley of poetic softness, lake, and volcanoes, and from the height on which we stood a waterfall marked a silver line down its sides (Stephens and Catherwood 1969:156-157).



Figure 1.1. Lake Atitlan, looking east from San Pedro La Laguna, with Cerro de Oro center right (Photo by author, 2016).

The stark geographical and environmental contrasts that made the Lake Atitlan Basin so visually stunning, however, also make it a challenging, and at times dangerous, place for permanent settlement. Earthquakes, volcanic eruptions and landslides are just some of the unpredictable hazards that have wreaked havoc on the lake's ancient and contemporary communities (Haapala, et al. 2006; Peltan 2009; Rose 2009). However, the limited availability of good agricultural land and the unpredictability of maize harvests, may have been among the more pervasive challenges facing the ancient residents of Atitlan (McBryde 1945) and for this reason Lake Atitlan's communities have mostly been located near important trails, and have maintained strong connections with adjacent communities in the Pacific Coast, where three maize harvests were possible, and where, in prehispanic times, money (in the form of cacao) literally grew on trees. As researchers of the Southern Maya Region have long noted, the natural trading partners of the highland Maya lay to the south rather than the north (Love 2011b; Zamora Acosta 1979).

1.1 LAKE ATITLAN AND THE SOUTHERN MAYA REGION

The idea of a "Southern Maya Region" has been around in one guise or another for some time (Rosenswig 2012), but has been increasingly adopted in recent years thanks to an increasing number of projects at sites in the Pacific piedmont and coast of Guatemala (Arroyo 2004; Arroyo, et al. 2002; Batres 2009; Bove and Medrano 2003; Kaplan and Paredes Umaña 2018; Love 2002; Love 2007; Love and Kaplan 2011; Neff, et al. 2006; Rosenswig 2012; Valdes and Kaplan 2003), as well as increasing recognition of the symbiotic relationship between the highland and coastal regions (Neff, et al. 2019). As defined by Love and Kaplan (2011), the Southern Maya Region (SMR) encompasses the Pacific Coastal Lowlands and Southern Highlands of Chiapas, Guatemala and El Salvador (Figure 1.2).

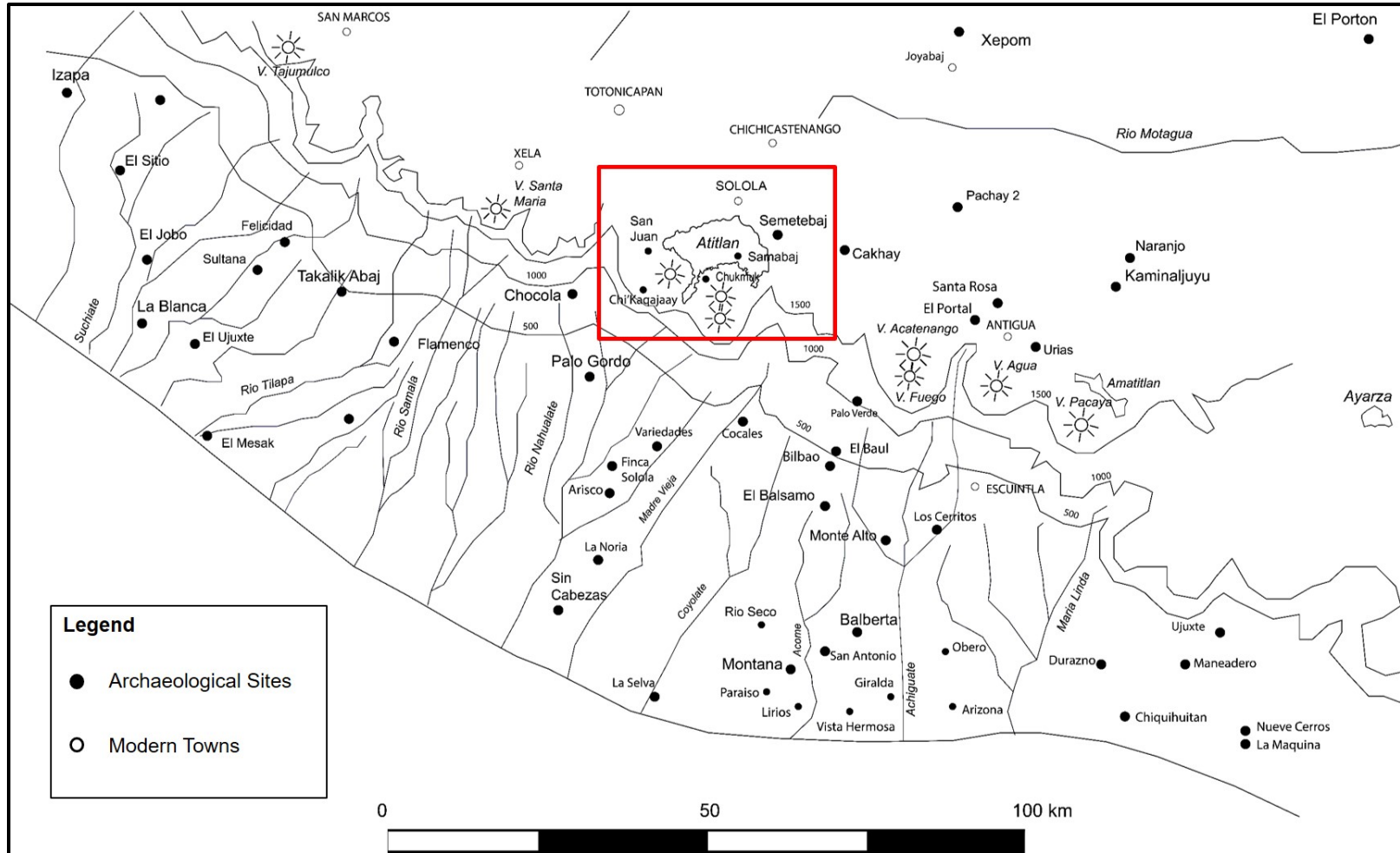


Figure 1.2. Map of the Southern Maya Region showing location of Lake Atitlan Basin.

Straddling the Sierra Madre mountains, at 1560 m above sea level (*tierra fria*), the Lake Atitlan Basin was also just over 70 km distant from the salt flats of the Pacific Coast (*tierra caliente*) (Figure 1.3). Between these extremes was the Pacific piedmont or *boca costa*, which was home to some of the most fertile soils in Mesoamerica and an important area for the production of cacao and cotton through much of the prehispanic era and into Colonial times.

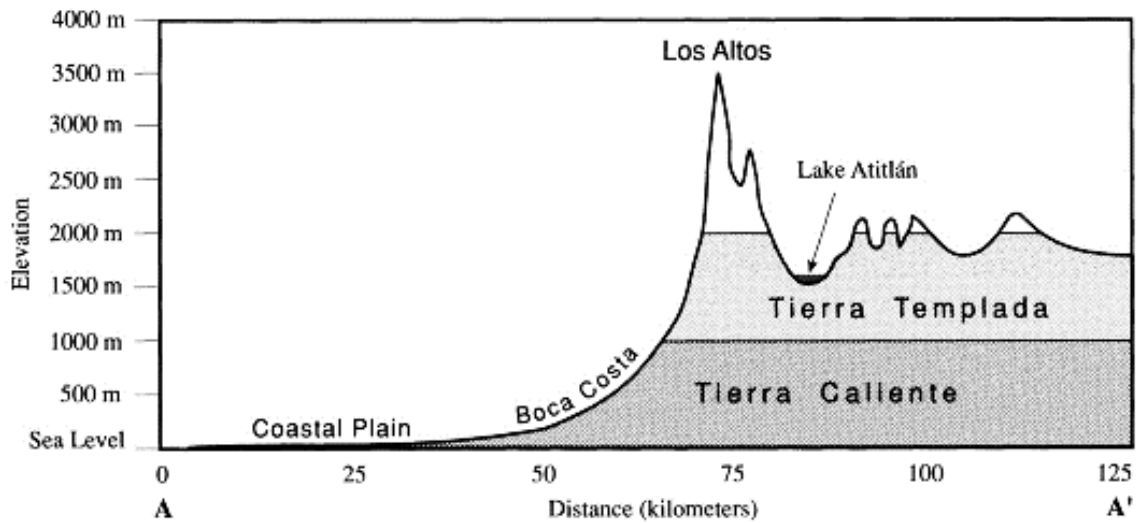


Figure 1.3. Schematic Profile of Pacific Coast and southern Guatemalan highlands, showing elevation of Lake Atitlan, after Whitmore and Turner (1992:414, Figure 7). Reproduced with Permission.

Separated from the piedmont by the three geologically young volcanoes of San Pedro, Atitlan, and Tolimán, as well as the steep slopes of the more ancient Cerro Paquisis, it would be natural to assume that the Lake Atitlan Basin was somehow insulated from the political and economic developments occurring in the rest of the Southern Maya Region and in Mesoamerica more generally. However, despite being rich in natural resources, and having a generally favorable climate, Lake Atitlan lacked several important products such as salt and cotton, that were essential to settled life in that region. Maintaining access to the coast and the interregional trade that passed through that area, was therefore of critical

importance for the communities of Atitlan. In spite of this apparent dependency on Pacific Coast trade, and the various political and economic shifts that took place in the coastal region across the prehispanic period, the Lake Atitlan region appears to have been able to adapt to these changes and does not appear to have suffered from collapse or depopulation like some other areas.

The central question posed by this research is thus how did Lake Atitlan society maintain access to critical resources, in spite of the periodic shifts in political and economic organization occurring on the coast? How, in other words, did Lake Atitlan society maintain its resilience? and to what degree did political centralization diminish or enhance this resilience? Finally, given the myriad contemporary challenges brought about by globalization and climate change, could Lake Atitlan's prehispanic communities have something to teach us about increasing long term resilience in the 21st century? In the remainder this introduction, I provide an overview of the theoretical concepts that have shaped this research and describe the project's objectives and methods. I then provide a summary of the organization of this dissertation.

1.2 THEORY

Although resilience theory and world systems theory have very different intellectual genealogies, with the former being championed by ecologists, and the latter having its origins in dependency theory and economics, both have several important commonalities. For instance, both provide models of long term change in complex, multi-scalar systems. Additionally, both recognize the important roles that geography and history play in shaping these trajectories (Gotts 2007). For these reasons, both of these bodies of theory have already attracted the attention of archaeologists, despite the fact that neither was specifically designed for the analysis of pre-industrial societies. Given the clear influence of geography on the cultures of the Southern Maya Region (SMR), and the broad time span covered by the PALA survey data, the current dissertation draws on both of these bodies of theory to help interpret how the prehispanic population of Lake Atitlan participated in and adapted to broad-scale changes in the Mesoamerican world system.

Until recently, world systems models had most commonly been applied to the Postclassic period in Mesoamerica, with some researchers also focusing on the Classic to Postclassic transition (Feinman 1999; Kepecs 2007; Kepecs and Kohl 2003; Paris 2008; Smith 2001; Smith and Berdan 2003). However, as Blanton and Feinman (1984:678) noted, several patterns visible in the Late Postclassic, i.e. the interconnectedness and core-periphery relations created by regular trade, “have considerable time depth.” The very concept of “Mesoamerica” as a cultural region was of course based in part on recognition of these interconnections (Kirchoff 1981), many of which were established during Olmec times. Thus, the idea that Mesoamerica may have operated as a world system as early as the Early Formative period (Rosenswig 2012) is not entirely radical or new. That the form and extent of this system was influenced by geography and the widely scattered distribution of resources is also not new (Rathje, et al. 1978), although world systems theory does provide some new avenues for understanding these connections. Finally, the mounting evidence for markets in Mesoamerica from at least Early Classic times (Chase and Chase 2014; Hutson, et al. 2010; Masson and Freidel 2012; Shaw 2012) indicates that many of the apparent barriers to the use of world systems models for early Mesoamerica have now been removed.

In comparison to World Systems Theory, archaeologists have been somewhat slower to embrace the resilience theory concepts popularized by ecologist C. S. Holling (1973), although a proliferation of studies in recent years (Dunning, et al. 2012; Fauseit 2015; Iannone 2014; McAnany and Yoffee 2009) indicates that this may be changing. The slower adoption of resilience theory by archaeologists is likely due in part to the legacy of General Systems Theory, which was largely rejected by post-processual archaeologists in the 1980s and 90s. And while resilience theorists continue to strive to develop a framework that gives equal attention to both the social and the ecological dimensions of resilience, many social scientists (Adger 2000; Cote and Nightingale 2012; Davidson 2010b; Rotarangi and Stephenson 2014) have expressed discomfort with the use of systems models from ecology to model social groups, decrying a lack of attention to individuals, power, and agency.

Partly in response to these concerns, the current research originally devised an approach that focused more on the notion of “social” or “community resilience”, a branch of resilience theory with roots in psychology and community development (Magis 2010;

Norris, et al. 2008; Sherrieb, et al. 2010). Avoiding entirely some of the key aspects of ecological resilience such as the adaptive cycle, community resilience was defined as the ability of a group to adapt to unpredictable changes without significantly reducing the quality of life of individual households. The plan for the archaeological investigations was accordingly to gather household series data (Hirth 1993) and to utilize Michael Smith's measures of quality of life (Smith 2015; Smith, et al. 2014) to determine how different communities in the project area coped with stress. Specifically, the hope was that the investigations would be able to focus in on one particularly mysterious period in the highland chronology, that of the Classic to Postclassic transition (c.800-1100 AD).

After several weeks of survey, however, when Late Classic and Early Postclassic diagnostics were still proving difficult to identify, it was decided that the original research plan would need to be postponed and that attention would instead focus on refining our knowledge of the local ceramic sequence and getting a general idea of settlement changes over a broader period of time. Given that no radio-carbon dating had been included with the original budget, this task was also not without its challenges. However, thanks to the long occupations documented at several of the investigated sites, the survey and excavation data did enable us to piece together the majority of the prehispanic sequence. Because this data was less applicable to the analysis of household-scale adaptations, however, the theoretical focus also had to be broadened and thus I began to explore the meaning of resilience in the context of larger scale social and political systems.

1.3 THE LAKE ATITLAN ARCHAEOLOGICAL PROJECT (PALA)

The PALA project area encompassed all portions of the municipios of San Pedro and San Juan La Laguna that lay within the physical boundaries of the Atitlan caldera (Figures 1.4 and 1.5). Bounded by Santiago Bay to the east, and a steep rocky headland to the north (between San Juan and San Pablo), the study area was selected because it represented a well-defined sub-region of the lake basin and was therefore considered a good candidate for a former *amaq*. Featuring multiple sites and inter-site spaces, the project area conformed well to definitions of a micro-region (Kolb and Snead 1997) which Yaeger

and Canuto (2000) identified as the most appropriate scale for examining the changing patterns of interaction that constitute communities. Finally, due to the proximity of this area to the core of the postclassic Tz'utujil polity, centered at Chuitinamit, it was expected that the effects of political centralization during the postclassic would have had a significant impact in this area and that this impact would be archaeologically visible.

The PALA field investigations took place between March and July of 2015. The bulk of the artifact analysis was conducted between August and November 2015 and was completed in June of 2016. A complete registry of the artifacts recovered by the project was provided to the Instituto de Antropología e Historia (IDAEH) in 2016 and a representative sample of the recovered ceramics are now available for study in the Ceramoteca facility of IDAEH in Guatemala City.

Over the course of the 8-month field season, PALA conducted systematic surface collections for over 60 properties and documented four ritual-administrative centers with monumental architecture (Chi'kaqajaay, Chuwa Kiyakapek, Pan'alujaay, and San Juan Antigua), a large number of residential areas, a smaller number of ritual and defensive sites, and a diverse range of rock art and stone sculpture. Test excavations were subsequently conducted at four sites with the goal of defining the local ceramic sequence and identifying domestic architectural features such as house floors and middens.

The settlement and ceramic data recovered during these investigations indicated that the southwest Lake Atitlan Basin supported sizeable populations during the Late Preclassic, Early Classic and Postclassic periods. Late Classic and Terminal Classic / Early Postclassic diagnostics were scarce and suggested that there was a reorganization of the population during this period, but this has been interpreted as reflecting political centralization and population clustering around the growing center of Chuk'muk, located to the northwest of Santiago Atitlan. San Pedro La Laguna (ancient Pa'Tzununa) and other sites in the project area appear to have maintained small populations through the transition until the beginning of the Late Postclassic when the population rebounded and appears to have reached a new maximum. Our excavations at the site of Pan'alujaay, however, indicated that the San Pedro area fell under strong K'iche influence during this time and thus occupied a frontier of the Tz'utujil polity.



Figure 1.4. Map of Lake Atitlan showing location of the PALA project area outlined in black and slope percentage, after Vivamos Mejor (2011).

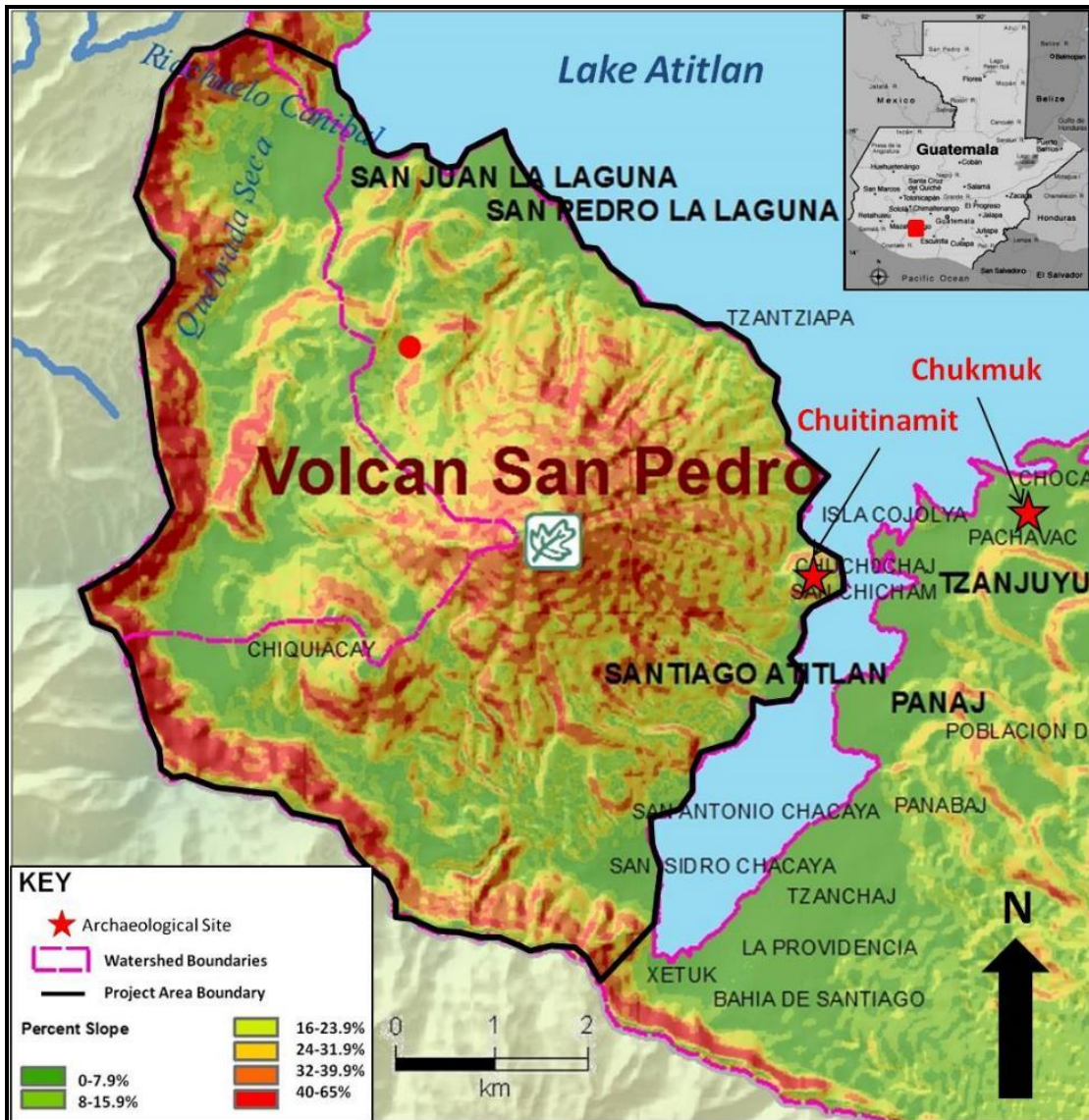


Figure 1.5. Detail of PALA project area showing slope percentage, major sites and modern towns, after Vivamos Mejor (2011).

1.4 OVERVIEW OF DISSERTATION

The dissertation begins in Chapter 2 with a discussion of the theoretical frameworks that have been explored in this research, which include Resilience and World Systems perspectives. Chapters 3 and 4 then provide the regional background, describing the unique geography and natural environment of the Lake Atitlan Basin, before reviewing the previous archaeological investigations. Based on the data generated by these earlier

investigations, I then provide a summary of the cultural history of the lake as it was understood prior to the PALA investigations. Chapter 5 acts as an introduction to the data section of the dissertation and serves to introduce the process of settlement survey, before laying out the specific methodology and logistical issues relating to the PALA survey. This chapter goes on to provide a description of the site typology utilized in the two subsequent survey data chapters (Chapters 6 and 7). The survey data chapters are designed to be used together, with Chapter 6 providing the maps and reference data in support of the more detailed site information contained in Chapter 7. Because the project area was divided into five geographical zones, the chapters are organized by these zones and then by site type. Chapter 8 presents the excavation data gathered from our test units at four sites; three in the municipio of San Pedro, and one in the municipio of San Juan La Laguna. Chapters 9 and 10 then provide detailed descriptions of the recovered artifacts and the analysis procedures. Chapter 11 provides descriptions and interpretations of the stone monuments and rock art identified in the project area. The dissertation then closes with a chronological synthesis (Chapter 12) and a conclusions chapter (Chapter 13).

CHAPTER 2. RESILIENCE AND WORLD SYSTEMS

The current research initially set out to investigate how Lake Atitlan's communities adapted to the heightened risks that were assumed to have been present during the Classic to Postclassic Transition. However, the difficulty of identifying ceramics dating to the critical Late Classic and Early Postclassic phases made it necessary to revise this plan. The project goals were therefore adjusted towards the more modest goal of refining the relative chronology of the ceramics across the whole prehispanic sequence. In this process, it was expected that, at the very least, we would be able to narrow the range of potential diagnostics that could be used to define the Classic to Postclassic transition.

As discussed in the remainder of this dissertation, the data gathered by the PALA project provided a broader overview of the lake's cultural development and highlighted external connections more than internal processes. But while the original focus on community resilience was abandoned, resilience concepts remained central to the research. In this chapter, I review the resilience theory and World Systems concepts that have influenced and continue to influence this research. Recognizing that both socio-cultural systems (i.e. societies) and economic systems (e.g. the Mesoamerican world economy) can be considered as Complex Adaptive Systems (CAS), I first review this important concept before exploring the resilience and world systems approaches in more depth.

2.1 COMPLEX ADAPTIVE SYSTEMS

Scarborough and Burnside (2010:329) define a complex adaptive system as: "a system of diverse "agents" that interact locally and adapt their behavior to their environment including the social [political, and economic] environment formed by their fellow agents". Examples of complex adaptive systems include the human immune system, market economies, and ecosystems.

Scarborough and Burnside (2010:328) argue that complexity is an "almost inevitable outcome of increasing order and system processing, or "throughput"". Reviewing a number of definitions from other disciplines, including computer-science, ecology, economics, and social sciences, they note that there is general agreement that complexity refers to the notion of a high degree of interconnections producing outputs that are more

than the sum of their inputs (Scarborough and Burnside 2010). Complexity, when used in reference to socio-cultural groups typically encompasses aspects of the economy, political organization and ideology or belief systems (Scarborough and Burnside 2010). Scarborough and Burnside (2010) note that sociocultural systems begin evolving as soon as they emerge, but that “adaptation occurs in fits and starts with many societies becoming "unfit" for their sociocultural and/or biophysical environs and "collapsing." However, they go on to describe a general evolutionary model for the development of a socio-cultural system which follows three stages:

- 1) Colonization of a specific bio-physical environment and development of specific practices, including kinship and exchange rules that are related to local natural and social environment.
- 2) Modifications / improvements of environment and social institutions in response to external changes and stress. Increasing connections and rigidity. Mounting resources and potential
- 3) External stresses force the system to either:
 - a) collapse,
 - b) revert to an earlier or simpler form, or
 - c) shift towards greater "complexity".

This general evolutionary scheme for socio-cultural systems has been heavily influenced by developments in resilience theory, particularly the writings of C. S. Holling (1973), whose major contributions include the concept of the coupled Socio-Ecological System (SES) and the adaptive cycle, which he asserts represents a metaphor for understanding complex adaptive systems that include human and natural systems.

2.2 RESILIENCE

As originally utilized in mathematics, physics, and engineering, the term resilience referred to “the capacity of a material or system to return to equilibrium after a displacement” (Norris, et al. 2008) and basically referred to elasticity. However, in the

1970s, systems ecologists adopted the term to develop a new model of sustainability (Holling 1973). In contrast to traditional models of sustainability, which viewed ecosystems as having just one stable state, C. S. Holling argued that ecosystems actually have multiple stable states (Holling 1973; Holling 2001; Timmerman 1981) (Cote and Nightingale 2012). Resilience in this emerging model was viewed as “a measure of the ability of systems to absorb changes of state variables, driving variables, and parameters, and still persist” (Holling 1973). As a result of its increasing popularity in ecology and its utility for analyzing contemporary problems related to the environment, climate change and globalization, the concept of resilience has begun to be adopted by an increasingly wide range of disciplines. However, the popularity and flexibility of the concept has resulted in a proliferation of different definitions and a lack of conceptual clarity.

A key difference in resilience definitions is between those that emphasize resilience as the ability to resist or withstand perturbations and those definitions that emphasize adaptability or transformability. Underlying this difference are the different ways that different disciplines conceptualize systems and what constitutes transformation in an ecological vs a social or economic system.

The Adaptive Cycle

Central to the vision of socio-ecological system (SES) developed by Holling and Gunderson is the “adaptive cycle”, which is depicted as an infinity loop and which describes four general stages in the development of any complex system (Figure 2.1). The four phases of the adaptive cycle are defined as Exploitation, Conservation, Release, and Reorganization (Table 2.1; see Figure 2.1). As Moore and Westley (2011:5) explain “The exploitation and conservation phases in the “front” loop represent periods of growth and resource accumulation, where change is routine and almost always adaptive”. The back-loop on the other hand, which includes the release and reorganization phases, is characterized by “the introduction of novelty, either transformative (radical) or adaptive change, and renewal of the system” (Moore and Westley 2011: 5). Holling (2001) argues that three qualities of systems determine their trajectory through the adaptive cycle. These are:

- a) potential = accumulated resources
- b) connectedness = the tightness / rigidity of coupling among
- c) adaptive capacity / resilience = the ability of a system to adapt and continue functioning in the event of an external disturbance

Holling (2001:394) summarizes the path of an adaptive cycle as “oscillating between conditions of low connectedness, low potential, and high resilience to their opposites”, i.e. “high connectedness, high potential, and low resilience (Table 2.1). To this list, I have added a fourth variable which is that of stability, which I define as the ability of a system to stay in its present configuration. As Gotts (2007) notes, the interpretation of these variables is system dependent. However, in general terms these four variables can be defined as follows:

Table 2.1. Adaptive Cycle Phases and Variables

Phase	Potential	Connectedness	Resilience	Stability
<i>Exploitation (r)</i>	Low	Low	High	High
<i>Conservation (K)</i>	Increasing	Increasing	Decreasing	High
<i>Release (Ω)</i>	Null	Null	Null	Low
<i>Reorganization (α)</i>	Low	Low	High	Low

Panarchy

Holling and Gunderson suggest that, when viewed in their broader context, individual social-ecological systems can be seen to be linked in nested sets, forming what they define as a *panarchy*. Holling (2001) defines a panarchy as a...

“hierarchical structure in which systems of nature (for example, forests, grasslands, lakes, rivers, and seas), and humans (for example, structures of governance, settlements, and cultures), as well as combined human-nature systems (for example, agencies that control natural resource use) and social-ecological systems (for instance, co-evolved systems of

management) are interlinked in never-ending adaptive cycles of growth, accumulation, restructuring, and renewal”.

Holling asserts that different systems, operating at different scales within a panarchy will pass through the adaptive cycle at different speeds. Specifically, he asserts that larger systems will have slower cycles and that these will provide constraints for the smaller, faster systems. During the Ω and α phases, however, they argue that there is greater potential for “cross-scale interactions”. In other words, collapse/release of a small system may cascade up to bring about the collapse of the entire nest. Alternatively, the collapse/release of a larger scale system will likely undermine the functioning of smaller scale systems.

Critiques

Both the adaptive cycle and the more complex panarchy model appear on their face to have clear utility for the study of long-term social and cultural dynamics, particularly those that involve some kind of sudden collapse. Archaeologists studying the Lowland Maya collapse and other instances of sudden change have therefore embraced this framework. However, other social scientists (e.g. Adger 2000; Davidson 2010a) have expressed "nagging doubts" about the appropriateness of using theories of ecological resilience to analyze social systems. W. Neil Adger (2000:351), for example observes that "seeking to analyze the resilience of social systems by using analogies from ecological systems is akin to endogenizing the role of social institutions in the wider environment".

Social and Community Resilience

Paralleling developments in ecology, psychologists and community development researchers have been using the concept of resilience to address individual, household and community vulnerabilities. Grounded in the notion of resiliency from psychology, this branch of resilience research has been focused more on individuals, mental health, wellbeing and quality of life and has so far paid less attention to long-term change.

A report by the Community and Regional Resilience Institute (CARRI), provides a useful list of recent definitions of community resilience and reveals that, as with definitions of ecological resilience, some definitions of community resilience emphasize resistance to change, and stability, while others emphasize the ability to adapt and improve (Plodinec 2013). Given that resilience may not always be positive or desirable, a definition of resilience as mere survival or persistence presents clear problems with regards to communities or other social groups. As Gyles Iannone (2014) notes for example, “a political regime that is firmly entrenched and totalitarian in operation may be highly resilient, but undesirable to the vast majority of the population” (Iannone 2014). In another example, Berkes and Ross (2013:16) note that “poverty cycles in inner-city environments are often very persistent (resilient) though hardly desirable”.

Recognizing this problem, Rotarangi and Stephenson (2014) have argued that notions of community resilience need to incorporate a notion of wellbeing or quality of life and that a resilient community would therefore refer to a community that was capable of not only withstanding perturbations but also maintaining existing levels of wellbeing, or continuing on a positive trajectory.

In most of the community resilience literature, community resilience is measured in terms of community resources, assets or capitals (Emery and Flora 2006; Flora 2018; Flora, et al. 2005). As Magis (2010:405) notes “Communities have a variety of internal and external resources from which to draw to respond to change”. Emery and Flora, for instance define eight categories of capitals (also described as assets), which enhance community resilience. These are: 1) Natural, 2) Cultural, 3) Human, 4) Social, 5) Political, 6) Financial, and 7) Built Capital. Social capital, which is the most familiar to social scientists is further divided into three forms, which are Bonding, Bridging and Linking capital.

Although the capitals approach provides a useful framework for evaluating the assets and vulnerabilities of contemporary communities and may provide a useful way for tracking future changes in these attributes, using these measures to look at diachronic change over longer periods in ancient settlements is both conceptually and logistically challenging. This is because the idea of community capitals framework focuses on community as a bounded entity, which may adapt to change as a collective whole thanks to its assets. This is problematic because it ignores the power differentials that exist within

communities; the fact that different individuals in a community may have different social statuses and different occupations and therefore may have access to different types and quantities of resources, including political power. And while it is theoretically possible to gain a measure of the social capital of a community as a whole, this does not seem desirable in the case of archaeologically defined communities as it seems likely that it will mask important changes in internal organization.

Regional and Economic Resilience

One of the most notable developments in the recent literature on resilience is the emerging interest in landscapes, regions and, specifically regional economies (Bristow and Healy 2014; Cumming 2011; Hassink 2010; Martin 2011; Modica and Reggiani 2015; Simmie and Martin 2010; Swanstrom 2008). Like world systems theory, this research is concerned with the question of why some regional economies manage to renew themselves, whereas others remain “locked in decline” (Gong and Hassink 2016:1). Swanstrom (2008:10) defines a resilient region as “one in which markets and local political structures continually adapt to changing environmental conditions”.

These researchers have quickly recognized that equilibrium models (either single or multiple) are not a good fit for economic systems. As Martin (2012:5) notes, “unlike (some) physical or ecological systems, a regional or local economy need never be in equilibrium, [and may] be characterized by an identifiable, and relatively stable, growth trend or path”. These researchers have also highlighted the ways in which the choice of temporal and spatial scale will impact the results and definition of resilience.

Given the nascent state of this research, it is too early to assess how effective these theories of economic and regional resilience will be in the contemporary world. However, for the current analysis, the idea of considering the regional or macro-regional economic system as something that is connected to but still separate from the socio-cultural system is useful and helps to highlight the fact that different types of systems (e.g. socio-cultural, political, economic) may have very different dynamics and cycles and that different systems are linked in different ways.

For example, while the socio-cultural system (i.e. the people) of the Lake Atitlan Basin might be viewed as forming one part of larger socio-ecological system that encompasses the entire lake basin and its people, it is perhaps also important, for analytical purposes at least, to recognize that the socio-cultural system, including its political institutions, mediates between the local environment and the broader economic system. Contrary to the original resilience theorists view that everything could be explained in terms of “coupled social and ecological systems”, I argue that it is productive to consider other types of couplings and perhaps also to consider chains or configurations that encompass more than two types of systems. Furthermore, I argue that it is necessary to be explicit about the couplings or mechanisms that links the different systems. In terms of individual communities and the world economy, for example, it is important to remember, that communities (i.e. aggregations of individual households) do not in and of themselves represent a system and that they are merely molded into system-like formations by political institutions, which in the case of very small communities may consist of little more than a single lineage head or chief.

2.3 WORLD SYSTEMS

World Systems theory was developed by Emmanuel Wallerstein in order to explain the emergence of capitalism and was particularly concerned with explaining why certain “peripheral” regions of the world were exploited by states in the “core”. For Wallerstein, a core represented a zone with a “broad-spectrum economy, containing capital-intensive, high-profit goods produced with ... wage labor” (Alexander 2008). A periphery, in contrast consisted of “a politically weak, narrow-spectrum economic zone where low-profit, less-diversified, and low-capital intensive goods and resources were extracted” (Alexander 2008). In between these two extremes were “semi-peripheries” which contained “an intermediate mix of high and low profit production” and which formed a buffer between the developed core and the undeveloped hinterlands (Alexander 2008).

Ancient World Systems

Smith (2001) argued that a world system perspective was a useful analytical tool for considering how long-distance exchange impacted the organization of polities and considered such a perspective to be justified in cases where it can be shown that “a large number of independent polities engage[d] in high volumes of exchange, and when the processes and results of that exchange exert[ed] strong effects on the social and political organization of those polities” (Smith 2001:133). Archaeologists, however, have identified several areas in which the original world systems perspective needs modification to make it suitable for the analysis of interregional networks in the ancient world. Researchers working in Mesoamerica have specifically highlighted the need to consider:

- The importance of prestige goods vs staple goods
- The possibility of differentiated as opposed to hierarchical core-periphery relations
- The importance of non-economic forms of interactions

Each of these critiques is briefly reviewed below.

Prestige vs Staple Goods

Wallerstein argued that world systems developed from the exchange of staple products and that prestige goods were of little importance. However, Blanton and Feinman (1984) argued that the Mesoamerican World Economy was fueled by core-elites demands for preciosities, noting that the collapse of core polities typically resulted in the collapse of this system of interaction. As Wells (2006) observes “most evaluations of world-systems models in Mesoamerica follow Blanton and Feinman’s lead and consider luxury goods and wealth finance, while recognizing that some utilitarian goods such as obsidian [and cotton] could have served as either a staple or a luxury item depending on its social and economic context”.

Hierarchical vs Differentiated Core-Periphery Relations

Various scholars (e.g., Chase-Dunn and Hall 1993; Iannone, et al. 2014; Schortman 1989; Wells 2006) have pointed out that the Core/periphery relationship favors a hierarchical approach to culture change, which paints the periphery as a “pale reflection” of the core, which is viewed as the source of all innovations. This idea has been heavily criticized in recent years. Iannone for instance notes that hinterlands may instead be “dynamic places of cultural contact and syncretization, where innovations of all kinds are created, manipulated, and transformed”. As Kepecs (2007:130) also notes “ancient peripheries sometimes possessed technologies on which cores depended”. Chase-Dunn and Hall have argued that “ancient world systems had *differentiated* cores and peripheries without strong hierarchical relations”. They define a differentiated core/periphery is as a mutual interdependency with neither the core nor the periphery necessarily structurally dominating the other” (Wells 2006:274).

Non-Economic Core-Periphery Relations

In addition to envisioning different forms of economic interactions in ancient world systems, archaeologists have drawn attention to the fact that interactions between communities or social groups need not be defined in economic terms (Schortman and Urban 1992). The appearance of Teotihuacan related traits at distant sites such as Kaminaljuyu and Los Horcones, for example need not indicate economic integration, but may instead represent a case of political or ideological emulation. As Alexander (2008:388) notes “local pretenders” may have claimed Teotihuacan affiliations in order to elevate their local status. Similar arguments have been made for the adoption of Toltec and Aztec symbols and practices by the K’iche’, Kaqchikel and Tz’utujil elites (see discussion in next Chapter). The direction of influence may also be reversed, as in the case of trade diasporas .As Alexander (2008:390) notes, “Teotihuacan's apparent ethnic pluralism was the result of several such diaspora groups initiating and establishing economic and consanguineal ties with groups of Teotihuacanos”.

2.4 WORLD SYSTEM RESILIENCE

Recognizing the substantial overlap in resilience theories of complex adaptive systems and world systems approaches to complex economies, the current research utilizes both of these perspectives in order to develop a more nuanced understanding of how the socio-cultural system of the Lake Atitlan Basin adapted to broad-scale changes in the Mesoamerican economy.

Based on the previous archaeological data and our own investigations in the southwestern region of the Lake Atitlan Basin, I argue that the Middle Preclassic and Late Preclassic phases this region were characterized by a loose organization of small communities, connected by regular but infrequent interactions. Thanks to this loose organization and the lack of political integration, these small communities and the entire socio-cultural system of Atitlan was able to adapt to the changes brought on by the Late Preclassic collapse, quickly producing a more centralized economic system focused on the settlement of Chuk'muk.

Rather than evolving to compete with Chuk'muk, the smaller communities on the fringes of the lake continued to exist in simpler form, while Chuk'muk became increasingly centralized and increased in political and administrative complexity. This more centralized system, however, was not capable of sustaining itself in this bio-physical environment once the Teotihuacan-dominated Montaña system collapsed and the climate began to dry, causing problems with agricultural production and therefore exchange. At that time Chuk'muk was forced to expand its territory into the Pacific piedmont where it could have more direct connections to coastal resources. Eventually, as climatic conditions improved, however, the elite relocated to the highlands and established a new center at Chuitinamit, while continuing to maintain their coastal plantations of cacao and cotton.

CHAPTER 3. THE LAKE ATITLAN BASIN

The Lake Atitlan Basin (Figure 3.1) is located in the rugged southwestern highlands of Guatemala and occupies the southern edge of the Sierra Madre mountains, a chain of volcanic peaks that stretches from southern Mexico to El Salvador.. Described as “one of the most complicated physiography’s to be found anywhere in the world” (La Bastille 1974), the Atitlan Basin represents a collapsed caldera¹, and was created by the massive *Los Chocolos* eruption around 84,000 BP (Drexler, et al. 1980; Newhall, et al. 1987; Newhall 1987; Rose, et al. 1987). This cataclysmic event deposited ash as far as Florida to the north and Panama to the south (Purvis 2012) (Figure 3.2). The resulting caldera was subsequently filled by water from the rivers Quiscab and Panajachel.



Figure 3.1. View of Lake Atitlan and its three volcanoes, looking southeast.

¹ A caldera is defined as a large crater caused by either the collapse of the central part of a volcano or by explosions of extraordinary violence” (Szybist 2004:7)

On its southern edge, the Atitlan Basin is dominated by three geologically recent strato-volcanoes (Atitlan, Tolimán and San Pedro), which emerged sometime between 60,000 and 30,000 BP (Dix, et al. 2003). Atitlan Volcano (Tz’utujil = Hunqat / Juncat) (Figure 3.2) is the tallest of the three and is the only one that is still considered active, although the last period of recorded activity was between 1826 and 1856 AD (Newhall, et al. 1987). Fragmentary historic records point to earlier episodes of high activity in the years 1469, 1505, 1541, 1579, 1663, and 1717-1721 (Haapala, et al. 2006; Orellana 1984).



Figure 3.2. Atitlan Volcano, viewed from Cerro Pa K'isiis, looking east.

Directly north of Atitlan is Tolimán Volcano, which is the second highest of the lake’s volcanoes, with a height of 3,158 m. According to Bassie-Sweet (2008:243) the name Tolimán is a nahua word meaning “place of reeds”. In Tz’utujil, however, its name

is *Ox ic'ahol* – meaning “three sons of a male” (Orellana 1984:5). Toliman’s northern slopes provided the bulk of the habitable terrain on the southern shore of the lake and the recent bathymetric map produced by Reyes-Morales et al. (2018) shows that prior to the lake level rise that occurred around 300-350 AD, the extent of habitable land in this part of the lake was much more extensive. However, in 1585, local informants described Tolimán volcano as rocky, cold and poor for agriculture (Betancor and Arboleda 1585). It was further noted that the volcano had never erupted or even smoked.

The third volcano, which sits to the west of the previous two and forms the core of the PALA project area is San Pedro volcano (Figure 3.3), which has a height of 2,995 m and is not known to have been active in historic times. Local names for this volcano include *Chuchuk*, *Nima Juyu* (meaning “great mountain”) and *Choy Juyu* (meaning “mountain of the lake”) (Carmack and Mondloch 1983).



Figure 3.3. San Pedro Volcano, looking west from Bay of Santiago.

The western edge of the Lake Atitlan caldera is marked by a steep incline which rises almost vertically to the west of San Juan La Laguna, where San Juan’s three ridgeline

aldeas of Palestina, Panyevan, and Pasajquim are located. Beyond these towns to the west, is the Nahualate river valley, whose tributary, the Yatza, continues to be utilized by communities in the western half of the lake to reach market towns in the Pacific piedmont such as Santo Tomas La Union (near ancient Chocla) and San Antonio Suchitepéquez (ancient K'otzij) (Figure 3.4).



Figure 3.4. Rio Yatza valley that connects Lake Atitlan to Pacific piedmont, looking southwest from trail near Pasajquim.

To the east, the Atitlan caldera is bound by the Madre Vieja river valley, which represented another important communication route between the lake and the coast and was consequently the focus of numerous boundary conflicts between the Tz'utujil and Kaqchikel in the late 15th and early 16th centuries (Caravantes 2002; Recinos and Goetz 1953). One of the most important Tz'utujil settlements in this area was Chicochin, which in Colonial times became San Geronimo Chicochin. Today, the façade of the church marks the location of this site (Figure 3.5), which due to the frequent conquest attempts by the Kaqchikel, was reportedly surrounded by a moat.



Figure 3.5. The façade of the 16th century church at San Geronimo Chicochin.

The Lake

Lake Atitlan has a surface area of approximately 125 km² and is the second-largest body of water in Guatemala after Lake Izabal. It measures 18 km east to west and 13 km north to south and has a maximum depth of 327 m (Reyes-Morales, et al. 2018). Because it has no surface outlet and is drained by underground fissures, large seismic events, in addition to producing landslides and rockfalls, are known to have caused significant long-term changes in the lake level. The devastating earthquake of 1976 for example caused the lake level to rise by 5 m in under a month (Medrano 2011). However, between 1980 and 1998, the lake level dropped by 10 m (Szybist 2004:8).

Geologists have observed that the lake's original outlet, which was located to the south of San Lucas Tolimán, was blocked by lava and pyroclastic flows sometime in the last 3000 years (Haapala et al 2006). Archaeological data from the site of Samabaj has provided a potential means of refining the date of this event, with Sonia Medrano's investigations indicating that this island, which is now between 17 and 25 m below the

surface lake, was abandoned between approximately 300 and 350 AD (Mata Amado and Medrano 2011).

Settlement Circumscription

The steep volcanic slopes and fluctuating levels of the lake have encouraged most settlements in the Lake Atitlan region to be positioned midway between the lake shore and the adjacent mountains (Lothrop 1933; McBryde 1945; Orellana 1984; Tax 1937), with most of the existing towns occupying level plateaus formed by ancient lava flows. These stable landforms provided suitable ground for the construction of houses and public buildings and had inherent defensive capabilities. The plateau upon which the town of San Pedro sits for example is encircled by a steep incline strewn with large volcanic boulders.

Comparing the western shore, around San Pedro volcano (i.e. the current project area), with the south shore around Tolimán volcano, Lothrop (1933:3) observed that the latter had many more opportunities for settlement and agriculture (Figures 3.6 and 3.7). What Lothrop and later observers such as Sandra Orellana failed to recognize, however, was that the inhabitants of San Pedro and San Juan La Laguna had access to a large agricultural reserve located in an almost hidden valley between San Pedro Volcano and the slopes of the Atitlán caldera (Figure 3.8). This broad, open, valley, located approximately 700 m above the shore of the lake. is where most of the modern residents of San Pedro and San Juan continue to maintain milpas to provide maize for their households, the warmer shoreline being now almost exclusively dedicated to coffee. Nestled between the peaks of San Pedro volcano and Cerro Pa K'isiis, one can imagine how for the ancient Maya, entering this valley might have felt like entering the great mountain Nima Juyu itself, and how it could have fueled beliefs in the idea of mountains as places of sustenance and abundance (Carlsen and Prechtel 1991; Christenson 2001; Wilson 1993). As discussed later, in the description of the archaeological site of Chi Kaqajaay, the hidden nature of this place, combined with the presence of a permanent water supply and fertile soils appear to have enabled a small population to reside her continuously for much of the prehispanic period.



Figure 3.6. Gentle slopes surrounding Tolimán Volcano, looking southeast from Chuitinamit, with Santiago Atitlan at center.



Figure 3.7. Steep slopes of San Pedro volcano, looking south from near Finca Tzantziapa.



Figure 3.8. Vast expanse of agricultural land surrounding Chi Kaqajaay.

Other factors that encouraged settlement nucleation around the lake shore included the relative scarcity of permanent water supplies beyond the lake itself, access to lake resources and access to trade.

3.1 NATURAL ENVIRONMENT AND RESOURCES

As Felix McBryde (1945) famously noted, there is no place like southwestern Guatemala for illustrating the influence of geography on people. The intimate knowledge that the Tz'utujil and Kaqchikel Maya have of their land and its resources is reflected in the names that they have given to every portion of this territory. Of the 141 place names listed by Navichoc and Navichoc (1998) for the municipio of San Pedro, for example, 48 (34%) appear to contain some form of ecological information. Some examples include: Pa K'isiis = where the cypress trees are, Xe'Ooj = under the avocados, and Chuwa Ch'imaay = in front of the guisquil. Other place names also appear to designate areas that are

unsuitable for cultivation of that have low agricultural potential by noting the presence of sand (Sanayi') or rocks (aba'aj), or a lack of vegetation (e.g. Ch'anay = bald place), while others may describe the color of the soil, e.g. Tza'n Q'ana Uleew (at the point of the yellow earth). In the latter case, the "yellow earth" referred to may have designated this area as a source of a particular type of clay that was preferred for the production of mud bricks (Antonio Matzar 2018, personal communication).

Geology and Soils

The hydro-geological map produced by Nunez (2012-13) indicates that the PALA project area is dominated by deposits of Quaternary age pyroclastic materials (Qpa) (Figure 3.9), which are characterized as being of "high porosity and permeability" and favoring the accumulation of surface water. These relatively recent pyroclastic deposits have provided the most stable landforms in the project area and all four of the largest settlements that were documented during the survey (San Pedro, San Juan, Pan Alujaay and Chi Kaqajaay) were located on one of these landforms.

These ancient lava flows are separated by steep-sided gullies or barrancas which contain rocky and sandy soils that have been characterized as Quaternary Andesitic (Qa) (the dark green portions of the map in Figure 3.9) and represent the result of more recent lava flows and lahars (Nunez 2012-13). These gullies, such as the ones that bounded both sides of the site of Pan Alujaay, were rarely settled but provided a useful source of construction materials (i.e. a variety of different types of stone) and fertile soils for agriculture.

The project area additionally includes areas of alluvium (Qal) around the shoreline (strong blue sections in Figure 3.9), as well as colluvial soils (Qcol) (the lighter blue sections) to the south and west, adjacent to the steep walls of the original Atitlan caldera. Finally, the project area contains a few areas that are underlain by more ancient andesite and granite (QTs and Tg), which represent the surface of the original Atitlan caldera and are represented in light green and beige on the map.

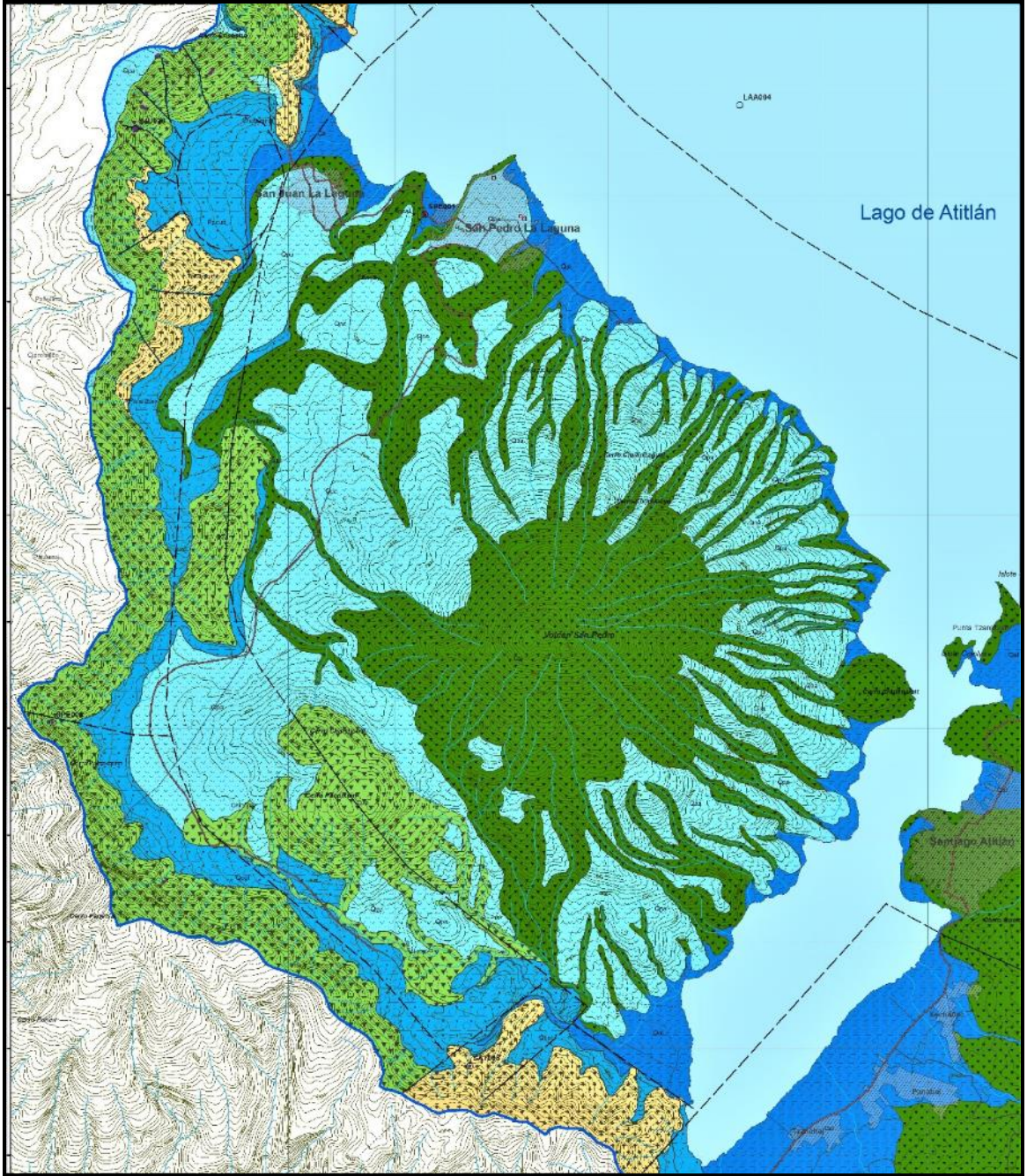


Figure 3.9. Hydro-geological map of project area, after Nunez (2012-13).

The volcanoes of the Lake Atitlan region have provided the area with fertile soils, A recent soil survey of the Department of Sololá by MAGA (2006) identifies several of the specific soil classes, consociations and groups, that are found within the current project area and these are listed in Table 3.1 along with their specific locations and current uses.

Several of the soils listed in Table 3.1 are located in steep mountainous areas that are not suitable for agriculture. The most productive agricultural soils appear to have been located in the open valleys to the north of San Juan la Laguna (Consociation EFA-Sololá), in the valley to the southwest of San Pedro volcano (Consociation Paquixtan), and in the Finca Tzantziapa area (Consociation Tzantziapa).

Table 3.1. Soil classes, consociations and groups within the project area based on MAGA 2006.

Consoc / Group	Class	Locations	Uses
<i>San Pedro</i>	Andisoles	Cerro Chutincagual, median slopes of San Pedro Volcano.	Forest
<i>Chiriximay</i>		Cerros Panán and Pakisiis. Aldea Pasajquim, caserío Paquir, cerro Cristiano, sierra Parraxquim, paraje Patzunoj	Forest / Agriculture
<i>Paquixtán</i>		Cerros Chuichumil and Paquixtán,	Forest / Agriculture
<i>Tamalaj Group</i>		Upper slopes of San Pedro volcano, paraje of Xeracantzi.	Forest / Agriculture
<i>Atitlán</i>	Inceptisols	Chu'nimajuyú hill,	
<i>Tzantziapa</i>		Xecal, Xeracantzi, and Tzantziapa	Agriculture
<i>Cerro Patzunoj</i>		Cerro Pakisiis, Nicajquim, Panatzán, Xelajnom, Pachalí and Cerro Patzunoj	Forest
<i>EFA-Sololá</i>		Panyevar, caseríos Cipresales, Panacal	Forest / Agriculture
<i>Sansquim</i>	Molisols	Chicajay caserío, Cerro Patzunoj and lower part of the Sierra Parraxquim	Forest / Agriculture
<i>Tzampetey</i>		Paraje Xecal. Cabecera municipal, San Juan	
<i>Chichivoy</i>		Cabecera San Pedro. San Juan, Tzanjay area	
<i>Cerro de La Cruz</i>	Entisols	Cerro de la Cruz	

Climate

The predominant climate in the Department of Sololá is humid cold and the average annual temperature ranges from 8.0 to 15.5 °C. In the central region surrounding Lake Atitlán, the range is between 15.0 and 18.5 °C. Dix et al (2003) note that the barrier created by the volcanoes Atitlán, Tolimán and San Pedro causes condensation and cloud formation over the lake, which serves to keep the humidity relatively low, while immediately to the south of this barrier, in the Pacific piedmont, the humidity is greatly increased, contributing to the legendary fertility of this area.

The average rainfall in the department of Sololá ranges from around 4,500 mm per year in the Pacific piedmont to between 1,200 and 1,000 mm along the mountains to the north of the lake. Around the lake shore the averages range from 1,200 to 1,600 mm. The wettest and highest rainfall area is found in the municipalities of Nahualá, Santa Catarina Ixtahuacán, Santiago Atitlán and San Lucas Tolimán. The period of greatest rainfall occurs during the wet period between mid-April and mid-November.

Flora

The high-altitude range and climate contrasts found within the Lake Atitlan area mean that it is home to a wide variety of plant and tree species, which McBryde (1945) notes include deciduous, scrubby oak-pine woods and chaparral with areas of open bunchgrass and meadows” in the higher areas. La Bastille (1974:12) notes that because the “southern shores receive more moisture, they support a “lush, more tropical growth, especially around the 2 large bays and the slopes of the volcanoes”. A wide variety of subsistence crops can be grown within this 600-m elevation zone and include maize, beans, squash, wheat, potatoes and several different kinds of fruits and vegetables. Crops mentioned in the *Relación Geográfica de Atitlán* from the year 1585 AD included avocados, jocotes (a native plum), green sapotes, chili peppers, sweet potatoes, cassava or manioc, annona, tomato, and chia (McBryde 1945; Orellana 1984).

Among the tree species in the lake basin, Oaks, (*Quercus* spp.) Pines (*Pinus* spp.) and alders (*Alnus* spp.) are the most sought after for firewood and thus are coming under increasing pressure. Cypress trees, which are limited to the higher elevations of San Pedro

Volcano and Cerro Paquisis, are still used by Atitecos for boat construction. Avocado trees are abundant in the area and are found on farms and small plots of land. Other plants of interest are elderberry (*Sambucus spp*), macuy (*Solanum nigrescens*), pitahaya (*Hylocereus undatus*) and amaranth (*Amaranthus spp*).

Medicinal Plants

Dix et al (2003) identified 112 species of plants that are used by the indigenous peoples of the Lake Atitlán basin. Among the most important uses are medicinal (35%) and edible (32%). Stalls selling medicinal plants are present at markets in San Pedro La Laguna, San Juan La Laguna, Santiago Atitlan, and San Lucas Tolimán. The revitalization of traditional textile production in San Juan La Laguna has prompted the women of the town to return to the use of plants for natural dyes. Most of the plants used are planted in their fields or collected in the adjacent forests.

Fauna

Large mammals in the Lake Atitlan basin include deer, mountain lions, pumas and jaguars, the latter two of which are in serious danger of extinction due to the fact that they require large areas of movement (home environment) in order to survive and the available habitat has been greatly reduced (Dix et al 2003:62). Among the small mammals found in the lake area, bat species are the most numerous, with 89 species.

Dix et al (2003) report a total of 236 bird species in the Lake Atitlan Basin (60% of the known species for the western highlands)

Dix et al recorded 116 species of amphibians and reptiles (37% of the 315 species known from Guatemala). Included in the latter are 27 species of lizards, 49 species of snakes and 37 species of amphibians.

3.2 SUBSISTENCE

Agriculture

Although the soils of Lake Atitlan are fertile, most are located in undulating or steep terrain, and thus erosion is a significant problem in the Lake Atitlan area. Such problems have been mitigated, however, by extensive landscape modifications, many of which date back to prehispanic times (Lothrop 1933; Matthewson 1984; Tax 1969). For example, hill-slopes in many areas of the lake have been modified with the construction of impressive stone terraces of the “contour” variety (Donkin 1979), which can be over 2 m in height and may run for hundreds of meters. Less noticeably, many of the narrow barrancas that line the volcanoes’ flanks have also been furnished with lower stone terraces of the “cross-stream” variety (Donkin 1979).

In the marshy delta of the Panajachel river, a third type of anthropogenic landscape feature called the tablón has developed, which probably originated in prehispanic times and which has been compared to the Aztec chinampa (Hinshaw 1975; Mathewson 1984). As Kent Matthewson (1984: xxiii) explains “Tablones are carefully constructed raised-garden plots, [which are] ... generally rectangular” and range from “20 to 65 cm” in height.

Maize Production

Maize (*zea mays*) appears to have been the staple crop in the Lake Atitlan Basin since the time of the first permanent settlements (e.g. Semetabaj), the first of which emerged around the middle of the 1st millennium BC (i.e. 600 BC), during Middle Preclassic times. The modern Tz’utujil Maya who occupy the southern shore are thus the heirs of traditions and practices that date back over two millennia. The climatic diversity available to the Tz’utujil enabled them to cultivate a wide variety of different types and resulted in a complex system of maize classification based on the age of the milpa, its location, and its class (Butler and Arnold 1977).

Each variety of maize has a different growth cycle. Maize grown in warmer areas near the lake, e.g., *Rawex jab’* (meaning rain-sprouting milpa) or *Sajk’im* (meaning white straw), for instance, is harvested in September, while maize grown in the colder uplands, called *nima jal* (meaning “big ears”) is not harvested until January. Such differences

explain why many residents of San Pedro and San Juan maintain plots in both areas and may also partially explain why the area between San Pedro Volcano and Cerro Pa K'isiis, became the focus of an important prehispanic settlement (the site of Chi Kaqajaay).

Maize Shortages and Exchanges

In the 1930s, when the population of Lake Atitlan was close to its prehispanic level, McBryde (1945) found that securing annual supplies of maize required regular exchanges between the different lakeside communities. Despite the regularized nature of these exchanges, however, McBryde observed that many Atitecos also maintained milpas in the adjacent Pacific piedmont to mitigate against the risk of shortfalls. As the Pacific piedmont had a different growing season and could produce three maize crops per year, access to these piedmont lands may have been a vital lifeline for Atitlan's communities during times of drought or poor harvests and explains why, in addition to the area's cacao and cotton products, Tz'utujil nobles have fought hard to keep control of these valuable territories.

Supplementary Activities

In 1969, Manning Nash (1969:36) noted that: "Although the economy of the region is based on subsistence agriculture, no community is self-sufficient and so relies on a network of trade" (Nash 1969:36). In the same volume, Tax and Hinshaw (1969:71) observed that "each community devotes itself to some economic pursuit that, as income-producing activity supersedes the milpa in importance", however, "life is attuned to the agricultural cycle, and milpa agriculture is the occupational ideal".

The communities of Lake Atitlan have a long history of producing non-agricultural goods from resources found around the lake, including, in-particular, items made from maguey (henequin) and tul, the reeds that were once abundant in many parts of the lake shore (Lothrop 1929b; Loucky 1979).

James Loucky (1979:704) notes that micro-geographical diversity has been an important factor in shaping the types of non-agricultural pursuits practiced by these communities as well as their degree of reliance on these industries. As Loucky explains: "Irregularities of topography, differential availability of water, and restricted distribution

of some crops ... contribute to the community distinctiveness in production strategies”. In turn, the adoption of these industries has had a profound effect on the social and demographic structure of these communities.

Maguey Production

The use of maguey for the production of rope products such as bags, fishing nets, and hammocks, has been an important industry for communities in the western part of the lake, particularly San Pablo La Laguna, whose lack of good quality farm land has made this a vital lifeline, enabling them to exchange finished maguey products for essential foodstuffs such as corn and beans (Lothrop 1929b; Loucky 1979; McBryde 1945). According to Lothrop, Loucky and McBryde, however, the best quality maguey was grown around San Pedro, motivating some Pablenos to purchase their maguey from San Pedro rather than grow it themselves in San Pablo.

Reed Products

Tul is the Maya word for the rushes or reeds that were once plentiful in several of the low-lying marshes around the shores of the lake. These reeds were utilized by several communities around the lake to produce mats (petate tul). McBryde (1945:68) noted that the town of Santa Catarina Palopo, located at the eastern edge of the lake, was the principal producer of tul mats up until 1932 but that the industry had slowed since then due to rising lake levels. McBryde (1945:68) notes that tul mats were also produced in Cerro de Oro, Santiago, San Marcos, and Santa Cruz and that the mats produced in these towns were sold at the market in Sololá. Up until the lake level rises of the last few years, tul also appears to have been plentiful along the gently sloping shoreline of San Juan La Laguna.

3.3 SUMMARY

This chapter has highlighted the richness and diversity of the Atitlan landscape but has also noted the various challenges and risks associated with settled life in this region. Given the micro-geographical diversity of the Lake Atitlan region, it should not be surprising to find that each individual community in the lake developed its own specific

variant of what might be considered a general suite of traits associated with highland agricultural life (Nash 1969). What's more, the diversity of the landscape had a direct influence on the types of non-agricultural pursuits that these communities engaged in, which in turn shaped the daily activities and local social, political and economic organization.

CHAPTER 4. ANTECEDENTS AND ARCHAEOLOGICAL SYNTHESIS

Archaeological interest in the Lake Atitlan region has been patchy and inconsistent, probably due to the fact that even the most conspicuous ruins in the area (e.g. Chuitinamit) have remained relatively hidden and inaccessible and perhaps also due to the fearsome reputation of the local landowners (Lothrop 1948). And although the quantity of archaeological data emerging from the lake has substantially increased in recent years, only a small portion of this has come from well-organized research investigations; the bulk deriving from rescue work and amateur recovery efforts.. In the current chapter, I provide an overview of the most important archaeological investigations and their findings. I then attempt to thread this information together to provide a chronological synthesis of the prehispanic history of the lake as it was known prior to the PALA project. In this effort, I rely heavily on earlier syntheses produced by archaeologists from the Universidad del Valle de Guatemala (Barrientos Q. 2009; Ivic de Monterroso 2012; Ivic de Monterroso and Alvarado Galindo 2016) who, in addition to creating earlier syntheses have also kindly provided me with unpublished data relating to the rescue investigations carried out around Chuk'muk.

4.1 CHUK'MUK AND CHUITINAMIT

As with most areas of the world, it was the most conspicuous ruins that first drew archaeological attention to Lake Atitlan. Thus, the first official investigations on the lake targeted the prehispanic Tz'utujil capital of *Chiya*, more commonly known as Chuitinamit (Luna 1910; Lothrop 1933).

Chuitinamit

Chuitinamit is the most imposing site on the south side of the lake and occupies the summit of a small hill attached to the western slope of San Pedro volcano (Figure 4.1). The site includes a square plaza with a pyramid at its center and a large acropolis mound which was constructed around the rocky peak of the hill (Figure 4.2). John Fox (1978), who produced the most detailed available map of the site during his visit in 1977 (Figure 4.2), noted similarities with contemporary highland sites such as *Chuitinamit-Sacapulas*,

Chutixtiox, *Tenam* and *Chamac*. As Ivic et al. (2016) have noted, however, the site's orientation (25 degrees east of the north), is not shared by these other sites and the architectural style appears to be primarily of local derivation. It is also worth noting that several large Classic-period sites located in the adjacent Pacific piedmont (e.g. Palo Gordo and Bilbao) as well as in the department of Escuintla (e.g. Montana) also focused on large acropolis-like platforms.



Figure 4.1 The hill of Chuitinamit (foreground) with San Pedro volcano behind, looking southwest. G. Davies 2011.

The Acropolis at Chuitinamit features two large terraces (see Figure 4.2). The upper terrace contains the remains of four rectangular mounds arranged around a small patio which Lothrop dubbed the Patio Luna due to the fact that Luna had “excavated the inner side of the northern edifice and secured important stone carvings there” (Lothrop 1933:75). Lothrop’s excavations in this area revealed that “stone and adobe buildings painted red once stood upon the mounds” and that the substructures had “vertical walls of stone” (Lothrop 1933:75). The lower terrace contains the remains of three long mounds, two of which run parallel and may represent the remains of a ballcourt.

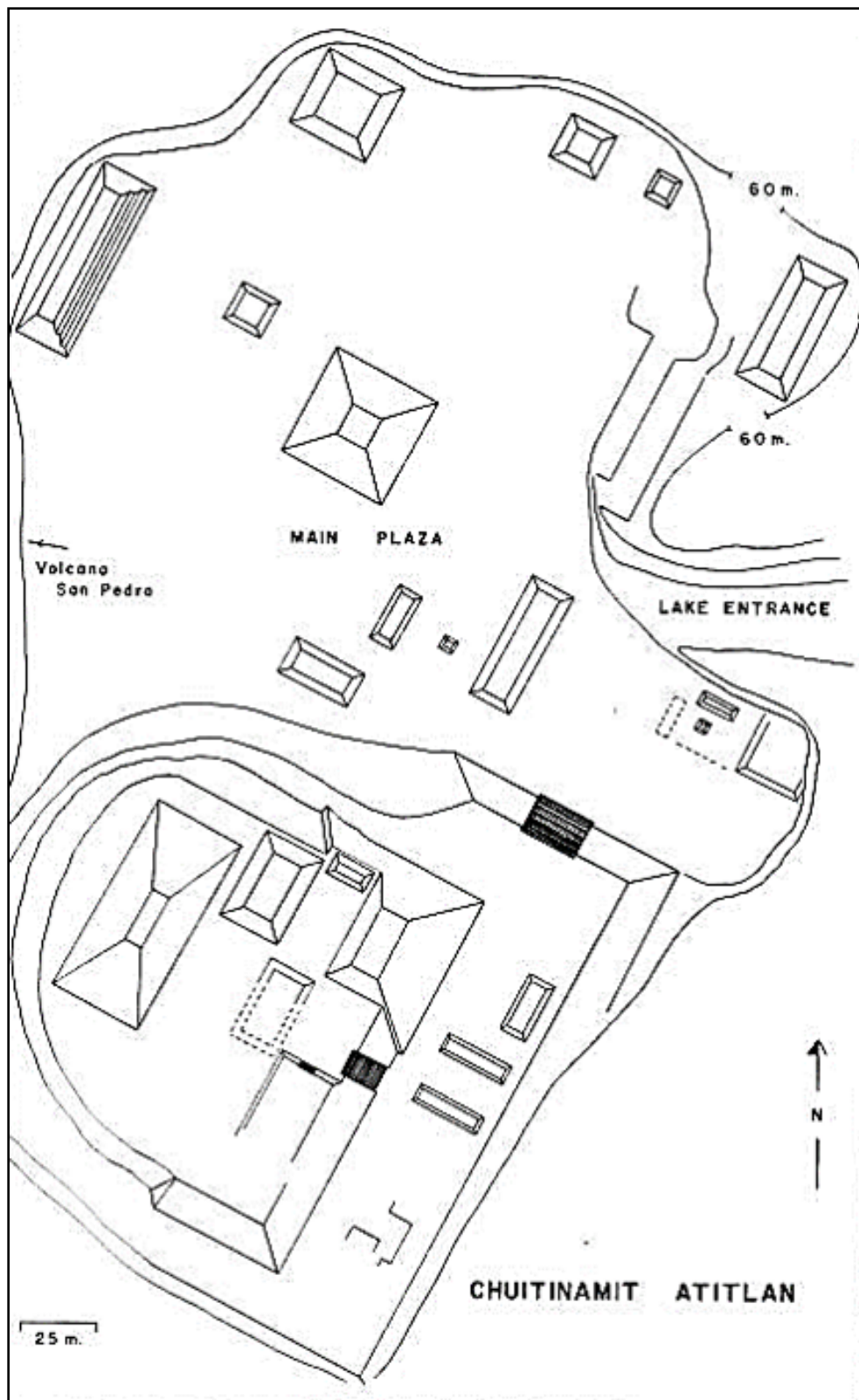


Figure 4.2. Map of Chuitinamit, after Fox (1977).

The main plaza is situated to the north of the acropolis and includes a large central pyramid (Structure 4), a large rectangular structure (Structure 5), and several smaller mounds that line the northern and eastern edges. The central pyramid is today covered in vegetation, however, Lothrop (1933) noted that it was constructed of stone and adobe but had been robbed of all facing stones and bore signs of looting at the summit.

Lothrop's excavations at the base of this mound identified human remains which he interpreted as evidence of human sacrifice (Lothrop 1933:75). Lothrop was informed by locals that Structure 1, located in the far northeastern corner of the site had been the house of the king, while structures 2 and 3 had housed his retainers (Figure 4.2). In addition to conducting excavations in the site center, Lothrop also probed the terraces below and identified houses of adobe and stone, which he interpreted as being recent or modern due to their small size.

Chuk'muk

In comparison to Chuitinamit, Chuk'muk (Figure 4.3) is a far less imposing site and has suffered significant destruction in recent years as a result of the development of refugee housing for the survivors of the Hurricane Stan disaster that wiped out a portion of Santiago Atitlan. Situated on a broad open plain, settlement here appears to have consisted of dispersed house groups loosely gathered around a modest ceremonial center which featured a number of low mounds grouped around two plazas (Figure 4.4). According to Orellana (1984), the site of Chuk'muk may correspond with the town of *Xepoyom*, which is mentioned on two occasions in the Annals of the Kaqchikeles and which was reportedly conquered and captured by the Kaqchikeles in 1521, following an internal conflict between two factions of the Tz'utujil (Recinos and Goetz 1953).

Lothrop investigated three structures at Chuk'muk which he interpreted to be houses, excavating a total of 29 small trenches and recovering a large collection of ceramics and obsidian. In one of these structures he also encountered several burials accompanied by ceramics and other offerings. The burials included an infant covered with an inverted bowl, adults in a sitting position with knees bent against the chest, and a multiple burial containing the decapitated heads and bodies of eight individuals.



Figure 4.3 The now severely disturbed site of Chuk'muk, looking west.

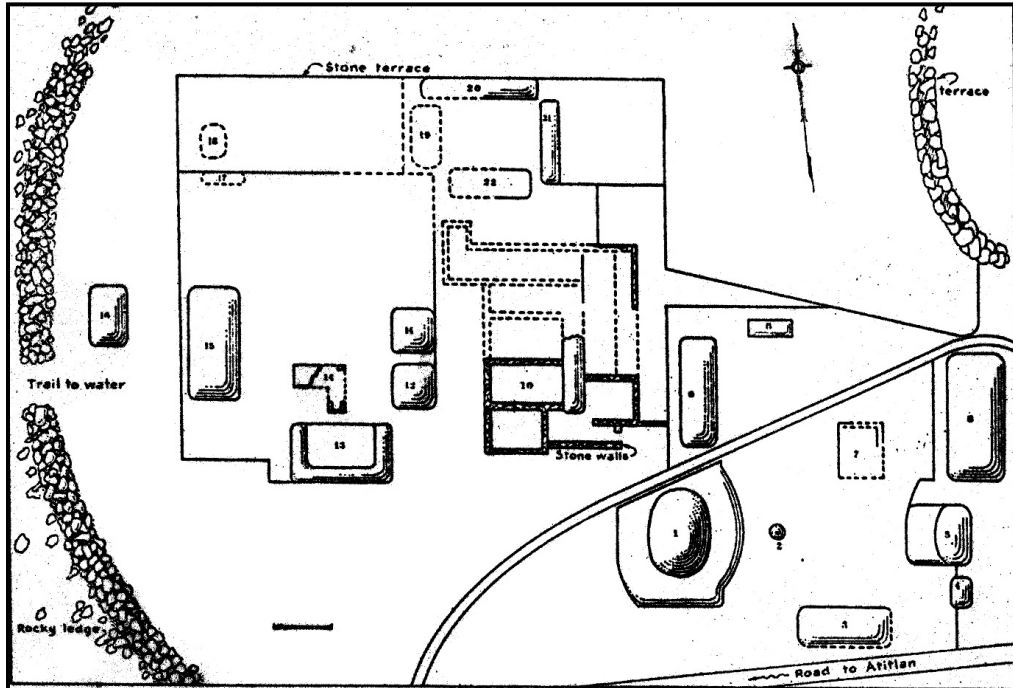


Figure 4.4 Plan of central portion of Chuk'muk, after Lothrop 1933, Figure 5.

Chronology

Lothrop recovered approximately 1,500 sherds from Chuk'muk and a smaller quantity from Chuitinamit. Despite the lack of stratigraphy at Chuk'muk, he was able to separate the recovered ceramics into three phases (Chuk'muk 1, Chuk'muk 2, and Chuitinamit) (Table 4.1), based largely on comparisons with the published sequence from Uaxactun

Lothrop's analysis and the recent investigations by the Agua Azul project (Chinchilla et al 1994; Popenoe de Hatch 2009) indicate that Chuk'muk was established by the Late Preclassic period (c. 300 BC – 250 AD) and that its occupation extended up until at least the beginning of the Postclassic period (c. 900 AD), while Chuitinamit's occupation was restricted to the Postclassic period (c.900 – 1524 AD). And while Lothrop (1933:88) noted that the surface ceramics from Chuk'muk appeared to be “related to some of the Chuitinamit wares and [thus] ... contemporaneous” he also observed that the Chuitinamit ceramics were “much more complex and surprisingly different from what has been found on the opposite side of the Atitlan harbor”.

Unfortunately, due to the fact that the landowners of the principle mounds at Chuk'muk have consistently refused permission for excavations, the degree of overlap in the occupations of these two important sites is no clearer today than it was in Lothrop's time and given the rapid rate at which the ruins here are disappearing, it is unclear if this question will ever be fully resolved.

Table 4.1. Comparison of ceramic phases developed by Lothrop (1933) and by Agua Azul project (Chinchilla et al 1994).

Years	Period	Lothrop Phase	Agua Azul Phases
300 BC – 250 AD	Late Preclassic	Chuk'muk 1	Chukumuk
250 AD – 600 AD	Early Classic		Tolimán
600 AD – 900 AD	Late Classic	Chuk'muk 2	Xechivoy
900 AD – 1250 AD	Early Postclassic	Chuitinamit	Chuitinamit
1250 – 1524 AD	Late Postclassic		

Reconnaissance

Following his work at Chuk'muk and Chuitinamit, Lothrop conducted a relatively thorough reconnaissance of the lake and its surroundings, identifying several other important archaeological sites as well as some minor ones located between the major towns (Figure 4.5). He also produced an invaluable photographic record of the carved stone monuments, several of which have long since disappeared. His understanding of the ceramic sequence from Chuk'muk enabled him to recognize the early date of sites like Semetabaj and Agua Escondida, while his knowledge of Tz'utujil ethnohistory combined with his previous ethnographic work (Lothrop 1928; Lothrop 1929a; Lothrop 1929b), enabled him to recognize the prehispanic origins of many of the existing towns (e.g. San Pedro La Laguna, San Pablo La Laguna and San Antonio Palopo).



Figure 4.5. Location of known archaeological sites around Lake Atitlan, adapted from original drawn by Xelani Luz.

The four decades (1935-1975) following Lothrop's investigations saw little in the way of new archaeological work in the lake region, with the exception of site visits by A. V. Kidder and Edwin Shook in the 1940s (discussed briefly in Shook et al 1979) and underwater work by Stephen Borhegyi in the 1960s, and by Rodrigo Llarena in the 1970s (Mata Amado 2011). In 1978, however Edwin Shook, Marion Popenoe de Hatch and Jamie Donaldson began an intensive series of excavations at the site of Semetabaj, located on an upland plateau near the modern town of San Andres Semetabaj (see Figure 4.5).

4.2 SEMETABAJ

First identified by Lothrop during his general reconnaissance of the lake in the 1930s,, the site of Semetabaj then boasted 17 earthen mounds arranged around a large rectangular plaza which was left open in the direction of the lake (Shook, et al., 1979) (Figures 4.6 and 4.7). Shook et al. confirmed Lothrop's suspicions that the site was early, identifying a significant Middle Preclassic component followed by a Late Preclassic hiatus and then a brief Early Classic occupation. Utilizing a more detailed and rigorous ceramic analysis methodology, Marion Hatch provided the first chronologically anchored ceramic sequence for the lake, a sequence which had gone largely unquestioned until the recent critique by Takeshi Inomata and colleagues (2014), which has cast doubt on the absolute dating of both the Semetabaj sequence and the Kaminaljuyu chronology that it was based on (see discussion in the Ceramics Chapter for more details).

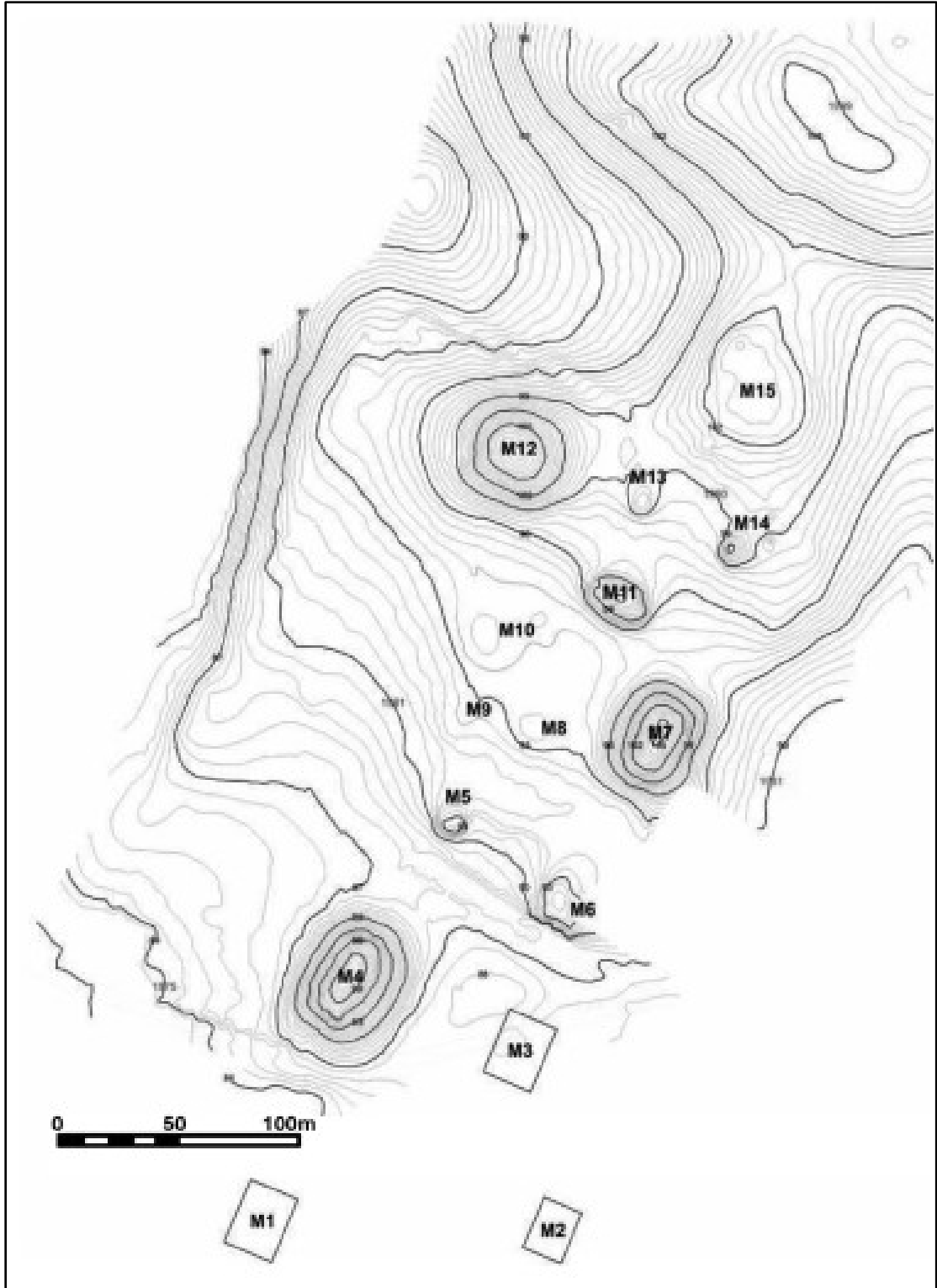


Figure 4.6. Map of the site core of Semetabaj. After Alvarado Galindo and Eduardo Bustamente (2013).



Figure 4.7. Large earthen mound at Semetabaj. Photo by Maria Corado 2016

4.3 SURVEY AND RESCUE PROJECTS

Since the Semetabaj excavations, investigations have focused on filling in some of the gaps between the major sites. Surveys by Margaret Bruchez (1994) along the north shore, and by the Agua Azul project (Chinchilla et al 1994) along the south shore, have begun to provide important details on some of the smaller ceremonial centers around the lake and have provides some ceramic data for rural settlements. However, there has still been little success in determining how these smaller sites were integrated with the larger, suspected capitals sites such as Semetabaj and Chuk'muk.

Rescue investigations carried out around Chuk'muk (Aguilar and Aguilar 2010; Chocano Alfaro 2009; Popenoe de Hatch 2009) have continued to provide information on the wealth of that site's leaders and have also provided some information on domestic architecture and ceramics. However, the haphazard and hurried nature of these investigations combined with the lack of information relating to the ceremonial precinct, still makes it difficult to interpret the historical development of this site. Meanwhile, rescue

excavations elsewhere around the lake are also helping to generate information about some of the lesser known communities such as Sololá, which in Postclassic and Early Colonial times was known as Tecpan Atitlan (Corado 2013).

4.4 SAMABAJ

The most spectacular archaeological discovery to have been made in the lake region in recent years, however, has been the underwater site of Samabaj (Atwood 2015; Benitez and Samayoa 1999; Medrano 2009; Medrano 2011; Medrano 2015)). Located on a now submerged island off the shore of Cerro de Oro, this apparent pilgrimage site (Atwood 2015), has not only provided important information on the Late Preclassic culture of the lake but has also revealed the dramatic changes that have occurred in this landscape since that time, indicating that between approximately 300 and 350 AD, the lake level rose by as much as 25 m. Such a revelation has significant implications for our understanding of Preclassic settlement patterns around the Lake, including within the current project area.

4.5 PROJECT AREA BACKGROUND

The project area encompasses most of what Lothrop termed the “western shore” of the lake, lying between the Bay of Santiago and the municipal boundary between San Juan and San Pablo. In spite of the area’s archaeological potential, which was commented on by both Luna and Lothrop) and ethnohistoric references to the prehispanic settlements that existed in this area (Recinos 1957; Recinos and Goetz 1953), the western portion of the Atitlan Basin, encompassing the municipios of San Juan and San Pedro La Laguna, had received no serious archaeological attention prior to the current project. And while several sites had been registered (Table 4.2) and some of the extant monuments have been photographed (forming part of the Edwin Shook Collection at the Universidad del Valle), the vast majority of the sites remained entirely undocumented. The rest of this section summarizes the previous knowledge of this area’s prehispanic history.

Table 4.2. Registered Sites within the Project Area

Municipio	Site	References
San Pedro	Berhorst	Lothrop 1933, Orellana 1984
	Chuchuc	Lothrop 1933, Orellana 1984
	Cojoljuyu (Chi Kaqajaay)	Lothrop 1933, Maxwell, Scott
	San Pedro La Laguna	Lothrop 1933, Luna 1910, Orellana 1984.
	Pan Alujaay	Aguirre 1972; Lothrop 1933; Orellana 1984; Maxwell 2008, Maxwell 2010
San Juan	San Juan La Laguna	Lothrop 1933

San Pedro La Laguna

San Pedro is a fairly typical colonial Guatemalan town, featuring a small Catholic church, a compact plaza, municipal offices, and a covered marketplace in the town center, which sits upon an elevated plateau. While photos from the first half of the 20th century indicate that the town was once largely confined to this plateau (Figures 4.8 and 4.9), the impact of tourism in the last 50 years has caused a boom in construction around the shore and a rapid increase in the overall population of the town, which now includes a significant group of foreign residents.

San Pedro was probably established shortly after Santiago Atitlan (i.e. 1547), however, no documentation of its founding exists (Aguirre 1972). A former priest of San Pedro, however, named Gerardo Aguirre, compiled a detailed account of the town’s history, highlighting in passing, evidence of the town’s prehispanic origins in the form of mounds and walls. It is, however, unclear if Aguirre knew of these sites from personal experience or if he just heard about them from locals.

Similar observations were made much earlier by Carlos Luna (1910), who observed that: “Judging by the vestiges which remain in Santiago Atitlan, San Pedro La Laguna, San Andres, San Lucas and Santa Catrina La Laguna, these towns have been since times prior to the conquest cities of much importance” (translation by Orellana 1984:15). Lothrop (1933:100) echoed these remarks, noting that the town of San Pedro stood “on an outcrop

of lava blocks, forming a natural fortress” and that “the position had been strengthened by piling up of rocks around the periphery of the town – dating doubtless before the Spanish Conquest”.



Figure 4.8. Photo of San Pedro and San Juan, taken by William Gates in 1920s. Harold B. Lee Library, L. Tom Perry Special Collection, Brigham Young University.

Lothrop also described seeing “several mounds” approximately one mile (1.6 km) to the east of San Pedro (most likely those of Pan Alujaay – our FS7) and at two other locations between San Pedro and Chuitinamit. The first of these consisted of “a mound of yellow earth” and was described as being located approximately 100 m from the water on the “next to last ridge of San Pedro volcano visible to the north from the summit of Chuitinamit”.

The second location, he noted was approximately 800 m to the northeast of this, across the town line of San Pedro. Here, he observed a small mound located behind a small

sandy bay and noted that sherds could be picked up between the mound and the water s edge (Lothrop 1933:99).



Figure 4.9. San Pedro La Laguna c. 1940, looking northeast, with Pa Tawal peninsula top left and Catholic church center right. Probably taken by Benjamin Paul.

Ethnohistory

In early colonial documents, San Pedro La Laguna is named San Pedro Pa Tz'ununa', meaning "place of hummingbirds" (Figure 4.4). Other references to "Tz'ununa" in the Annals of the Kaqchikeles (e.g. Recinos and Goetz 1963:77 and 81) may refer either to ancient San Pedro or the existing town of Tz'ununa', an aldea of Santa Cruz la Laguna. According to Recinos and Goetz (1953), the town of San Pedro may also have been known as Chi Tzunun Choy, meaning "in front of the hummingbird waters".

Early Spanish documents such as the *Libro del Pueblo de San Pedro Pa'Tzununa* (1648) provide some important details about the chinamits that made up the community of San Pedro in prehispanic times (Table 4.3). For instance, a total of 16 of the 59 marriages that took place in 1648 involved a member of the Tz'ununa' chinamit. Other chinamits that were well represented in this document are the Ko'oni (n=14), Aj'chavajaay (n=6), Ulujaay (n=6), and Nimakachi (n=5) (Table 4.3).

Table 4.3. Chinamits mentioned in the Libro de Matrimonios de Pa Tz'ununa' from 1649.

Chinamit	Marriages
Tz'ununa'	16
Ko'oni	14
Aj'Chavajaay	6
Ulujaay	6
Nimakachi	5
Aj Tzikinjaay	2
Ahquibihay	1
Hulahui	1
Nihayi	1
Nikachi	1
Quevaki	1
Taval	1
Vatza	1
Xalamancaya	1
de Santa Clara	1
de Tecpanatitlan	1

In Postclassic times, the Ko'oni chinamit probably occupied a portion of the shore to the east of San Pedro, an area that modern residents of San Pedro (a.k.a. *Pedranos*) still refer to as Ko'on (Maxwell and Garcia Ixmata 2008).

The *Ulujaay* chinamit may also have been located to the east of San Pedro and may have been associated with the site of Pan Alujaay (our FS7), which we identified as being an important settlement in Late Postclassic times (see Chapter 7).

Finally, the *Aj'chavajaay* chinamit is presumed to have been named after the Chavajay family, who have been one of the largest and most affluent families in San Pedro since the Conquest and still own large quantities of land in the town, including the shoreline site of Saqaribal (our FS28), which contains four important prehispanic monuments.

San Juan La Laguna

Unlike San Pedro, San Juan whose Tz'utujil name is *Xe Kuku Abaj*, is not specifically mentioned in any of the extant ethnohistoric sources, and its late founding, in 1618, by colonists from Santiago Atitlan, indicates that it was not densely settled at the time of the Conquest (Aguirre 1972) (Figure 4.10). However, the surviving archaeological evidence from around the town and in several private collections indicate that the area around modern San Juan was an important focus of early settlement in the lake (see Chapter 7).

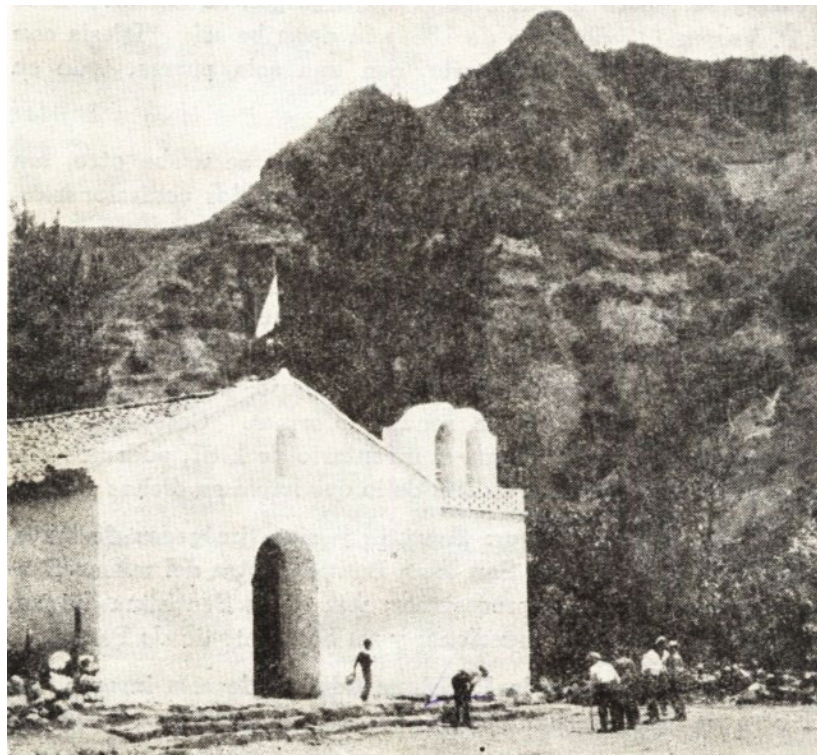


Figure 4.10. San Juan La Laguna church, with Cerro Cristalina (the Indian Nose) behind.
After Aguirre (1972:106).

Lothrop made a brief visit to San Juan during his reconnaissance and identified a small plaza surrounded by five mounds to the southwest of the town. One of these mounds appears in a photograph within the Harvard-Peabody Collection (Figure 4.6). Lothrop described the prehispanic evidence he observed in and around San Juan as follows:

San Juan is another town founded before the Conquest, and traces of an encircling stone wall may still be detected. Between the landing and the town, undecorated sherds and obsidian chips may be picked up, but the deposit of ancient refuse is less than a foot (0.3 m.) deep, as revealed in cuts on the side of the trail. To the west and southwest of San Juan similar refuse exists over quite a large area. About 150 yards (140 m.) beyond the last house there are five mounds ranging from 6 to 15 feet (1.8 to 4.6 m.) in height. Four of the mounds formed a small plaza and the fifth stood slightly apart. The largest mound had been trenched some years ago by the municipal authorities, but nothing had been found of sufficient interest to be remembered. (Lothrop 1933:100-101).

While in San Juan, Lothrop (1933:101) also photographed two statues that were then located in the main plaza, but which have long-since disappeared. He was told that these statues had come from “alli en el monte,” and interpreted this as a reference to the site of Cojoljuyu, now better known as Chi Kaqajaay (our FS3).

Finca Chicayal

Located just outside of the project area but within the western shore physiographic area Finca Chicayal is located at the southwestern corner of the Bay of Santiago, on the lower slopes of San Pedro Volcano. At a private residence located approximately 200 m from the shore, Lothrop was shown four stone monuments, which included a tenoned jaguar head measuring approximately 1 m in length and three pedestal statues, of which two are illustrated in his monograph (1933:99, Figure 63). The monuments were said to have been recovered from the top of a “small mound of earth and uncut stones” located about 75 m uphill from the house”. When he inspected the mound, however, he recovered

only “a few brown ware sherds” and concluded that “no large population had ever dwelt here” and that the mound probably represented the remains of a small isolated temple.

Chi Kaqajaay

In his discussion of sites in the Chuitinamit-San Pedro district, Lothrop (1933:98) reported the existence of a site called Cojoljuyu, which he noted was “the name of a high plateau on the slopes of the Volcano Santa Clara [now Cerro Paquixtan] about two leagues west of [Finca] Chicayal”. He goes on to state that “We were told that there are mounds and several stone statues there but lacked time to verify it”.

Based on Lothrop’s description, this site was plotted on later maps as being located on the slopes of Cerro Paquisis. However, as we discovered during our investigations, this site, which is now more commonly known as Chi Kaqajaay (our FS3), is in fact located near the center of this upland valley and, to this day, represents an important pilgrimage site for residents of the three towns of San Pedro, San Juan and Santiago Atitlan. This site is described in greater detail in Chapter 7.

4.6 CHRONOLOGICAL OVERVIEW

The first agricultural settlements in the Lake Atitlan region appear to have been established towards the end of the Early Preclassic period (Bruchez 1997; Medrano 2015; Shook et al. 1979). The recovery of small quantities of Early Preclassic ceramics have been recovered from several sites in the northern and northeastern portions of the lake basin, including at the large Middle Preclassic center of Semetabaj (Shook et al. 1979) and at five sites in the area surveyed by Margaret Bruchez in the vicinity of San Jose Chacaya (Bruchez 1997). Sonia Medrano (2015) has also noted the presence of Early Preclassic materials at the site of Samabaj, although no descriptions or illustrations of this materials have so far been published.

The ceramics utilized by these early southern highland groups appear to be similar to those of the Conchas phase groups of the Pacific Coast, consisting principally of tecamate forms. Clark and Blake (1994) have argued that the first plants domesticated on the coast were of highland origin, indicating that the symbiotic relationship between the

two areas was already established by these times. However, given the small number of Early Preclassic sites that are known in the highlands and the even smaller number that have been subjected to stratigraphic investigations, it is still too early to say for certain, whether these first settlers heralded from the coast or somewhere else in the highlands. The fact that the earliest dated settlements in the lake have been found along the northern shore would seem to suggest a northern point of origin. Alternatively, it might be an indication that the more hospitable southern shore locations were already occupied. Unfortunately, as these southern shore sites are now undoubtedly located well below the current shoreline, answering this question may simply not be possible.

Elsewhere in the southern highlands, Early Preclassic ceramics have only been recovered from a handful of sites, e.g., Kaminaljuyu, Naranjo and Piedra Parada in the Valley of Guatemala, Urias in the Antigua Valley, and Salama in the Salama Valley (Robinson, et al. 1998; Robinson 2014; Robinson, et al. 2005b; Sharer and Sedat 1987).

The Middle Preclassic (c. 900 - 400 BC)

The beginning of the Middle Preclassic period in the Pacific Coast was marked by the appearance of large organized settlements in the western part of Pacific Guatemala, near the Guatemala-Mexico border. The most impressive of these sites was La Blanca, whose enormous 25 m high mound may have been the largest structure in Mesoamerica at the time (Love 1999a; Love 1999b; Love 2002a; Love 2002b; Love 2016; Shook and Popenoe de Hatch 1994). The increased hierarchical organization implied by this new level of organization and productivity appears to have coincided with the appearance of Olmec sculpture and symbols in the region.

Over the course of the next three-hundred years, Olmec sculpture began to appear at a string of large settlements along the Pacific piedmont, including especially at Takalik Abaj (Cassier and Ichon 1978; Popenoe de Hatch, et al. 1999; Schieber de Lavarreda and Corzo 2010) and reaching as far east as Chalchuapa in El Salvador (Love 1999b). It is still unclear if the appearance of Olmec sculpture at these sites was a cause or consequence of these sites' sudden increase in economic prosperity and whether the appearance of Olmec symbols at these sites indicated connections to the Gulf Coast Olmec or simply the local

adoption of an Olmec Horizon style. However, some of the monuments, including the Shook Altar from San Antonio Suchitepéquez, appear to allude to travelers and so the most plausible explanation seems to be that these sites were in fact connected by an early version of the Aztec *pochteca*, long-distance merchant-warriors whose task it was to establish trade networks to distant sources of exotic goods desired by Gulf Coast elites (Rosenswig 2016).

By around 700 BC, monumental public architecture was also appearing at strategically located sites in the Valleys of Guatemala and Salama (Arroyo 2013), both of which lay on important overland routes between the highlands and lowlands. Thus, it seems clear that what connected these various sites more than anything was a mutual interest in the trade and exchange of exotic goods between elites situated in different ecological zones.

As with the large piedmont centers (e.g. Izapa, Takalik Abaj and El Baul), these southern highland centers also appear to have been located approximately a day's journey (c. 25-35 km) apart (Figure 4.7), forming a parallel network that extended from Chiapas and possibly as far as Veracruz in the west to Kaminaljuyu in the east (Rosenswig personal communication).

The site of Semetabaj, located in the northeast corner of Lake Atitlan was one of these centers and by around 500 BC, the residents of this settlement had constructed as many as 17 earthen mounds, with some totaling more than 18 m in height (Rick 2005; Rick, et al. 2008; Shook, et al. 1979). McBryde's (1945) research on this and other large corn-producing towns in the southern highlands indicates that this site's location was far from random. As he explains:

The municipios of San Andres Semetabaj, Tecpan, and Patzun, northeast and east of the Lake, grow maize in large quantities, and constitute *the greatest granaries of the Lake region*, more significant by far than the southwestern municipios, Santiago and San Pedro. (McBryde 1945:125 my emphasis).

To the south and east of Semetabaj, large earthen mounds also appeared at the sites of *Chirijuyu* (a.k.a. *Cakhay*) and *Agua Escondida*, both of which have yielded similar types and ranges of utilitarian and imported ceramics. Chirijuyu, which was located

approximately 19 km southeast of Semetabaj was another of the sites identified by Lothrop in the 1930s. Lothrop noted the presence of three large mounds and several small ones. A study of the ceramics by Ivic de Monterroso (1998) indicated that the early history of the site closely aligned with Semetabaj, including Middle Preclassic and Early Classic occupations with a Late Preclassic hiatus in between. However, in contrast to Semetabaj, Chirijuyu continued to be occupied into the Late Classic, when it reached its apogee, and may have been the first regional center of the Kaqchikel (Robinson 2018). Given the strong ceramic similarities with Semetabaj, Ivic de Monterroso has argued that the residents of Semetabaj may have relocated to this site during the Late Classic.

Agua Escondido, which is located between Godinez and San Lucas Tolimán was a considerably smaller site which may have functioned as a node in exchanges between Semetabaj and one either Patulul or Bilbao to the south. Lothrop identified a group of six mounds located 100 m east of the road, the largest of which had been looted. Two sculptures were uncovered at the site during road construction and these were placed on display by the side of the road at a place called Xitanju (see Lothrop 1933:105, Figure 66) Shook dated the site and monuments to the Middle Preclassic.

The Late Preclassic (c.400 BC – 200 AD)

During the Late Preclassic period (c.400 BC - 250 AD), Semetabaj's importance appears to have declined, as indicated by the relative lack of Late Preclassic ceramics recovered from the site center and the complete absence of Late Preclassic monuments. However, a burial containing a significant collection of Terminal Preclassic vessels was identified during construction approximately 500 m to the north of the site, indicating that, by the end of the Late Preclassic, "a settled population existed in the general area, if not on the site" (Shook et al 1979:16). The tomb consisted of an underground chamber that had been cut into the natural talpetate, a compact volcanic ash and sand that underlies much of the soil in this region). Four individuals were identified inside the tomb along with 27 complete vessels all of which had been placed on a floor that had been covered in red ochre. Semetabaj's time as the pre-eminent center on the lake, appears to have ended, however,

and the focus of settlement appears to have shifted to the south shore where the sites of Samabaj and Chuk'muk began to increase in importance.

Samabaj

The site of Samabaj appears to have emerged as an important ritual center during this time and Medrano and colleagues have identified a total of 11 groups of structures and 10 monuments (altars and smooth stelae), covering an area of 16.4 hectares (Linares Palma and Medrano 2010; Medrano 2009; Medrano 2011). The northeastern part of the island is the highest and this is where the civic-ceremonial center appears to have been located. Public architecture at the site included an 18m-long terrace and a 20 m-long platform constructed around a natural outcrop. The most notable feature of the site, however, is the abundance of plain stelae and altars (the fourth highest concentration in the entire Maya area), which indicate that the residents of Samabaj were ideologically affiliated with communities on the Pacific Coast and piedmont, including Takalik Abaj and Ujuxte (Medrano 2009).

The majority of the ceramics recovered from Samabaj have been dated to the latter part of the Late Preclassic and show connections to the Verbena phase ceramics of Kaminaljuyu (Medrano 2011). Medrano (2011) notes that the Samabaj assemblage is similar to the offerings from Tomb II at Kaminaljuyu, and also a tomb from Marinala, both of which included Glossy Orange, Fine Red, Usulután, and Café Negro types. Medrano (2011) also describes the presence of vessels with Protoclassic features, including a tetrapod with mammiform supports and polished orange slip which she dates to c. 200-300 AD.

Chuk'muk

The other site that appears to have suddenly increased in importance during this period is Chuk'muk which occupies a large level, but rocky plateau located at the base of Tolimán Volcano. Today, the site includes the remains of 11 groups of residential structures, dispersed across several natural terraces and a group of mounds at the western edge of the site which was originally considered to have been a separate site but is now considered to have been the ceremonial center of Chuk'muk. (Ivic de Monterroso 2012).

The positioning of the ceremonial center at the western edge of the site may have prefigured the later arrangement between Chuitinamit (the royal court of the Tziquinahay) and Santiago Atitlan (the principal residential area), by which time the ceremonial center was located across the bay from the general populace.

Medrano and Popenoe de Hatch both note strong similarities between the Late Preclassic ceramics from these sites and ceramics from the Pacific Coast, noting especially the Escuintla area and the site of Monte Alto.

Chocola

Like contemporary centers such as Kaminaljuyú, Izapa, and Takalik Abaj, Chocola reached its peak during the Late Preclassic period, by which time the site's center is estimated to have covered an area of 80 hectares (Kaplan and Paredes Umaña 2018). Local residents reported to Kaplan that the site used to include hundreds of mounds, suggesting it could have rivaled sites like Kaminaljuyú and Takalik Abaj in terms of overall population (Kaplan and Umana 2018).

Based on their positive identification of cacao residues in Late Preclassic vessels from Chocola, Kaplan and Paredes Umaña (2018) hypothesize that by Late Preclassic times, Chocola was producing surplus cacao for trade. If a large portion of Chocola's population was involved in this production, then Chocola may have needed to import staple foodstuffs such as corn from the highlands, and this might explain its connection with Semetabaj, which was located in one of the most productive locations for corn in the region (McBryde 1945). Other products that might have been desired by Chocola's elites and which could be obtained in the Lake Atitlan region might have included bags made of maguey fiber, baskets made of tul (perhaps for carrying cacao) and other maguey products such as nets, which could be traded to groups on the coast.

The Preclassic Collapse

Like the later Terminal Classic collapse, the Preclassic collapse in the Southern Maya Region may have resulted from a mixture of both climatic and political factors (Love 2011). Love has observed, for instance, that it was the areas that receive the lowest rainfall, in parts of the lower coast, that were abandoned most rapidly, while centers in the

piedmont, (e.g. Izapa, Takalik Abaj, and Chocoma) appear to have endured the transition. The desiccation of Lake Miraflores, near Kaminaljuyú around 100 AD (Popenoe de Hatch, et al. 2002; Velez, et al. 2011) may also have been a consequence of this dry spell.

Love (2011:74) notes, however, that “the abandonment of the coastal plain ultimately caused the collapse of the Late Preclassic trade networks that highland sites, including Kaminaljuyú, depended on for their wealth” and thus suggests that: “The movement of K’iche’an-speaking populations into the Central Highlands ...[could] be viewed, then, as a symptom rather than a cause of the Late Preclassic collapse”.

The Early Classic (c. 200-600 AD)

Around 300-350 AD, a massive landslide, caused by a volcanic eruption from Atitlan Volcano appears to have blocked the lake’s only surface outlet near San Lucas Tolimán, causing a 25 m rise in the lake level (Medrano 2015). This cataclysmic event completely submerged the ceremonial center of Samabaj, and no doubt forced the abandonment of several other shoreline settlements. The subsequent increase in water-related ceremonies, involving the use and discard of elaborately decorated incensarios featuring quincunx symbols and ceiba tree spikes, no doubt served to commemorate this dramatic flood and to ensure that such an event would not recur.

Underwater investigations along the south shore by the Agua Azul project recovered large quantities of ceramics dating from this period. (30% of all underwater ceramics) including a number of elaborate incensarios (Chinchilla et al. 1994) (Figure 4.11, left). The most productive locations included: Chuitinamit, Tzanchicham, Patzajaye, Tzanchalí, and San Lucas Tolimán. Chinchilla et al. note strong similarities with incensarios from the Nebaj area of the Department of Quiché, many of which have the same hourglass form and cut-out cross decoration (Smith and Kidder 1951). Six censers, however, display Teotihuacan influence and thus have been dated to the Middle Classic period, between c. 400 and 600 AD.

Given the apparent increase in population and prosperity of Chuk’muk during the Early Classic, it seems reasonable to assume that some of the refugees from Samabaj and other shoreline sites, relocated here at this time, precipitating an increase in construction activity and commercial activities. Rich tombs laden with ceramics, including

Teotihuacan-style tripod vessels (Figure 4.11, right) indicate that this new prosperity may have been related to increased connections and interactions with communities such as Montana and Rio Seco, in the lower Pacific Coast (Figure 4.12). Bove and Medrano (2003) consider Montana to have been a Teotihuacan colony at this time, while investigations at the site of Rio Seco to the northwest have also uncovered Teotihuacan inspired ceramics (Sánchez 2015), indicating the possible existence of a communication route extending directly northwest of Montana and thus in the direction of Chuk'muk (see Figure 4.12).



Figure 4.11. Left. Early Classic incensario recovered by the Agua Azul project. Right. Teotihuacan-style tripod vessel recovered during rescue excavations at Chuk' Mu'q. Reproduced with permission of Tomas Barrientos.

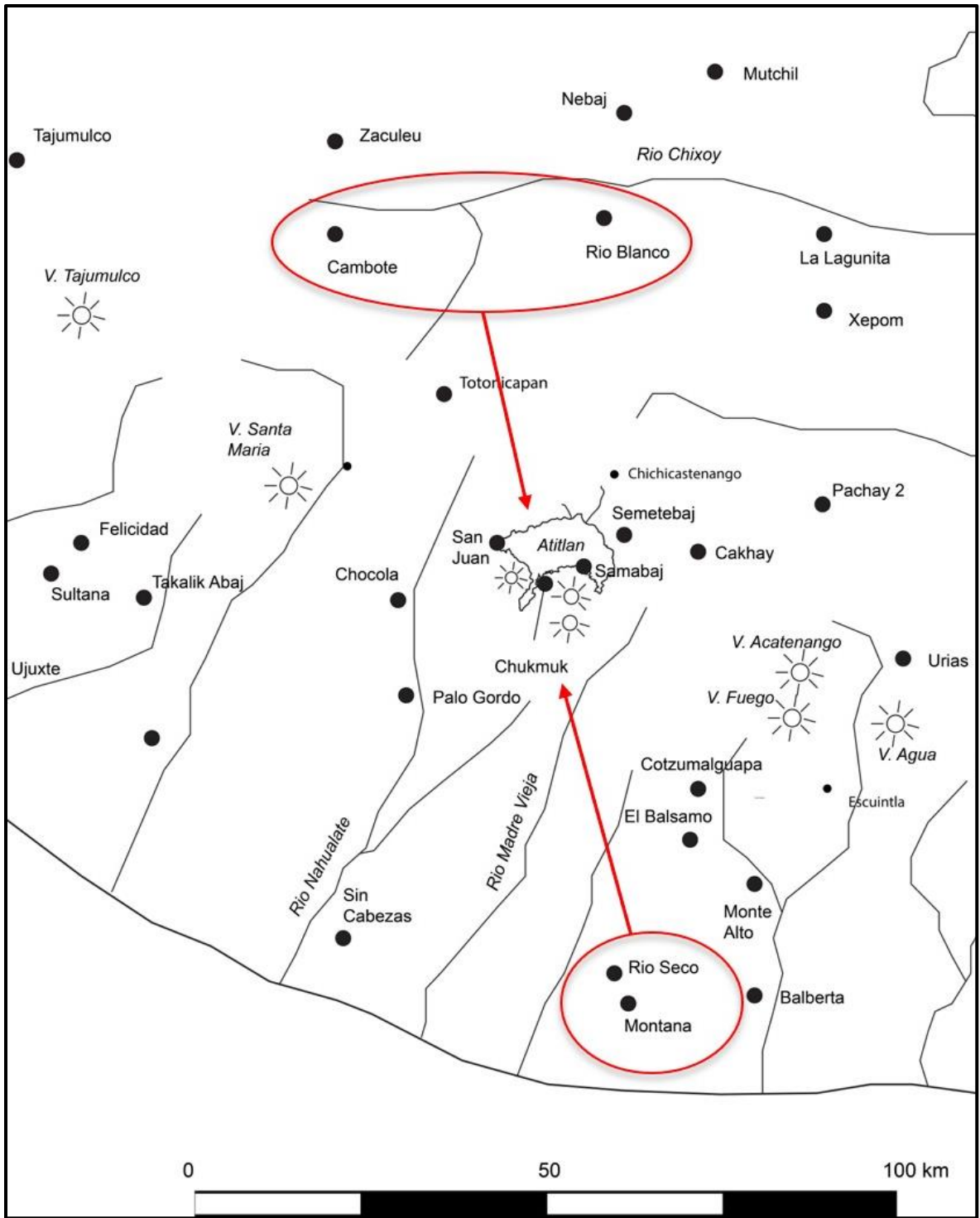


Figure 4.12. Locations of Early Classic sites with ceramic connections to Chuk'muk.

In her analysis of the Agua Azul material and re-examination of the material excavated by Lothrop, Popenoe de Hatch (2009) observed that the Chuk'muk ceramics from the first half of the Early Classic form part of the Rio Blanco Tradition, focused on the site of the same name located in the department of Quiche and shared by the nearby sites of Cambote, Huitchun, Chalchitan, Nebaj and La Lagunita (see Figure 4.10). She suggests that the Rio Blanco Tradition probably represents a precursor of the later Solano Tradition. Ceramics from the second half of the Early Classic at Chuk'muk included Esperanza Flesh and Llanto. Forms included tripod cylinder vessels and hour-glass-shaped censers, in the Nebaj style (Popenoe de Hatch 2009).

The presence of Solano ceramics at Chocola, Semetabaj, and Chuk'muk indicates that the Lake Atitlan area was profoundly affected by the southeastern movement of these populations and may even have participated in the overthrow of Kaminaljuyú that has been proposed by Popenoe de Hatch (1998). Semetabaj, which had experienced a hiatus in the Late Preclassic, was apparently re-occupied by these or related groups and subsequently re-established trade with Chocólá to the southwest. Similar Early Classic ceramics have also been recovered from Sololá and Panajachel, where early researchers noted the presence of mounds (Lothrop 1933) which can no longer be identified.

The Late Classic (c.600-900 AD)

Despite the proximity of the Cotzumalguapa area to Lake Atitlan and the assertions made by Van Akkeren (2005) for lineage connections between the Cotzumalguapa elite and the Tz'utujil, very little evidence of Cotzumalguapa influence has so far been identified in the area, suggesting perhaps a conflictive relationship between the two populations. However, a few Cotzumalguapa-style ceramic vessels appear to have been unearthed recently, during the construction of the hospitalito, just north of Santiago Atitlan (Luz 2007).

The presence of Late Classic Cotzumalguapa-style ceramics on the fringe of Santiago Atitlan and their absence from Chuk'muk suggests that the Santiago Atitlan area may have become the primary focus of settlement during the Late Classic. Ethnohistoric texts refer to a settlement by the name of *Vaiza* or *Pulchich Vayz Amaq* which was

reportedly in front of *Sakibuk*, (the principal deity of the Tziquinahay), suggesting that it was in front of Chuitinamit. Such a settlement shift, from Chuk'muk to Santiago Atitlan, may have been prompted by increasing hostilities from the Kaqchikel, who appear to have been pushing into the lake area from the east by this time.

Late Classic diagnostics identified by Popenoe de Hatch in the Agua Azul and Chuk'muk collections included Amatle and Jelic Red on Cream from the Totonicapán area (see Lothrop, 1936: 28-30). At Chuk'muk, Amatle sherds were recovered from the same contexts as *Rapago Ware* (Popenoe de Hatch 2009), a local utilitarian ware that has a thick, dull-red slip and which was most commonly used for necked-jars (cantaros) decorated with wide, shallow grooves and horizontal moldings. Popenoe de Hatch (2009) notes that this type could easily be confused with Late Postclassic Cinnamon Ware / Xola Naranja which was common at later K'iche'an sites. Based on the distribution of Rapago ceramics in the trenches excavated by Lothrop, Popenoe de Hatch concluded it likely emerged as a minor ware during the Early Classic and increased in popularity over a time, becoming the dominant type in the Late Postclassic (Popenoe de Hatch 2009: 4-5)

The Terminal Classic or Early Postclassic (900-1200 AD)

Currently, the Terminal Classic and Early Postclassic periods are almost completely invisible in the Lake Atitlan area and in the adjacent Pacific Coast, with the two best known diagnostics (Tohil Plumbate and Fine Orange) being almost entirely absent. Marion Popenoe de Hatch (2009) and others (Chocano Alfaro and Sanchez 2009) view the lack of Early Postclassic diagnostics at Chuk'muk as indicating the complete abandonment of that site at the end of the Terminal Classic. Barrientos et al. (2010), however, are more cautious and note that there is little evidence for abandonment at this time.

Although abandonment or population decline, cannot be ruled out, I find it more plausible that the lack of fancy trade wares such as Tohil Plumbate in the investigated contexts in Atitlan indicates either: a) a breakdown in interregional trade or, b) the monopolization of imports by the elites of Chuk'muk (Chinchilla et al 1994). Given that most of the excavated examples of Tohil Plumbate in this region have been recovered from

burial contexts, the lack of this fancy import may simply reflect the fact that no burials dating to this interval have yet been excavated (Dutton 1943; Dutton and Hobbs 1943).

All that we really know for sure, however, is that sometime between the Terminal Classic and the beginning of the Late Postclassic, the fortified site of Chuitinamit was constructed on a small hill at the base of San Pedro Volcano. Representing a new tier in the settlement hierarchy, the appearance of this site signified a new era in the history of the lake. The appearance of new architectural forms, monument styles and pottery styles all suggest that this site was established by a new political elite, who can probably be identified with the Tzikina Jaay (Bird House) who appear frequently in later ethnohistoric records. The hilltop location of the site was also novel for Atitlan but may have had as much to do with the ideology of the new elite as it did with the practical need for defense. Given that the construction of hilltop sites was closely tied to K'iche'an domination in areas to the north of the lake, it seems likely that the construction of this site, may also have been part of a strategy for establishing control over the existing population. Only further excavations will resolve these questions.

The Late Postclassic (c.1200 – 1524 AD)

As most postclassic settlements in the lake area now lie beneath the colonial towns, our information on the Late Postclassic period in Atitlan is restricted to the results of Lothrop's limited excavations at Chuitinamit, and a rich, but often confounding collection of ethnohistoric documents. The remainder of this section briefly summarizes some of the most pertinent information derived from these sources. For a more comprehensive review of the ethnohistory of the Tz'utujil, the reader is referred to the excellent works by Sandra Orellana (1973; 1984), Pedro Carrasco (1982) and Matilde Ivic de Monterroso (2010; 2011).

Ethnohistory

The Tz'utujil feature in several of the extant ethnohistoric documents (e.g. the Popol Vuh, the Annals of the Kaqchikeles, the Title of the Lords of Totonicapan, and the Title of the Indians of Santa Clara) due largely to the fact that their history was closely intertwined with that of their neighbors, the K'iche' (to the north and west) and the Kaqchikel (to the

east), and that all three were frequently engaged in the same or related conflicts (Carmack 1973; Recinos and Goetz 1953; Van Akkeren 2009). Many of these sources, particularly the more historically-focused Kaqchikel sources, provide us with a variety of important details regarding the political history of the lake for the very last part of the prehispanic period, c. 1475-1524 AD and the first few decades of the colonial period. Prior to that time, the histories are less reliable and often difficult to untangle from myth.

Origins and Ancestry

According to the Popol Vuh and other K'iche' documents (e.g. the Titulo de Totonicapan), the Tz'utujil or at least the Tzikina Jaay lineage, were one of several groups of warriors that migrated to the Guatemalan highlands after uniting at a place called Tollan, the place of cattail reeds. The Tzikina Jaay, like many other groups in the Postclassic period, thus claimed to have connections to the Toltecs of Central Mexico. To what degree these migration stories reflect a real or mythic history is still a subject of heated debate (Braswell 2001; Braswell 2003; Carmack 1981; Fox 1987; Van Akkeren 2004). However, Van Akkeren has made a compelling case for a Pacific Coast origin for several of the major K'iche'an lineages and suggests that the Tzikina Jaay and Cabin Jaay (the second ranking lineage of the Tz'utujil) may have originally been based in the Cotzumalguapa area, or at the site of Palo Gordo, where they would have been close neighbors of the Nahua-speaking Pipil.

War and Tribute

According to the ethnohistory, shortly after the various K'iche'an groups had established themselves in the highlands, they began to fight over important territories and trade routes. Fuentes y Guzman (as summarized by Chinchilla 1999:54) observed that: "The main cause [of these conflicts] was the control of ... Atitlán..., which was initially divided equally between the three". During these wars, the Pipiles of the Pacific Coast reportedly intervened as allies of the Tz'utujil against the combined K'iche' and Kakchikel forces.

On at least two occasions, this appears to have resulted in the conquest and subordination of the Tz'utujil to the K'iche'. The first of these instances appears to have

occurred during the reign of Kucumatx-Cotuja (c.1350-1400 AD), who was also the founder of the ultimate capital of the K'iche' at K'umarcaj (Chonay 1953). The second occasion appears to have been during the reign of Kucumatx's son and heir Quicab, whose conquest expedition, which is described in the Titulo de Totonicapan and the Titulo de los Indios de Santa Clara, took him right through the heart of Tz'utujil territory en route to the Pacific Coast. As I discuss later in relation to the site of *Xe' Kaak'a Aab'aj* (Chapter 9), several of the places that Quicab visited during this expedition can be correlated with places located within the current project area.

Political Organization

The only surviving document in the Tz'utujil language describes how subjects of the Aj Tzikina Jaay (the Tz'utujil ruler) would pay them, “men and women as slaves...stones called chalchuitl [(jade)], gold, and cacao and feathers, hens, honey, and many seed bags of corn” (Ribera, et al. 2007 [1571]). Discussing the political territory of the Aj Tzikina Jaay, however, this document only lists towns in the Pacific piedmont, specifically San Bartolome (near modern Chicacao), San Andres, San Francisco and Santa Barbola, all of which, with the addition of most of the lakeside towns, became *sujetos* of Santiago Atitlan in the early colonial period (Kramer 1994; Orellana 1984). Whether the prehispanic communities located near modern San Pedro and San Juan also paid tribute to Chuitinamit is therefore not clear and is usually just assumed.

Social Organization

Like the K'iche' and Kaqchikel, the Tz'utujil polity appears to have been organized into *chinamits*, corporate land-holding groups that were at least conceptually similar to the *calpolli* of Central Mexico (Hill and Monaghan 1987). A document dating to 1563, which was analyzed by Pedro Carrasco, records that the Tz'ikina Jaay lineage ruled over 15 lords, who, Orellana suggests, likely represented the heads of the local *chinamits* (a corporate land-holding group) (Carrasco 1982; Orellana 1984). Orellana (1984) has produced a list of these subsidiary *chinamits* (Table 4.5), and includes in this the *chinamit* of Tz'ununa, which, as already noted, was the most important *chinamit* in the San Pedro area. However,

Orellana does not clarify the sources she used to produce this list and therefore some of the listed chinamits should be viewed as tentative.

Table 4.4. Chinamits making up the Postclassic Tz'utujil Kingdom and their possible home territories, based on Orellana (1984) and Carrasco (1982).

Chinamit Name	Location of Chinamit Territory
Atziquinaha	Chuitinamit, Santiago Atitlan
Cabinjay	Santiago Atitlan?
Najtijay / Nalitiha	Santa Barbara / San Antonio Suchitepequez
Ajcojay	Strong House
Ajquiwijay / Ah Qiba Haa	San Francisco de la Costilla?
Ajquitzihay / Qitzihay	San Bartolome?
Aj'cabawil	Idol House
Cooni / Koni	Between San Pedro and Finca Tzantziapa
Ajpopolajay	San Juan La Laguna?
Tzununa	San Pedro la Laguna
Lapyoi	?
Zaq Ahib	?
Lamakib	?

If the specific functioning, organization and significance of the chinamit are still somewhat unclear, our understanding of the *amaq*, is even more shaky. This is in part due to the fact that the term often appears with modifying words and so clearly had something of a flexible meaning. In most cases, however, the term appears to connote a rural territory and / or its people, and thus Hill and Monaghan (1987) assert that the *amaq* represented a small confederation of allied *chinamits* or *parcialidades*. Maxwell and Hill (2006) note that prior to the Tukuche revolt at Iximche, both the K'iche' and Kaqchikel represented confederations of four *amaq*. The Tz'utujil, on the other hand are typically interpreted as having comprised two *amaq*. However, the argument for the existence of two *amaq* among

the Tz'utujil is weak, and it is possible that the Tz'utujil in fact represented one large amaq. containing a relatively large number of chinamit. This would indicate that the Tz'utujil Kingdom's political organization closely resembled that of a Central Mexican altepetl and would suggest a more centralized power structure than that of the K'iche' and Kaqchikel polities.

Ethnicity

In addition to the chinamit and amaq units, some researchers have argued that the K'iche' and Kaqchikel also recognized a broader scale of identity known as a vinak. Typically translated simply as people. Greg Borgstede (2004) recently made the argument that vinak represented ethnic identities and therefore that entities such as the K'iche' and Kaqchikel could be considered to resemble modern nation-states. However, this assertion appears to be strongly contradicted by the evidence, which is well synthesized in a recent chapter by Braswell (2016).

Rather than representing ethnic identities, Braswell (2016) argues that the Tz'utujil, Kaqchikel, and K'iche' are better viewed as *program identities*, which he defines as identities that are "created to redesign or redefine a particular group's position in society and to transform the existing social structure" (Braswell 2016). As Braswell explains, K'iche'an program identities appear to have been designed to overcome the lineage basis of K'iche'an society which, he argues, undermined the development of a strong class structure. Rather than emphasizing cultural unity, the program identities of the K'iche', appear to have been designed to "create social proximity among elites from different territories and polities while simultaneously defining social distance between classes within the same polity" (Braswell 2016:178-9).

CHAPTER 5. SETTLEMENT SURVEY BACKGROUND AND METHODS

The first part of this chapter provides a brief overview of the historical development of settlement survey practices and the settlement pattern concept, before examining some of the specific challenges associated with archaeological survey in the Guatemalan highlands. The second part describes the specific survey methodology and site typology employed by the PALA survey.

5.1 SETTLEMENT PATTERN SURVEY

Settlement pattern survey has a long and illustrious history in Mesoamerica, emerging in the 1940s with Gordon Willey's pioneering study in the Viru Valley of Peru. Strongly influenced by the Cultural Ecology paradigm of Julian Steward, Willey argued that settlement patterns reflected "the natural environment, the level of technology on which the builders operated, and various institutions of social interaction and control which the culture maintained" (Willey 1953:1). As such, settlement pattern data could be utilized to address questions concerning "land utilization, agricultural potential, population densities, urbanism, the districting or zoning of ancient settlement, and the independence or interdependence of communities or community assemblages" (Willey et al 1965:15).

Gordon Willey's simple but effective survey methodology, which he applied first in Peru and later in the Maya area, involved making large scale maps from aerial photographs and adding notes on settlement settings and architectural forms. In the 1960s, this survey methodology was adopted by William Sanders and developed into the full-coverage technique, which was used to great effect in both the Valley of Mexico and the Valley of Oaxaca (Blanton 1978; Sanders 1965; Sanders, et al. 1979).

However, both of these regions were arid and open, and ancient settlement remains were often already exposed and easily visible on the ground surface. In the contrasting environment of the Maya lowlands, with its dense forest and poor surface visibility, such survey methodologies were simply not practical, and so the majority of investigations employed sampling approaches that involved cutting transects or brechas in multiple directions from previously identified centers (Bullard 1960; Deevey, et al. 1979; Puleston 1974; Rice and Rice 1980; Sabloff, et al. 1985; Scarborough 1980).

In the highlands also, the full coverage techniques used in the Basin of Mexico were less successful; in this case, because the surface ceramics turned out to be more heavily eroded and less reliable for dating sites (Sanders and Murdy 1982). Such difficulties prompted a shift to obsidian hydration dating techniques (Murdy 1990; Murdy 1996), which have since been shown to be unreliable (Braswell 1992; Inomata, et al. 2014).

In recent years, settlement survey has undergone a second revolution thanks to advances in Geographic Information Systems (GIS), and aerial laser scanning technology LiDAR. Innovative use of these new technologies have enabled researchers to acquire detailed settlement data for large blocks of land in an instant, reducing the need for extensive field survey or at least changing the goals of survey from site discovery to “ground-truthing”. Such techniques have been particularly impactful in the Maya Lowlands (Chase, et al. 2011; Garrison, et al. 2019; Hutson 2015; Inomata, et al. 2018), where they have enabled researchers to finally see through the dense canopy and get the kind of broad scale coverage that was long ago available to investigators in the Valley of Mexico. LiDAR has also been pioneered now on the Pacific Coast (Rosenswig, et al. 2015; Rosenswig, et al. 2013), providing these researchers with the ability to recognize the extent of settlement associated with the Izapa polity. And while such techniques have yet to be tested in the Maya highlands, it is my hope that this technology will soon also be utilized for the discovery of lost highland settlements, and the mapping of terrace and trail systems. In addition, the technology may enable us to recover some of the extensive settlement traces that almost certainly lie beneath the vast expanses of sugar cane on the Pacific Coast and beneath the coffee and rubber trees of the piedmont.

5.2 SURVEY IN HIGHLAND GUATEMALA

An important focus of settlement pattern studies since the 1960s has been the identification and mapping of houses and house groups (Ashmore 1981; Drennan 1988), something which just became easier, thanks to LiDAR technology. This is because the spatial patterning of houses in relation to each other and in relation to political centers provides important clues as to the social, political and economic organization of a society (de Montmollin 1989; de Montmollin 1988) As de Montmollin (1989) notes “the presence

or absence of higher-level political interference may be charted by looking at the distribution of domestic settlement remains with reference to agricultural resources and then with reference to higher-order political centers”.

In the highland region of Guatemala, however, identifying domestic sites can be problematic. As Braswell (1996:181) notes “Construction materials employed in the central highlands of Guatemala during the Formative and Classic periods rarely included stone” and “the majority of the population probably lived in perishable structures constructed directly on the ground”. The perishable nature of domestic architecture in the highlands, combined with the fact that the area has been continually inhabited and farmed since prehispanic times, means that many of the settlement indicators available to archaeologists in other regions are simply not available in the highlands. This does not mean that houses have been undiscoverable, however, simply that they are seldom discoverable by surface survey alone.

For example, Classic period house floors, constructed of hardened earth or talpetate (compact volcanic subsoil) have been identified at Kaminaljuyu (Reynolds 1979). Classic period residences have also been encountered on terraces excavated into the sides of hills in Verapaz, Chiapas, and in the K’iche’ region (Adams 1972; Babcock 2012; Bryant 1988), while the rare use of stone walls at Chuk’muk, Lake Atitlan (Figure 5.1), and at Agua Tibia in the Totonicapan Valley (Figure 5.2), has provided enables these structures to be more easily identified and investigated (Ciudad Ruiz 1984, Lothrop 1933).

The use of low, rectangular, stone-faced platforms became more common in the highlands during the Postclassic period and examples of these have been excavated at the sites of Pueblo Viejo Chichaj, Mixco Viejo and Cawinal (Fauvet-Berthelot 1986; Hill 1982; Ichon 1975). In some of these locations, it has also been possible to identify superstructure materials through the survival of impressions in clay. At El Peren, near San Martin Jilotepeque, for example, Braswell (1996:181) recovered fragments of clay daub with imprints of cornstalks.

Finally, the recently discovered island site of Samabaj in Lake Atitlan has yielded well-preserved examples of Late Preclassic Maya house foundations, providing a rare glimpse of early highland Maya domestic arrangements (Linares Palma and Medrano 2010).



Figure 5.1. House walls at Chuk'muk. Photo by author, 2011.

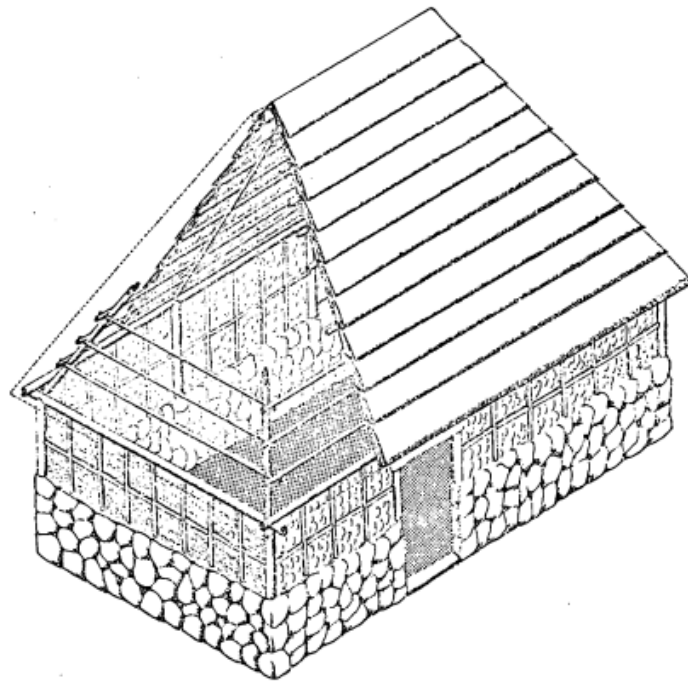


Figure 5.2. Reconstruction of residential structure at Agua Tibia, Totonacapan, after Ciudad Ruiz 1984, Figure 27.

5.3 PRELIMINARY ACTIVITIES

Feasibility Study (2011)

Preliminary research by the author in 2011 included visits to several ceremonial centers in the project area, including Chi Kaqajaay (FS3), Pan Alujaay (FS7), and Pa'Tawal (FS8), and also to sites in the municipio of Santiago Atitlan including the well-known sites of Chuitinamit and Chuk'muk, as well as some lesser known sites such as Chupiom (a plateau that overlooks Chuk'muk from the south), and Patziapa, which is a single plaza site with three stone mounds, located just a few hundred meters north of Chuitinamit.

During this time, I also visited several of the impressive carved monuments around San Juan and photographed two private artifact collections in the area of the ancient settlement (San Juan Antigua). These initial explorations were incredibly fruitful and informative and provided me with an opportunity to start building relationships with key individuals in each town, including some important landowners, getting familiar with the topography, and identifying the locations with high archaeological potential.

Preliminary Reconnaissance (2015)

Additional preliminary explorations were conducted during the first weeks of the project in 2015, while we awaited official permits from IDAEH. With the assistance of two municipal officials from San Pedro, I was then able to walk over a large portion of Zone 3, including the valley of surrounding the site of Chi Kaqajaay. This was a valuable exercise as it provided me with an opportunity to learn which areas had archaeological potential and which areas could be ignored. During this process it was observed, for example, that surface ceramics and settlement remains were largely absent from the flat valley bottom and were instead concentrated on areas of gradual slope at the edges of the valley, usually around natural rock outcrops. One reason for this appears to have been that the bottomland is poorly drained and often becomes flooded during the rainy season. Given the size of Zone 3, and the difficulty of identifying landowners for the individual milpas in this area, this information was important for narrowing the focus of our investigations.

Socialization

Aware that some recent projects in the southern highland region had been prematurely shut down as a result of insufficient communication or trust between the archaeologists and the communities in which they were working (Atwood 2015; Kaplan and Paredes Umaña 2018; Kraemer 2008), the current project spent over two months in the process of socialization, prior to beginning fieldwork. In reality, however, this process began four years earlier with the feasibility study and informal interviews carried out in 2011. Key to the success of PALA's socialization process was our recruitment of a local advisor, Dr. Domingo Yojcom, a mathematics professor from the Universidad del Valle Altiplano, and the Director of the Centro de Investigaciones Culturales y Científicas (CICC) in San Pedro La Laguna.

Our approach to socialization was grounded in three basic principles: Communication, Transparency and Respect. These principles reminded us to:

- a) Put the community's needs before our own or those of the archaeology,
- b) Restrict our investigations to properties for which we had permission,
- c) Explain our mission to the public whenever we had the opportunity, and
- d) Encourage local participation and engagement

Armed with these principles, and a highly qualified local advisor we found that the majority of the local residents and landowners we encountered were not only accommodating but openly appreciative of the interest we were taking in the history of their community. Some of our socialization activities that I feel exemplify our engagement with these principles are elaborated below:

Communication

Prior to beginning the archaeological investigations, an audience was requested with the mayor of each municipality. Upon the advice of Domingo, we also requested a meeting with the COMUDE of education. Finally, in the case of San Juan La Laguna, we also held a meeting with the "ancianos", a group composed of the most respected elders.

In each of these meetings, we presented the goals of the project and described our methods and what we intended to do with the artifacts. We also discussed the range of potential benefits that the project could have for the community and explained that there would be no financial cost for the community. In order to communicate the objectives of the project to the general public, we resorted to a different range of methods. This included conducting interviews on the local radio and television stations and by beginning a project Facebook page.

Transparency

Aware that rumors and misinformation can be very dangerous to the success of an archaeological project, the project invited community members to attend and observe the work of the archaeologists both in the field and in the laboratory. This was made easier by the fact that our laboratory was located at the CICC, which was located on an important thoroughfare and functioned as a gallery, a café, and an educational facility.

Inviting relatives of landowners to join in the fieldwork or to simply watch and learn the process, not only helped to build trust, but became an important way of gaining landowners permission and making them realize that they had little to fear from the archaeological process. Once landowners recognized that we were only interested in collecting sherds, they usually lost interest and ceased any opposition. There were, of course, a few exceptions.

Respect

To ensure that the project had no problems with the local population, a strict policy was adopted that we would not enter or dig on any land without receiving verbal permission and the consent of the owner(s). Although the process of identifying and obtaining authorization from the owners was one of the most difficult and time-consuming aspects of the project, it was also invaluable as it gave us piece of mind and almost certainly helped us to earn the trust of the local people, or at least for us to confidently defend ourselves against accusations or suspicions.

Because several of the archaeological sites in the project area are seen as sacred and still used by Mayan priests, the PALA team organized two traditional ceremonies to

demonstrate our respect for these traditions and beliefs. The first of these ceremonies was held before the start of the project and was dedicated to blessing the project and request protection for team members. The second ceremony, held at the sacred site of Chi Kaqajaay (Site FS3), was dedicated to requesting approval from the guardian spirits of that site to conduct investigations there.



Figure 5.3. Maya ceremony at the site of Chi Kaqajaay petitioning the site guardian to allow us to work at the site.

5.4 PALA SURVEY METHODS

Due to time and funding limitations, it had previously been decided that the PALA survey would be restricted to habitable portions of the project area (defined as those areas with less than 16% slope), where the surface visibility was sufficient to conduct surface collections. Excluding areas obscured by modern development (approximately 1 square kilometer), the proposed survey area totaled approximately 450 hectares, or 4.5 square kilometers.

Due to the topographical diversity of the project area (see Chapter 3), it was decided to divide the project area into five zones (see next Chapter). These zones, which are

described below, were viewed as sampling strata for the project and a concerted effort was made to obtain data on the range of site types within each of these zones. However, as all agricultural land within the project area was privately owned, the precise locations and extent of the survey coverage were entirely dependent on our ability to identify landowners and acquire permissions.

As it was expected that the few sites with surviving monumental architecture (e.g. Chi Kaqajaay, Pan Alujaay, and San Juan Antigua) would also produce the most complete stratigraphic sequences, special efforts were expended in gaining permissions to survey around these sites. Due to our belief that San Pedro itself was an important prehispanic center, and the rapid rate at which the remaining green spaces in this town are being lost to development, special efforts were also expended in gaining permissions with the urban center and residential areas of San Pedro.

Surface Collection

Within each specific parcel, surface survey typically involved a team of between two and five people walking in transects spaced at intervals of 5 or 10 m and making collections at intervals of 5 or 10 m. The decision of whether to use a 5 or 10 m grid was based on the size of the property, the number of fieldworkers available (this varied across the length of the project) and the time available. At each point in the grid, a circular area with a diameter of 3 m (1.5 m radius around the individual) was defined and all ceramic and lithic artifacts within that circle were collected. The principle reason for utilizing such an intensive survey strategy, was to ensure that the recovered sample was large enough to enable the identification of new types, recognizing that we may not get the chance to revisit an area and or to investigate adjacent parcels. This strategy additionally provided us with the best chance of identifying small concentrations that might signal the presence of buried house remains or features.

In addition to the systematic collections made on a grid, diagnostic ceramics and other interesting artifacts that were observed outside of the grid were collected as Piece Plots (PPs). Piece plots were also used in place of controlled collections in areas where the artifact density was low, or where artifacts appeared to be in situ (e.g. Pa Tawal [FS8]).

The difficulty of mapping the 89 collection points at Pa Tawal, however, caused this strategy to be abandoned.

Finally, general surface collections (GSCs) were made to retrieve samples of ceramics from specific features (e.g. terraces or suspected house locations) to look for data that may help with interpreting the function of that feature. GSCs were also used to provide grab bag samples in public areas (e.g. dirt paths, beaches, and parks) and in places where the surface visibility was poor, or the available time was not sufficient to make a systematic collection.

For each systematically surveyed parcel, a hand-drawn map was produced and was anchored to landscape features utilizing a handheld GPS. A total station, generously loaned to the project by the Universidad del Valle, was used only at the site of Pan Alujaay to more precisely map the locations of excavated units and features.

Survey Units: Field Sites and Parcels

Each individual land parcel that was investigated during the current project was initially recorded as either an individual Field Site (FS) or, in the case of parcels that were adjacent to previously surveyed parcels, as “Areas” of a particular Field Site (e.g. FS9 incorporated two land parcels, which were designated as Areas A and B, while FS3 incorporated 8 land parcels which were designated as Areas A-H).

As all of the investigated parcels produced some evidence of human activity, in the form of either surface artifacts and / or monuments, site boundaries were not defined in the field and it was decided that the individual field sites / land parcels would be utilized as the primary units of analysis. Such an approach is consistent with a “siteless” survey approach (Dunnell and Dancey 1983), which has been utilized in other areas where artifact distributions have been found to be largely continuous.

However, as several of the investigated land parcels produced only low quantities of artifacts and the recovered ceramics were often highly fragmented and eroded, it was decided that field sites / land parcels that shared a topographical feature (i.e. a terrace or low lying area) would be aggregated in order to increase the sample sizes and thus improve our chances of identifying the ceramic types that were represented in each location.

Thus the 61 land parcels were grouped to create 35 “sites” (Figure 5.10), which were then named after existing toponyms (e.g. Pa’Tawal, Xe’Tawal), canton names (e.g. Pa K’ucha’, Chuwa Kante, Chuwa Sanayi’) or using an ad hoc toponym based on the site’s location in relation to a prominent landscape feature (e.g. Xe’Tinamit = below the town). The term “site” as it is employed in the current study therefore refers primarily to *an area of human activity delimited by natural geographic or topographic features*. Sites thus functioned primarily as units of analysis whose social or cultural significance was to be determined after the fact through analysis and comparison of the various site assemblages.

Site Typology / Functional Classification

Each of the individual parcels surveyed during the current project was assigned to one or more of the following functional categories:

1) Centers

1a. Ritual-Administrative Center

1b. Invisible Center

2) Residential Areas

2a. Neighborhood (A Residential Zone within a nucleated settlement)

2b. Rural Cluster (Non-Contiguous Residential Zone)

2c Rural homestead

3) Lookout / Defensive Site

4) Ritual Area

5) Indeterminate Low-Density Scatter

The criteria used for assigning parcels to these functional categories are discussed below. It should be noted that some land parcels clearly had multiple functions and that the function of some sites likely changed over time. In this sense the Lookout (Type 3) and Ritual (Type 4) classifications are the most problematic. For example, four of the most obvious defensive parcels (FS14a, FS21, and FS 54) also displayed evidence of residential functions and one of these (FS21) also displayed evidence of ritual activity. Meanwhile,

several sites that appear to have been principally used for ritual, e.g. FS1 and FS17 also appear have had domestic functions. The functional categories should therefore be viewed as non-exclusive. It should also be noted that, as the ceramic and lithic analyses performed so far have been principally typological and focused on questions of chronology, the categorizations made thus rely principally on:

- a) the physical attributes of the parcel,
- b) the presence / absence of monuments and surface features,
- c) the presence / absence of certain artifact categories.
- d) Ethnohistoric and oral historic information
- e) Place name data
- f) Environmental data – e.g. soils, vegetation and climate

More specific functional categories associated with economic activity, e.g. ceramic and lithic production, food preparation, etc. will need to await a more detailed functional analysis of the recovered ceramic and lithic artifacts.

Type 1a - Ritual-Administrative Centers

The functional category Center was assigned to parcels deemed as representing the nucleus of ancient settlements and the focus of important political, administrative and ritual activities. In the current project area, these consisted of small plazas surrounded by the remnants of public architecture. Only four Centers were identified during the current project and these were Chi Kaqajaay (FS3, Zone 3), Pan Alujaay (FS7, Zone 2), San Juan Antigua (FS18), and Chuwa Kiyakapek (FS58). All four centers were focused on single plazas and the first three of these were clearly surrounded by contiguous areas of domestic settlement. These nucleated settlements were therefore the equivalent of Robinson's second tier sites and would likely have occupied a similar level in the regional hierarchy for Atitlan in which larger multi-plaza sites, such as Semetabaj, Chuk'muk and Chuitinamit, would have represented the top tier.

No contiguous settlement was identified around the center of Chuwa Kiyakapek; however, this site was only visited briefly after the completion of fieldwork. The fact that

this site is located on the current municipal boundary and boasts a ballcourt, the only one so far identified on the south shore, indicates that the site may have been a special purpose site, created for inter-community rituals and ballgame events. However, it is also possible that residential settlement was once located in the area now occupied by buildings associated with the historic coffee finca, or on an as yet unidentified group of terraces somewhere on the surrounding slopes.

Type 1b - Invisible Centers

The sub-category of invisible center was created to provide a means for discussing the evidence for ritual administrative centers that have been destroyed by urban development since the Conquest. Two invisible centers are hypothesized to have existed in the area of modern San Pedro. (Sa qaribal [FS28] and Pa Tz'ununa') and one may have existed in the vicinity of the current town of San Juan (Xe Kuku Juyu).

Type 2 - Residential Zones

Most surveyed parcels yielded some evidence of domestic settlement (i.e. ceramic and lithic tools) reflecting past household / domestic activities. Sometimes these surface artifacts were associated with ephemeral features such as stone-terraces, simple lines of stones, stone cairns, or arrangements of boulders, which might have once been incorporated into house foundations or houselot enclosure walls commonly referred to as *albarradas*. Three sub-categories of residential zone were defined as follows:

- Neighborhoods - Settlement clusters in close proximity to a ritual-admin center
- Rural Clusters - Settlement clusters located in a rural area and lacking a clear center
- Homesteads - single houselots in a rural settings

Type 3 – Defensive Sites / Miradors

Miradors were sites whose location, features, or artifacts were suggestive of a lookout / defensive function. The three sites listed in this category are believed to have been used as lookout points or refuges but not for permanent settlement.

Type 4 - Ritual Sites

Ritual sites identified during the current project were typically located in areas with striking natural features such as impressive rock outcrops. Some of these sites contain rock art in the form of petroglyphs (pecked or chiseled features) or pictographs (painted designs) . In some cases, such as the site of Alta Vista (FS59), the rock art was the only evidence of human activity.

Type 5 - Low Density Scatters

This was a residual classification utilized to group those land parcels with low densities of surface material whose specific use could not be ascertained. The low density of surface remains in these parcels indicates that they were probably not directly associated with ancient habitation and were most likely areas reserved for agriculture. Most were located some distance from the nearest known center.

CHAPTER 6. SURVEY RESULTS

As discussed in the previous chapter, the project area, was divided into five zones in order to aid in survey planning (Figures 6.1 and 6.2). These zones became the sampling strata for the project and helped to structure and organize the recovered data.

A total of 61 individual parcels were surveyed across these five zones and each of these was given a Field Site (FS) number. However, because some of the survey parcels were very small and didn't yield a large enough sample of ceramics to be analyzed individually, these parcels were grouped to form 35 sites (Table 6.1).

The main factors that were considered when determining whether to aggregate parcels into sites were proximity and elevation. Basically, if parcels shared the same landform and were not separated by any physical barrier, they were assumed to have been used contemporaneously at some point in their history and were therefore likely to have some overlap in their ceramic assemblages, an assumption that was typically borne out in the analysis.

The question of whether these sites should be grouped into larger aggregates, i.e., whether all the surveyed parcels in Zone 1 should perhaps be considered part of a single "San Pedro Site" is something that is yet to be decided and which will likely require a more detailed ceramic analysis than has so far been attempted. Table 6.1 shows the overall distribution of site types by Zone. The locations of each zone are shown in Figure 6.1. below.

Table 6.1. Site Distributions by Type and Zone.

Type	Description	Z1	Z2	Z3	Z4	Z5	Total
1	Centers	2	2	1	2		7
2	Residential Zones	6	3	3	1	1	14
3	Defensive Sites	1	1			1	3
4	Sacred Sites	3	1				4
5	Scatters	3	1		2	1	7
Total		15	8	4	4	3	35

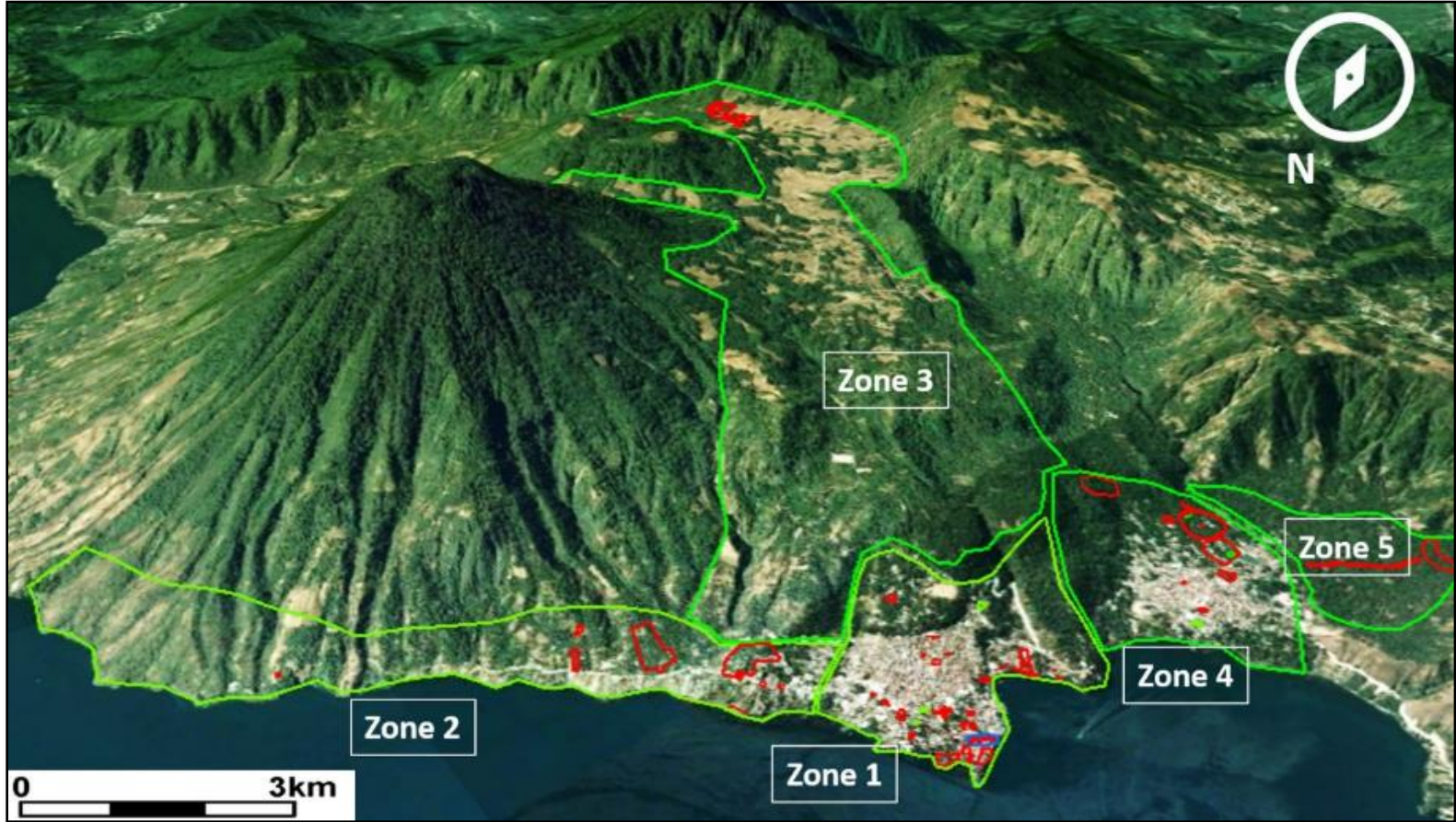


Figure 6.1. Location of the five survey zones in the PALA project area, on Google Earth.

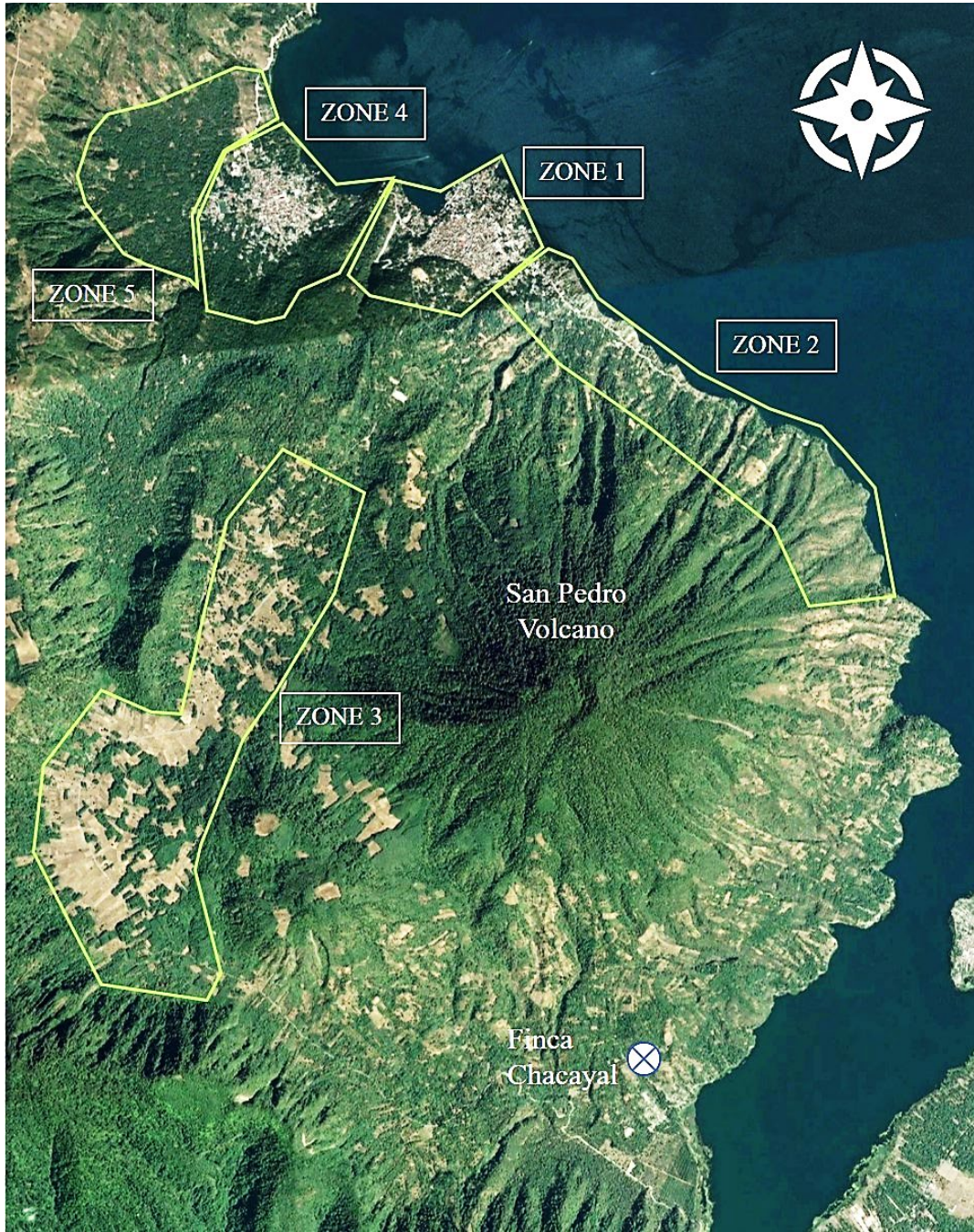


Figure 6.2. Plan view of project area on satellite image, showing location of Zones 1-5.

6.1 ZONE 1. PA TZ'UNUNA'

Zone 1 was centered on the town of San Pedro (ancient Pa Tz'ununa') and was bounded to the north by Lake Atitlan, to the south by an abrupt elevation change, and to the east and west, by steep volcanic ridges (Figure 6.3). Zone 1 encompassed a total area of approximately 115 hectares, however approximately 50% (57.5 hectares) of this was obscured by historic or modern development.

Of the five zones defined by the current project, Zone 1 was the most intensively investigated. A total of 31 properties were surveyed in this zone, totaling approximately 2.8 hectares and these were subsequently grouped into 15 named "sites" (Table 6.2). The sites defined in this area included two invisible centers (Pa Tz'ununa' and Saqaribal), four neighborhood clusters (Cruz Bey, Chuwa Kante, Xe'Tinamit, and Las Gradadas), one rural cluster (Chuwa Jul Ya'), two defensive sites (Rachaq Abaj and Tz'an Tinamit), three ritual sites (Pa'Tawal, Tikalito, and Xe'Tawal), and three low density scatters (Pa K'ucha', Pa Q'a'm, and Chuwa Sanayi'). The location of each of these sites is depicted on the map in Figure 6.1 and each site is described below.



Figure 6.3. Satellite image of Zone 1, showing all surveyed parcels except for FS17.

Table 6.1. Sites Defined in Zone 1

Site Type	Name	Parcel / FS No.	Dates
1a	Pa Tz'ununa'	42 y 43, 46, 47	Early Classic, Postclassic
	Saqaribal	28	Preclassic
2a	Las Gradass	15	Late Preclassic to Late Classic
	Cruz Bey	11, 12, 53	Postclassic
	Chuwa Kante	9, 15, 38	Late Classic, Postclassic
	Xe'Tinamit	13	Early Classic and Postclassic
2b	Chuwa Jul Ya'	17a, 17b	Late Preclassic
3	Tzan Tinamit	21	Postclassic
	Rachaq Abaj	14a, 14b	Early Classic , Postclassic
4	Pa'Tawal	8	Preclassic to Postclassic
	Saqaribal	28	Preclassic
	Tikalito	14c	Postclassic
	Xe'Tawal	10, 45, 48	Postclassic
5	Pa K'ucha'	4a, 4b, 33-37, 40, 44	Postclassic
	Pa'Q'am	19	
	Chuwa Sanayi'	16	

6.2 ZONE 2: KO'ON

Zone 2 comprised the northeastern portion of the municipio of San Pedro and therefore included the shore and lower slopes of San Pedro volcano between the town of San Pedro and the municipal boundary (Figure 6.4), which is located at Finca Tzantziapa. Maxwell and Garcia Ixmata (2008) report that Pedranos refer to this area as Ko'on and that they sub-divide it into Chu Suj, Pa Mes, Pan Alujaay, and Tza'm Kaqjay. It seems likely that the place name Ko'on is associated with the "Koni" chinamit, which was one of the most commonly mentioned chinamits in the Libro de Matrimonios of 1649 (Aguirre 1972).

Zone 2 totaled approximately 95 hectares and included the lower slopes of San Pedro volcano and a strip of level to gently sloping shoreline. The slopes of San Pedro volcano are interrupted at regular intervals by narrow, steep-sided gorges or barrancas, many of which contain evidence of recent landslides. An estimated 1-5% of the zone was obscured by modern development (houses, hotels and roads), while most of the shoreline had been heavily disturbed by the construction of terraces for vegetable gardens. Sherds recovered during the preliminary reconnaissance in this area were all heavily water eroded.

A total of 13 properties were investigated within Zone 2 (Table 6.3). These properties totaled approximately 5.5 hectares, representing approximately 5.8% of the zone. Two of these properties (Pan Alujaay, Area A and Chuwa Kiyakapek) represented Ritual-admin Centers, four properties represented neighborhoods associated with Pan Alujaay (FS7, Areas B-E). The remaining properties investigated in Zone 2 included three homesteads (Pa Mes Alto, Pa Mes Bajo, Pa Ch'anay Bajo), one defensive site, (Pa Ch'anay Alto, and one ritual site (Alta Vista).

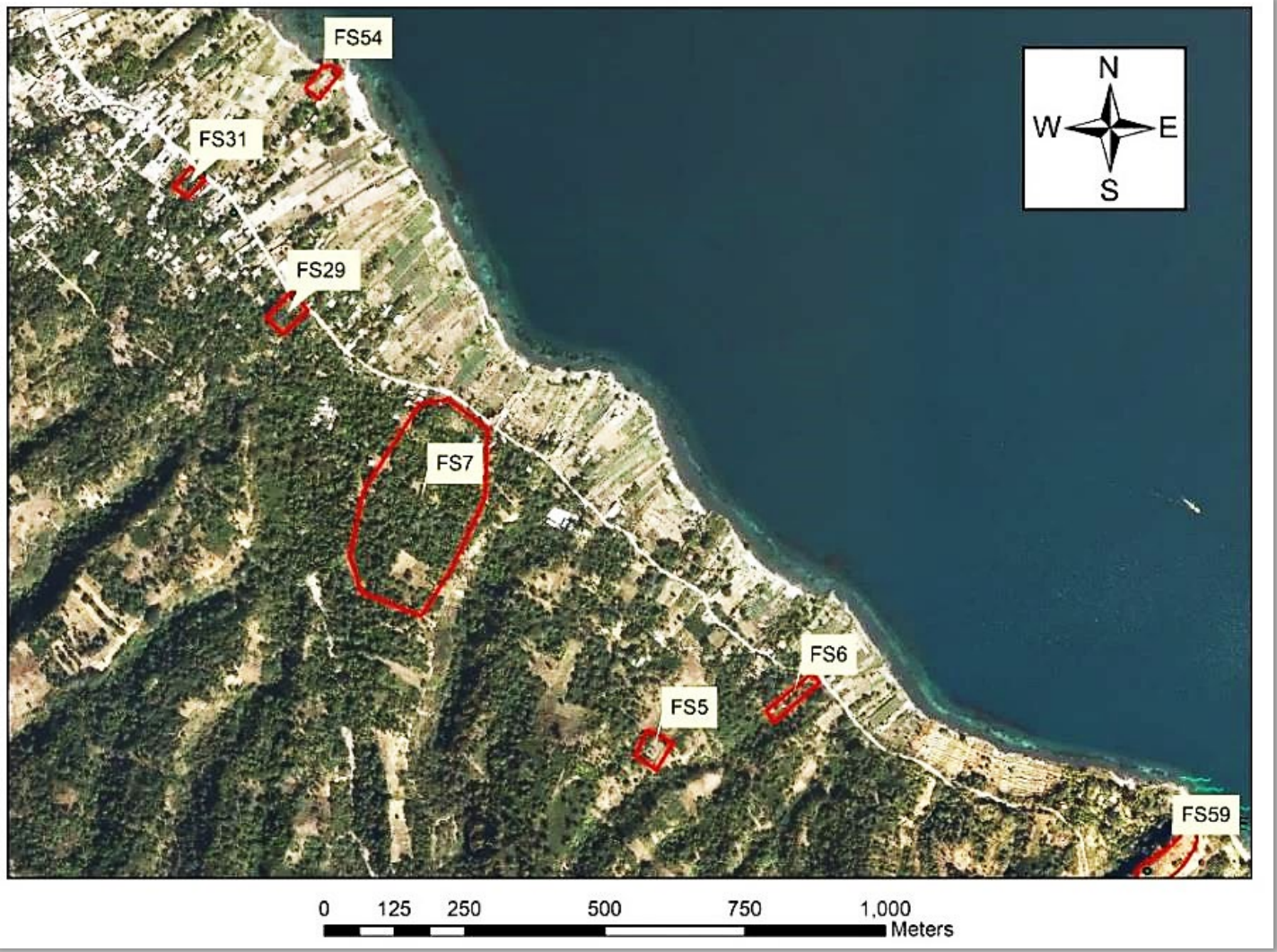


Figure 6.4. Satellite image of Zone 2 showing locations of investigated properties (red polygons).

Table 6.2. Properties investigated in Zone 2, by type.

Site Type	Name	Parcecl / FS No.s	Dates
1	Pan Alujaay	7a	Early Classic, Postclassic
	Kiyakapek	57	Protoclassic, Early Classic
2a	Pan Alujaay	7b-7e	Early Classic - Postclassic
2b	Punta de Oro	54	Late Preclassic, Early Classic- Late Classic
2c	Pa Mes Alto	5	Early Classic
	Pa Mes Bajo	6	Early Classic
	Pa Ch'anay Bajo	31	Early Classic
3	Pa Ch'anay Alto	29	Early Classic
4	Alta Vista	FS56	Early Preclassic?

6.3 ZONE 3: CHI KAQAJAAY

Zone 3 consisted of the southern, upland portion of the project, located between 1,700 and 2,200 m AMSL (Figure 6.5). As already noted, many of the present residents of San Pedro and San Juan maintain milpas in this area. Zone 3 is therefore divided into hundreds of small plots and ascertaining the identity of individual landowners and renters for this zone was highly problematic. Due to the size of this area and the difficulty of identifying the specific landowners, a walk-over survey was first carried out to identify areas of high potential that deserved intensive research.

A total of 11 properties were investigated in Zone 3 (Table 6.4) but eight of these were associated with Chi Kaqajaay (FS3) and were thus labelled as areas A-H of that site. The remaining three sites were classified as homesteads, however, Xe'Cruz was viewed as having a secondary ritual function, while Jaay Aab'aj was considered to have a secondary defensive function.

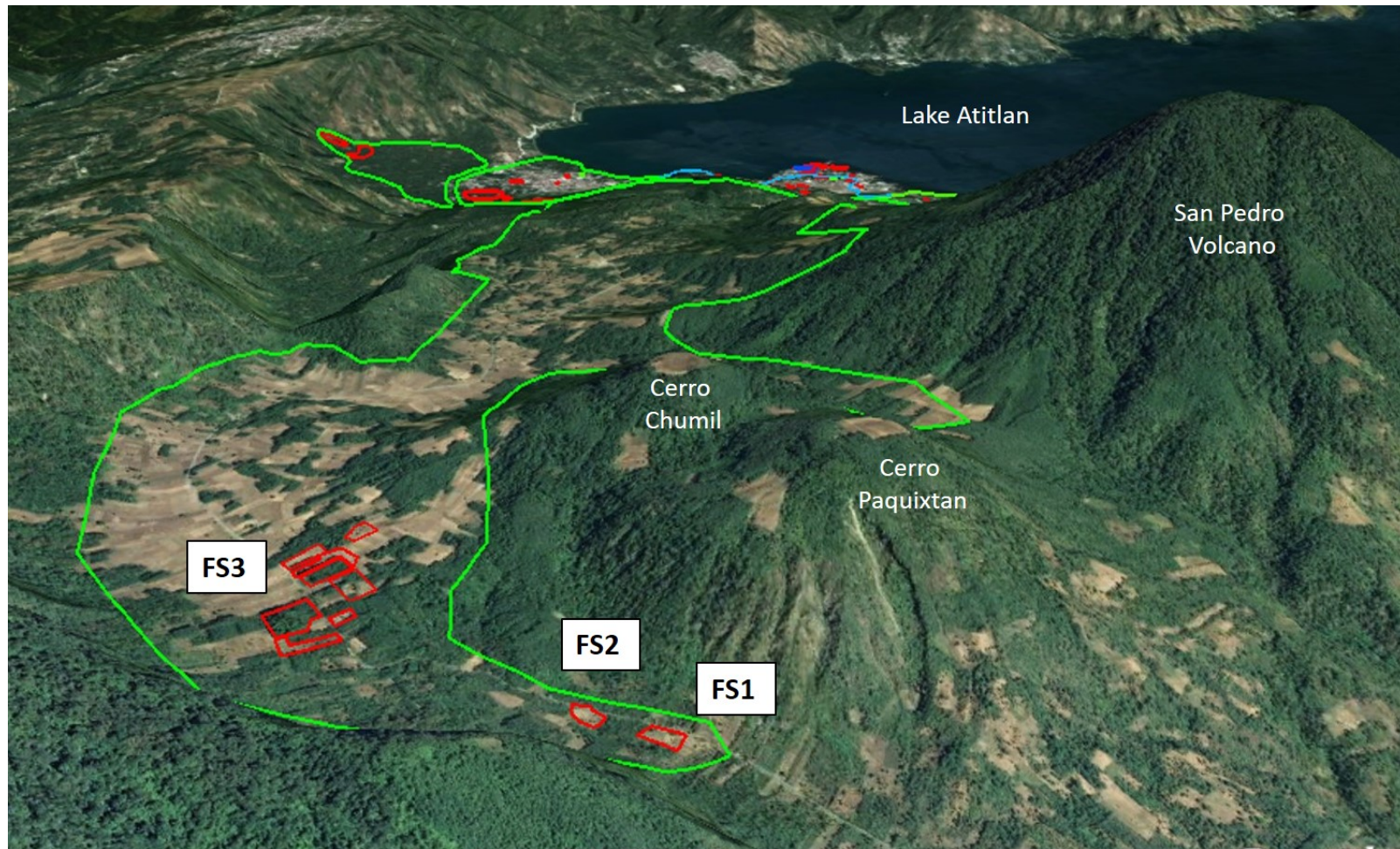


Figure 6.5. Overview of Zone 3 on Google Earth, looking northeast, showing locations of investigated properties (red polygons) and major landmarks.

Table 6.3. Sites and corresponding parcels documented in Zone 3.

Site Type	Name	Parcel / FS No.s	Dates
1	Chi Kaqajaay	3b	Late Preclassic to Postclassic
2a	Chi Kaqajaay	3a and 3c-h	Late Preclassic to Postclassic
2c	Xe'Juyu''	FS2	Early Classic to Postclassic
2c / 3	Jaay Aab'aj	FS57	Late Classic
2c / 4	Xe'Cruz	FS1	Early Classic to Postclassic

6.4 ZONE 4: SAN JUAN LA LAGUNA

Zone 4 encompassed the urban area of San Juan La Laguna and the surrounding terrain up until the boundary with San Pedro in the east and the Rio Seco to the north and west (Figure 6.6). The southern boundary was left undefined.

Due to some delays in getting our permissions in San Juan, official survey did not begin in Zones 4 and 5 until late in the season. The sample of sites investigated in these zones was therefore smaller than in the San Pedro area. However, the ceramics recovered by our systematic and general surveys as well as the ceramics observed in two large private collections all indicated that the most intensive occupation of San Juan occurred between the Late Preclassic and Early Classic periods. It was also clear that the focus of settlement during these periods was located to the west and southwest of the present town, where a large mound of earth and stone and several elaborate stone monuments can be found. Whether this settlement extended into the area now occupied by the current town is unknown but seems highly probable.

A total of 11 individual properties were surveyed in Zone 4 and these were later grouped into six sites based on proximity and the presence or absence of physical boundaries (Table 6.5). The six sites included one Ritual-Administrative Center (San Juan Antigua), one Invisible Center (Xe Kuku Juyu), four neighborhoods (San Juan Antigua

Areas A-C and Tza'n' Juyu'), one homestead (Chi Nimaya'), and one low density scatter (Tza'n Jaay).



Figure 6.6. Overview of Zone 4, looking west-southwest, Google Earth 2017.

Table 6.4. Sites and their corresponding parcels documented in Zone 4.

Type	Site Name	Parcel / FS No.	Dates
1a	San Juan Antigua	Cerro Encantado	Late Preclassic to Early Classic
1b	Xe' Kuku' Juyu'	27 and 51	Early to Late Postclassic
2a	San Juan Antigua	18a-c	
	Tza'n' Juyu'	20	Late Preclassic to Late Classic
2c	Chi Nimaya'	22	Late Preclassic
	Tza'n Jaay	23	Early to Late Classic

6.5 ZONE 5: XE' KAAK'A AAB'AJ

Zone 5, Xe' Kaak'a Aab'aj, is a predominantly rural portion of the San Juan municipality, located to the west and northwest of the current town, on the lower slopes of Cerro Cristalino and the surrounding mountains (Figure 6.7). Today it is almost entirely utilized for coffee cultivation and thus archaeological ruins are difficult to identify. Zone 5 was the least intensively investigated zone and no systematic survey was conducted in this area. General collections, however, were made in three locations. One of these appears to be a Type 2b rural cluster, which surrounds the now famous stone head, known as Jab'el Wiaaj.

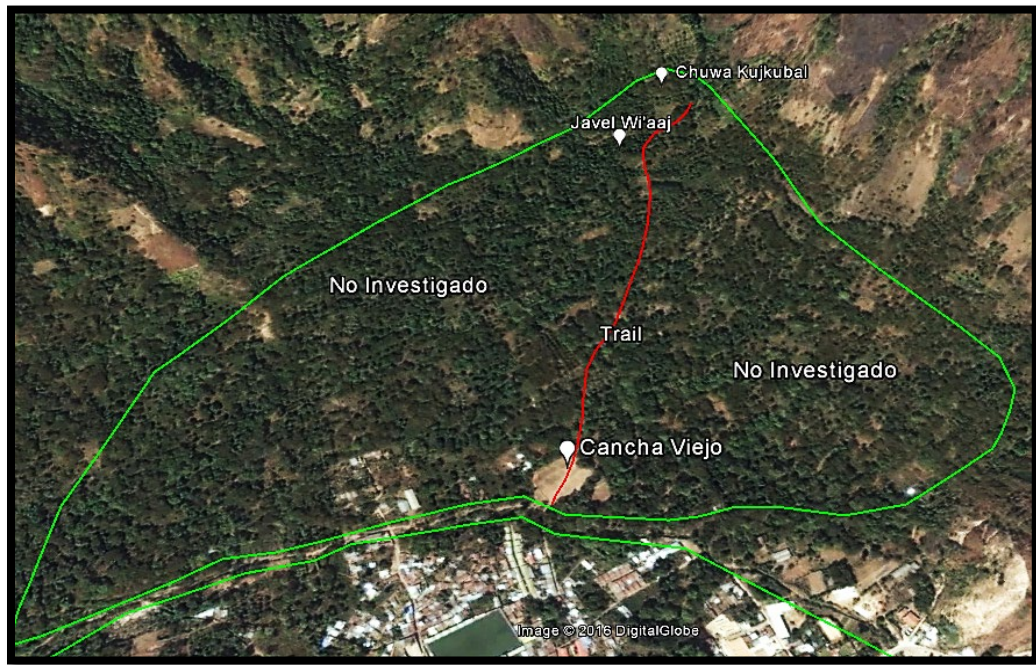


Figure 6.7. Overview of Zone 5 on Google Earth, looking west-northwest.

Table 6.5. Sites and their corresponding parcels documented in Zone 4.

Site Type	Site Name	Site No.s	Dates
2b	Xe' Kaak'a Aab'aj	FS25	Late Classic
4	Tzujk'abal	FS 24	Postclassic
5	Pa K'waa'	FS 26	?

CHAPTER 7. SITE DESCRIPTIONS

This chapter provides detailed descriptions of each of the sites documented during the PALA survey. As noted in the previous chapter, “sites” were defined in a relatively arbitrary manner by grouping surveyed parcels on the basis of topography and proximity. The descriptions are organized by Zone and Site Type beginning with Zone 1 and finishing with Zone 5. For the locations of the sites, please refer to the maps provided in Chapter 6.

7.1 ZONE 1: PA TZ’UNUNA’

Invisible Centers

Pa Tz’ununa’

Although no monumental architecture remains within the urban center of San Pedro, ethnohistoric sources (e.g. the Annals of the Kaqchikeles and the *Primero Libro de Matrimonios de Pa Tz’ununa’*) indicate that a prehispanic settlement was located in this area (see also Aguirre 1972; Navichoc and Navichoc 2007) and it seems likely that the colonial town center, including the church and municipal buildings were constructed over the original prehispanic plaza. This is supported by the presence of a partially buried prehispanic shrine or altar (SP08), located approximately 170 m southeast of the central square and by the presence of prehispanic ceramics and obsidian fragments within many of the dirt alleys that wind their way between the older houses within the town center.

Ceramics and obsidian can also be observed within the walls of the few surviving mud-brick structures and in the presence of cut stone blocks and ground stone tools embedded in some of the cobbled stone alleyways. Finally, the catholic church is raised approximately 1.5 m above the central square and appears to be oriented to observe winter solstice sunset over the mountain peak of Cerro Cristalino, known by tourists as the Indian Nose. The raised position of the church suggests that it may have been constructed over an existing prehispanic platform and this would also explain the church’s orientation of 300 / 120 degrees, which is similar to the orientation of other early churches in the area (e.g. Santiago Atitlan [296 / 116 degrees]). I suggest that these orientations likely memorialize

the earlier prehispanic plazas and structures, whose original orientations may have been closer to 25 degrees, the orientation of the prehispanic capital of Chuitinamit.

Surface Collections

In an attempt to obtain some ceramic data from the urban core of San Pedro, several small, opportunistic surface collections (FS 42, 43, 46, and 47) were conducted within a two-block radius of the central square and Catholic Church (Figure 7.1). The areas from which these samples were recovered included: the central square (FS 42); an open green space located adjacent to the current Post Office building (FS 43); a private yard containing exposed soil located just 40 m west of the central square (FS 46), and finally, a footpath and adjacent green space located approximately 130 m southwest of the central square (FS 47). These collection spots were located at elevations of between 1608 and 1628 m AMSL, with the lowest elevation being the central square. A total of 82 ceramic sherds and two obsidian flakes were recovered from the four collections made in central San Pedro. Body sherds less than 2” in diameter (n = 33) were ignored because they were less likely to be diagnostic. The remaining 49 sherds were analyzed and measured (Table 7.1).

Table 7.1. Ceramics from Pa Tz’ununa’.

Date	Ceramic Types / Wares	Total	% of Total	% by Period
Late Preclassic	Glossy Black	1	2.04%	2.04%
Early Classic	Esperanza Flesh	1	2.04%	2.04%
Middle to Late Classic	Santa Marta Ware	2	4.08%	24.48%
	Café Rojizo Matte	5	10.20%	
	Engobe Crema	5	10.20%	
Terminal Classic to Postclassic	SP Café Pulido	2	4.08%	59.18%
	SP Negro Marron	7	14.29%	
	SP Rojo	3	6.12%	
	SP Tan-Cafe	17	34.69%	
Late Postclassic	Fortaleza Blanco sobre Rojo	1	2.04%	4.08
	Pa K’ucha’ Rojo	1	2.04%	
ND	ND	4	8.16%	8.16
Total		49	100%	100%



Figure 7.1. Central San Pedro La Laguna on Google Earth, showing collection locations (FS42-43 and FS46-47).

The analyzed sherds were mostly local monochrome wares (e.g. San Pedro [SP] Tan-Café) dating from the Terminal Classic to Postclassic periods (59.18%). However, the Middle to Late Classic phase was also well represented (24.48%). One glossy black sherd and one Esperanza Flesh sherd date to the Late Preclassic and Early Classic periods respectively. Four sherds (8.16%) could not be identified with confidence.

Interpretation

The ceramics recovered from the current center of San Pedro indicate that this area was most intensively occupied between the Terminal Classic and Postclassic periods. The offertory (SP08), which is located approximately 120 m east of the center probably also dates to this period and supports the idea that the prehispanic center of Pa Tz'ununa' was in the location of the current center. The paucity of Early Classic and Late Preclassic ceramics suggests that the current center of San Pedro was not densely settled in those times. As discussed below, it is possible that the first nucleated settlement in the San Pedro area was located closer to the shore, near the location known as *Saqaribal*.

Saqaribal (FS28)

The site of Saqaribal is located approximately 500 m northeast of the center of San Pedro and in 2015 it was just 80 m from the shore. The surveyed portion was located between Avenida 7 and the rocky peninsula that is now the site of hotel Mikaso (Figure 7.2). Elevations in this area are between 1568 and 1570 m AMSL. The site is thus currently approximately 3 m above the current lake level but the sandy soils and the clear evidence of water erosion on two of the monuments (SP03 and SP04) indicates that this property has been subject to periodic flooding. This location is listed here as a possible Invisible Center due to the presence of four carved monuments (SP1 – SP4), all of which appear to date to the Late Preclassic or Terminal Preclassic. The monuments, which are discussed in more detail in Chapter 11, include: a pedestal monument (SP01); a cylindrical column (SP02); an oblong column (SP03); and a heavily eroded fragment of a stela with evidence of relief carving (SP04).

Surface Collection

A single general collection conducted over the terraces immediately around the monuments recovered only 14 pieces of ceramics. Among these was a solid, trough-shaped handle for a ladle incensario and a whistle mouthpiece. The ladle incensario is likely of Middle to Late Classic date and is therefore probably not contemporary with the monuments.

Features

Several low walls and terraces can be seen in the Saqaribal area and around the Hotel Mikaso, which occupies a rocky peninsula to the north, however, very few ceramics were observed on the surface in this area and so it seems that the terraces were mostly agricultural in function. In contrast, walls constructed of dressed stone blocks (Figure 7.3) were observed on adjacent properties to the west suggesting that there was once monumental architecture in this area. Dressed stone architecture was not common in the Preclassic highlands, however, and so it seems unlikely that these stones are contemporary with the monuments.

Interpretation

The presence of four monuments of probable Late Preclassic or Terminal Preclassic date suggests that Saqaribal was located near the center of an important Late Preclassic site. The paucity of artifacts in the immediate vicinity of the monuments, however, suggests that these may not be in their original location. Interestingly, the bathymetric map of the area (Figure 7.4) indicates that an extensive plateau of land extends out from the northeastern shore of San Pedro. As we know that there was a significant lake level rise around the end of the Preclassic period (Medrano 2011), it seems possible that this area, or parts of it were above water at the time these monuments were carved.



Figure 7.2. General overview of Saqaribal, showing low walls and terraces



Figure 7.3. Dressed stone blocks being reused on a property adjacent to FS28.

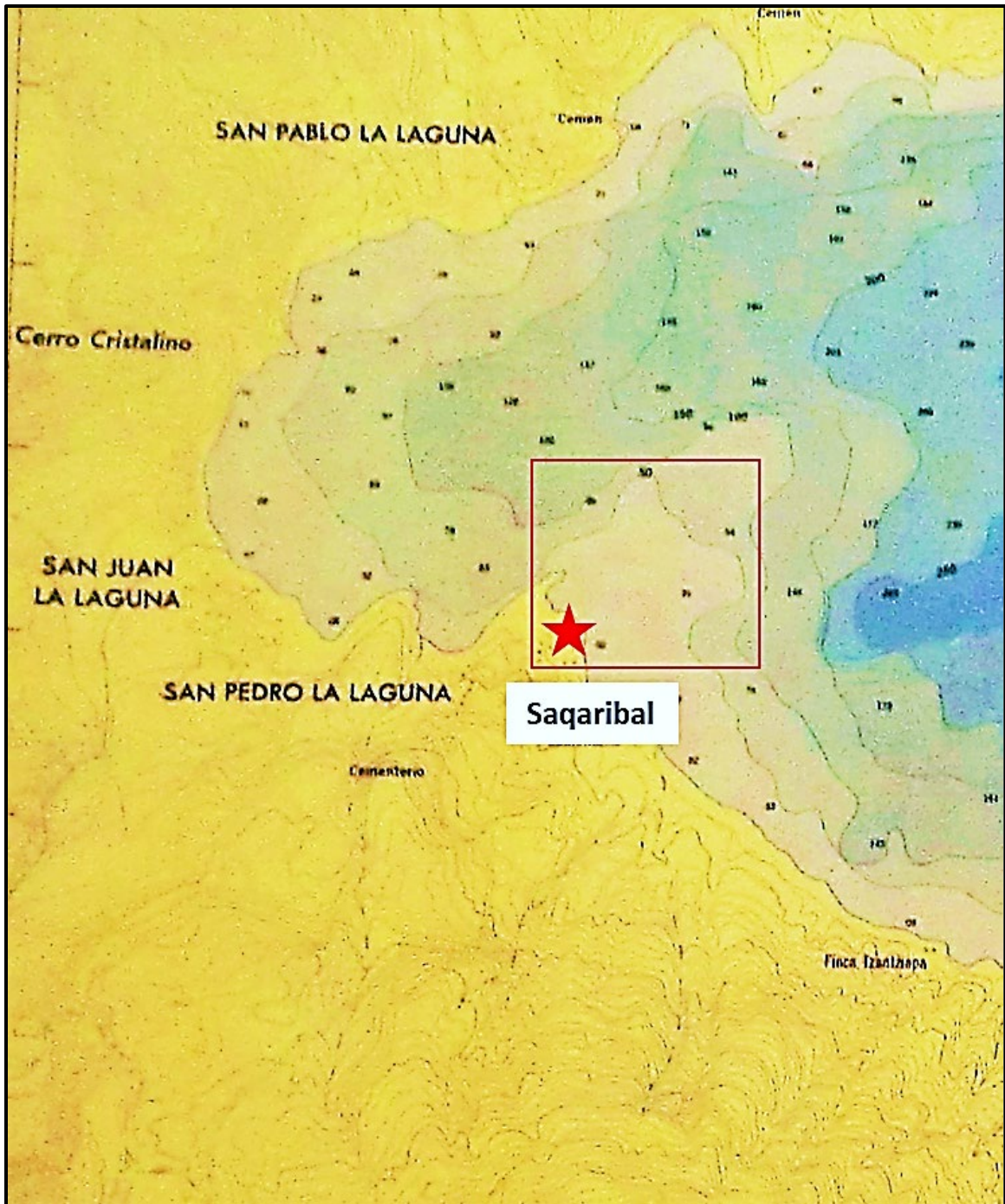


Figure 7.4. Location of Saqaribal on bathymetric map (1975), showing possible submerged plateau.

Residential Zones

As can be seen in Figure 6.3, the majority of the properties surveyed in Zone 1 were located to the north of the current town center, within the cantons of Chuwa Kanti and Xe'Tawal. Historic maps and photos indicate that this area was sparsely settled for most of the 20th century and given the small size of the colonial population of the town (Aguirre 1972) it seems likely that this has been the case since the Conquest. However, all of the properties investigated in this area (e.g. FS9-15) produced a moderate to high density of surface ceramics indicating that this was an important focus of residential settlement through much of the prehispanic era. These sites are thus considered to be areas of urban settlement. In contrast, properties investigated towards the eastern and western edges of Zone 1 (e.g. FS4, FS19, and FS16) produced much lower densities of surface materials, suggesting that these areas were more sparsely settled.

Cruz Bey (FS11, 12, and 53)

Cruz Bey encompassed a group of five properties (FS11, FS12 Areas A-C, and FS53) and several connecting dirt alleyways, located between 320 and 400 m north of the main plaza of San Pedro. Two of these properties (FS12a and FS53) were being prepared for construction at the time of the survey and were thus heavily disturbed (Figures 7.5 and 7.6). Elevations in these areas were between approximately 1570 and 1580 m AMSL. The northern portion of this area occupied a well-constructed stone terrace measuring approximately 1 m in height which extended up to the edge of the escarpment on which FS14 was located.

Surface Collections

Controlled surface collection was conducted in only one of the Cruz Bey properties (FS11). A total of 19 CSCs in this property produced a moderate density of ceramics, with an average of 9.63 sherds per CSC. The remaining properties included in the Cruz Bey site were subject to piece plots or general collections.



Figure 7.5. Parcel FS12a of Cruz B'ey, adjacent to Museo Tzunun'Ya (right side of picture).



Figure 7.6. Parcel 53, Cruz B'ey, directly north of the Museo Tzunun'Ya and adjacent to the Collegio Bethel.

Artifacts

A total of 477 ceramic sherds were collected from Cruz B'ey. Of these, 206 were classified by type and analyzed (Table 7.2). The majority of the sherds were identified as local monochrome types (e.g. San Pedro Tan Café and San Pedro Rojo) dating from the Late Classic to Postclassic periods (67.0%). The remaining 33% included diagnostics from the Protoclassic (n = 3, 1.46%), Early Classic (n = 15, 7.28%) and Late Postclassic periods (n = 12, 5.83%).

Table 7.2. Ceramics from Cruz B'ey by Type and Phase.

Phase	Type	Total	% by Type	% by Phase
Late Preclassic	Naranja Glossy	2	0.97%	1.94
	Rojo Especular	1	0.49%	
	Pasta Rosa Micaceo	1	0.49%	
Early Classic	Mahogany	1	0.49%	2.91
	Rojo Acanalado	1	0.49%	
	Rojo con Pintura Crema	1	0.49%	
	Rojo-Naranja Delgado Pulido	1	0.49%	
	San Juan Morado	1	0.49%	
	Crema Rosada, Pasta Roja	1	0.49%	
Middle to Late Classic	Santa Marta	9	4.37%	9.71
	Engobe Crema	3	1.46%	
	Oxido	8	3.88%	
Terminal Classic to Postclassic	Plomizo	1	0.49%	66.99
	SP Café Gris	11	5.34%	
	SP Café Pulido	1	0.49%	
	SP Negro Marron	17	8.25%	
	SP Rojo	6	2.91%	
	SP Tan Café	97	47.09%	
	Rojo Grisáceo Alta Pulido	5	2.43%	
Late Postclassic	Acropolis Rojo sobre Crema	3	1.46%	13.6
	Pakucha Café-Negro	11	5.34%	
	Fortaleza Blanco sobre Roho	4	1.94%	
	Ante	5	2.43%	
	Xola Naranja	5	2.43%	
ND	ND	10	4.85%	4.85
Total		206	100.00%	100.00%

A relatively large number of obsidian artifacts (n=24) and two ground stone tools were also recovered from Cruz Bey. The five pieces of obsidian that have been examined have been identified as belonging to the San Martín Jilotepeque source. The two stone tools included a cylindrical mano fragment. and a hemispherical stone of unknown function.

Interpretation

The high density of ceramics and the relatively high density of lithics recovered from the Cruz Bey properties indicates that this area probably functioned as a residential neighborhood of Pa'Tzununa during the Postclassic period, much like it continues to do today. The low density of materials from earlier periods indicates that it was probably not permanently settled prior to this time, however, given the history of flooding in this area, it is possible that such materials are buried beneath deep alluvial deposits.

Chuwa Kanti

Chuwa Kanti consisted of two adjacent properties (FS9a and FS9b) located in the canton of the same name, which occupies the northernmost part of the municipality. These properties consisted of low-lying milpas (1568-1570 m AMSL) with very dry, sandy soils (Figure 7.7).

Surface Collections

Area A was subjected to systematic collection, while area B was subject to a general collection only. The 14 CSCs conducted in Area A produced a total of 252 pieces of ceramics, with an average of 18 sherds per CSC. This was the highest density of surface ceramics recovered for the whole project area. The general collection in Area B yielded an additional 111 sherds.



Figure 7.7. Chuwa Kanti, Area A, looking northwest.

Artifacts and Chronology

Of the recovered 363 ceramics, 155 were classified by type and analyzed and the results are summarized in Table 7.3. The assemblage was dominated by types dating to the Late Classic and Postclassic periods. The majority belonged to the San Pedro monochrome group (70.32%) which spans the Terminal Classic and Postclassic periods. Middle to Late Classic types included Santa Marta Ware (n=12, 7.74%). Late Postclassic imports included Acropolis Red on Grey and Fortaleza White on Red.

The Late Preclassic / Protoclassic (n=4, 2.58%) and Early Classic (n=6, 3.87%) phases were only lightly represented. The Late Preclassic / Protoclassic types included a base sherd with a polished black slip and basal flange. One of the sherds recovered from both areas showed evidence of water-erosion, indicating that the area had seen occasional flooding. Two pieces of obsidian were also recovered from FS9 and both represented prismatic blade fragments. The source of this obsidian has not yet been determined.

Interpretation

Despite the evidence of flooding and significant soil erosion, the investigations at Chuwa Kanti revealed a high density of surface ceramics, indicating that this property supported domestic settlement. The ceramics indicate that this area was most intensively utilized during the Late Classic and Postclassic periods.

Table 7.3. Ceramics recovered from Chuwa Kanti (FS9a and FS9b) by phase and type

PHASE	TYPE / WARE	COUNT	% BY TYPE	% BY PHASE
Late to Terminal Preclassic	Glossy Black	1	0.65%	2.58
	Kam Café Negro	3	1.94%	
Early Classic	Esperanza Flesh	4	2.58%	3.87
	Café-Rojizo	1	0.65%	
	Café-Negro Impresado	1	0.65%	
Middle to Late Classic	Santa Marta	12	7.74%	12.9
	Engobe Crema	8	5.16%	
Terminal Classic to Postclassic	SP Café Gris	25	16.13%	70.32
	SP Café Pulido	2	1.29%	
	SP Negro-Marron	51	32.90%	
	SP Rojo	31	20.00%	
Late Postclassic	Acropolis Rojo sobre Gris Inciso	1	0.65%	8.39
	Fortaleza	3	1.94%	
	Patzam Mud	1	0.65%	
	Pichacha	1	0.65%	
	Pa K'ucha' Café-Rojizo	6	3.87%	
	Pa K'ucha' Café-Negro	1	0.65%	
ND	NARANJA ND	3	1.94%	1.94%
Total		155	100	100

Xe'Tinamit (FS13)

The site of Xe'Tinamit was located approximately 300 meters north of the center of San Pedro, just below the San Pedro escarpment. The site occupied one of the few remaining milpa plots within the urban limits of San Pedro and was in the process of being developed at the time of the current investigation (Figures 7.8 and 7.9).



Figure 7.8. Overview of Xe'Tinamit (FS13) with Unit 1 in the foreground, looking east.

Construction workers had already excavated ten foundation pits by the time the PALA team arrived at the site. Fortunately, the majority of these were square and conveniently measured approximately 1 x 1 m. An inspection of the soil removed from these pits revealed that they had all been excavated through dense pre-Hispanic deposits, including a probable domestic midden. Because human remains had been identified in one of these pits, the investigations here began with the motivation of ascertaining the origin and context of these bones. At the same time a systematic collection of the surface was initiated.



Figure 7.9. Location of Xe'Tinamit (FS13), Zone 1, San Pedro La Laguna.

Surface Collections

A total of 21 systematic surface collections (CSCs) and four general collections (GSCs 1-4) were carried out at Xe'Tinamit, spanning two adjacent properties: the construction lot, and a second lot located immediately to the north. These surface collections produced a total of 243 ceramic sherds, five obsidian blades, 1 obsidian scraper, and one ground stone tool of unknown function.

Artifacts and Chronology

The bulk of the materials recovered during the surface collection at Xe'Tinamit consisted of San Pedro Monochrome, including SP black-brown, SP tan café / tan-Rosado and SP red sherds. The presence of Late Postclassic diagnostics such as Acropolis Red on White, Fortaleza White on Red and Xola Naranja support the notion that the principal occupation of the site occurred during the Postclassic. However, a small number of Early and Late Classic diagnostics indicate that the site was also utilized in those times. Whether the site was occupied continuously from Classic times is still being determined and will be discussed in greater detail in the excavations chapter.

Las Gradadas (FS15)

The site of *Las Gradadas* occupied a series of narrow terraces (5 - 8 m wide) located on a narrow section of slope that runs from the main tourist street of San Pedro (c. 1568 m AMSL) towards the lake shore (1563m AMSL) (Figure 7.10). It also included a small level area located immediately northwest of the tourist street. The investigated portion of the site totaled approximately 750 m².

Surface Collections

A total of 29 control surface collections (CSCs 1-29) and three general surface collections (GSCs 1-3) were conducted at Las Gradadas (Figure 7.11) and these recovered a total of 361 pieces of ceramics and 9 pieces of obsidian. The ceramic density was moderate (11 sherds per CSC) and was relatively consistent across the property, although small concentrations were detected towards the front side of Terrace 2 (CSCs 20, 28 and 29), and

on the backside of Terrace 1 (CSCs 12-14) (Figure 6.8). Being the broadest of the three terraces, Terrace 2 appears to be the only one that could have supported a domestic structure. The density of obsidian artifacts (0.333 per CSC) at Las Gradass was the second highest recorded for the project area.



Figure 7.10. Las Gradass, Zone 1, San Pedro La Laguna, looking northwest.

Artifacts and Chronology

The ceramics recovered from Las Gradass were dominated by San Pedro Tan Cafe and Black-Brown, (57%); with monochrome orange and red sherds forming the second largest group (15%). These monochromatic types are believed to have emerged during the transition to the Late Classic and continued in use until the Conquest. The presence of small quantities of Santa Marta and Esperanza Flesh suggest a Middle-to-Late Classic date for the initial occupation of the site, while sporadic diagnostics dating to the Late Postclassic, such as Acropolis Red on White, confirm the use of the site in the Late Postclassic. The obsidian artifacts included eight prismatic blade fragments and one flake. The source of this obsidian has not yet been determined.

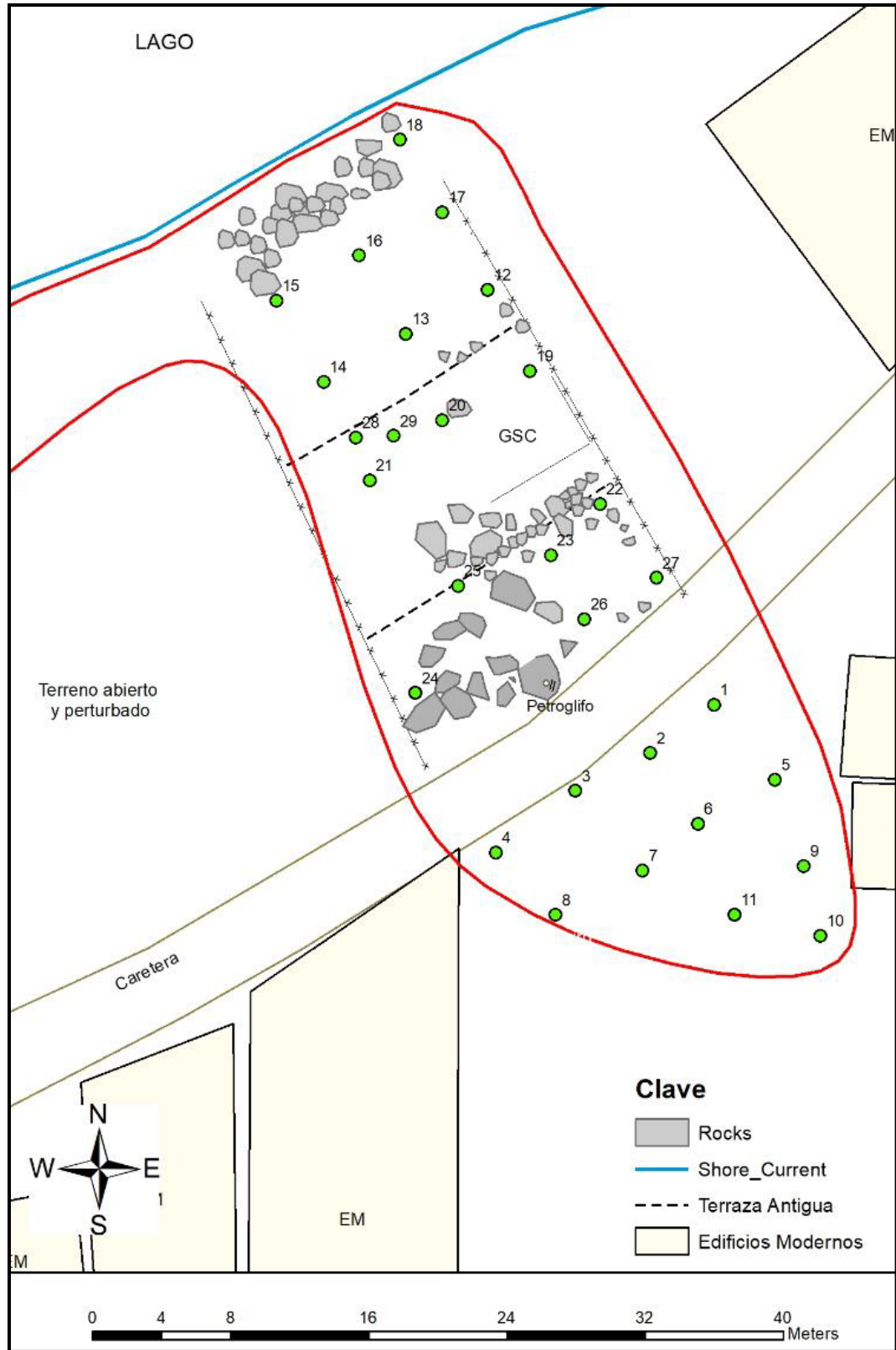


Figure 7.11. Schematic plan of Las Gradass (FS15), Zone 1, San Pedro La Laguna.

Monuments

San Pedro Monument 6 is included in the site area for Las Gradadas. This monument, which is discussed in detail in Chapter 11, is located on the southern side of the tourist street and consists of a large boulder bearing an escalinata carving (a single column of horizontal lines), a bedrock mortar, five or six smaller cupules, and some other indistinct features. Escalinata petroglyphs and the more elaborate “maquetas”, with which they appear to be conceptually related, have been identified at Lake Amatitlan (Carpio Rezzio 2012) and at watery location in both Yucatan (Miller 1983) and Central Mexico (Turner 2016), where Turner argues that they are Late Classic in date. However, their evident connection to the altepetl (water-mountain) concept indicates that at least some examples were carved in Late Postclassic times.

Interpretation

Las Gradadas appears to have been the location of an individual houselot from at least Late Classic times through to Postclassic times. The moderate density of ceramics recovered from this site indicates that the site was probably continuously occupied for much of this time. The high density of obsidian artifacts, including one flake, suggests that the residents of this site may have been involved in the processing of obsidian artifacts. However, given the sloping aspect of the site, it is possible that a portion of these artifacts have been swept or washed down from the street above. Despite its location, near the northern limit of San Pedro, the residents of Las Gradadas probably considered themselves to be part of the larger community of San Pedro.

Chuwa Sanayi' (FS16)

The site of *Chuwa Sanayi'* was located downhill and to the east of the current center of San Pedro and approximately 220 m west of the jetty to Santiago Atitlan. It consisted of a light scatter of ceramics dispersed across an area of open ground, and the remnants of an ancient terrace (Figure 7.12). The terrace section that survives on the current property is approximately 3.0 m long and 0.8 m high and was built of rounded and angular stones of various sizes. This terrace continued into the adjacent property to the southeast where it

appeared to be better preserved. Unfortunately, permissions were not obtained to survey the adjacent property.



Figure 7.12. General view of Chuwa Sanayi (FS16) looking south, showing eroded terrace.

Surface Collections

The investigated portion of the site totaled approximately 180 m². This area was subjected to systematic surface collection. A total of 15 controlled surface collections, one general collection (GSC 1) and two piece plots (PP1 and 2) were conducted. A total of 193 pieces of ceramic were recovered from Chuwa Sanayi', however, 31 of these turned out to be of historic date. The density of prehispanic ceramics averaged 8.73 sherds per CSC. The highest density was found in CSC 1 where 33 sherds were recovered. This represented the best-preserved portion of the terrace and indicates that the artifacts recovered on this property may relate to a more intensively utilized site located on the adjacent property to the southwest.

Artifacts and Chronology

Of the 162 prehispanic sherds collected from Chuwa Sanayi', 128 were non-diagnostic body sherds measuring less than 2" in diameter and were not analyzed. The remaining 34 sherds were classified by type and analyzed. This set of ceramics was dominated by local utilitarian types dating to the Late Classic to Postclassic period (58.82%). The remainder included small frequencies of Protoclassic (2.94%), Early Classic (11.76%) and Late Classic (8.82%) types. A portion of the analyzed ceramics (17.65%) could not be assigned to a phase with confidence. One piece of obsidian, consisting of prismatic blade fragment was also recovered from FS16. The source of the obsidian has not yet been determined.

Interpretation

The moderate density of ceramics and single piece of obsidian recovered from FS16 suggest that this area was probably a focus of sporadic domestic activity in the past, with the heaviest use probably occurring during the Postclassic and historic periods. Although the remains of an ancient terrace suggested the potential to find the remains of a prehispanic residence in this area, the artifact density indicated that this area was probably not directly associated with a residential unit.

Defensive Sites / Lookouts

Tza'n Tinamit (FS21)

The site of *Tza'n Tinamit* was located in the Canton of Chuwa Sanayi', at the eastern edge of the lava terrace on which the town of San Pedro sits. Elevations at the site were between 1578 and 1580 m AMSL. The property spanned two adjacent terraces (Figure 7.13), the uppermost of which had been landscaped for use as a Spanish School. It was unclear to what extent these landscaping activities had reshaped this area, but several large natural rock outcrops had been left untouched. The natural focus of this upper terrace was the northeast corner which provided unrestricted views of the San Pedro shoreline to the east and north (Figure 7.14). The surveyed portion of the property covered approximately 6300 m².

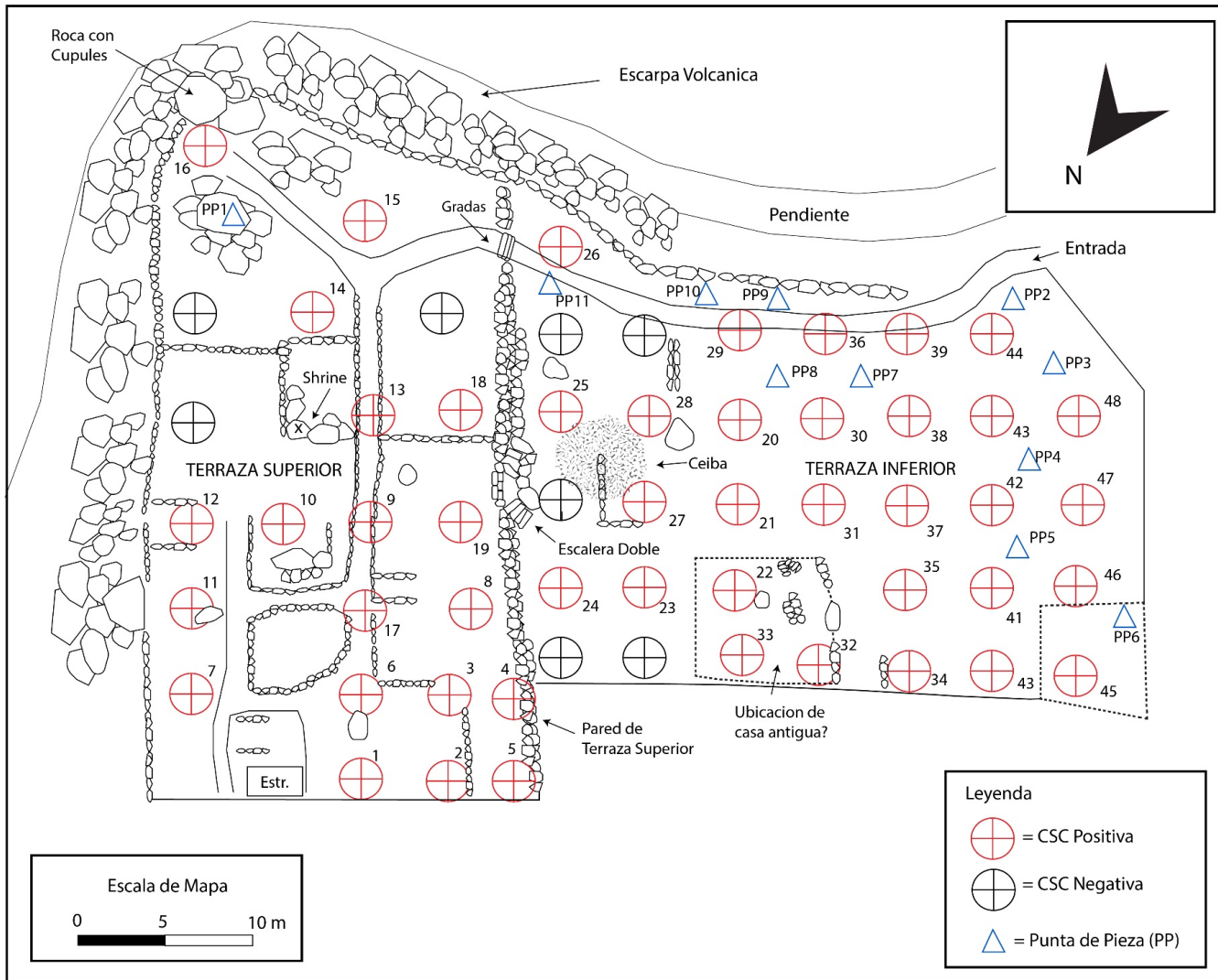


Figure 7.13. Schematic plan of Tzan Tinamit (FS21), showing upper terrace on left side and lower terrace on the right.



Figure 7.14. View from Tzan Tinamit, looking east towards Cerro de Oro.

Features

A thick stone wall separated the two terraces at Tzan Tinamit and access to the upper terrace was provided by a double set of stone stairs constructed of large stone blocks. One or both of these features may be prehispanic, but this is impossible to verify at the current time. Most of the other features located on the upper terrace consisted of individual lines of stones, which are probably of recent origin. One feature that is undoubtedly prehispanic is located at the southwest corner of the site. Here, where you can find the best views of the shore, there is a natural rock outcrop that includes a boulder with a small cavity or mortar in its upper surface.

A small raised area fronted by a line of stones and enclosing an area of approximately 7 x 7 m was observed near the northwestern edge of the site. This could have supported a small domestic structure at some time in the past and may represent the edge of a larger area of settlement that has now been obscured by development on the adjacent property.

Surface Collections

A total of 48 controlled surface collections (CSCs) were made at Tza'n Tinamit, using a 5-m grid. In addition, 11 piece-plots were collected (see Figure 6.5). A total of 349 ceramics, three pieces of obsidian and two ground stone tools were recovered. The highest ceramic densities occurred in CSCs 30, 37 and 46, all of which were located on the lower terrace. The average density for the lower terrace was 7.15 sherds per CSC.

Collections made on the upper terrace (CSCs 1 to 19), yielded consistently lower densities of cultural material, with an average of just 4.09 sherds per CSC. This may be in part to the greater amount of disturbance that has taken place on this terrace, however, a lower density of ceramics would also be consistent with the interpretation of this part of the site as a refuge or lookout. The average density for the site as a whole was just 5.22 sherds per CSC. Of the 349 sherds that were recovered from Tza'n Tinamit, 117 were classified and measured (Table 6.5).

Artifacts and Chronology

The Tzan Tinamit ceramics were dominated by San Pedro monochrome types (n=56.14%) dating to the Terminal Classic to Postclassic, and other Late Postclassic wares (n = 30.14%) like Pa K'ucha' and Ante (Table 7.4). Early Classic (n=5.85) and Late Classic (n=5.26%) types were represented in small quantities and a single sherd of Fine Incised Black dating to the Late Preclassic or Protoclassic was also recovered.

Three obsidian artifacts were also recovered from FS21, at CSCs 5 and 20, and included two prismatic blades and one flake / fragment. The source (s) of obsidian have not yet been determined. Two manos were also recovered from the lower terrace at CSCs 39 and PP 01.

Interpretation

The property designated as Tzan Tinamit appears to have included both defensive and residential areas. The ceramics indicate that this area was primarily utilized between the Terminal Classic and Late Postclassic. Like other impressive rocky places in the project area (e.g. Chuwa Jul Ya'), it seems that the upper terrace acquired a ritual function in later times..

Table 7.4. Ceramics recovered from FS21 by type and date.

Date	Type or Ware	% by Type	% BY PERIOD
Terminal Preclassic	NEGRO INCISO FINO	0.58%	0.58
Early Classic	SAN JUAN MORADO	0.58%	5.85
	ROJO ACANALADO	1.17%	
	ROJO NARANJA DELGADO PULIDO	2.34%	
	ESPERANZA FLESH	1.75%	
Middle to Late Classic	SANTA MARTA	4.68%	5.84
	TIQUISATE?	0.58%	
	CREMA BICROMO	0.58%	
Terminal Classic to Postclassic	SP CAFÉ GRIS	4.09%	56.14
	SP CAFÉ PULIDO	0.58%	
	SP ROJO	4.68%	
	SP TAN CAFÉ	46.78%	
Late Postclassic	ANTE	3.51%	30.41
	PA K'UCHA' ROJO	19.88%	
	PA K'UCHA' CAFÉ NARANJA	1.75%	
	PA K'UCHA' CAFÉ-NEGRO	4.68%	
	XOLA NARANJA	0.58%	
ND	ND	1.17%	1.17
TOTAL		100.00%	100.00%

Rachaq Abaj (FS14)

The site of *Rachaq Abaj* (FS 14) was located on a level terrace at the northern edge of the San Pedro escarpment at an elevation of approximately 1585 m AMSL. The site occupied a level terrace, which had been constructed on top of the escarpment (Figure 7.15). Two adjacent parcels (14a and 14b) were investigated at Rachaq Abaj and were only separated because permissions were acquired at different times.

Features

Although Area A appeared to have been cleared of most surface stone, a configuration of small boulders enclosing an area of approximately 5 x 7 m remained and suggested the presence of a small structure in this area (see Figure 7.15). Directly to the

southwest of this configuration, in the level change from the highest terrace to the next, a configuration of large rocks appeared to represent the remains of a "Z" shaped entrance. Between these two features were several other large natural rocks, one of which appeared to have been smoothed on one side to create a concave surface. The function of this incipient trait is unclear.



Figure 7.15. Rachaq Abaj, Area A (FS14a), showing remnants of a possible foundation or albarrada. Looking south towards center of San Pedro.

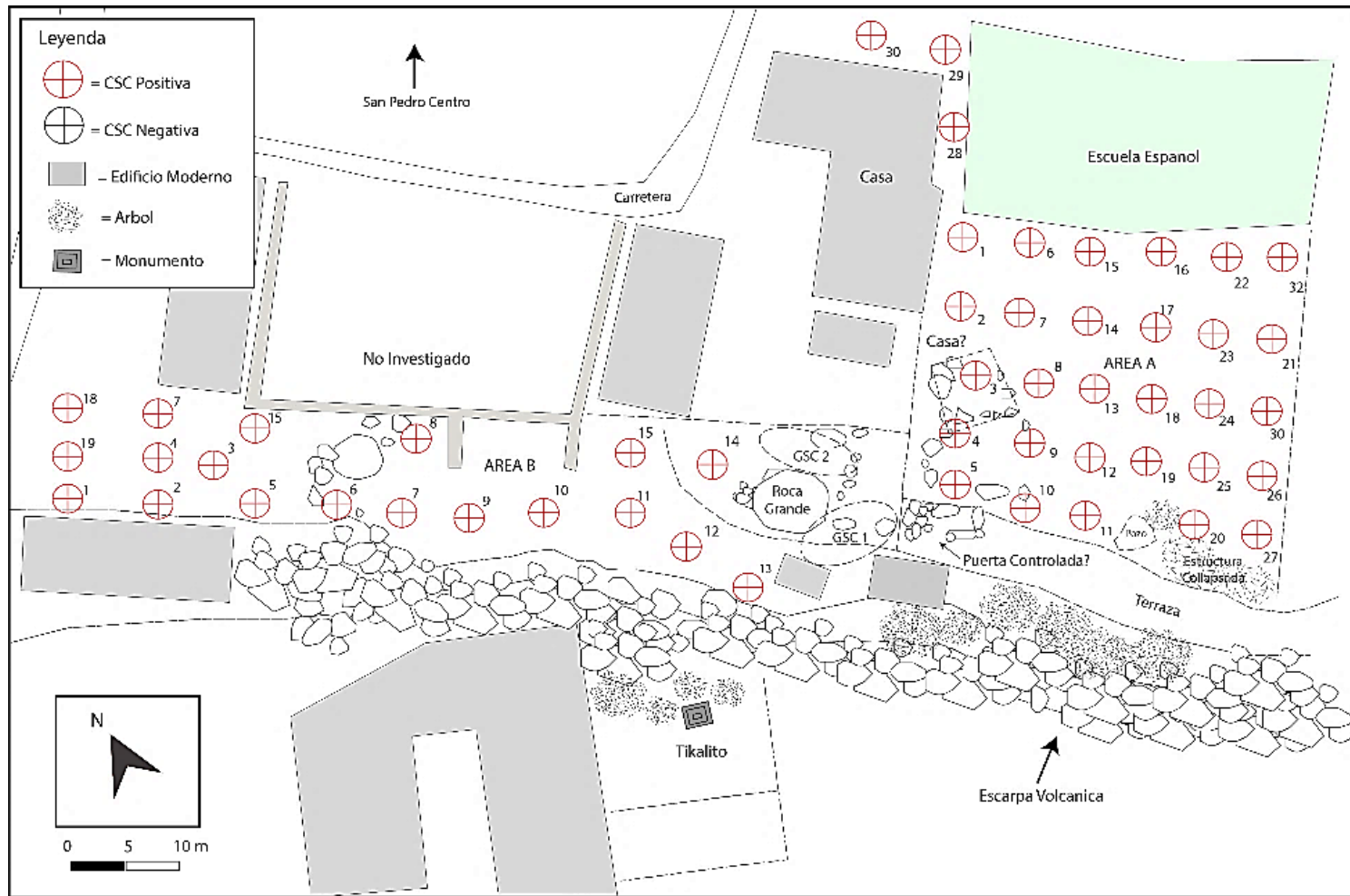


Figure 7.16. Schematic plan of Rachaq Abaj (FS14), showing Areas A and B and location of Tikalito.

Surface Collections

A total of 33 controlled collections (CSCs) were conducted in Area A and 19 in Area B (see Figure 7.16). In addition, three general collections (GSC 1 to 3) were conducted in Area B. These collections yielded a total of 773 ceramic sherds, three pieces of obsidian, and three ground stone fragments. Area A produced an average of 13.57 sherds per CSC, while Area B produced an average of 17.10 sherds per CSC. The average for the site as a whole was 15.33 sherds per CSC. The highest frequencies were encountered at CSC 7 (n = 71) and CSC 9 (n = 34), both of which were located in a flat portion of Area B that directly overlooked the Tikalito monument (SP08). were recovered from FS14. Of the total of 773 sherds that were recovered, a sample of 170 were classified by type and measured (Table 7.5).

Table 7.5. Ceramics recovered from FS14 (Areas A and B) by type and phase.

DATE	TYPE / WARE	COUNT	% OF TOTAL	% BY PHASE
PROTOCLASSIC	BUTTON SUPPORT	1	0.59%	3.53
	GLOSSY NARANJA	4	2.35%	
	ROJO-NARANJA FINO	1	0.59%	
EARLY CLASSIC	CREMA ROSADA, SOBRE PASTA ROJA	2	1.18%	4.12
	ESPERANZA FLESH	5	2.94%	
MIDDLE TO LATE CLASSIC	SANTA MARTA	10	5.88%	12.35
	AMATLE	2	1.18%	
	CAFÉ ROJIZO	9	5.29%	
TERMINAL CLASSIC TO POSTCLASSIC	SP CAFÉ PULIDO	1	0.59%	54.71
	SP NEGRO MARRÓN	38	22.35%	
	SP ROJO	19	11.18%	
	SP TAN CAFÉ	35	20.59%	
LATE POSTCLASSIC	ACROPOLIS ROJO SOBRE BLANCO	1	0.59%	14.71
	ANTE	2	1.18%	
	FORTALEZA BLANCO SOBRE ROJO	1	0.59%	
	PA K'UCHA' CAFÉ NARANJA	3	1.76%	
	PA K'UCHA' CAFÉ-NEGRO	6	3.53%	
	CHINAUTLA POLYCROMO	1	0.59%	
	SP NEGRO Y ROJO	11	6.47%	
ND	ND	18	10.59%	10.59
TOTAL		170	100%	100%

Artifacts and Chronology

The analyzed ceramics included a broad range of dates and indicated a steady increase in activity at the site from the Protoclassic through to the Postclassic.

Like most sites in Zone 1, the collection from FS14 was dominated by local monochrome wares spanning the Terminal Classic through Postclassic periods (n=54.71%). However, as already noted, the site appeared to have witnessed sporadic use in all prior periods, producing small quantities of ceramics dating to the Protoclassic (n=3.53%), Early Classic (n=4.12), and Middle to Late Classic (n=12.35%) periods. A diverse range of Late Postclassic diagnostics (n=14.1%) were identified in the collection, however, including imported types such as Fortress White on Red, Acropolis Red on White Incised, and Chinautla Polychrome. The relatively high percentage of Late Postclassic diagnostics indicates that peak use of the site occurred during this phase.

Only one piece of obsidian was recovered from Rachaq Abaj, and was recovered from GSC 1 in Area B. However, three ground stone tools were recovered from CSCs 15 and 26, in Area A. These included two metate fragments and a polishing stone.

Interpretation

Rachaq Abaj's location, on a wide, flat terrace, above a steep rocky escarpment, and the presence of what appears to have been a controlled entrance way, suggested that it may have had a defensive function. However, unlike the mirador at Tzan Tinamit (FS21), Rachaq Abaj produced a high density of ceramics as well as some lithic tools, indicating that it supported a high intensity of usage, including residential activities, particularly during the Late Postclassic period. I thus suggest that Rachaq Abaj functioned as an important entrance to Pa Tz'ununa' during the Late Postclassic period and that it may also have been an area for public events, ceremonies or market events. At this time, the lake is suspected to have been higher than it is today, and the Tikalito monument (described below and in Chapter 13) is believed to have been located near the shore. Visitors may thus have disembarked near the Tikalito and entered Pa Tz'ununa' via the controlled entrance.

Ritual Sites / Sacred Places

Tikalito FS14c

The Tikalito monument consists of a small pyramid-shaped offertory which has been carved from the natural bedrock (Figure 7.17). It is located in the northern part of the town of San Pedro La Laguna at an elevation of approximately 1577 m AMSL and sits on a level terrace at the base of the steep rocky escarpment that surrounds the village of San Pedro. This escarpment separates the Tikalito monument from the site of Rachaq Abaj (FS14 a and b), which is located just 20-30 m to the north but approximately 5 m higher in elevation. The monument itself is discussed in more detail in Chapter 13.



Figure 7.17. The Tikalito monument, photographed in 1978 by Chris Berhorst. Part of the Shook Collection held by the Universidad del Valle in Guatemala City.

The Tikalito monument was documented by Chris Berhorst as part of the site registration for ancient San Pedro and the registration card, which is part of the Edwin Shook collection at the Universidad del Valle, includes a photo of the monument taken in 1978 (Figure 6.16), prior to the insertion of the Christian cross (see Chapter 13). The monument was also mentioned in passing by Sandra Orellana (1984) who plotted its approximate location on one of her sketch maps.

Surface Collection and Artifacts

A single general collection was conducted in the vicinity of the Tikalito monument and covered a circle of approx. 5 m radius around the monument. This general collection yielded a total of 33 sherds. Included in this small collection was a flat stamp seal, bearing an incised double-headed bird symbol. The seal appears to be virtually identical to an example that was recovered by Robert Burkitt from the site of Chipal in Alta Verapaz (Butler 1940, Plate X) and is almost certainly Late Postclassic in date.

Interpretation

The Tikalito most likely dates to the Postclassic period and may have been constructed at a time when the lake level was higher. Photographic evidence as well as oral testimony record that the lake level once reached past the Colegio Bethel which is currently located just 100 m to the south and only approximately 3 m lower in elevation. It is thus highly possible that the Tikalito was once situated at the shore of the lake or at least at the edge of a lagoon. If this is the case, it seems likely that its function was to enable pilgrims to make offerings prior to embarking by boat to the site of Pa'Tawal (described below), which at times of high water is known to become an island.

Pa'Tawal (FS8)

Pa'Tawal is a prominent rocky peninsula that juts out into the lake from the northern tip of San Pedro La Laguna. This peninsula is almost entirely made up of large volcanic boulders and only a small portion of the landward (southwest) side of the peninsula has any soil or vegetation. Elevations along the peninsula range from 1560 m AMSL at the

water's edge to 1566 m at the highest point. Historic photos and maps indicate that this peninsula becomes cut off from the mainland during times when the lake level is higher, as it apparently was during the time of Benjamin Paul's research in the 1940s.

Features and Monuments

This peninsula of Pa'Tawal is currently dominated by a large dry-stone platform measuring approximately 30 m in length, 15 m in width and up to 3 m in height (Figure 7.18) The date and function of this platform seem to be a mystery to most Pedranos. However, the guardian of the land asserts that it was constructed by the current landowner (an Italian who now lives abroad) in the 1960s as the foundation for a hotel which the municipal authorities did not permit him to complete. Other locals, however, believe that it was constructed by the military during the civil war (c.1979-1985). The irregular shape of the platform in plan and the fact that it was not identified by Sandra Orellana who surveyed the area in the early 1970s lends support to the latter theory.



Figure 7.18. Southeast facing wall of stone platform, Pa'Tawal, San Pedro La Laguna.

Although the stone platform obscures a large part of Pa Tawal's natural surface, it appears that the most prominent rock outcrops were preserved. The two peaks of one of these outcrops have been modified to form shallow, circular basins which align with the peak of San Pedro volcano (Figure 7.19). Two more formal petroglyphs (SP09 and SP10), which are discussed in Chapter 13, are located on the landward (southwest) side of the peninsula. Both have circular cavities or basins, but one is more elaborate, and has been embellished with three channels leading off from the cavity.



Figure 7.19. Rock outcrop with modified basins and peak of San Pedro volcano.

At the base of the northwestern side of the platform there is a small hunting shrine, which Linda Brown recorded previously as part of her research on modern hunting sanctuaries (Brown 2005). Judith Maxwell and Ann-Marie Scott also visited Pa'Tawal during their study of sacred sites in the area (Maxwell and Garcia Ixmata 2008; Scott 2009) and noted that the site is associated with storms and that fishermen still use this place to petition for luck and abundance in their fishing expeditions.

Surface Collections

Because Pa'Tawal appeared to have been minimally disturbed by agricultural activity, a piece-plot strategy was employed. A total of 81 PPs were conducted at the site and these produced a total of 946 ceramics and 4 pieces of obsidian. A sample of 177 of the ceramics from Pa'Tawal were classified and the results of this classification are summarized in Table 7.6 below.

Table 7.6. Ceramics recovered from Pa'Tawal by Phase and Type.

Date	Type / Ware	Count	% of Total	% by Phase
Protoclassic	GLOSSY ORANGE WITH RED PAINT	4	2.26%	6.21
	ROJO SOBRE PASTA NARANJA O BLANCO	2	1.13%	
	IZOTE	5	2.82%	
Early Classic	ESPERANZA FLESH	17	9.60%	10.17
	SAN JUAN MORADO	1	0.56%	
Middle to Late Classic	SANTA MARTA	38	21.47%	22.03
	JELIC ROJO SOBRE NARANJA	1	0.56%	
Terminal Classic to Postclassic	SAN PEDRO CAFÉ GRIS	29	16.38%	47.46
	SAN PEDRO CAFÉ PULIDO	4	2.26%	
	SAN PEDRO NEGRO MARRÓN	15	8.47%	
	SAN PEDRO ROJO	35	19.77%	
	PLOMIZO GRIS	1	0.56%	
LATE POSTCLASSIC	ACROPOLIS ROJO SOBRE BLANCO	1	0.56%	1.74
	DURO DELGADO ANTE	1	0.56%	
	FORTALEZA BLANCO SOBRE ROJO	1	0.56%	
ND	ND	22	2.26%	12.43
TOTAL		177	100%	100%

Artifacts and Chronology

The ceramic collection from Pa'Tawal was diverse and spanned the entire prehispanic sequence, indicating as was expected, that this prominent rocky point had attracted ritual activity throughout the history of settlement in the San Pedro area.

As with most of the sites in Zone 1, a large portion of the ceramic assemblage from Pa'Tawal (47.46%) consisted of local monochrome wares dating to the Terminal Classic

through Postclassic periods. However, the Protoclassic (6.21%), Early Classic (10.17%), and Middle to Late Classic (22.03%) periods were also clearly represented.

Imported ceramics included Jelic Rojo sobre Naranja dating to the Late Classic, a piece of dark grey plumbate pottery likely dating between the Late Classic and Early Postclassic, and individual sherds of Fortress White on Red and Acropolis red on white incised.

Interpretation

Like other rocky peninsulas located along the southern shore of Lake Atitlan (e.g. Cerro de Oro, Tzanguacal), Pa'Tawal has clearly been an attractive location for ritual activities in the past and the surface ceramics and petroglyphs indicate that the site was likely used sporadically throughout the prehispanic period.

Maxwell and Ixmata Garcia (2008), who have found that all highland Maya municipios have five sacred sites that act as “guardians” for the town report that the site of Pa'Tawal represents the “northern guardian” of San Pedro, while the site of Chi Kaqajaay (discussed later in this chapter) serves as the southern guardian. The eastern guardian is reported to be located near the Santiago dock, while the western guardian is located on the point known as Chwi Tinamit, near the municipal boundary with San Juan.

Xe'Tawal (FS10)

Xe'Tawal is the local name for a large, low-lying area (1578 to 1586 m AMSL) of the shore of San Pedro (Figure 7.20), located between two rocky points (Pa'Tawal and Saqaribal). Its limit to the south appears to have been the San Pedro escarpment. Many of the residents of San Pedro associate this area with ancient remains and our workers (Juan and Antonio Matzar) noted that house walls were visible in this area when they were growing up (1960s-70s). However, at various times in the past, the area appears to have been inundated, forming a small lagoon (Figure 7. Navichoc and Navichoc (2007: 108) note that: “Previously it was a small bay from where the blue of the lake depth was appreciated”



Figure 7.20. Casa Rosario portion of Xe'Tawal which has been landscaped for use as a Spanish School.

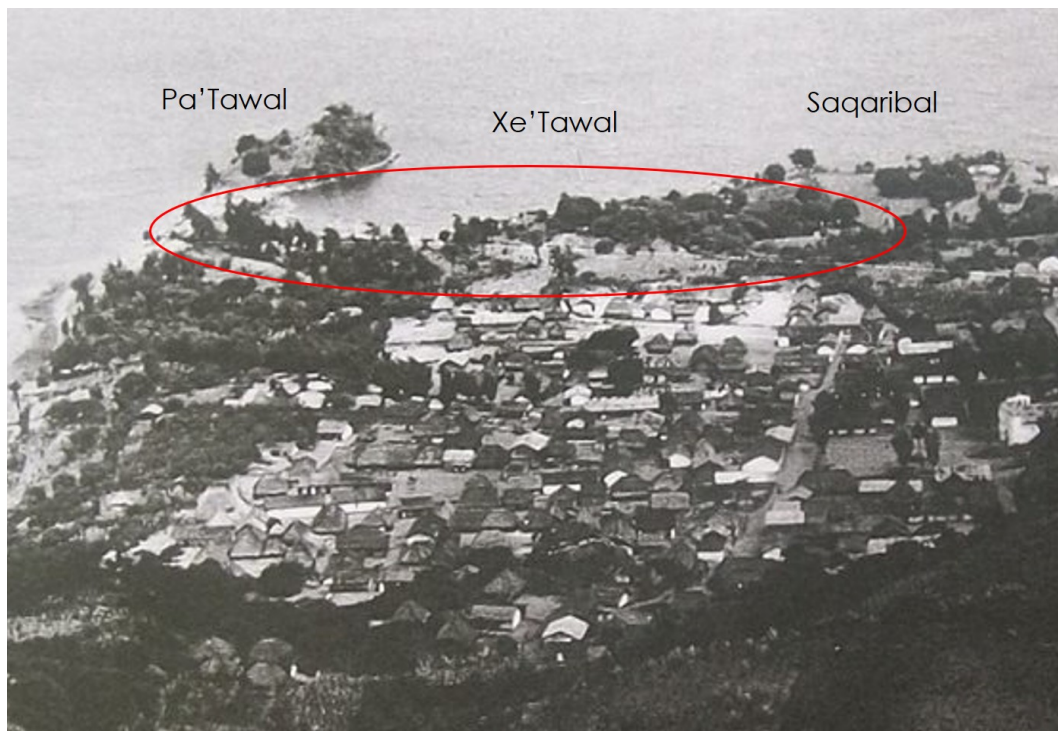


Figure 7.21. San Pedro c. 1940, looking northeast, showing inundation of Xe'Tawal area.

Private Collections

The association of the Xe'Tawal area with ancient remains was supported by the fact that several of the landowners in this area had private artifact collections. The most impressive of these collections was that held at the Casa Rosario Spanish School. The owner of the school, Vicente Cumes, informed us that, over a period of more than two years, he excavated a large portion of the property and that the majority of these artifacts were recovered during these operations. However, he also noted that some things, including a carved ballcourt marker (discussed in Chapter 11) were found among the rocks near the shore.

Surface Collections

Only one small property (FS10) in the Xe'Tawal area was systematically investigated during the field investigations and produced 107 sherds. Of these, 27 were classified and measured (Table 7.7). The majority (66.66%) were San Pedro Monochrome types dating to the Late Classic through Postclassic. The remainder included Santa Marta Ware (n=3, 11.11%) dating to the Middle to Late Classic period and Pa K'ucha' Café-Naranja (n=1, 3.70%) dating to the Late Postclassic.

Table 7.7. Ceramics recovered from Xe'Tawal (FS10).

Period	Group	Total	% by period
MIDDLE TO LATE CLASSIC	SANTA MARTA WARE	3	11.11%
TERMINAL CLASSIC TO POSTCLASSIC	SP NEGRO MARRÓN	18	66.66%
	SP ROJO	2	
	SP TAN CAFÉ	3	
LATE POSTCLASSIC	PA K'UCHA' CAFÉ NARANJA	1	3.70%
ND	ND	3	11.11%
Total		27	100

In addition to these collections, a landowner in this area generously donated a large Postclassic urn (Figure 6.20), which he reported recovering from a depth of approximately 2 m on an adjacent property to the north, and which, he noted, originally contained bones. On this same property, two erect stones, standing to heights of approximately 40 and 60 cm respectively, were observed protruding from the surface. Additional cremation urns were observed on the Casa Rosario property together with a collection of sherds and a few almost complete vessels which ranged in date from Late Preclassic through to Late Postclassic.



Figure 7.22. Cremation urns from Xe'Tawal (FS10). Top = donated urn. Bottom = urn in Casa Rosario collection.

Interpretation

Although the Xe'Tawal area was not thoroughly investigated, the apparent prevalence of Postclassic cremation urns in this area suggests that the area may have been utilized as a cemetery during the Postclassic period.

Chuwa Jul Ya' (FS17)

The site of Chuwa Jul Ya' (FS 17) was located approximately 200 m uphill, to the south of the center of San Pedro (Figure 7.23). It was situated in a fallow coffee field, on a level to gradually sloping plateau. Elevations at the site ranged from between 1687 and 1676 m AMSL.

Features

Chuwa Jul Ya' included two adjacent properties that were designated Areas A and B. Area A was dominated by a large rock outcrop, measuring approximately 10 m north to south, 8 m east to west, and approximately 3 m high. The property owner informed us that the outcrop had been used for Maya ceremonies in the recent past and that he had found prehispanic artifacts in the vicinity. At the summit of this outcrop there was a rock whose upper surface bore a linear, U-shaped channel, measuring between 10 and 20 cm wide, up to 8 cm deep and approximately 1 m long. The channel traversed a natural fissure in the rock. This feature may be related to the ceremonial activities that have been described as taking place in this area (Navichoc and Navichoc 1998) and may have been used for grinding organic materials or producing fire.

Four meters southeast of this outcrop was the remnants of what appeared to have been a small rectangular enclosure measuring 4 m long x 3 m wide. The enclosure abutted a low terrace, which also functioned as the back wall of the enclosure. A small stone bench had been constructed against this wall. Extending perpendicular from the terrace, a low stone wall measuring 3 m in length appeared to form one end of the enclosure bounded. The remaining two sides lacked walls, but a small rock pile appeared to indicate the location of another corner. Although CSCs in this area did not identify any specific concentrations of materials in this area, two general collections recovered a moderate density of pottery (n = 28).



Figure 7.23. Location of Chuwa Jul Ya' (FS17) on satellite image.

Surface Collections

A total of, 25 controlled collections (CSCs), 12 piece plots (PPs) and two general collections (GSC 1 and 2) were conducted in Area A (Figure 7.24). Area B was subjected to a general reconnaissance only due to the fact that it was encountered after the completion of fieldwork.

Artifacts

A total of 86 pieces of ceramic were recovered from Chuwa Jul Ya', Area A. The site was dominated by Middle to Late Classic types, principally Santa Marta Ware which made up 59.18% of the collection (Table 7.8). Included in this were three solid incensario handles.

The site also appears to have attracted activity in the Late Preclassic period, as indicated by the presence of a glossy orange rim with Usulután decoration and several sherds of fine red-orange. Early Classic use of the site was also indicated by the presence of Esperanza Flesh, while Terminal Classic and Postclassic use of the site was evident from the recovery of a small amount San Pedro Negro-Marrón and a single sherd of Acropolis Ware.

Two prismatic blades and four ground stone fragments were also recovered from Chuwa Jul Ya'. The obsidian was recovered from GSC 1 and PP 1 (Figure 6.22). The source of the obsidian has not yet been established. The ground stone fragments were recovered from GSC 1, PP2 and PP3 and included a mano, a polisher and a cut stone of indeterminate use.

Interpretation

The peak ceramic densities in Area A were located within the northern portion of the site (CSCs 18 and 25, and PP4). This data and the presence of slightly denser deposits in Area B, indicates that Chuwa Jul Ya' may represent the edge of a larger residential cluster whose center lies further to the north. The presence of a possible domestic structure and the recovery of both ceramics and lithic tools suggests that this area probably supported sporadic domestic settlement.

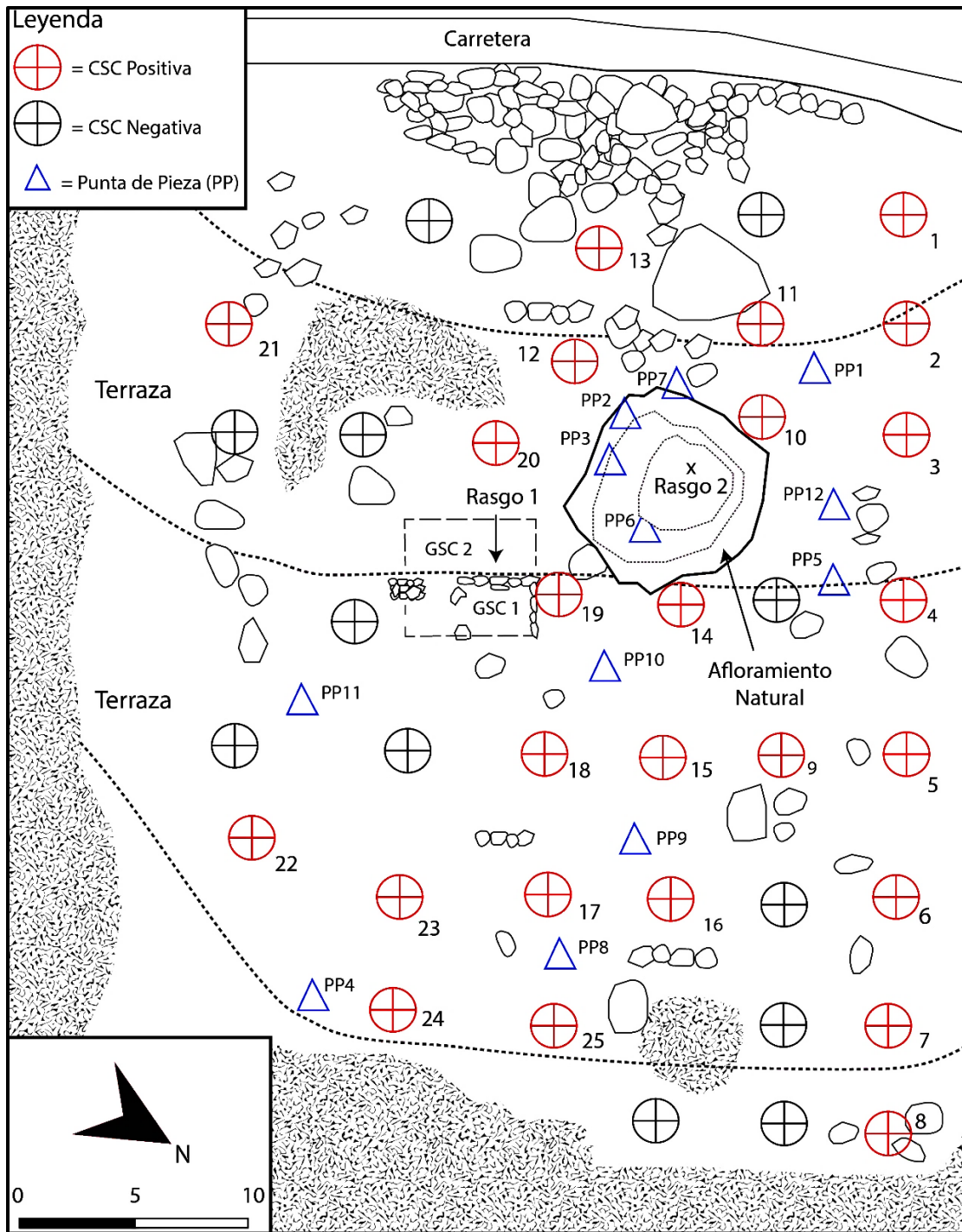


Figure 7.24. Schematic map of Chuwa Jul Ya', Area A (FS 17a)

Table 7.8. Ceramics from Chuwa Jul Ya' by phase and type.

PHASE	TYPE	COUNT	% OF TOTAL	% BY PHASE
LATE PRECLASSIC	BALSAMO NARANJA	1	2.04%	16.33
	ROJO O NARANJA FINO	7	14.29%	
EARLY CLASSIC	CREMA ROSADA, SOBRE PASTA ROJA	1	2.04%	12.24
	ESPERANZA FLESH	5	10.20%	
MIDDLE TO LATE CLASSIC	AMATLE	1	2.04%	59.18
	SANTA MARTA	28	57.14%	
TERMINAL CLASSIC TO POSTCLASSIC	SP NEGRO MARRON	5	10.20%	10.20
LATE POSTCLASSIC	ACROPOLIS ROJO SOBRE BLANCO	1	2.04%	2.04
TOTAL		49	100%	100%

Low Density Scatters

Pa K'ucha' (FS4)

The Pa K'ucha' property was located in a low-lying portion of the canton of the same name, which constitutes the northwestern portion of the municipio, adjoining the border with San Juan. Two separate properties (Areas A and B) were investigated. Area A was located between 1566 and 1571 m AMSL. Area B was located between 1572 and 1583 m AMSL. The total area surveyed included approximately 1200 m².

Surface Collections

Area A was heavily overgrown and because of its location on one of the main routes in and out of San Pedro, it had been utilized for trash dumping. The PALA crew offered to clear the property in return for permission to conduct our survey. Unfortunately, the density of materials in this area was extremely low and so it was decided to piece plot these artifacts. A total of 11 piece lots yielded 28 sherds.

Area B included an open field that was used periodically for drying coffee and a narrow strip of forest that extended the length of the property. Systematic collection was conducted in the open field and produced 68 sherds, an average of 3.4 sherds per CSC. Two general collections were conducted in the forested area and produced an additional 23 sherds.

Artifacts and Chronology

Only 30 of the 119 sherds recovered from Pa K'ucha' were analyzed. Of these, 80% were Late Postclassic types belonging to the Pa K'ucha' group (see Chapter 9 for definition). The remaining sherds included a single Late Postclassic polychrome sherd, two sherds of Santa Marta belonging to the Middle to Late Classic, and one piece of Fine Red-Orange dating to the Protoclassic Period.

Interpretation

This location produced a very low density of surface ceramics and our workers informed us that prior to recent road construction above the site, the area had been frequently flooded by a small stream. In prehispanic times, this area was probably peripheral to the settlement of San Pedro, although residential settlement may have been located just beyond this to the southeast.

Pa Q'a'm (FS19)

The Site of Pa Q'a'm (FS19) consisted of a moderate scatter of ceramics dispersed across a narrow section of land that traversed the San Pedro escarpment at one of its steepest points. Elevations on the property ranged from 1570 m at the base of the slope (Terrace 1) to 1585 m at the top of the slope (Terrace 2).

Surface Collections

Three general surface collections were conducted across this property: one on each of the two terraces, and one on the sloping section in between which was traversed by a dirt path. The lower terrace (T1) which was approximately 8 m from the lake shore produced the highest quantity of ceramics (n=48) and also produced one piece of obsidian.

The upper terrace produced only seven sherds, while the dirt path produced 21 sherds. Of the 76 sherds recovered from FS19, 42 were classified and measured (Table 7.8).

Artifacts and Chronology

The ceramic collection was dominated by Terminal Classic to Postclassic monochrome types (42.86%) (Table 7.9). Early and Middle to Late Classic sherds were also present in small quantities. A significant portion of the sherds (54.76%) could not be assigned with confidence to a specific phase.

Interpretation

The moderate density of ceramics on the lower terrace suggests that this area may once have supported residential settlement.

Table 7.9. Ceramics from Pa Q'a'm (FS19) by date and type.

Phase	Type	Count	% by Type	% by Phase
Early Classic	ESPERANZA FLESH	2	4.76%	9.52
	PASTA ROSA MICACEO	1	2.38%	
	ROJO ACANALADO	1	2.38%	
Middle to Late Classic	SANTA MARTA	1	2.38%	2.38
Terminal Classic to Postclassic	SAN PEDRO CAFÉ PULIDO	1	2.38%	42.86
	SAN PEDRO ROJO	2	4.76%	
	SAN PEDRO TANCAFE	15	35.71%	
Late Postclassic	ACROPOLIS ROJO SOBRE BLANO	1	2.38%	2.38
ND	ND	23	54.76	54.76
TOTAL		42	100	100

7.2 ZONE 2 – KO’ON

Ritual-Admin Centers

Pan Alujaay, Area A

Pan Alujaay is the largest archaeological site between San Pedro and Chuitinamit and is regarded by many San Pedro residents as their original home. It occupies a series of broad, level terraces constructed on a gradual part of the skirt of San Pedro volcano, between approximately 1580 and 1620 m AMSL. The site includes a compact ritual-administrative core (Area A) that covers approximately 1 hectare, from which residential areas extend out to the south, east and west (Areas B-E), covering an additional 10 hectares (Figure 7.25).

Monumental Architecture

Only three structures survive in the epicenter of the site. The largest structure is a double pyramid whose twin mounds (A1 and A2) now measure approximately five and three meters high respectively (Figures 7.26 and 7.27). Although most of the facing stones on these mounds have been removed, a few dressed stone blocks were still visible near the base of Structure A1 and clearing of the vegetation around Structure A2 revealed the corner of a large cut stone which may represent the edge of an internal feature, perhaps a vault. Large quantities of cut stones were also observed in the terrace walls and in the foundations of outbuildings on the property containing structure A2. The landowner reported that when he was constructing a water tank on the south side of the mound that he encountered stone blocks to a depth of 2 m and that he also encountered a large U-shaped stone, probably indicating a stone yoke. Despite heavy disturbance caused by the planting of coffee trees in its sides, structure A1 appears to retain a stepped form, with the possible remains of three tiers being visible.

The other structures located within the epicenter of Pan Alujaay (Structures A3 and A4) were both low, stone platforms measuring approximately 1 m in height (Figures 7.28). Unfortunately, due to a lack of permissions, we were not able to access this property to inspect these mounds or take measurements. Located just outside the monumental core of the site, in the yard of an adjacent property we also identified a large block of dark volcanic

stone, whose upper surface had been smoothed and incised with an abstract curvilinear design.

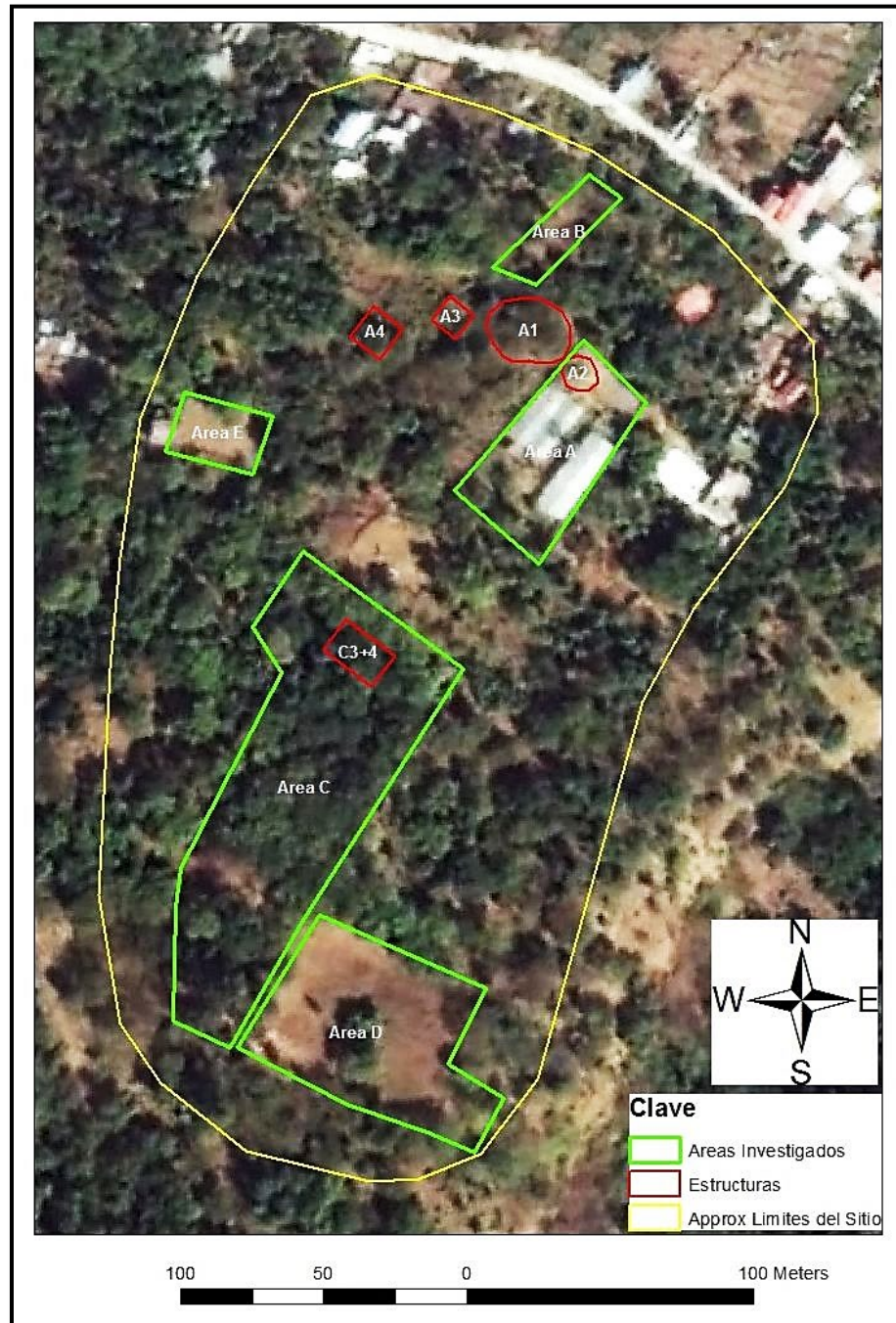


Figure 7.25. Aerial image of Pan Alujaay, showing investigated Areas A-E.



Figure 7.26. Structure A1, Pan Alujaay, looking south.



Figure 7.27. Structure A2, Pan Alujaay, looking west, with top of Structure A1 behind



Figure 7.28. Structure A3 viewed from public path, looking southeast

Surface Collections

A total of 56 controlled collections and one general collection were conducted within the property containing Structure A2, the smaller of the two mounds that make up the double pyramid. The surface collection recovered a total of 338 pottery sherds, 3 pieces of obsidian, a grinding stone, and one special artifact. The ceramic density was low around the mound and increased towards the south, an area that is presumed to have been part of the main plaza of the site. The average ceramic density for the area was 5.56 sherds per CSC. In addition to these controlled collections, several general collections were made along the dirt path leading to Area C, which passed through Area A, approximately just 70 m to the west of Structure A1. These collections, which were made on several separate occasions, provided a significant supplement to the ceramic material from this part of the site.

Artifacts from Area A

Due to the fact that excavations were subsequently carried out at Pan Alujaay, the surface artifacts were given a lower priority for analysis and unfortunately time ran out before these could be classified and analyzed. However, in general these appeared to replicate the ceramics recovered from the excavations conducted in Area C (discussed

further in Chapter 10), being dominated by Late Postclassic types but also including a significant Early Classic component and an ephemeral Late Classic component.

Chuwa Kiyakapek (FS61)

The site of Chuwa Kiyakapek is located near the now defunct Finca Tzantziapa, which straddles the municipal boundary between San Pedro and Santiago Atitlan. The site, which boasts the only surviving ballcourt in the Lake Atitlan area, is also located directly above a natural cave (Figure 7.6), thus providing a tangible connection between the ballgame and the ancient Maya underworld.

The site occupies a level shelf or terrace that appears to have been carved out of a gently sloping ridge, approximately 100 m uphill from the lake shore. Although a portion of the site was destroyed in recent years for road construction, several structures remain and while portions of each structure appear have been destroyed by stone-robbing, other portions appear to be well preserved.

Interestingly, the arrangement of the principle structures (the pyramid and the ballcourt) and the positioning of the site over a cave appears to replicate the arrangement Group A at the site of La Lagunita, in the Chixoy Valley (Figure 7.7), although the overall orientation of the site is different. It is not yet clear if the smaller structures at Chuwa Kiyakapek also replicate the pattern of La Lagunita as these are in a poorer state of preservation and were heavily overgrown at the time of our visit.

Investigations

The site of Chuwa Kiyakapek would not have been identified had it not been for the insistence of a friend and long-term resident of Santiago Atitlan, who had visited the site previously and believed it to be one of the small sites identified by Lothrop and Sandra Orellana. Unfortunately, as our field season was completed by that time, only a brief visit to the site was achieved. This was sufficient, however, to gain an appreciation of the importance of the site.

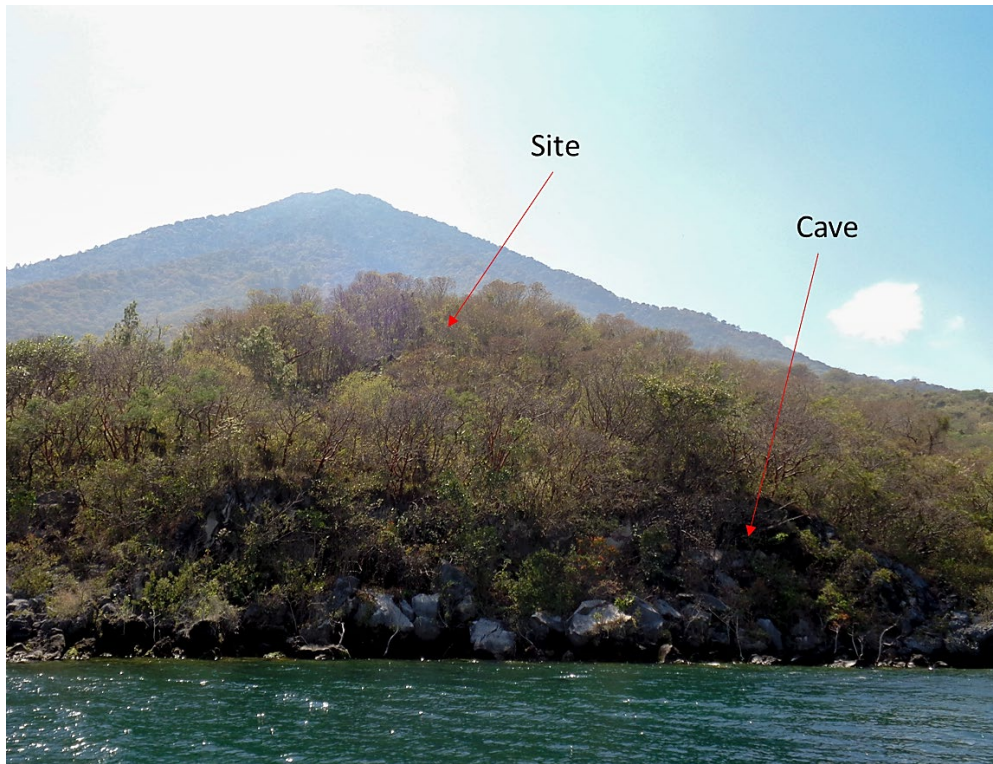


Figure 7.6. View of Chuwa Kiyakapek from the shore, showing location of cave. Looking southwest.

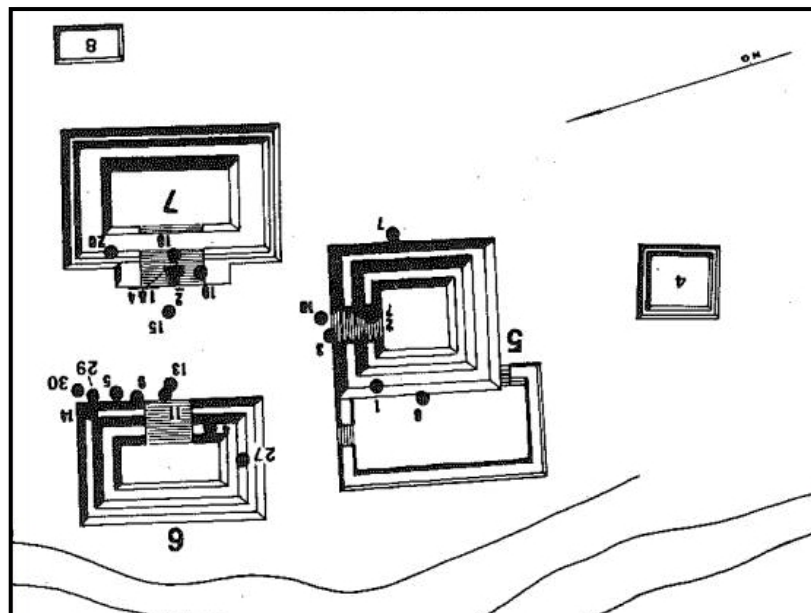


Figure 7.7. Portion of Group A at La Lagunita, showing pyramid A-5 above palangana ballcourt.. After Ichon and Viel 1984.

Monumental Architecture

The largest structure at the site (Structure 1), which is located at the northeast edge of the terrace, consists of a 4 to 4.5 m-high, stone-faced mound, which appears to have been constructed in several tiers. The base of the mound is square in plan with sides that are 8 m long and 1 m high. Unfortunately, the entire upper section of the pyramid has now been robbed of its facing stones, leaving just the square stone base surmounted by a 3 m-high mound of rubble and earth. Two sides of the base are well preserved (Figure 7.8) but the other two have been largely destroyed. As there are no indications of stairs on either of the surviving sides, it is presumed that these were originally located on the southeast side, which would replicate the pattern (although not the direction) at La Lagunita.

Directly off the northeast side of this mound, and now precipitously close to the road cut is a surprisingly well preserved palangana ballcourt (Structure 2), which appears to have been constructed entirely of river cobbles (Figure 7.9). The ballcourt measures 33 m long x 9 m wide and its walls are 1.5 m tall and vertical. The floor of the ballcourt was heavily overgrown and so no internal features were visible. In addition, no stairs were identified that would have provided entry and exit to the court.

Artifacts

Despite a thorough search of the site and the adjacent road cut, no artifacts were identified at the site. Our informant, however, who had been present during the road construction, reported that one of the workers had found a bowl with bulbous mammiform supports in the vicinity of the site, thus suggesting a Terminal Preclassic or Early Classic date, which would make it contemporary with one of the main occupations at La Lagunita.

Interpretation

The position of the mound off the long side of the ballcourt, exactly replicates the arrangement of Group A at La Lagunita. Also, like La Lagunita, *Chuwa Kiyakapek* is positioned above a cave, thus providing a link to the underworld. The close similarities in the site plans of the two sites and the finding of a tetrapod vessel nearby indicate that the site dates to the Protoclassic period or the first part of the Early Classic. Further

investigations will be needed to determine the full extent of this site and whether it was associated with any residential settlement.



Figure 7.8. Basal level of Structure 1, Chuwa Kiyakapek.



Figure 7.9. Interior wall of ballcourt, Chuwa Kiyakapek.

Residential Zones

Pan Alujaay

Surface collections were conducted in four properties (Areas B, C, D, E) surrounding the monumental center of Pan Alujaay. Table 7.10 below, summarizes the extent of the investigations in these areas and provides quantitative information relating to the recovered ceramics and obsidian. All of these properties revealed evidence of residential settlement in the form of ceramic and lithic material and, in some cases (e.g. Areas C and D), possible architectural remnants. In this section, I first provide brief descriptions of each of these areas, and then provide a discussion of the artifacts.

Table 7.10. Ceramic and obsidian counts and densities from Pan Alujaay, Areas A-E.

Area	CSCs	GSCs	Ceramic Count	Sherd Density	Obsidian Count	Obsidian Density
A	56	1	313	5.58	4	0.071
B	32	2	216	6.46	2	0.063
C	90	5	609	6.76	14	0.155
D	-	9	211	NA	7	NA
E	24	2	263	8.83	8	0.333

Area B

Area B was located immediately downslope and to the north of the double pyramid (Structure A1/A2) and the south end of the investigated property appears to include part of the original basal platform (Figure 7.29). The property investigated here was mostly on sloping terrain except for a small section of level terrain at the northern end of the property, which overlooked a steeper section of slope that led down to the road. A total of 31 CSCs and two GSCs were conducted on this property and produced a total of 216 ceramics, and 2 pieces of obsidian.



Figure 7.29. Basal platform of double pyramid (Structures A1 and A2), looking south from Area B.

Area C

Area C was the largest area that was investigated in Pan Alujaay and spanned several broad terraces that ascended the slopes directly to the north of the site center (Figure 7.30). These terraces were fronted by impressive dry-stone walls, some of which were over 2 m in height. One of these, located directly below the area of our excavations, had a sloping section, which suggested prehispanic construction (Figure 7.31).

A total of 90 CSCs were conducted in this area see (Figure 7.30), covering a total area of approximately 10 hectares. These collections produced 592 ceramics, with the highest densities occurring across two terraces located approximately 100 m south of the mounds and approximately 5 m higher in elevation. The highest ceramic densities CSCs 14 (n = 27) and 18 (n = 27), occurred near a historic altar (Structure C1) (Figure 7.32) where the landowner reported finding urn burials when he was a child.

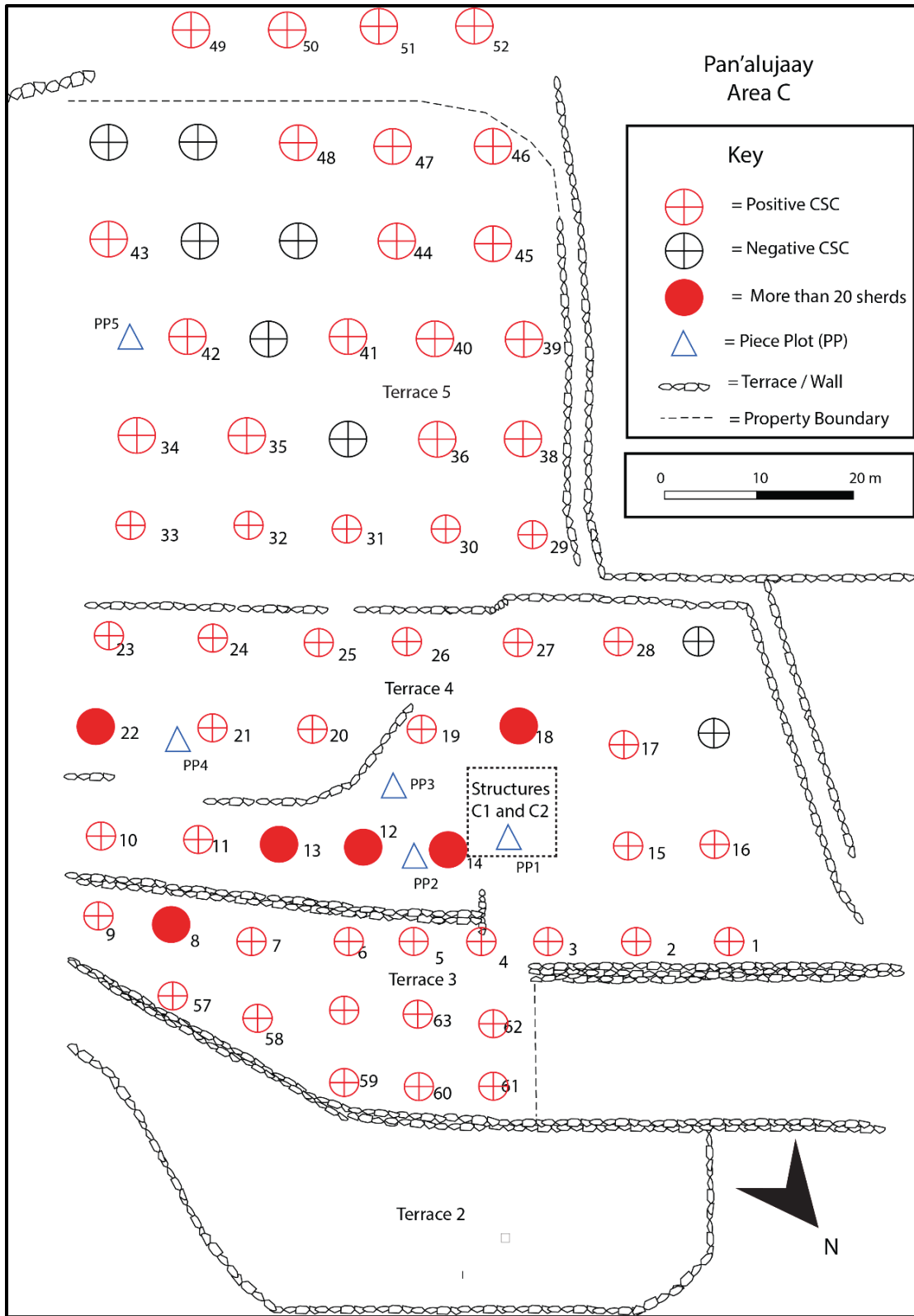


Figure 7.30. Schematic plan of Pan Alujaay, Area C, showing collection locations.



Figure 7.31. Terrace wall with sloping section. Pan Alujaay, Area C, looking west.



Figure 7.32. Historic altar (Structure C-1) constructed partially out of prehispanic cut stones. Pan Alujaay, Area C. Looking southwest.

Area D

Area D consisted of a fallow cornfield located approximately 300 m south of Area A and adjacent to the southern portion of Area C (see Figure 7.25), between 1630 and 1635 m AMSL. Although the soil in this area was heavily eroded, a few large boulders and short lines of stones appeared to represent the remains of former house foundations or albarrada walls (Figure 7.33). This idea was supported by the presence of a relatively high density of ceramics on the surface, with notable concentrations around these arrangements of rocks.

A total of nine general surface collections were conducted in this area, with each focusing on a distinct concentration of rocks. These collections yielded a total of 211 ceramics and seven pieces of obsidian.



Figure 7.33. Pan Alujaay Area D, looking south towards San Pedro Volcano. Red highlighted area indicates possible remnants of foundation or albarrada.

Area E

Area E was located on a terrace located slightly to the west of Areas A and C but at an intermediate elevation. The surveyed area consisted of a small beanfield which had just recently been planted and so had excellent surface visibility (Figure 7.34). The recovered ceramic density in this area was slightly higher than Areas A and B, with the highest frequency occurring near the northern edge of the field, where there was a single line of stones which was interpreted to be the remnant of an ancient terrace or house foundation.



Figure 7.34. Pan Alujaay, Area E, looking west.

Artifacts

Due to the large quantity of ceramics recovered from the site of Pan Alujaay, and our confidence that the principal occupation occurred during the Late Postclassic period, the surface ceramics were not prioritized for analysis and only samples from Areas D and E have so far been classified (Table 7.11).

The collections from these two areas of the site indicate relatively continuous occupation of these areas from Early Classic times through to the Late Postclassic, with a small Early Classic component (9.47%), a larger Middle to Late Classic component (26.32%) and a dominant Terminal Classic to Postclassic component (52.64%).

Interpretation

Although the site of Pan Alujaay, with its twin pyramid clearly reached its peak of importance during the Late Postclassic period, the ceramic data from several of the surrounding residential areas indicates that the site was occupied long before this. The ceramics recovered from Areas D and E reveal that these areas of Pan Alujaay were occupied from at least Early Classic times, while the excavations in Area C (discussed in Chapter 10) also produced a small quantity of Preclassic types. Excavations within the site core will be necessary to determine if any of the public buildings originated during one of these earlier phases.

Table 7.11. Ceramics from Pan Alujaay Areas D and E, by date and type / ware.

DATE	TYPE	COUNT	% OF TOTAL	% BY PHASE
EARLY CLASSIC	ESPERANZA FLESH	4	4.21%	9.47
	HEMATITA ROJO SOBRE CREMA	4	4.21%	
	ROJO ACANALADO	1	1.05%	
MIDDLE TO LATE CLASSIC	BAIL HANDLE	1	1.05%	26.32
	SANTA MARTA	24	25.26%	
TERMINAL CLASSIC TO POSTCLASSIC	CAFÉ ROJIZO	2	2.11%	52.64
	SP CAFÉ GRIS	2	2.11%	
	SP CAFÉ PULIDO	4	4.21%	
	SP NEGRO MARRÓN	4	4.21%	
	SP ROJO	13	13.68%	
	SP TAN CAFÉ	25	26.32%	
POSTCLASSIC	ACROPOLIS WARE	2	2.11%	4.21
	CHINAUTLA POLICROMO	1	1.05%	
	DURO DELGADO (ANTE)	1	1.05%	
ND	ND	7	7.37%	7.37
TOTAL		95	100%	100%

Pa Mes Alto (FS 5)

Pa Mes Alto (FS5) was located in Zone 2, to the east of Pan Alujaay. It was situated on a gently sloping portion of San Pedro volcano at an elevation of between 1578 and 1586 m AMSL (Figure 7.35). The site consisted of a well-defined scatter of ceramics spread across two low terraces.



Figure 7.35. General view of Pa Mes Alto, looking south towards San Pedro volcano, with rock pile to left of picture.

Features

A small rock pile / clearance cairn measuring approximately 1 m in length, 40 cm wide and 50 cm in height was observed at Pa Mes Alto. Our workers suggested that this may have been a burial. During his excavations of a burial at Chuk'muk, Lothrop (1933:57) suggested that the bodies and associated artifacts had likely been placed on the ground surface and covered with a rock cairn, noting that the Tz'utujil still do this.

Although the dimensions of the rock pile at Pa Mes Alto suggest a burial function, it is equally possible that it is simply a field clearance cairn. The presence of such field clearance cairns appears to be a reliable indicator of ancient house locations, indicating that

they are probably composed of the stones that were previously used in house foundations or albarradas.

Surface Collections

A total of 14 piece-plots and one general surface collection were conducted at Pa Mes Alto and yielded a total of 107 pieces of ceramics, two pieces of obsidian, and one ground stone tool. The density of ceramics at the site was low, averaging 4.5 sherds per piece plot. Of the 107 recovered ceramics, 42 were classified and measured (Table 7.12).

Table 7.12. Ceramics from Pa Mes Alto by date and type / ware.

Phase	Type	Count	% of Total	% BY Phase
Early Classic	ESPERANZA FLESH	9	21.43%	21.43%
Middle to Late Classic	SANTA MARTA	7	16.67%	16.67%
Terminal Classic to Postclassic	SP CAFÉ GRIS	1	2.38%	50.00%
	SP ROJO	3	7.14%	
	SP TAN CAFE	17	40.48%	
Late Postclassic	DURO DELGADO AMARILLO	2	4.76%	4.76%
ND	ND	3	7.14%	7.14%
TOTAL		42	100%	100%

Artifacts and Chronology

The recovered ceramics indicated that Pa Mes Alto was utilized over a surprisingly long period, beginning in the Early Classic and continuing up until at least the Terminal Classic. The most common ceramic in the assemblage was San Pedro Tan Café (n=17, 40.48%) dating to the Terminal Classic to Postclassic. The next two most common diagnostics were Esperanza Flesh Ware (n=9, 21.19%) and Santa Marta Ware (n=7, 16.67%). The first of these dates to the Early Classic, while the second dates to the Middle-to-Late Classic (c.400-900 AD).

Two prismatic blade fragments and one ground stone tool (a circular polishing stone) were also recovered from Pa Mes Alto. The obsidian was recovered from PPs 4 and 10, while the ground-stone tool fragment was recovered from the general surface collection.

The obsidian source used for the manufacture of the obsidian blades has not yet been determined.

Interpretation

Pa Mes Alto appears to have been the location of an individual household (sitio) whose occupation occurred between the Early Classic and Terminal Classic or Postclassic periods. The small quantities of later ceramics indicate that the site was also utilized sporadically in Late Postclassic times. Although it is now situated in a rural setting, it is only a short distance (0.5 km) from the large site of Pan Alujaay and thus the household here may have identified themselves as being part of that community.

Pa Mes Bajo (FS 6)

Pa Mes Bajo was located on a level to gently sloping ridge on the southern flank of San Pedro volcano, approximately 2 km east of the center of San Pedro. The investigated portion of the site was situated on the south side of the Finca Road and consisted of a rectangular coffee plot measuring approximately 25 m wide x 105 m long (Figures 7.36 and 7.37). The site thus extended over a total area of approximately 2,625 m², however 700 m² of this had been heavily disturbed by quarrying.

Investigation Methods

Due to the presence of a thick layer of leaf litter obscuring the ground surface in this parcel, it was necessary to use rakes to first clear areas before surface collection could be conducted. Circular areas of approximately 3 m in diameter were cleared at 5 m intervals along transects spaced 5 m apart and in this manner a total of 24 piece-plot collections were made (Figure 7.37).

Artifacts and Chronology

Of the 101 ceramic artifacts recovered during the surface collection, 69 were non-diagnostic body sherds measuring less than 2 inches in diameter and were simply counted, weighed and discarded. The remaining 32 sherds consisted of 24 body sherds, 6 rims and

two handles. This small collection consisted mostly of San Pedro Tancafe (n=15, 46.88%) dating to the Terminal Classic to Postclassic, and Santa Marta Ware (n=9, 28.13%) diagnostic of the Middle to Late Classic era (c. 400-900 AD) (Table 7.13). The remaining sherds included isolated sherds of Naranja Glossy and Rojo-Naranja Delgado dating to the Late Preclassic and Protoclassic (n=2, 6.25%), and four non-diagnostic body sherds.

The lithic artifacts recovered from FS6 included two pieces of obsidian and three ground-stone fragments. The ground stone fragments included a brazo (a mano with flattened primary surfaces), a metate or stone-seat fragment with lozenge-shaped support, and a hemi-spherical stone implement of unknown function bearing semi-circular concavities on each side.



Figure 7.36. Pa Mes Bajo, looking north, showing coffee trees.

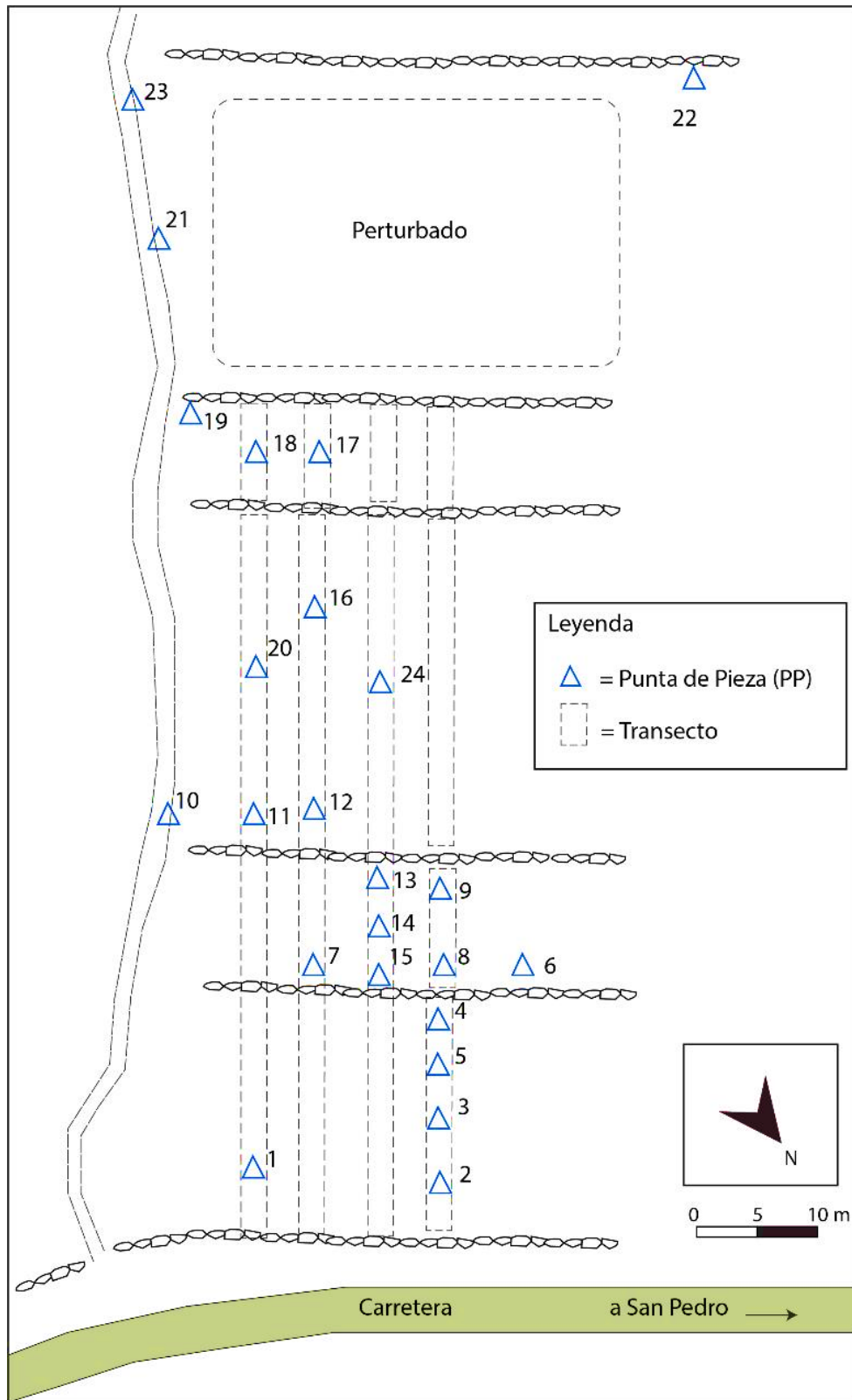


Figure 7.37. Schematic plan map of Pa Mes Bajo (FS6), showing piece-plot locations as blue triangles.

Table 7.13. Ceramics recovered from Pa Mes Bajo

Phase	Type	Count	%	% by Phase
Late Preclassic to Protoclassic	NARANJA GLOSSY	1	3.13%	6.25%
	ROJO NARANJA ND	1	3.13%	
Middle to Late Classic	SANTA MARTA	9	28.13%	31.26%
	CREMA CON PINTURA ROJO	1	3.13%	
Terminal Classic to Postclassic	San Pedro Tan Café	15	46.88%	46.88%
ND	ND	5	15.63%	15.63%
TOTAL		32	100.00%	100.00%

Interpretation

Although the density of ceramics recovered from Pa Mes Bajo was low, this may have been skewed somewhat by the poor surface visibility, a thicker than average humus layer, and the poor resolution provided by the piece-plot strategy. The presence of ground-stone implements and obsidian in association with the ceramics indicates that the area probably did support a residence and the few recognizable ceramics suggest that the principal occupation occurred during the Middle Classic (c. 400-600 AD) and Late Classic (c.600-900 AD).

Pa Ch'anay Bajo (FS31)

When the PALA project began, the area we refer to as Pa Ch'anay Bajo was heavily overgrown but included several low stone terraces and a large volcanic boulder. Unfortunately, in July of 2015, the area was completely cleared, and these terraces were destroyed, leaving only the large boulder and a gently sloping area of disturbed ground (Figure 7.38). The clearing of this site, did, however, enable us to inspect the large boulder and to conduct a small grab-bag collection of ceramics from the disturbed surface.



Figure 7.38. PaCh'anay Bajo, looking east, showing large boulder in foreground and remnants of destroyed terraces in the background.

Features

Although no petroglyphs or pictographs were observed on the large boulder itself, the clearing of the site revealed the presence of a small portable monument sitting at the base of the boulder (Figure 7.39), which had previously been hidden beneath the vegetation. This monument consisted of a block of stone, measuring approximately 60 cm long x 40 cm wide x 20 cm thick, which may have originally been carved to represent a frog or toad and which contained a shallow, circular basin in the widest portion of the upper surface. Similar monuments have been recorded at Chocla and other sites in the Pacific piedmont (Kaplan 2018). Regrettably, as we had not obtained the landowner's permission, we decided not to collect this monument and it subsequently disappeared.



Figure 7.39. Portable monument at Pa Ch'anay Bajo, now lost.

Artifact and Chronology

A total of 19 ceramic sherds and one piece of obsidian were recovered from Pa Ch'anay Bajo (FS31). The recovered ceramics included Amatlé, San Pedro Rojo, San Pedro Tan Café and Pa K'ucha' Café Negro. These ceramics suggest that this area was principally utilized between the Late Classic and Late Postclassic periods.

Interpretation

The low terraces at Pa Ch'anay Bajo area may have supported residential settlement during the Late Classic to Postclassic periods. The large natural boulder and portable monument, however, suggest some ritual activity also occurred at the site.

Miradors and Defensive Sites

Pa Ch'anay Alto (FS29)

The site of Pa Ch'anay Alto (Figure 7.40) is located almost exactly half-way between the center of Pan Alujaay and the center of San Pedro, on a prominent finger ridge which extends from the north side of San Pedro volcano and ends to the south side of the road to Finca Tzantziapa. The site was located approximately 200 m southeast of Pa Ch'anay Bajo, 100 m southeast of San Pedro Monument 6 (Cumatz), and 250 m south of Punta de Oro (Figure 7.41).



Figure 7.40. Pa Ch'anay Alto, viewed from the road, looking south.

Features

Two retention walls surround the upper portion of the ridge at Pa Ch'anay Alto and serve to enclose the crest of the ridge. The construction style of these walls appears similar to that of the terrace walls at Pan Alujaay, involving roughly shaped blocks of volcanic stone.

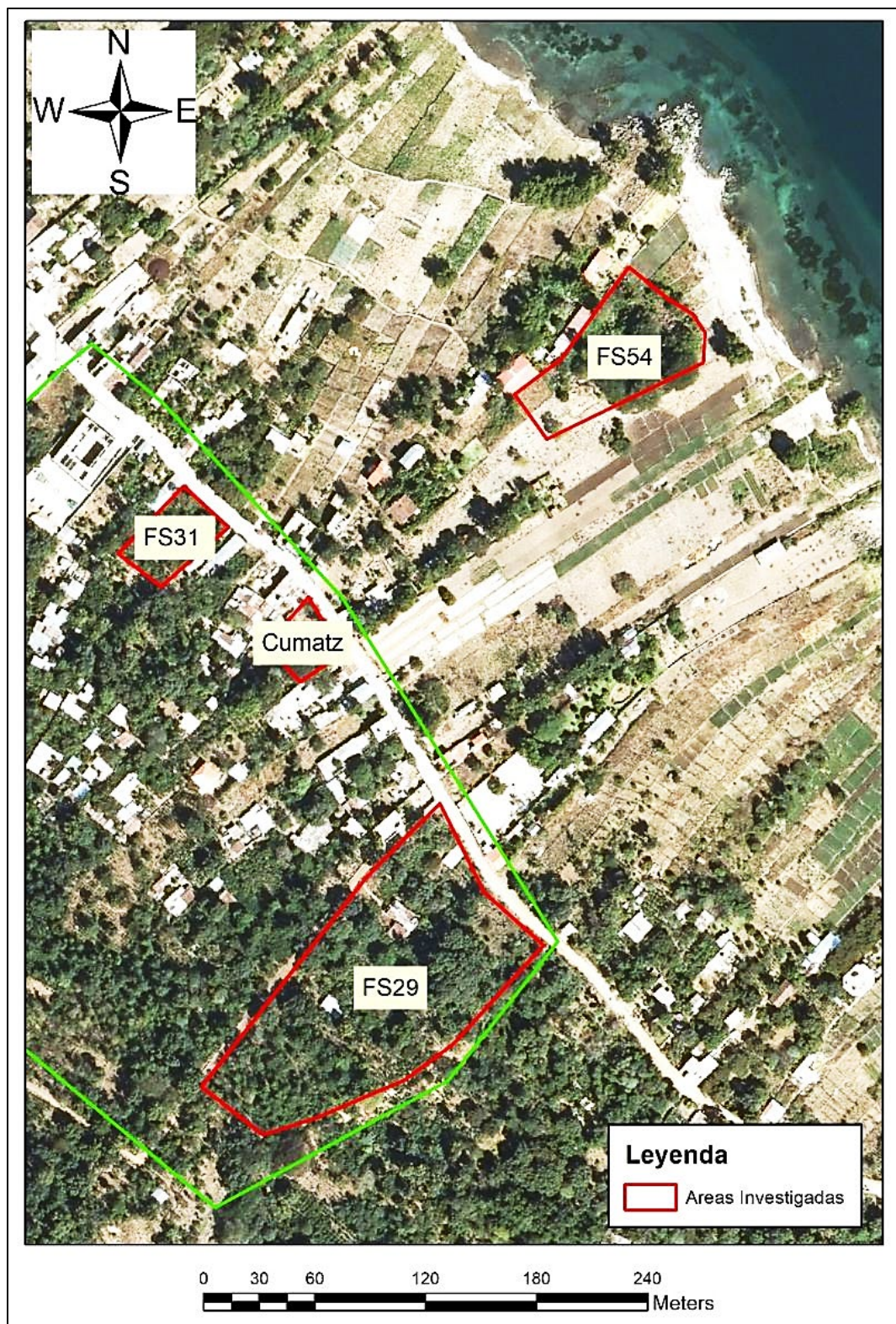


Figure 7.41. Location of investigated sites near Pa Ch'anay Alto.

Unfortunately, most of the top of the ridge is split between private properties and we did not obtain permits to investigate these areas. However, some public paths passing over this area provided the opportunity to obtain some obsidian and ceramics from the surface.

Artifacts and Chronology

Only nine sherds and two obsidian artifacts were recovered from Pa Ch'anay Alto. This small sample included Early Classic types such as Esperanza Flesh (n=3) and San Juan Morado (n=1), Middle to Late Classic types such as Santa Marta Ware (n=2) as well as Postclassic types such as Pan Alujaay Rojo (n=1) and Ante (n=1). The obsidian artifacts have not yet been analyzed.

Interpretation

Given its strategic location, overlooking one of the principal land routes into San Pedro, it seems likely that this site served a defensive function in times of high population density. At other times the site may have hosted a small residential group.

Punta de Oro (FS54)

The site of Punta de Oro (also known as *Tza'n Canac* or *Tza'n Ch'anay*) is located on a prominent peninsula to the east of downtown San Pedro and is approximately 250 m north of the site of Pa Ch'anay Alto (see Figure 7.41). Like other shoreline sites, the site of Punta de Oro was dominated by large volcanic blocks of stone, representing the remains of an ancient lava flow stemming from San Pedro volcano. Elevations at the site were between 1560 and 1570 m AMSL.

Features

The northern end of the peninsula included several small enclosures that had been created by clearing small and medium boulders from a roughly square area. The most impressive of these is located at the northernmost point of the peninsula (Figure 7.42). The floor level within this enclosure was about 1 m below the natural surface and thus would have required quite a significant amount of labor to construct. Similar features exist at

Chuk'muk and may have been used to provide shelter and protection for small perishable structures.



Figure 7.42. Sunken stone enclosure, Punta de Oro.

Ceramics

The ceramics recovered from Punta de Oro included Usulután decorated wares dating to the Late Preclassic period and Glossy Black ceramics with fluting that probably dates to the Early Classic. The site also produced small quantities of Esperanza Flesh and Amatlé.

Interpretation

The function or functions of the Punta de Oro site and its principal enclosure are unclear at this time. The unusual semi-subterranean nature of the enclosure and its 180-degree views along the shore to the east and west, suggests that it may have served as a lookout point during times of unrest. However, it would also have made an attractive location for religious rituals and a domestic function cannot be ruled out. Given the long

history of use evidenced by the ceramics, it is possible that it served each of these function at different times in its history.

Alta Vista (FS56)

The site of Alta Vista (FS56) is located on a prominent finger ridge, approximately 1.3 km southeast of Pan Alujaay (FS7) (Figure 7.43). This site was visited twice during the PALA investigations and although the surface visibility at the site was excellent, no cultural materials were encountered. Nevertheless, a faint oval shaped pictograph (discussed in Chapter 11) and the remnants of a low stone platform or cimiento (Figure 7.44) were identified and suggest that the site was utilized in prehispanic times, probably for ceremonial or ritual activities.

Features

The pictograph is located at the southern end of the site, adjacent to the existing dirt road. It consists of a simple red oval which has been painted on the upper surface of an oval shaped boulder, which measures approximately 1.2 m long, 0.6 m wide, and .5 m high.

The cimiento consisted of a single L-shaped line of stones located in a central position on the ridge. The stones appeared to mark the edge of a square area of approximately 4 x 4 m.

Interpretation

Boasting stunning views over the lake, the site of Alta Vista would have been an attractive location for ritual activities, while its exposure to the elements and lack of fertile soil would have made it an unlikely location for habitation. Red pictographs at Las Golondrinas and at Lake Amatitlan have been dated to the Early Preclassic period (c.1450-1000 AC) (Robinson, et al. 2005a) and so it is possible that the pictograph at Alta Vista is one of the earliest cultural features in the project area. It is therefore possible that such features were created by pre-ceramic, semi-sedentary, hunter-gatherer groups, like those that Kenneth Brown argues formed a significant portion of the population of the Quiche Basin up until the Middle Preclassic (Brown 1980; Brown 1984).



Figure 7.43. Location of Alta Vista (FS59) on Google Earth, 2017.

Although it appears that ceramic-using agricultural groups were already settling permanently at sites along the north shore by the end of the Early Preclassic (c.900 BC) (Bruchez 1997), the ceramic evidence from the PALA project area suggests that this part of the lake was not settled permanently until the end of the Middle Preclassic. This area may therefore have been utilized by hunter-gatherer groups until around 400 BC.

The location of the pictograph, on a prominent ridge, in a highly visible location (adjacent to what is probably a very ancient path), suggests that the symbol may have represented a boundary marker. For this reason, Alta Vista has been classed as a Boundary Site.



Figure 7.44. Remnants of low stone platform or cimiento at Alta Vista, looking southeast.

7.3 ZONE 3. CHI KAQAJAAY

Ritual-Admin Centers

Chi Kaqajaay

The site of *Chi Kaqajaay* occupies a broad upland valley located between *Cerro Paquixtan* and the southern rim of the Atitlan caldera. Elevations at the site range from 2130 to 2160 m AMSL. The site includes a compact Ritual-Administrative area located on the summit of a small forested hill (Area B) situated near the center of the valley, and an extensive area of residential settlement, spanning much of the valley floor and extending up the slopes of Cerro Paquixtan (Figure 7.45). Investigations at the site included systematic surface collection in two residential areas (Areas A and C) and general surface collection in 6 other areas of the site, including the site core (Area B).

Monumental Architecture

The monumental core of Chi Kaqajaay occupied the artificially levelled summit of a small hill and consisted of two circular mounds (Mounds 1 and 2) measuring 3-4 m in height and approximately 20 m in diameter, and three low (.5 m high) earthen mounds / platforms, arranged around a small square plaza.

Mound 1 appears to be the better preserved of the two but is now partially obscured by an elaborate Catholic shrine and concrete access steps (Figure 7.46). Mound 2, whose matrix clearly includes rough cut stones as well as earth has, an oblong stone in front of it, which, if in situ, may represent the base of a long disappeared stela. (Figure 7.47).

These two mounds occupy the northwest and southwest sides of a small rectangular plaza. Low rises measuring less than one meter in height can be seen in the eastern and western corners of the plaza and likely denote the remnants of smaller platforms. The one in the eastern corner is lined with a number of roughly cut stones, which could represent the remnants of a foundation.

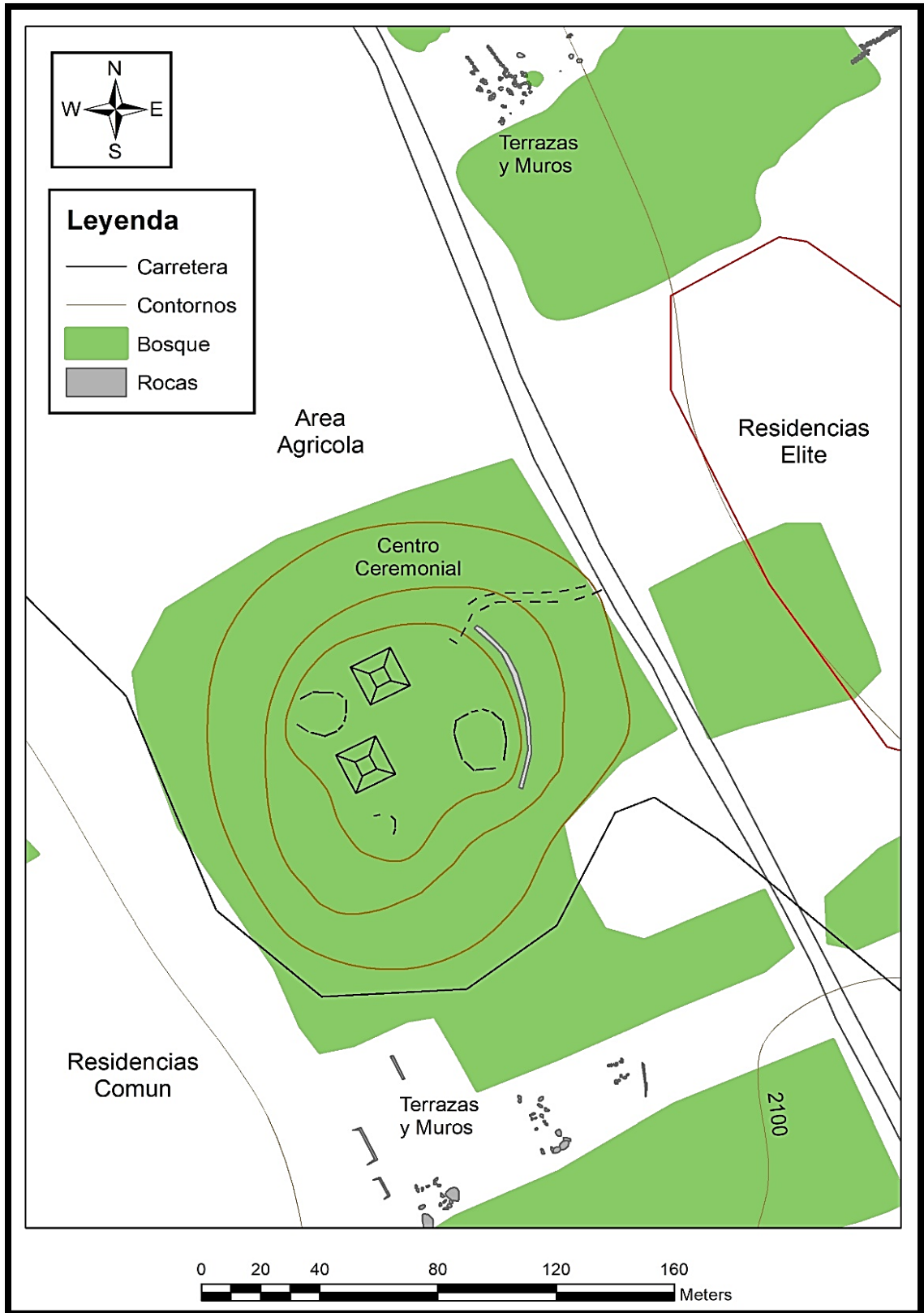


Figure 7.45. Map of Chi Kaqajaay, showing location of mounds, walls and terraces.



Figure 7.46. Mound 1, Chi Kaqajaay, Area B, looking northwest.



Figure 7.47. Mound 2, Chi Kaqajaay (FS3), Zone 3, showing possible stela base in foreground. Looking northwest.

Because the central plaza of Chi Kaqajaay (Area B) was located in mature forest and had probably never been cultivated, the ground surface was obscured by leaves and a thick layer of humus. Thus, despite a careful search, no ceramics were recovered from the central plaza or the surface of the mounds. However, the well-worn dirt path that approached the site center from the road did provide us with two general collections which produced a total of 39 sherds (Table 7.14).

Artifacts and Chronology

The small collection of ceramics recovered from the access path to the mounds at Chi Kaqajaay was dominated by Early Classic types (n=20, 51.28%), Middle to Late Classic ceramics (n=13, 33.33%) were the next most common. Late Preclassic to Protoclassic ceramics (n=3, 7.69%), and Postclassic ceramics (n=2, 5.13%) were only lightly represented.

Table 7.14. Ceramics recovered from Chi Kaqajaay, Area B.

PHASE	TYPE	COUNT	% OF TOTAL	% by Phase
LATE PRECLASSIC - PROTOCLASSIC	GLOSSY NARANJA	1	2.56%	7.69
	ROJO O NARANJA FINA	1	2.56%	
	CAFÉ GRIS PRECLASICO	1	2.56%	
EARLY CLASSIC	CAFÉ NEGRO BURDO	6	15.38%	51.28
	CAFÉ ROJIZO MATTE	2	5.13%	
	ESPERANZA FLESH	5	12.82%	
	OSUNA COARSE WARE	1	2.56%	
	ROJO BURDO	5	12.82%	
	MAHOGANY WARE	1	2.56%	
MIDDLE TO LATE CLASSIC	SANTA MARTA WARE	6	15.38%	33.33
	ZACULEU SCRAPED	1	2.56%	
	BULUX ROJO PEINADO	4	10.26%	
	RED ON CREAM	2	5.13%	
LATE POSTCLASSIC	PA K'UCHA' CAFÉ NARANJA	1	2.56%	5.13
	PA K'UCHA' CAFÉ-NEGRO	1	2.56%	
ND	ND	1	2.56%	
Total		39	100%	100%

Of interest is that two of the Late Classic sherds (Zaculeu Scraped and Bulux Rojo) were non-local types not recovered from elsewhere in the project area, suggesting the area may have been visited by individuals from as far away as the Totonacapan Valley and Huehuetenango. This may indicate that the site was already functioning as a pilgrimage site by this time.

Interpretation

Small mounds of earth and stone are most common in the Late Preclassic period in the highlands and the presence of a possible plain stela and small quantities of Late Preclassic ceramics on the slopes below the main plaza, supports the idea that the mounds here were constructed in the Late Preclassic period.

The high density of domestic refuse in the fields surrounding this monumental center (Areas A and C-H, discussed below) indicates that this center functioned as the ritual-administrative core for a reasonably large (c.10-15 ha) settlement that probably reached its peak population during the Middle Classic period (c.400-600 AD) but which continued to be an important settlement until at least the end of the Late Classic.

The lack of San Pedro Burnished Ware in the Monumental Center indicates that the monumental center had ceased to have an administrative function by Terminal Classic times (c.900-1100 AD). Nevertheless, the site's importance as a pilgrimage center has endured up to the current day and the mounds here continue to be utilized for Maya ceremonies. Its continued importance for Maya daykeepers of San Pedro has been discussed by Judith Maxwell and Ajpub Garcia Ixmata (2008), who note that the site is viewed as the "Southern Guardian" of the community of San Pedro. The corresponding "northern guardian" is located on the rocky peninsula of Pa'Tawal (FS8, see discussion in Chapter 6).

The fact that the site's location, near the San Pedro / Santiago municipal boundary surely has historical significance and ethnohistorical research indicates that the land between Chi Kaqajaay and the current municipal boundary was the focus of land disputes between the two towns up until the late 19th century (Caravantes 2002), when most of this land was awarded to San Pedro. This indicates that, originally, the boundary between the two communities was located very close to the center of the site of Chi Kaqajaay.

It is not hard to see why Chi Kaqajaay would have attracted ritual activity from early times. Its position in a valley between two massive mountain peaks (San Pedro Volcano and Cerro Paquisis) and at the center of a vast expanse of prime agricultural land, which must have been capable of producing enormous amounts of corn, make the site feel like the quintessential Maya place of abundance. The presence of a natural spring at the base of Cerro Paquisis, which made permanent life at the site possible, must also have been seen as confirming Maya beliefs in mountains being the source of life itself (references).

The abundance of maize that could be produced here and the fact that its growing season was longer than that of the shoreline, suggests that it may have provided a vital maize reserve for some of these communities, perhaps becoming particularly important during times of drought, when its level and poorly drained soils may have retained more moisture than the sloping soils near the lake.

In addition, ethnographic research by John Prybot has revealed that several walking trails to the coast converged at this site before ascending the caldera wall at Cerro Paquisis and then descending to the market towns of Suchitepéquez, i.e. Chicacao (ancient Xeoj), San Juan Nagualapa, San Antonio Suchitepéquez (ancient Xe' Kotzij) and Santo Tomas la Union, adjacent to the ancient regional capital of Chocoma. Located approximately mid-way between the lakeshore and these piedmont towns, Chi Kaqajaay was well positioned to act as a stopover for travelling merchants who may have carried word of its natural abundance to neighboring regions, thus elevating its status to that of a pilgrimage site.

Residential Areas

Residential settlement was indicated to the south, west and northeast of the core of Chi Kaqajaay by low walls, field clearance cairns, modified terraces, and by dense concentrations of surface ceramics and obsidian. Cultural materials were obtained from one large property to the south of the mounds (Area A) and six properties to the north and northeast of the mounds. Systematic surface collection, however, was only conducted in Areas A and C.

Chi Kaqajaay, Area A

Area A was located directly southeast of the epicenter and included approximately 4400 m² of open agricultural fields (Figure 7.48). A total of 58 controlled collections (CSC), 6 piece-plots (PP 1-6) and two general collections (GSCs 1 and 2) were conducted in this area. These collections produced a total of 1093 pieces of ceramics, 5 pieces of obsidian, one metate and one whetstone. Two additional metate fragments were noted in the field but not collected.



Figure 7.48. Chi Kaqajaay, Area A, looking west, southwest towards Cerro Pa K'isiis and showing possible residential terrace remnants.

All of the metates were of the Type 1, basin variety which is typically considered to predate the Late Classic. The highest ceramic densities were encountered at CSC 15 (n = 71), CSC 22 (n = 65), CSC 24 (n = 46), CSC 32 (n = 46) and CSC 43 (n = 40) and the average density for the area as a whole was 17.2 sherds per CSC. Of the total of 1093 ceramics recovered from Area A, 524 were classified and measured (Table 7.15).

Table 7.15. Ceramics recovered from Chi Kaqajaay, Area A by phase and type.

PHASE	TYPES / WARES	COUNT	%	% BY PHASE
LATE PRECLASSIC - PROTOCLASSIC	CAFÉ GRIS PRECLASICO	15	2.86%	4.01
	CAFÉ PULIDO ACANALADO	1	0.19%	
	KAMINALJUYU CAFÉ NEGRO	1	0.19%	
	ROJO Y NARANJO FINO	4	0.76%	
EARLY CLASSIC	AMARILLENTE ND	3	0.57%	28.24
	CAFÉ NEGRO BURDO	23	4.39%	
	CLASICO NEGRO	1	0.19%	
	CREMA ROSADA SOBRE PASTA ROJA	1	0.19%	
	ESPERANZA FLESH	106	20.23%	
	MAHOGANY	2	0.38%	
	MORROCCO ROJO	1	0.19%	
	OSUNA COARSE WARE	5	0.95%	
	ROJO BURDO	5	0.95%	
	TAN ROSADA ND	1	0.19%	
MIDDLE TO LATE CLASSIC	AMATLE	13	2.48%	62.40
	BICROMO ND	2	0.38%	
	CAFÉ ROJIZO ND	2	0.38%	
	CREMA CON ROJO	16	3.05%	
	CREMA ND	6	1.15%	
	SANTA MARTA WARE	288	54.96%	
Terminal Classic to Postclassic	PLOMIZO GRIS OSCURO	1	0.19%	1.53
	SP ROJO	1	0.19%	
	SP TAN CAFÉ	6	1.15%	
Late Postclassic	ACROPOLIS WARE	3	0.57%	0.95
	XOLA NARANJA	2	0.38%	
ND	ND	15	2.86%	2.86
TOTAL		524	100%	100%

Artifacts and Chronology

The analyzed ceramics were dominated by Santa Marta Ware, which made up 54.96% (n=288) of the recovered ceramics and which we view as spanning the Middle and Late Classic periods (c.500 – 800 AD). Santa Marta Ware appears to have been the most common utilitarian ceramic in use during these times and appears to have been used principally for deep bowls and jars with strongly everted rims, which ethnographic research

(Rosales 1949) suggests were probably used for domestic water storage. Another common form in Santa Marta Ware was the solid or trough-handled incensario, some of which terminated in modeled hands.

Other Late Classic types recovered from Area A included Red on Cream Bichrome (n=16, 3.05%) and Amatlé Ware (n=13, 2.48%). After Santa Marta Ware, the next most common type recovered from Area A was Esperanza Flesh (n=106, 20.23%) which is diagnostic of the Early Classic period (c.200-500 AD). The other Early Classic types were mostly present in small quantities and are dated to the Early Classic due to either their occurrence in Early Classic contexts at Semetabaj (e.g. Mahogany Ware) or due to their stratigraphic positioning in our own San Juan excavations (described in Chapter 10). Late Preclassic-to-Protoclassic types made up a small proportion (4.01%) of the overall assemblage.

Chi Kaqajaay, Area C

Area C was located on the lower slopes of Cerro Paquixtan, between 200 and 300 m north of the mounds in Area B. It consisted of two adjacent fields, one of which was level and the other of which consisted of gentle to moderate slope, portions of which bore the remnants of ancient terraces. Area C covered a total area of approximately 6,400 m².

A total of 77 controlled collections, 9 general collections, and 9 piece plots were conducted in this area (Figure 7.49) and produced: 1547 pieces of ceramics, 20 pieces of obsidian, 1 stone tool, and 4 special artifacts. The maximum sherd density (n=54) was recovered from CSC 12 and the average density per CSC was 15.7, only slightly lower than the average of 17.2 from Area A. Of the 1547 sherds recovered from Area C, 701 were classified and measured (Table 7.16)

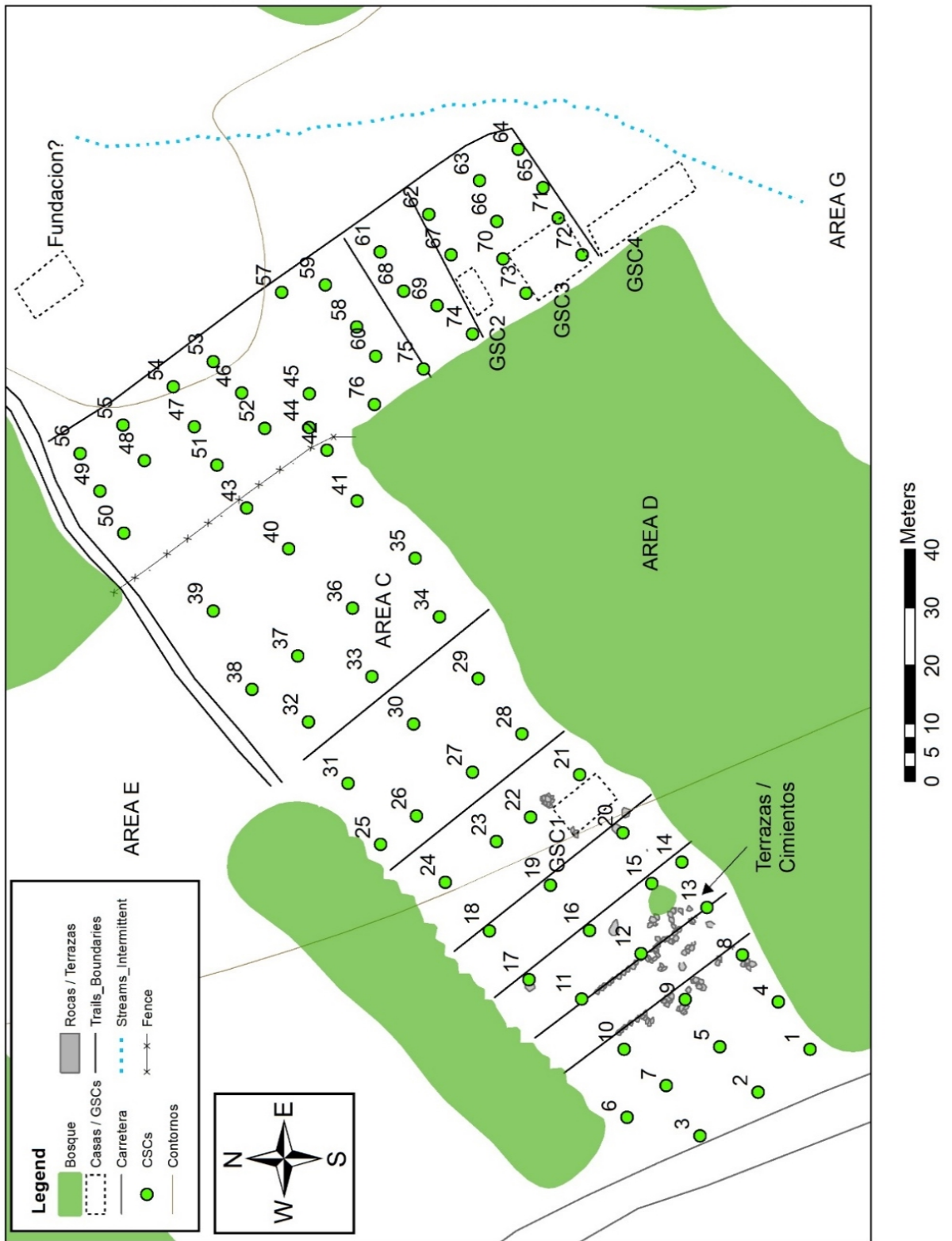


Figure 7.49. Schematic plan of Chi Kaqajaay, Area C, showing CSC and terrace locations.

Table 7.16. Ceramics from Chi Kaqajaay, Area C.

Date	Type	Total	% of Total	% by Phase
LATE PRECLASSIC TO PROTOCLASSIC	GLOSSY NARANJA	1	0.14%	10.68
	KAMINALJUYU CAFÉ NEGRO	7	1.00%	
	MARUCA ZONADA	3	0.43%	
	MORROCCO ROJO	2	0.28%	
	NARANJA PULIDA CON ROJO	1	0.14%	
	NEGRO INCISO	1	0.14%	
	ROJO Y NARANJO PRECLASICO	8	1.14%	
	CAFÉ GRIS PRECLASICO	52	7.41%	
EARLY CLASSIC	AMARILLENTE	4	0.57%	28.35
	CAFÉ NEGRO BURDO	45	6.41%	
	CREMA ROSADA, SOBRE PASTA ROJA	6	0.85%	
	ESPERANZA FLESH	93	13.25%	
	OSUNA COARSE WARE	1	0.14%	
	PASTA ROSA MICACEO	2	0.28%	
	ROJO BURDO	42	5.98%	
	SAN JUAN LOCAL	1	0.14%	
	STREAKY	2	0.28%	
	MAHOGANY	3	0.43%	
MIDDLE TO LATE CLASSIC	SANTA MARTA WARE	318	45.30%	55.41
	AMATLE	11	1.57%	
	CREMA CON ROJO	37	5.27%	
	CREMA ND	18	2.56%	
	PLOMIZO NARANJA CREMA	2	0.28%	
	ROPAGO	1	0.14%	
	TAN ROSADA ND	1	0.14%	
	TIQUISATE	1	0.14%	
Terminal Classic to Postclassic	SP ROJO	2	0.28%	0.99
	SP TAN CAFÉ	5	0.71%	
Postclassic	CHUITINAMIT WARE	2	0.28%	1.56
	ANTE	3	0.43%	
	PA K'UCHA' CAFÉ NARANJA	1	0.14%	
	PA K'UCHA' CAFÉ-NEGRO	1	0.14%	
	XOLA NARANJA	3	0.43%	
ND	ND	21	0.14%	2.99
TOTAL		701	100%	100%

Artifacts and Chronology

Like the assemblage from Area A, the assemblage from Area C was dominated by Santa Marta Ware (n=318, 45.3%) and Esperanza Flesh (n=93, 13.25%) although both made up slightly lower percentages of the total in Area C than they did in Area A. The most notable difference in the Area C assemblage, however, was the greater percentage of Late Preclassic-Protoclassic diagnostics (10.42%). The diversity of Late Preclassic materials in this area, indicates that this was likely the elite residential area as opposed to Area B, which appears to have been a commoner residential area.

Chi Kaqajaay, Areas D-H

In addition to the systematic collections conducted in Areas A and C, general collections were conducted in several other areas of this extensive site during general reconnaissance. These areas provided a number of diagnostics that were important for our understanding of this site's long history and indicated that the boundaries of the settlement area extended up the slopes of Cerro Paquixtan and onto the level plateau between Cerros Paquixtan and Chuichumil to the northwest.

Discussion

Considering that previous researchers (e.g. Lothrop 1933; Tax 1937; McBryde 1947; Orellana 1984) have argued that no permanent settlement could exist far from the lake shore, the extent of settlement radiating out from Chi Kaqajaay's core is surprising and clearly attests to the presence of a large settled population. Only the wide plain to the northwest of the center appears to have been left unsettled and this is apparently due to the fact that this area is subject to flooding in the rainy season. As today, this area appears to have thus been reserved for agriculture.

The ceramic evidence recovered from these residential areas indicates that at its peak, during the Middle to Late Classic periods, Chi Kaqajaay was probably one of the largest sites in the Lake Atitlan Basin. Its importance as a religious center and perhaps as a source of emergency maize supplies may have made it a focus of contestation between communities in the San Pedro and Santiago areas during the Terminal Classic and

Postclassic and may explain why the site saw less residential activity during these times and may also explain why, in colonial times, the municipal boundary between the towns of San Pedro and Santiago was located here.

Xe'Juyu'' (FS2)

The site of Xe'Juyu'' (FS2) was located near the municipal boundary between San Pedro and Santiago Atitlán, approximately 6 km southeast of San Pedro La Laguna and 3.6 km west-northwest of Finca Chicayal. The site occupied a gently sloping section of the valley that runs between the southern slopes of San Pedro volcano and the Bay of Santiago at an elevation of between 2,041 and 2,051 m AMSL. The site spanned a now-dry river bed (Figures 7.50 and 7.51) that also passes the site of Xe'Cruz and which, in the past, was probably fed by waters stemming from the natural spring near Chi Kaqajaay.



Figure 7.50. General overview of Xe'Juyu', looking southeast, with dry riverbed in foreground and San Pedro-Santiago road near center of photo.

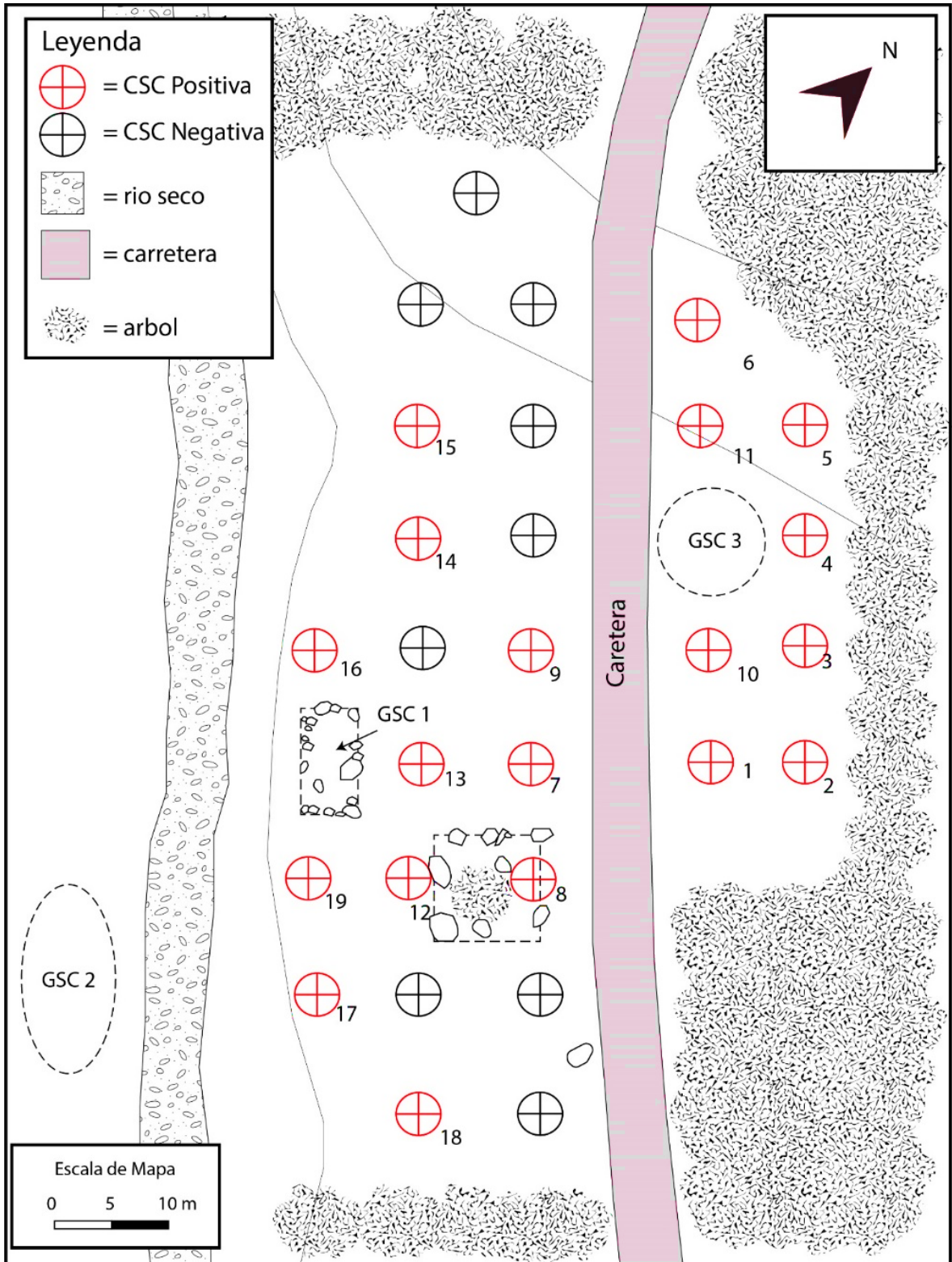


Figure 7.51. Schematic map of Xe'Juyu' (FS2).

The investigated portion of the site occupied areas located on both sides of the existing road, with the southernmost part being bounded by a dry river bed and the northern portion being bounded by thick forest. The site consisted of a relatively dense dispersion of surface artifacts centered on two arrangements of natural boulders, one of which may represent the remains of an albarrada for a perishable structure.

Features

A few médium-sized boulders arranged around a roughly square clearing measuring approximately 5 x 6 m may represent the remnants of an ancient albarrada for a perishable domestic structure (Figure 7.52). A second arrangement of boulders, some with smoothed surfaces, situated under a large avocado tree approximately 20 m to the east of this is suggestive of a food preparation area.



Figure 7.52. Possible remnants of house foundation or stone enclosure.

Surface Collections

Systematic surface collection was conducted at Xe'Juyu' on a 10-m grid and a total of 18 CSCs and four general collections yielded a total of 119 ceramics and two ground stone implements. No obsidian was recovered from the site.

Artifacts and Chronology

Ceramics recovered from the site indicated that the site was occupied from the Early Classic through to the Late Postclassic (Table 7.17). Middle to Late Classic ceramics were dominant, constituting 46.30% of the total. The Middle to Late Classic ceramics included Ropago Ware (n=13, 24.07%), Santa Marta Ware (n=7, 12.96%), Amatle (n=3, 5.96%) and a single sherd of Tiquisate ware.

Terminal Classic to Postclassic diagnostics were the next most common group and mostly consisted of San Pedro Tan café (n=16, 29.63%). A few Late Postclassic diagnostics were also identified, including Fortress White on Red (n=2), Xola Cinnamon (n=3), Xola Naranja (n=2), and Santa Rita Micaceous (n=1).

Table 7.17. Ceramics recovered from Xe'Juyu' (FS2) by phase and type.

PHASE	TYPE	COUNT	% OF TOTAL	% BY PHASE
EARLY CLASSIC	ESPERANZA FLESH	2	3.70%	3.70%
MIDDLE TO LATE CLASSIC	SANTA MARTA	7	12.96%	46.30%
	AMATLE	3	5.56%	
	CREMA	1	1.85%	
	ROPAGO	13	24.07%	
	TIQUISATE	1	1.85%	
TERMINAL CLASSIC TO POSTCLASSIC	SP NEGRO	2	3.70%	35.19
	SP ROJO	1	1.85%	
	SP TAN CAFÉ	16	29.63%	
LATE POSTCLASSIC	FORTALEZA	2	3.70%	14.81
	SANTA RITA MICACEOUS	1	1.85%	
	XOLA CINNAMON	3	5.56%	
	XOLA NARANJA	2	3.70%	
TOTAL		54	100%	100%

Lithic material recovered from the site included two obsidian artifacts and two ground stone implements. The ground-stone items included a cylindrical mano and the corner of what was likely once an unsupported, oval-shaped metate.

Interpretation

The site of Xe'Juyu' appears to have been a small residential site, whose occupation began in the Early or Middle Classic period and extended up until the Late Postclassic. Two arrangements of boulders suggested the former presence of a small domestic structure and a food preparation area. The site likely supported a nuclear household with possible connections to the large center of Chi Kaqajaay, located just 5-600 m to the northwest.

Xe'Cruz (FS1)

The site of Xe'Cruz (FS1) was located just a few meters west of the municipal boundary between San Pedro and Santiago Atitlán. Elevations at the site ranged from 2026 to 2040 m AMSL. The site was situated on a level to gently sloping bench of land. The investigated portion of the site consisted of a recently planted bean field which was bounded to the south by a dry river bed and to the north by the San Pedro-Santiago road (Figures 7.53 and 7.54).

Features

This property had been divided by several low terraces that followed the natural contours of the terrain. The highest point on the property encompassed a large boulder that was approximately 3 m in height, and which bore features that were vaguely anthropomorphic (see Figure 7.53).

Surface Collections

Systematic surface collection was conducted on a 10 m grid at Xe'Cruz (Figure 7.39). A total of 15 controlled collections were conducted and produced a total of 72 ceramics (903.3 g). The highest densities were encountered at CSC 12 (n = 26), CSC 15 (n = 14), and CSC 7 (n = 9), all of which were located in the northwestern part of the site, near the anthropomorphic boulder.



Figure 7.53. Xe' Cruz, Zone 3, looking northwest, showing low terraces and anthropomorphic boulder.

Surface Collections

Systematic surface collection was conducted on a 10 m grid at Xe' Cruz (see Figure 7.39). A total of 15 controlled collections were conducted and produced a total of 72 ceramics (903.3 g). The highest densities were encountered at CSC 12 (n = 26), CSC 15 (n = 14), and CSC 7 (n = 9), all of which were located in the northwestern part of the site, near the anthropomorphic boulder.

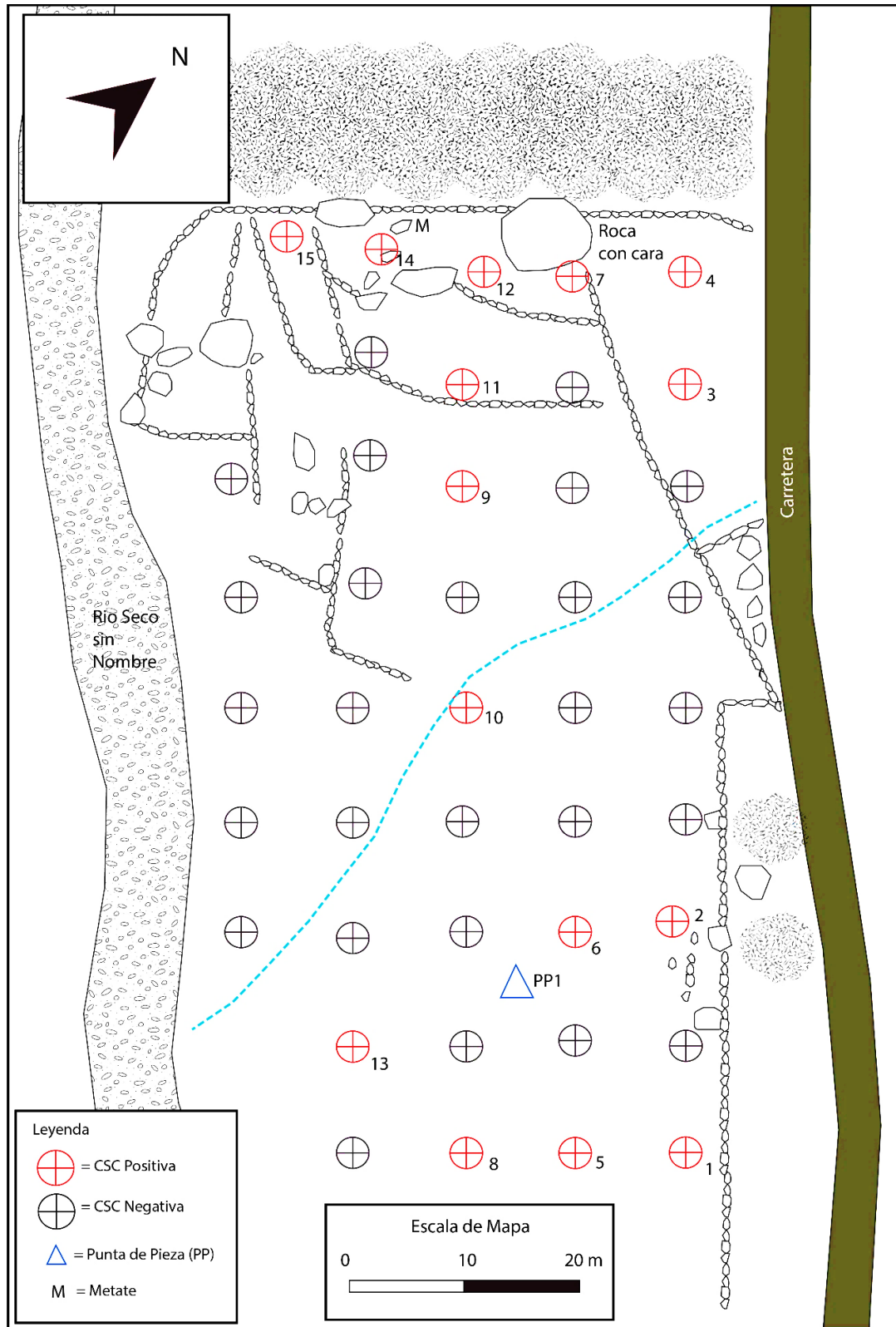


Figure 7.54. Schematic map of Xe'Cruz (FS1), Zone 3.

Artifacts

Of the 72 ceramics recovered from Xe’Cruz, 39 were classified and measured (Table 7.18). The ceramics spanned the Late Classic through to the Postclassic with the most common types being San Pedro Red or Ropago Ware (n=12,30.77%), closely followed by San Pedro Tan Café (n=11, 28.21%) and San Pedro Negro Marron (n=8, 20.51%). Four sherds of Amatle, one sherd of plumbate and one sherd of Acropolis red on white were also recovered.

One prismatic blade was recovered from GSC1 in the south-east part of the site. Visual analysis indicated this blade most likely derived from the San Martin Jilotepeue source. No ground stone tools were recovered from the site, but a slab of limestone located approximately 10 m to the south of the large boulder and within the same terrace section had evidently been used as a metate, resulting in a broad, smooth concavity in its upper surface.

Table 7.18. Ceramics recovered from Xe’Cruz (FS1) by phase and type.

PHASE	TYPE	COUNT	%	% BY PHASE
Late Classic	Amatle	4	10.26%	10.26
Terminal Classic to Postclassic	Plumbate	1	2.56%	82.05
	SP Tan Cafe	11	28.21%	
	SP Negro Marron	8	20.51%	
	SP Rojo o Ropago	12	30.77%	
Late Postclassic	Acropolis Ware	1	2.56%	2.56
ND	ND	2	5.13%	5.13%
TOTAL		39	100%	100%

Interpretation

The vaguely anthropomorphic features of the large boulder at Xe’Cruz may have been sufficient to attract ritual activity. The low density of the surface ceramics and the dearth of utilitarian ceramics (only one handle was recovered) support the idea that this area was principally utilized for ceremonial activities. Its location, adjacent to the main road leading to Chi Kaqajaay, means that the site would have been passed regularly by

people travelling to and from that site. Xe’Cruz may therefore have been utilized principally by merchants or other travelers for brief rituals.

Jaay Aba’aj and Tzan Q’ana Ulew

The site of Jaay Abaj was located approximately 1.1 km north of the center of Chi Kaqajaay, on a level toe-slope of Cerro Chuichumil. The site includes the remains of what appears to have been an individual homestead, including a relatively a well preserved, single-roomed house with an attached temezcal, all constructed with uncut stone blocks (Figure 7.55). Unfortunately, the site was only visited briefly during preliminary reconnaissance and the landowner of the property was never identified. Tragically, when we tried to relocate the site in 2018, we found that the house walls had been dismantled and the stones gathered into several small piles.



Figure 7.55. Stone walled residential structure at Jaay Aba’aj, now destroyed.

Artifacts and Chronology

Fortunately, a few sherds observed on the surface near the house were photographed and these appear to have included Esperanza Flesh and Santa Marta Ware suggesting an Early to Late Classic occupation of the house. This is in keeping with the stone-wall construction which is identical to that seen at some of the surviving house remains at Chuk'muk, near Santiago Atitlán, most of which also date to the Early or Late Classic period (Chocano Alfaro 2009).

Interpretation

Although the small Jaay Abaj site appears to represent an individual homestead, its isolated position and its vantage point, overlooking a bend in the road between Chi Kaqajaay and San Pedro, suggests that it may also have functioned as a guard house. Alternatively, the site may be associated with a larger site located approximately 250 m to the east, in an area known as *Tzan Cana Ulew* (meaning “at the point of the yellow earth”).

This site was identified in 2018 during our research on San Pedro's ancient trails. One of these trails passed through this previously unidentified site, where we observed a scatter of ceramics and lithic material covering an area of approximately 80 x 100 m (Figure 7.56). Although no collections were made, ceramics observed on the surface included Early to Late Classic diagnostics (e.g. Esperanza Flesh, Amatle and Santa Marta Ware) as well as some Postclassic material (including Acropolis Ware).

As the site does not appear to be associated with any monumental architecture, this site was most probably an outlying rural cluster of the larger community of Chi Kaqajaay, located a little over 2 km to the south, although it might have become an independent village by the Postclassic. According to Juan and Antonio Matzar, a second natural spring emerges at the base of the mountains on the opposite side of the valley, just 1 km west of the site and thus the site could have been occupied year round.



Figure 7.56. Cornfield containing the site of Tzan Q'ana Ulew, looking southwest.

7.4 ZONE 4: SAN JUAN LA LAGUNA

Invisible Centers

Xe Kuku Juyu (FS27)

Due to the almost complete lack of green space within the central area of San Juan La Laguna, only one small general collection was conducted in this area and took place within the yard of a private residence located just a few meters from the main municipal building. This collection produced just 13 small sherds and two obsidian fragments. Unfortunately, none of the sherds could be securely identified.



Figure 7.57. Center of San Juan La Laguna on Google Earth, showing location of FS27.

The paucity of the archaeological material recovered within the center of San Juan should not be taken as an indication that the site was uninhabited in prehispanic times. The field directors were told by several reliable San Juan residents that a wealth of artifacts was

uncovered during excavations for the construction of the covered market, all of which subsequently disappeared. As far as we could ascertain no photographic or documentary evidence of these discoveries exists.

That the existing town overlies an area of prehispanic settlement is also indicated by the large quantity of artifacts held in the private collections of several residents. One of these collections, which I had the opportunity to visit and photograph, was truly substantial, containing an estimated 50 to 75 portable stone objects and around 100 complete or almost complete ceramic vessels.

Ethnohistory

Local historian and lifetime resident of San Juan, Benedicto Ixtamer, writes in his popular blog that the original settlement of San Juan (i.e. San Juan Antigua) was decimated by disease, a punishment that was brought on these people by the sorcerer/dwarf Kaqikaxol in retaliation for his expulsion from the town. Ixtamer records that following this event the survivors established a new settlement in the current location of San Juan, which they then named Cho Kuku Abaj, meaning “place of the stone jar”.

A probable variation of this name, written *Xe Cucu Juyu*, which means “below the jar hill”, appears alongside the ancient name for San Pedro (*Chi Tzunun Choy*) in a section of the Anales of the Kaqchikeles describing places visited by this group during their early wanderings (Maxwell and Hill 2007: 64).

Ritual-Admin Centers

San Juan Antigua

The site of San Juan Antigua is located to the southwest of the current town and appears to have included a monumental core and an extensive residential zone centered upon a roughly oval-shaped plateau (Figure 7.58), which overlooks the Rio Seco to the southwest and may once have extended to cover much of the area occupied by the existing town. Elevations at the site range from 2130 to 2160 m AMSL.

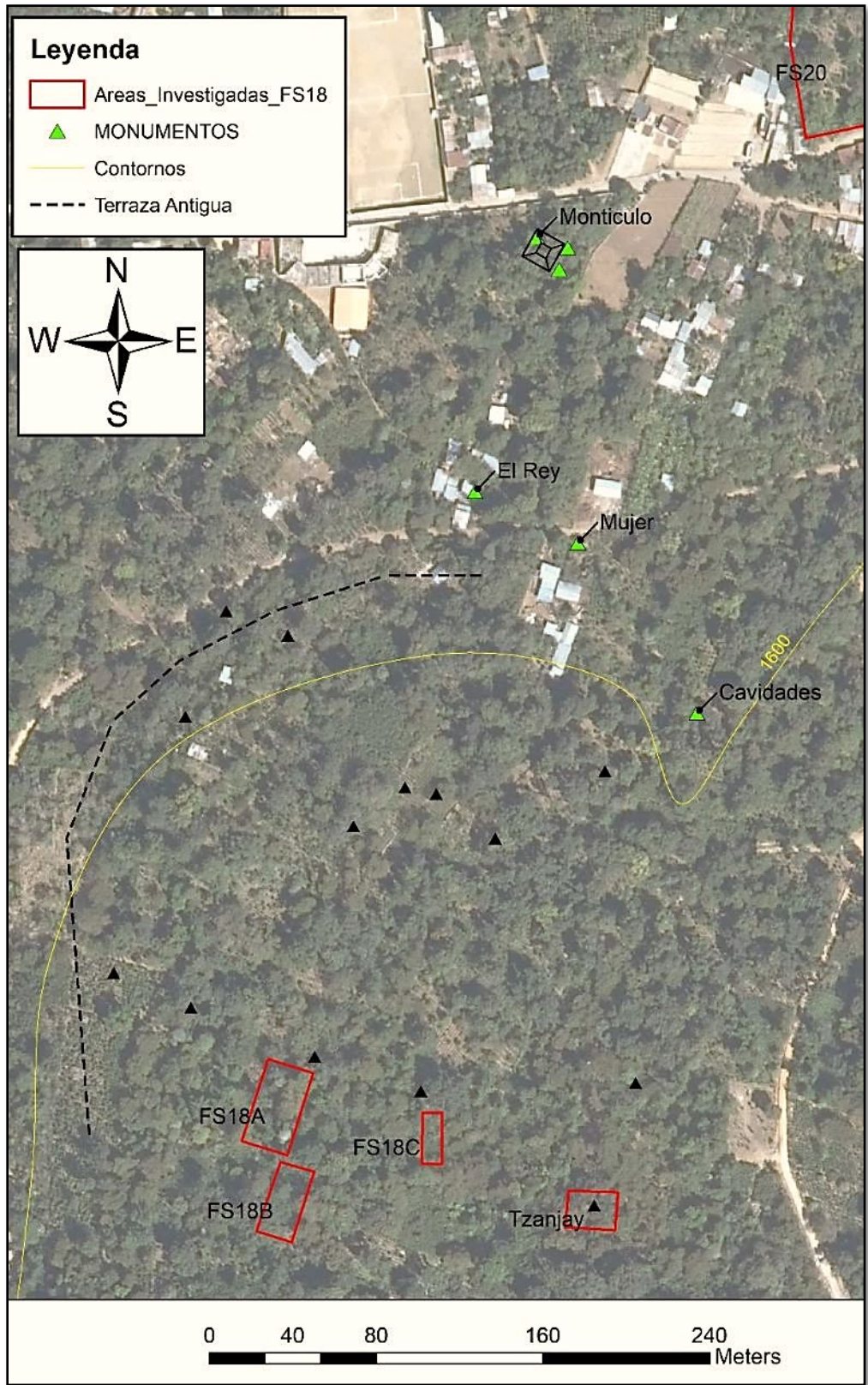


Figure 7.58. Location of Mound 1, monuments, and surveyed parcels, San Juan Antigua.

Monumental Architecture

As discussed in Chapter 4, Lothrop documented the existence of a plaza with five mounds to the southwest of San Juan during his reconnaissance of the area in 1928. Unfortunately, only one of these (Mound 1 / Cerro Encantado) was identified during the current survey (Figure 7.59). However, the remnants of others may be hidden on adjacent properties, which were not accessible at the time of the PALA survey.

Mound 1 (Cerro Encantado) is in a poor state of preservation and has obviously suffered several looting attempts. Two lines of stones located near the top and on one side of the mound, however, indicate that the mound once had a stone casing. Nevertheless, the casing stones have long since been robbed, leaving only a core of dirt and debris.

Although no pottery was recovered from the vicinity of the mound itself, the use of stone in construction and the presence of plain stelae indicate that it probably dates to either the Late Preclassic or Terminal Preclassic, making it contemporary with other sites with plain stelae such as Samabaj. This is supported by the dense amount of pottery dating to these periods recovered from the surface collections and excavations conducted in Parcels A-C, discussed below.

A small grab bag collection of ceramics from the adjacent field, which may have been part of the main plaza of the site, included two sherds of Glossy Black ware and four sherds of Esperanza Flesh, diagnostics of the Late Preclassic and Early Classic respectively.

Plain Stelae and Altar

The remaining mound in San Juan Antigua has two smooth stones near its base, one that is straight and thin and seems to represent a stela, and one that is thicker and could represent an altar (see discussion in Chapter 11). Approximately 30 m southeast of this, adjacent to the property boundary, is a second plain stela. The apparently in situ position of this stela suggests that the remnants of a second mound may lie on the adjacent property.



Figure 7.59. Mound 1 at San Juan Antigua, looking east.

Residential Zones

San Juan Antigua, Areas A-C

The highest density of surface artifacts was encountered to the southwest of the monumental center and extended over a large raised area that had been delimited by a 1 to 2-m high retaining wall. Several small mounds of earth and rock piles in this area indicates that this was probably the main residential area of the prehispanic settlement. Surface Collections were conducted in three small coffee plots (Areas A, B and C) located at the southwestern edge of this residential zone.

Parcel A

Parcel A consisted of a small agricultural plot measuring approximately 25 m east-west x 35 m north-south (Figure 7.60). The property was being used for coffee, maize, and bean cultivation at the time of the investigations. The terrain within this parcel was level

to gently sloping and encompassed three low terraces, which followed the aspect of the slope, rising from north to south.

A total of 24 controlled surface collections were made on a 5-m grid and produced a total of 157 pieces of ceramic and 2 pieces of obsidian. The ceramics included 118 body sherds, 28 rims, 6 handles, and 5 bases.

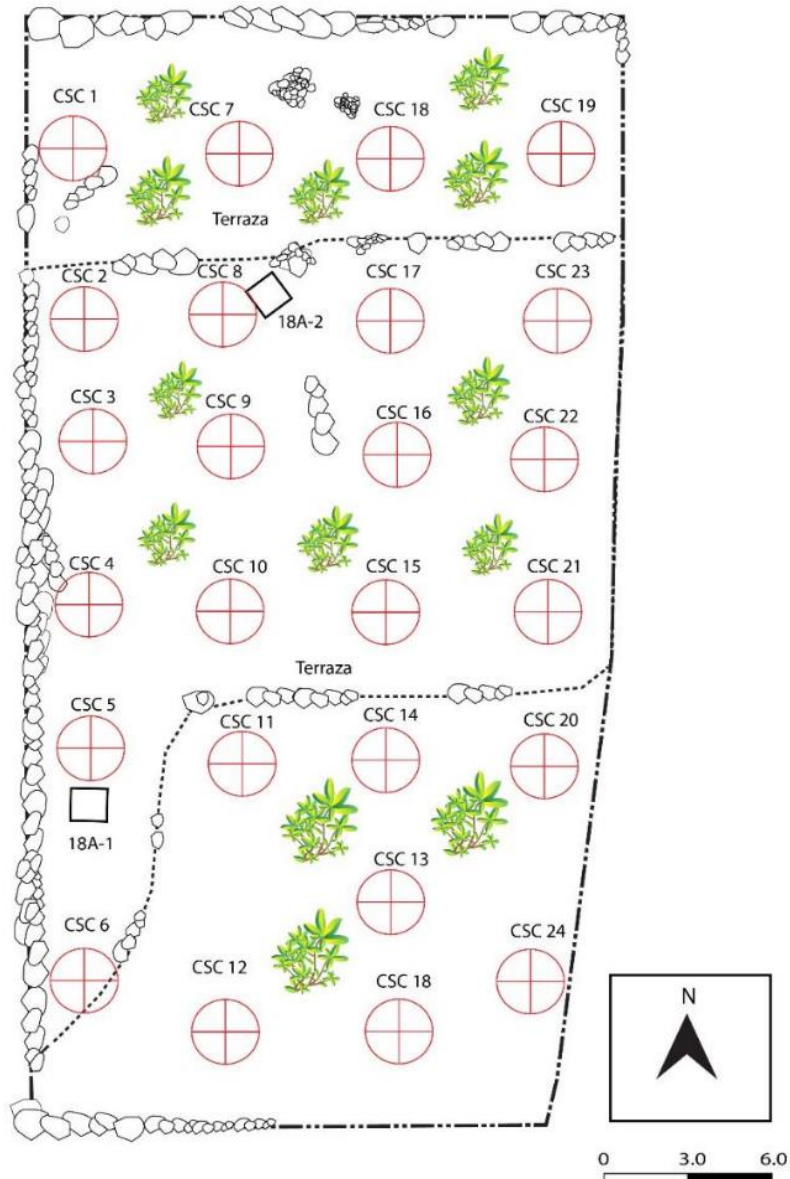


Figure 7.60. Schematic plan of San Juan Antigua, Area A, showing CSC locations and Test pit locations.

Parcel B

Parcel B was located directly southeast of Parcel A and represented another indistinct coffee field (Figure 7.61). The land within this parcel was gently sloping from south to north. Several heaps of stones appeared to indicate the possible remnants of house foundations, walls or dismantled terraces. Twenty CSCs, three piece-plots and four general collections yielded a total of 225 ceramics and four pieces of obsidian.

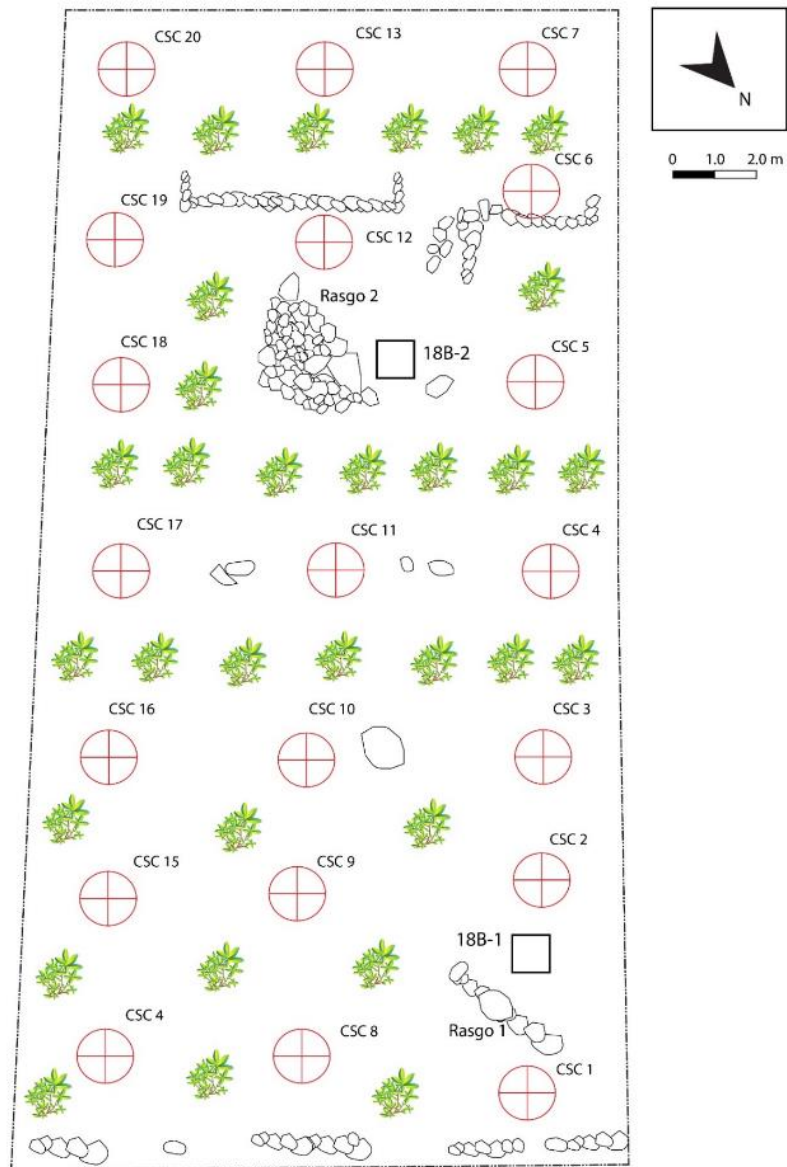


Figure 7.61. Schematic plan of Parcel B, San Juan Antigua.

Parcel C

Parcel C was located to the east of Parcel A and consisted of a level to gently sloping coffee plot that measured approximately 15 x 25 m (Figure 7.62). Ten controlled collections were made in this parcel and recovered a total of 146 ceramic sherds and 4 pieces of obsidian.

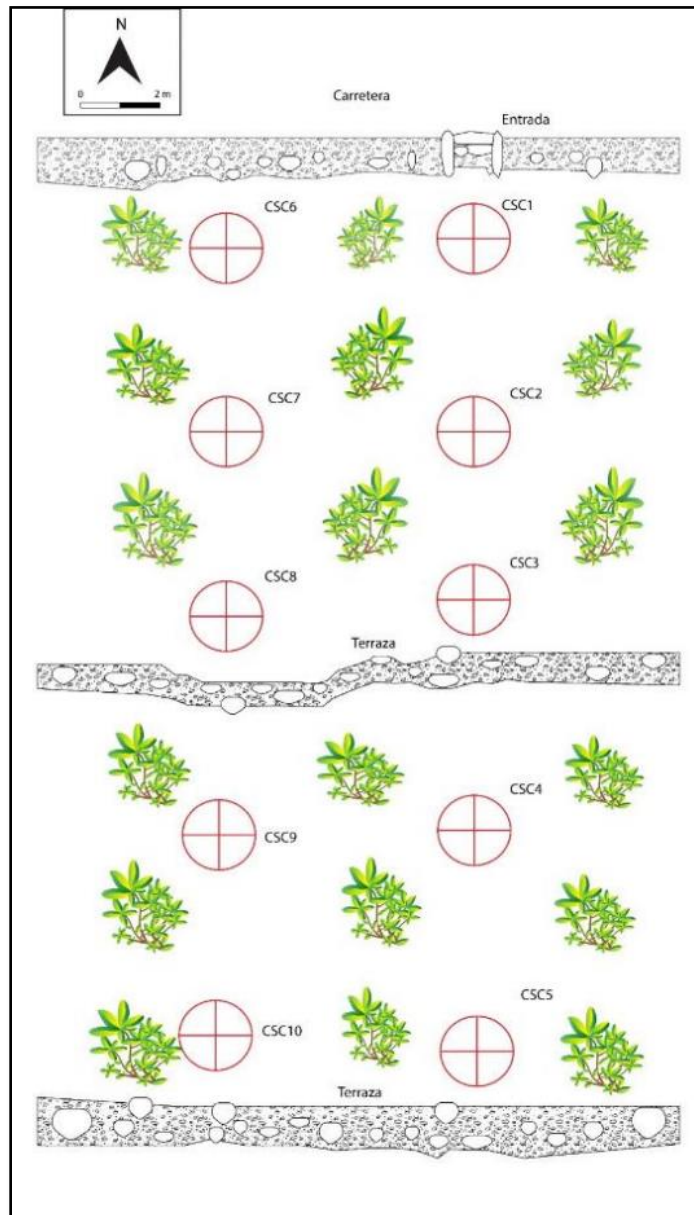


Figure 7.62. Schematic plan of Parcel C, San Juan Antigua.

Artifacts and Chronology

Of the 158 ceramics recovered from the surface of Area A, 104 were analyzed (Table 7.19). These ceramics were dominated by types dating to the Early Classic period (52.06 %), however, Late Preclassic to Protoclassic ceramics and Middle to Late Classic ceramics were also well represented, with 18.71% and 13.24% respectively, while Terminal Classic and Postclassic ceramics were only lightly represented.

Table 7.19. Surface ceramics from San Juan Antigua, Area A by phase and Type

Date	Type	Count	% of Total	% by Phase
Late Preclassic - Protoclassic	Naranja Glossy	10	4.57%	18.71
	Kam Café Negro	6	2.74%	
	Preclassic Café-Gris	2	0.91%	
	Rojo Rosado	2	0.91%	
	Rojo sobre Crema Preclasico	2	0.91%	
	Pasta Rosa Micaceo	13	5.93%	
	Rosa Micaceo con Engobe Crema	1	0.46%	
	Utatlan Rojo y Negro	5	2.28%	
Early Classic	Cafe Negro Burdo	2	0.91%	52.06
	Negro Clasico	2	0.91%	
	Crema Rosada sobre Pasta Rojo	2	0.91%	
	Esperanza Flesh	1	0.46%	
	Mahogany	13	5.94%	
	Morocco Red	2	0.91%	
	Osuna Coarse Incised	5	2.28%	
	Rojo Acanalado	1	0.46%	
	Rojo Burdo	17	7.76%	
	San Juan Morado	66	30.14%	
	Tan Rosada	3	1.37%	
	Middle to Late Classic	Santa Marta	26	
Oxido		2	0.91%	
Plomizo Rojo Suave		1	0.46%	
Terminal Classic to Postclassic	SP Café Gris	9	4.11%	5.03
	SP Rojo	2	0.92%	
Late Postclassic	Xola Naranja	2	0.91%	0.91
ND	ND	22	10.05	10.05
TOTAL		219	100%	100%

Of the 225 ceramics recovered from Area B, 149 were analyzed (Table 7.20). In contrast to Area A, the analyzed ceramics from Area B were dominated by Middle to Late Classic types (35.51%) and Terminal Classic to Postclassic ceramics were also better represented (23.36%). Late Preclassic to Protoclassic (4.67%) and Early Classic materials (23.36%) made up lower proportions of the assemblage.

Table 7.20. Surface ceramics from San Juan Antigua, Area B.

Phase	Row Labels	Total	% of Total	% by Phase
Late Preclassic - Protoclassic	Izote or similar	1	0.93%	4.67
	Pasta Rosa Micaceo	2	1.87%	
	Preclassic Rojo-Naranja Fina	1	0.93%	
	Rojo Rosado	1	0.93%	
Early Classic	Crema Rosada sobre Pasta Rojo	2	1.87%	23.36
	Esperanza Flesh	9	8.41%	
	Mahogany	3	2.80%	
	Morrocco Rojo	2	1.87%	
	Osuna Coarse	4	3.74%	
	Rojo Burdo	3	2.80%	
	San Juan Morado	2	1.87%	
Middle to Late Classic	Santa Marta	24	22.43%	35.51%
	Amatle	2	1.87%	
	Oxido	7	6.54%	
	Jelic Rojo sobre Crema	4	3.74%	
	San Juan Plomizo	1	0.93%	
Terminal Classic to Postclassic	Tohil Plomizo	1	0.93%	23.36
	SP Café Gris	21	19.63%	
	SP Rojo	1	0.93%	
	SP Tan Cafe	2	1.87%	
Late Postclassic	Pa K'ucha' Café-Negro	1	0.93%	0.93
ND	ND	13	0.93%	12.15
Total		107	100	100

Of the 146 ceramics recovered from Parcel C, 85 were analyzed (Table 7.21). The analyzed ceramics indicated low levels of activity at the site from Late Preclassic times through to Postclassic times, with peak activity occurring during the Middle to Late Classic period.

Table 7.21. Ceramics from San Juan Antigua, Area C, by phase and date

Phase	Type	Total	%	% by Phase
Late Preclassic or Protoclassic	Naranja Glossy	1	1.03%	15.46
	Kam Café Negro	1	1.03%	
	Preclassic Café-Gris	2	2.06%	
	Preclassic Rojo-Naranja Fina	3	3.09%	
	Pasta Rosa Micaceo	5	5.15%	
	Rosa Micaceo Burdo	3	3.09%	
Early Classic	Café-Negro Burdo	1	1.03%	25.78
	Crema Rosada sobre pasta roja	2	2.06%	
	Mahogany Inciso Grueso	2	2.06%	
	Maisillo Rojo Inciso	1	1.03%	
	Osuna Coarse	7	7.22%	
	Rojo Burdo	3	3.09%	
	San Juan Morada	4	4.12%	
	Tan Rosada	5	5.15%	
Middle to Late Classic	Jelic Rojo sobre Crema	5	5.15%	23.71
	Oxido	9	9.28%	
	San Juan Plomizo	1	1.03%	
	Santa Marta	8	8.25%	
Postclassic	SP Café Gris	15	15.46%	16.49
	SP Tan Cafe	1	1.03%	
ND	ND	18	1.03%	18.56
TOTAL		97	100%	100%

Private Collection

In 2011, a private collection of pottery and stone tools was documented in this area and the landowner claimed that the majority had been recovered from a cist-style burial on their property, the outline of which could still be seen. The fact that the majority of the pieces appeared to be Protoclassic or Early Classic in date, and thus contemporary with the majority of the excavated remains, lends credibility to these claims, although a small quantity of Late Classic pieces were also observed in the collection. One of the most impressive pieces was a complete Tiquisate ware bowl decorated with incised hands, on opposing sides of the exterior walls.



Figure 7.63. Tiquisate Ware bowl from private collection, San Juan Antigua.

Tza'n Juyu' (FS20)

The site of Tza'n Juyu' is located on a low rise approximately 150 m west of downtown San Juan la Laguna, and less than 100 m northeast of Mound 1 at San Juan Antigua (Figure 7.64). The high density of materials and the elevated location of this site indicates that it likely contained an elite residence in pre-Hispanic times.



Figure 7.64. Parcel FS20 (Tza'n Juyu') viewed from the street, San Juan La Laguna, looking northeast

Surface Collections

A total of 31 controlled surface collections (CSC) were conducted on a 5-m grid at Tza'n Juyu' (Figure 7.65) and these produced a total of 302 pieces of ceramics, three pieces of obsidian, and two ground stone tools. The highest ceramic count ($n = 25$) was recovered from CSC31, which was located near the southern edge of the site. Other high ceramic counts occurred at CSCs 27 ($n = 24$) and 14 ($n = 21$). The average density for the site was moderate, consisting of 8.33 sherds per CSC.



Figure 7.65. Schematic plan of Tza'n Juyu' showing CSC locations (red circles).

Ceramics and Chronology

The recovered ceramics ranged in date from the Terminal Preclassic through to the Terminal Classic or Postclassic, indicating a very long occupation of the site (Table 7.22). Early Classic ceramics (46.67%) made up the largest percentage with Middle to Late Classic types having the next highest percentage (36.67%). Terminal Classic to Postclassic types were also well represented (23.33%). The quantity of Late Preclassic to Protoclassic types was surprisingly low (3.33%), given the site's proximity to the center of San Juan Antigua.

The ground stone tool fragments included a metate fragment bearing a support and a cylindrical mano. The obsidian artifacts were all fragmentary prismatic blades. The source of the obsidian has not yet been determined.

Table 7.22. Ceramics from Tzan Juyu by Type and Phase

Phase	Type	Total	% by Type	% by Phase
Late Preclassic	MONTE ALTO ROJO O PRISMA	1	0.83%	3.33
	ROJO ROSADO	2	1.67%	
	SANTA CRUZ ROJO	1	0.83%	
Early Classic	CREMA-ROSA SOBRE PASTA MICACEO	1	0.83%	46.67
	ESPERANZA FLESH	6	5.00%	
	MAHOGANY INCISO GRUESO	5	4.17%	
	NEGRO CLASICO	5	6.67%	
	POLICROMO	2	1.67%	
	ROJO ACANALADO	1	0.83%	
	ROJO NARANJA DELGADO PULIDO	2	0.83%	
	ROJO SUAVE	1	0.83%	
	SAN JUAN MORADO	1	1.67%	
Middle to Late Classic	SANTA MARTA	29	24.17%	36.67
	AMATLE	10	8.33%	
	CREMA BICROMO	5	4.17%	
Terminal Classic to Postclassic	SP Rojo	4	3.33%	23.33
	SP Tan Café	24	20.00%	
ND	CAFÉ NARANJA	15	14.17	14.17
Total		115	100.00%	100.00%

Interpretation

The ceramic percentages indicated a steady increase in activity at the site of Tza'n Juyu' from Late Preclassic through to Late Classic times, after which, use of the site began to decline. The elevated location of this site, its proximity to the center of San Juan Antigua, its long history of occupation, and the diversity of the ceramic types, indicate that this site was probably occupied by an elite family. Interestingly, the ceramics indicate that the site continued to be occupied long after the main part of San Juan Antigua had fallen out of use. The absence of any clear Late Postclassic diagnostics suggests that the site was probably abandoned prior to that time.

Chi'Nimaya (FS 22)

The site of Chi'Nimaya was located adjacent to one of the main streets of San Juan La Laguna, just a few meters from the pier, at an elevation of 1570 m AMSL. At the beginning of the project in February 2015, the investigated property was a public park and ceramics could be clearly observed on the ground surface. I had therefore made intended to return to survey the property once permission had been obtained. Unfortunately, when we returned to investigate the property, it was under construction and so the recovered ceramics derived entirely from backdirt. The property included an area of approximately 250 m². It should be noted that the stratigraphy observed in one of the pits excavated by the construction workers suggested the presence of intact deposits beneath the disturbed upper soils.

Ceramics and Chronology

Only 19 sherds were recovered from disturbed secondary contexts at Chi'Nimaya. A Glossy Orange and a Glossy Black sherd, both heavily eroded, were identified among the collection. These types indicate that this area, or the area immediately above the property was used in the Late Preclassic times, when it would have been located some distance from the shore. The remaining ceramics included Santa Marta Ware and San Pedro Rojo suggesting some use of the area in the Middle Classic and Terminal Classic or Postclassic.

Interpretation

Given the small amount of recovered ceramics it is difficult to say much about the types of activities that were carried out here in prehispanic times.



Figure 7.66. Chi Nimaya', near the shore of San Juan La Laguna, looking northeast.



Figure 7.67. Pit excavated by construction workers, showing stratigraphy.

7.5 ZONE 5: XE' KAAK'A AAB'AJ

Residential Zones

Xe' Kaak'a Aab'aj (FS25)

The site of Xe' Kaak'a Aab'aj was located approximately 2 km northwest of San Juan, a short distance from the steep mountains of the Atitlan caldera, and directly below the shrine of Kaqbatzulu (aka the Indian Nose). This area came to our attention due to photos of a large stone head (San Juan Monument 2) that began circulating on the internet a few years previously (Figure 7.68). According to an interview with the owner, published in a recent issue of *Revue* magazine, the stone head which is known locally as *Ja'bel Wiaaj* was originally unearthed in the 19th century when the terraces here were being constructed for the coffee finca (Reeves 2014). The owner (quoted in Reeves 2014) stated that “The workers cleared the brush from around the head and then left it where they found it”. The head was photographed by Chris Berhorst in 1978, when the head was shown lying on its side. These photographs form part of the Shook Archive held at the Universidad del Valle.



Figure 7.68. Stone head (SJ02) on coffee terrace at the site of Xe' Kaak'a Aab'aj (FS25)

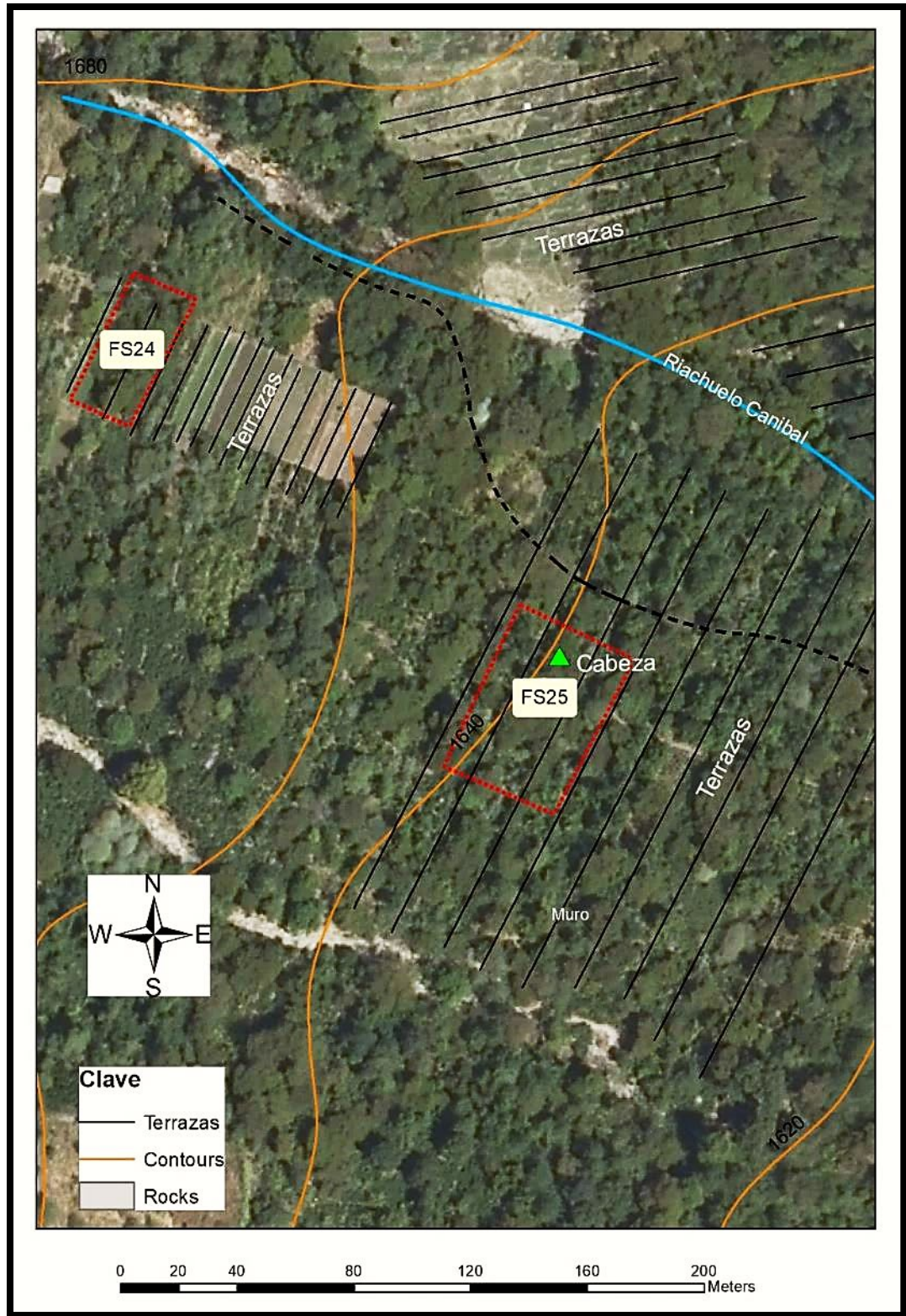


Figure 7.69. Map showing location of sites and terrace orientations in Zone 5.

Artifacts and Chronology

Although the PALA project was unable to obtain permissions to officially investigate the immediate surroundings of the head, most of the coffee terraces that were inspected in this area yielded small quantities of prehispanic material and a few contained lines of stone that probably represent the remains of prehispanic residences.

The pottery recovered from Xe' Kaak'a Aab'aj included a single rim of Santa Marta Ware and two body sherds of Amatlé Ware. Both of these types are assigned to the Middle to Late Classic periods (c. 500-800 AD). A single body sherd of Ante provided evidence of later activity in the area dating to the Late Postclassic to Colonial era. The remaining sherds were plain body sherds which could not be identified.

Ethnohistoric Data

Xe' Kaak'a Aab'aj is one of the few places in the project area that is mentioned specifically in the ethnohistory, with one mention occurring in the Annals of the Kaqchikeles (Recinos and Goetz 1953) and another in the Titulo de Santa Clara (Recinos 1957; Van Akkeren 2009). The Annals of the Kaqchikeles passage describes an incident from 1521, during which time:

"A revolution broke out against Aj Tzikina Jaay ... The chiefs, Aj Tzikina Jaay and Qitzihay, came to Iximche seeking help ... Twelve days later 11 Imox, Zotzils and Tukuches killed the Zutuhil tribes, all of Tziquinahay died ... Xepoyom City [possibly Xikomuk] was captured ... During that time, all of *Xekaka Abaj* fled and took refuge among the Cakchiquel "(Goetz 1953: 117).

The Titulo de Santa Clara also records that, after reaching Tzolola (Sololá), on the borders of the territory of Aj'Tziquinajay,

"King Quicab: ... entered the middle of the lake and went out to the side. He appeared in Pan Aqal and Xe' Kaak'a Aab'aj, worshipped in the ceiba tree ... Later, the guardians of these lands came, whose names were Xitap and Qobakil. Thus, they are named, those who grow Quicab's milpa "

Pan Aqal was probably located uphill from the place that is now called Xe' Aqal (González et al 2003), which means "at the foot of the fertile soil". The text of the Santa Clara Title implies that the San Juan area had been under the control of the K'iche' since before the Quicab campaign, suggesting it may have been conquered by Quicab's father, Kucumatz-Cotuja, or his allies, the Tz'utujil Malaj who came from the area of San Francisco Zapotitlán and San Juan Nagualapa on the Pacific Coast.

Pa K'waa' (FS 25)

The Pa K'waa' site consisted of a low to medium density ceramic scatter located in disturbed ground on the northwest side of an old football field. The field was located approximately 200 m northwest of the existing town and was crossed by the most direct trail to the area of Xe' Kaak'a Aab'aj.

Surface Collections

Only one general collection was conducted at Pa K'waa' and a total of 20 pieces of ceramics were recovered. The sherds were recovered from the redeposited surface soil that had been removed during the creation of the football field.

Ceramics and Chronology

The types identified in the small collection included local utilitarian types dating to the Early Classic such as San Juan Morada and Esperanza Flesh.

Interpretation

Given that this area was probably already reasonably level and situated adjacent to a stream (Rio Seco) it seems likely that this area once supported prehispanic residences. The recovered ceramics, which were collected from disturbed soils indicate that the area was in use during the Early Classic period.

Defensive Sites

Tzujk'abal (FS 24)

The site of *Tzujk'abal* was located on the steep slopes to the west of Xe' Kaak'a Aab'aj (see Figure 7.69) and was visited only briefly during an informal reconnaissance of the area. The site was located between 1710 and 1720 m AMSL, just a few meters from a natural spring, which feeds one of San Juan's principal streams. A series of impressive stone-faced terraces, some of which were constructed on top of natural rock outcrops (Figure 7.70) drew our attention to this area and suggested that it may have had a defensive function.



Figure 7.70. Stone-faced terrace located at Tzujk'abal.

Surface Collections

The site spanned a series of terraces, each of which were between 3 and 5 m wide and 10 m in length. Only one general collection (GSC1) was made at the site and covered two of these terraces.

Artifacts and Chronology

Only 14 sherds were recovered in the general collection at Tzujk'abal. The recovered ceramics included three sherds of Santa Marta Ware and one piece of Esperanza Flesh, suggesting that the site was utilized during the Early and Middle-Late Classic periods. The remaining sherds included one piece of San Pedro Rojo and several unidentified types that appear to date to the Terminal Classic or Postclassic periods.

Interpretation

This site is probably best interpreted as part of the low density settlement of Xe' Kaak'a Aab'aj. The height of the terraces and their proximity to a natural water source indicate that they could have served as a temporary refuge for the people of Xe' Kaak'a Aab'aj in times of trouble. However, their principle function was probably agricultural.

CHAPTER 8. EXCAVATIONS: METHODS AND RESULTS

Test excavations conducted during the current project had the principle goal of refining the utilitarian ceramic sequence for the project area and determining the integrity of the prehispanic deposits, particularly the survival of public and domestic architecture. The excavations thus targeted areas that had produced high densities of surface ceramics during the survey and which appeared to have the potential to yield stratigraphic sequences that would help us define the chronological position of some of the locally produced ceramic wares that had not been previously defined.

8.1 EXCAVATION PROCEDURES

Excavations were carried out systematically following arbitrary levels of 10 or 20 cm within natural or cultural strata. Soil was removed using shovels, azadons (heavy hoe-shaped tools used for clearing milpa) and trowels. All excavated soil was removed in buckets and screened through ¼ inch wire mesh. All cultural materials were collected and bagged by Unit and Level and context information was recorded. Profiles and plans were subsequently drawn and photographed. All excavated soil strata were described based on their composition, texture and color, utilizing a standard Munsell chart. The recovered materials were placed in a bag and returned to the laboratory daily. In this phase, we were assisted by four Licenciatura students from the Universidad del Valle de Guatemala

Table 8.1 summarizes the location and size of the excavations conducted during the current project. The excavations were carried out at two sites in Zone 1 (Xe'Tinamit and Rachaq Abaj), one site in Zone 2 (Pan Alujaay), and one site in Zone 4 (San Juan Antigua). Excavations were not conducted in Zone 3 because the only site with a high density of surface artifacts in that zone (FS3) appeared to predate the period of interest (i.e. the Classic to Postclassic transition). Excavations were also not conducted in Zone 5 due to the apparent lack of sites with high densities of surface artifacts in that zone and our failure to identify local landowners and therefore obtain permissions.

Table 8.1. Summary of Excavations conducted for the PALA project in 2015.

Zone	Site	Unit / Op.	Dimensions (m)	Depth (m)
1	Xe'Tinamit (FS13)	13-4	1 x 1	1.8
		13-12	1 x 1	1.2
	Rachaq Abaj, Area A (FS14a)	14-1	1 x 1	0.5
2	Pan Alujaay, Area C-Sur	7-1	1 x 1	0.5
		7-2	1 x 1	0.6
	Pan Alujaay, Area C-Norte	7-3	1 x 1	1.4
		7-4	2 x 1	0.9
		7-5	1 x .75	0.9
		7-6	1 x 1.5	0.4
		7-7	1 x 1.5	0.4
		7-8	1 x 2	0.6
		7-9	2 x 1.5	0.8
		7-10	1 x .8	0.8
		7-11	.5 x 4	0.6
		7-12	.5 x 4	0.9
		7-13	.5 x 3	0.6
		7-14	1 x 2	0.9
		7-15	.75 x .75	0.9
		7-16	1 x 1.5	
4	San Juan Antigua, Area A	18a-1	1 x 1	1.2
		18a-2	1 x 1	0.9
	San Juan Antigua, Area B	18b-1	1 x 1	1.2
		18b-2	1 x 1	0.7

All of the excavations conducted during the PALA project were carried out on private property and in the case of Pan Alujaay (FS7) and San Juan Antigua (FS18) the size and location of the units was determined in part by the presence of coffee trees. At Pan Alujaay in particular, the close proximity of the coffee trees made it necessary to restrict the width of the excavation units so that several of these might be better described as trenches. The use of long, narrow excavation units or trenches turned out to be an efficient strategy for identifying architectural features and determining their dimensions.

8.2 STRATIGRAPHY AND CHRONOLOGY

The chronological determinations for ceramics identified during the current project were based on the identification of ceramic diagnostics in stratigraphic excavations conducted at San Juan Antigua (Zone 4, FS18), Xe'Tinamit (Zone 1, FS13), and Pan Alujaay (Zone 2, FS7) and on radiocarbon dates recovered from excavated contexts at the latter two sites. Due to time constraints and the greater difficulty involved in classifying small body sherds, body sherds measuring less than 2 inches in diameter (the size of a 1 quetzal coin) were counted and weighed only and not analyzed.

The excavations at San Juan Antigua yielded ceramic diagnostics dating from the Middle Preclassic through to the end of the Early Classic, however, the stratigraphic sequence began in Protoclassic times, with all earlier materials deriving from mixed contexts. Charcoal samples were recovered from these excavations but have not yet been processed.

The excavations at Xe'Tinamit (FS13) yielded ceramics dating from the Early Classic through to Late Postclassic times. A fragment of bajareque (wood encased in clay), recovered from near the base of Unit 12 yielded a radiocarbon date of 1390 +/- 40 BP corresponding to 570 – 690 AD, indicating that the first permanent occupation of the site occurred around the Early to Late Classic transition.

The excavations at Pan Alujaay (FS7) focused on the remains of what appears to have been an elite residential complex dating to the Late Postclassic period. Charcoal recovered from beneath the earliest floor level of a domestic structure (Structure C-4) yielded a date of 730 +/- BP, corresponding to a calibrated date of 1220-1300 AD indicating that construction of this residential complex occurred around the beginning of the Late Postclassic period. Although Late Postclassic material was dominant in all of the excavated units at Pan Alujaay, small quantities of Early Classic material and occasional Late Preclassic sherds were also recovered from the majority of the units, indicating that the intensive Postclassic occupation had disturbed an earlier occupation. Detailed descriptions of the stratigraphic sequences for each of the sites where excavations were conducted are presented below.

San Juan Antigua (FS18)

The site of San Juan Antigua (FS18) is located to the southwest of the current town and includes a monumental core and a fairly extensive residential area (see Chapter 9). The residential portion of the site occupies a roughly oval-shaped terrace which is bounded by the Rio Seco to the west and southwest and totals approximately 13 hectares. It is possible that the site extends beyond the Rio Seco to the northwest where there is a large expanse of gently sloping land, but this area was not investigated. Elevations within the investigated portion of the site ranged from 1634 to 1644 m AMSL.

The excavations at San Juan Antigua were conducted within two parcels (18a and 18b) which were located between 370 and 450 m to the southwest of the surviving mound, near what was probably the southern limit of the residential zone (see Figure 10.1). Both plots were planted with coffee trees and other crops and so excavations had to be placed so as not to disturb these.

Operation 18A-1

Operation 18A-1 was a 1x1 excavated to explore what appeared to be an ancient residential terrace. The goal of the excavation was to look for domestic features and to obtain a stratified sample of ceramics with which to refine the ceramic chronology for the surface materials. The unit was excavated in arbitrary 10 cm levels to a total depth of 120 cm below datum (Figures 8.1 and 8.2). Excavation was terminated at this level due to the paucity of artifacts in the final level (Level 10) and due to the presence of what appeared to be natural rubble.

Stratum 1: Stratum 1 extended from the terrace surface to approximately 15 cm below the surface and consisted of a loose, dark brown (10YR 3/3) sandy loam which represented recent organic soil.

Stratum 2: Stratum 2 extended from approximately 15 cm below surface to between 85 and 100 cm below surface and consisted of a fine, compact, dark yellowish-brown (10YR 3/6) sandy loam containing a moderate density of fine to

medium angular stones and displaying evidence of significant root disturbance.

Stratum 3: Stratum 3 extended from approximately 85 cm below surface to around 130 cm below surface and consisted of a fine, compact, dark yellowish-brown (10YR 3/4), sandy loam containing common fine-medium sized angular stones, a few fine rounded pebbles, and a moderate frequency of fine pumice fragments. In addition to ceramics and obsidian, cultural materials observed in this stratum included a few small fragments of charcoal and burnt clay.

Stratum 4: Stratum 4 of Operation 18A-1 extended from around 130 cm below the surface, to at least 140 cm below surface. It consisted of a fine, compact, dark yellowish brown (10YR 3/4), sandy loam containing angular and sub-angular rubble and a high density of fine pumice.

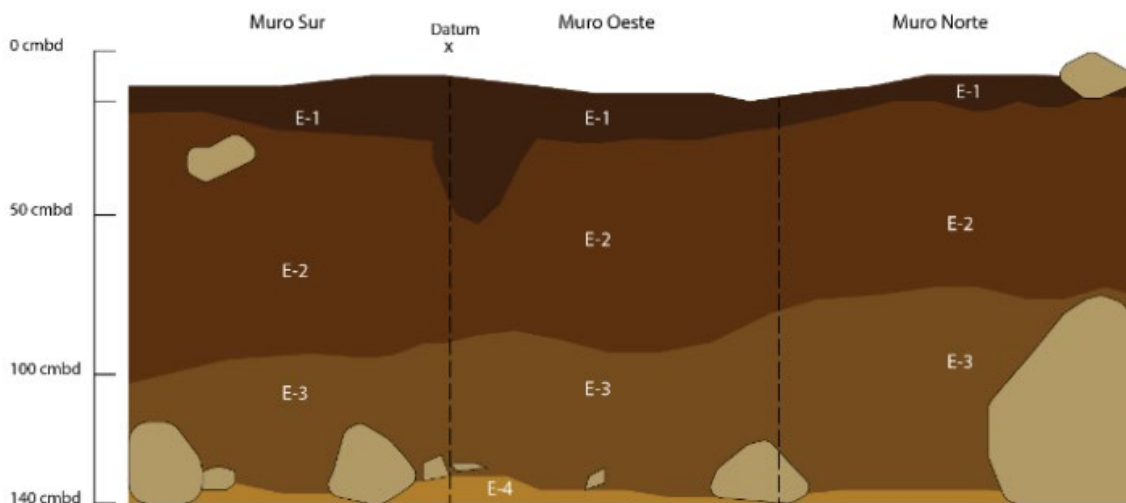


Figure 8.1. Profile of Operation 18a-1 showing strata 1-3 over natural subsoil (strata 4).



Figure 8.2. North profile of Operation 18a-1.

Ceramics and Chronology

A total of 1155 ceramic sherds were recovered from Operation 18a-1 with the highest amounts found in levels 4 (n = 229) and 5 (n = 243). Of the 1155 sherds recovered, a total of 394 were classified by type and analyzed (Table 8.2). The remaining sherds consisted of body sherds under 2" in diameter and were not analyzed. Most of the ceramics recovered from Operation 18a-1 were types that date between the Late Preclassic and Early Classic.

Table 8.2. Ceramic phases and percentage of total from Operation 18a-1.

Phase	Count	% of Total
LATE PRECLASSIC TO PROTOCLASSIC	307	77.90%
EARLY CLASSIC	64	16.24%
MIDDLE TO LATE CLASSIC	4	1.01%
TERMINAL CLASSIC TO POSTCLASSIC	10	2.53%
ND	9	2.28%
TOTAL	394	100%

The deepest two levels (Levels 9-10) of Operation 18a-1 contained a mixture of Late Preclassic and Protoclassic types, which included: Glossy Black, Kaminaljuyu Café Negro, Utatlan Ware, Robles Rojo Rosado, Pasta Rosa Micaceo, Streaky Grey, Coarse Unslipped, and Preclassic Café-Gris. A coarse incised Glossy Black everted rim was the most diagnostic piece recovered from these levels due to close similarities with a Glossy Orange vessel recovered from Tomb 2 of La Lagunita (Ichon and Viel 1984: 17, Figure 16) which was radiocarbon dated to 90 AD. (Ichon and Viel 1984).

Mixed throughout Operation 18a-1, was a local type that we dubbed San Juan Morado, which shares many formal attributes with Kaminaljuyú Black-Brown and which sounds very similar to Rosado Ware from Chocola (Kaplan and Paredes Umaña 2018; Popenoe de Hatch 2005). At Chocola, Rosado ware begins in the Middle Preclassic Providencia phase and continues through to the Early Classic (Kaplan and Paredes Umaña 2018). As no Middle Preclassic diagnostics were recovered from Operation 18a-1 we suggest that San Juan Morada starts a little later, during the Late Preclassic.

One special artifact recovered during the excavation consisted of a complete miniature effigy pot with coffee bean facial features and two holes in opposite sides of the neck, indicating that it was probably designed to be worn around the neck. The stratigraphic position (Level 6, Strata 2) and the style of the facial features indicate that this miniature vessel pertains to the Protoclassic or Early Classic. All of the types mentioned here are described in more detail in Appendix A.

Obsidian

A total of 24 obsidian artifacts were recovered from Operation 18a-1, with the highest frequency (n = 7) being recovered from level 5 (stratum 2). Half of this collection (n = 12, 50%) consisted of flakes, indicating that tools were being produced, modified or repaired at the site. The remaining pieces (n=12, 50%) consisted of prismatic blade fragments. The preliminary analysis of these pieces indicates that the source of the recovered obsidian was San Martín Jilotepeque.

Summary

Operation 18a-1 produced dense deposits of ceramics and obsidian to a depth of approximately 130 cm below the surface and all strata contained fragments of charcoal and adobe. Most of the recovered ceramics date between the Protoclassic and Early Classic with only a few sherds from later periods appearing in the upper levels. No architectural features were encountered, but the presence of adobe and charcoal together with the density and diversity of ceramics suggests that there was probably a relatively affluent household nearby. The presence of several obsidian flakes suggests that obsidian tools were being produced or repaired at the site.

Operation 18A-2

Operation 18A-2 was a 1 x 1 m test unit that was placed at the base of a residential terrace . The goal of the excavation was to look for domestic features and to obtain a stratified sample of ceramics with which to refine the ceramic chronology for the surface materials. The unit was excavated in arbitrary 10 cm-levels to a total depth of 90 cm below datum (Figures 8.3 and 8.4). Three strata were observed overlying the natural subsoil (Stratum 4) and these are described below:

Stratum 1: Stratum 1 extended from the surface to approximately 15 cm below surface (30 cm below datum) and consisted of an organic, brown (10YR 3/3), fine sandy loam containing common roots and a few fine to medium angular and sub-angular stones.

Stratum 2: Stratum 2 extended from approximately 15 to 35 cm below surface (50 cm below datum) and consisted of a yellowish brown (10YR 3/4) fine sandy loam containing a few roots and common fine to medium angular and sub-angular stones.

Stratum 3: Stratum 3 extended from approximately 35 cm below surface to around 70 cm below surface (50 to 85 cm below datum) and consisted of a loose, yellowish brown (10YR 4/6), fine sandy loam with common fine pumice gravel and a few fine to medium angular and sub-angular stones.



Figure 8.3. North profile of Operation 18a-2

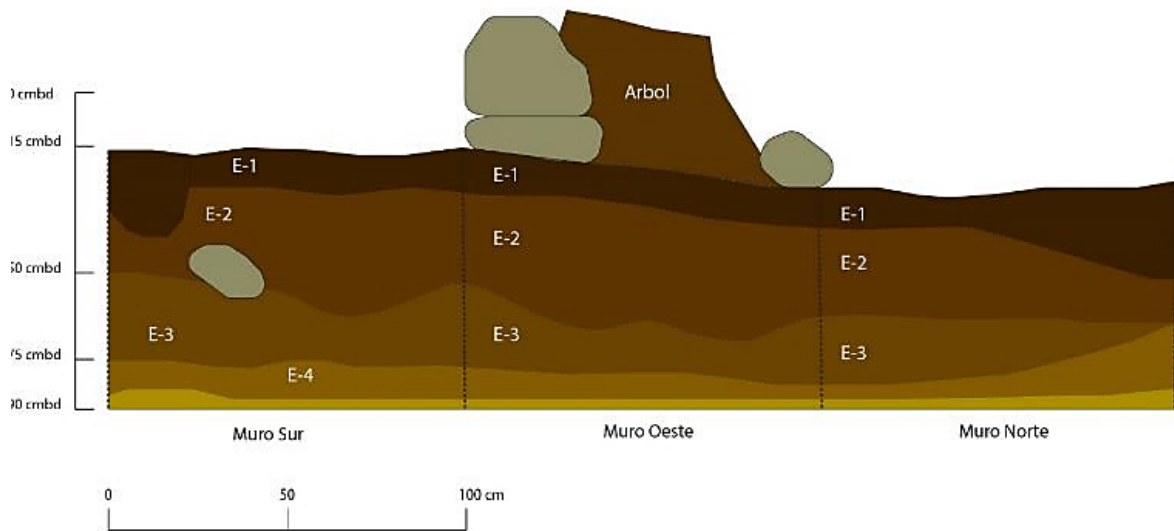


Figure 8.4. Profiles of south, west and north walls of Operation 18a-2

Ceramics

A total of 496 ceramic sherds were recovered from Operation 18a-2 with the highest frequencies occurring in levels 3 ($n = 195$) and 4 ($n = 169$). After level 4 the frequency of ceramics dropped off considerably, confirming that sterile soil had been reached, and thus the excavation was terminated. Of the 496 sherds recovered, a total of 161 were classified by type and analyzed. The remaining sherds were body sherds measuring less than 2 inches in diameter and were not analyzed. The ceramics recovered from Operation 18A-2 displayed almost the same range of types as seen in Operation 18a-1 but in the current unit the Protoclassic and Early Classic types were mixed from the base of the unit. Protoclassic types that were not represented in Operation 18A-1 included Verbena White-Incised.

Obsidian

The quantity of obsidian recovered from Operation 18a-2 was much lower than in Operation 18a-1, totaling just 5 pieces. The largest quantity ($n = 2$) was recovered from Level 4 and consisted of two reworked flakes. The preliminary visual analysis indicated that all the recovered pieces utilized obsidian from the San Martín Jilotepeque source.

Summary

Operation 18a-2 provided what was essentially a truncated version of the stratigraphic sequence documented in Operation 18a-1 and as a result the ceramic sequence was more mixed and less complete. However, the unit extended the range of known types in use at the site during the Protoclassic phase.

Operation 18B-1

Operation 18B-1 was conducted to search for evidence of domestic features and to refine the ceramic chronology (Figure 8.5). The 1x1 unit was excavated in 11 arbitrary 10 cm-levels to reach a maximum depth of 120 cm below surface (130 cm below datum). Excavation was terminated at this depth due to a substantial decrease in artifacts and the presence of natural subsoil. Four Strata were identified and are described below and illustrated in Figure 8.6.

- Stratum 1:* Stratum 1 extended from the surface to approximately 35 cm below surface (45 cm below datum) and consisted of a yellowish brown (10YR 4/4) sandy loam containing common fine to medium roots and common angular and sub-angular stones.
- Stratum 2:* Stratum 2 extended from approximately 35 to 85 cm below surface (45 to 95 cm below datum) and consisted of a yellowish brown (10YR 5/6) sandy loam with a few fine to medium roots and a few angular and sub-angular stones.
- Stratum 3:* Stratum 3 extended from approximately 85 to 115 cm below surface (95 to 125 cm below datum) and consisted of a compact yellowish brown (10YR6/6) sandy loam with common, fine pumice sand and a few fine to medium angular stones.
- Stratum 4:* Beige pumice stone deposit 10YR8 / 3. with presence of very small pebbles, sand and mica.



Figure 8.5. Plan and profile of Operation 18b-1.

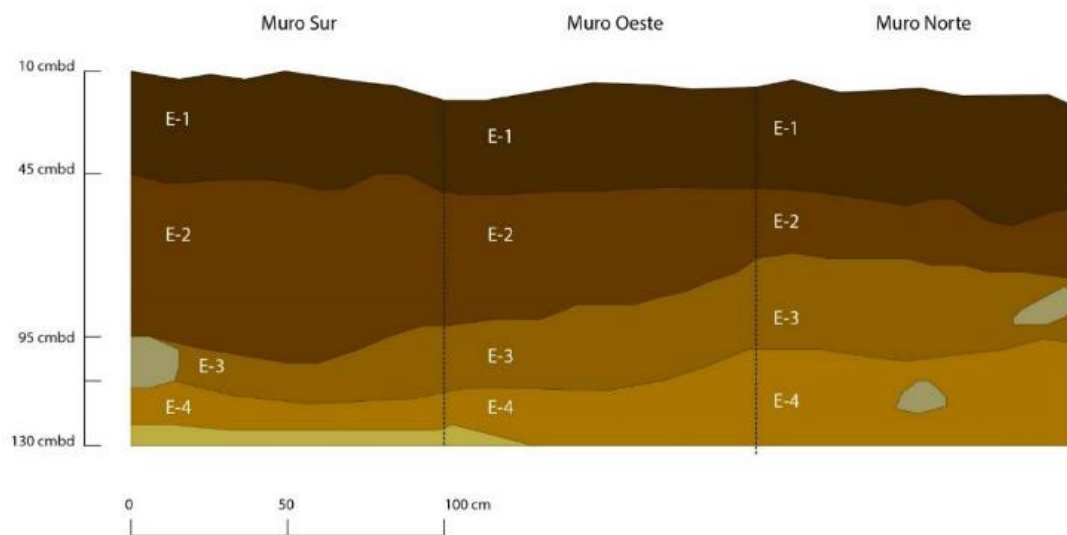


Figure 8.6. Profiles of Operation 18b-1

Cultural Features

A line of stones was identified at the base of Stratum 1, at a depth of 38 cm below the datum (28 below the surface). The orientation of the stones ran parallel to the alignment of stones identified outside the unit that constitute Specific Point 1 of FS18 - B.

Ceramics

The deeper levels of Operation 18b-1 produced diagnostic ceramics from the Late Preclassic / Protoclassic and Early Classic periods. Given that the frequency of Preclassic types was much lower than the Early Classic types, it is suspected that the occupation of this part of the site began around the transition between the two periods, between 150 and 250 AD. The most common type encountered in levels 6 through 11 was Esperanza Flesh, but the same stratum also contained Glossy Orange, Glossy Black and Monte Alto Rojo sherds that have a longer history.

Obsidian

A total of ten pieces of obsidian were recovered from Operation 18B-1. These included 8 prismatic blades and two flakes. Analysis of the two flakes, which were recovered from level 4, indicates that one of these came from the El Chayal source and the other from the San Martín Jilotepeque source.

Summary

Operation 18b-1 produced a low density of materials in comparison with Operation 18a-1 and the ceramics indicated that the three observed strata had all been disturbed by agricultural activities. However, the excavation provided a good range of diagnostic ceramics for the Protoclassic through Early Classic periods and thus expanded our knowledge of the range of ceramic types available to San Juan residents during these periods.

Operation 18B-2

The objective of Operation 18B-2 was to investigate a possible residential terrace for evidence of domestic activities and / or architectural features. Unfortunately, due to the presence of corn on this terrace, the 1x1 unit had to be placed at the base of the terrace. This operation was excavated in 6 arbitrary levels to a maximum depth of 70 cm below the surface (80 cm below the datum) (Figures 8.7 and 8.8). Excavation was terminated at this level due to the paucity of artifacts and the presence of what appeared to be natural subsoil.



Figure 8.7. Profile of south wall of Operation 18B-2, San Juan Antigua.

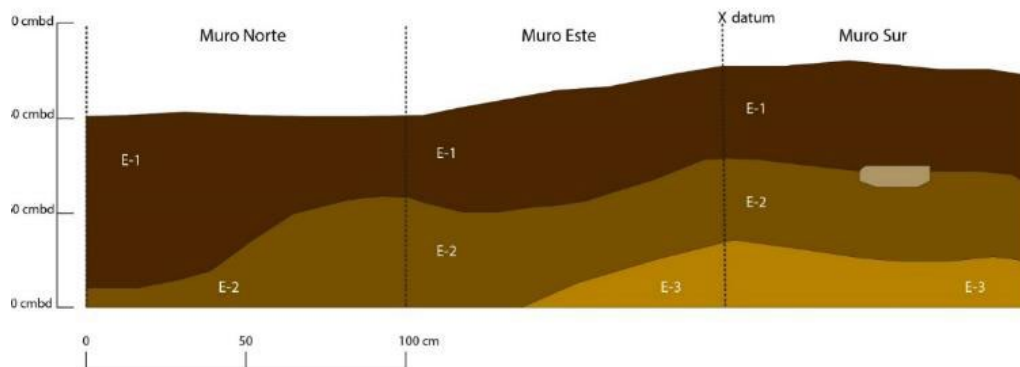


Figure 8.8. North, east and south profiles of Operation 18B-2.

Ceramics

Compared to some of the units excavated at the San Juan Antigua site, the quantity of ceramics recovered in Operation 18b-2 was low (n=120). The highest frequency of sherds was recovered from level 2 (n=40). Of the 135 ceramics recovered from Operation 18B-2, 53 sherds were analyzed. The remainder consisted of body sherds less than 2" in diameter and were not analyzed.

The majority of the analyzed ceramics (82.9%) were assigned to the Early and Middle Classic periods. However, a few of the identified types may have originated in the Protoclassic period (6.9%). A small percentage (9.3%) of the analyzed ceramics were non-diagnostic (ND). The most common type identified in this assemblage was Santa Marta Ware (n = 9, 21.4%) which appears to have been most common during the Middle to Late Classic periods (c.500-800 AD). The next most common type was a Cream Slipped type (n = 6, 14.3%). Esperanza Flesh, Mahogany Ware and Pink Micaceous Ware were represented by 4 sherds (9.5%) each.

Obsidian

Only three pieces of obsidian were recovered from Operation 18b-2. One piece was recovered from each of levels 4, 5 and 7. The raw material source of the obsidian has not yet been determined.

Summary

Operation 18B-2 provided a low density of ceramics and these covered a slightly later sequence than the other units excavated at San Juan Antigua, with a greater percentage of Middle-to-Late Classic diagnostics and lower percentage of Late Preclassic / Protoclassic diagnostics being represented. The low density of ceramics and the lack of adobe or charcoal indicates that this unit was not directly associated with a domestic unit and may have been primarily utilized for agriculture.

Rachaq Abaj (FS14)

The site of Rachaq Abaj (FS14) was located in Zone 1, approximately 250 m north and downhill of the center of San Pedro. The site occupied an artificial terrace overlooking a steep rocky escarpment (see Chapter 6 for full description). Excavations were initiated at FS14 because the site produced a high density of surface ceramics (an average of 13.57 sherds per CSC), because it was located near the center of San Pedro, and because possible architectural remnants were visible on the surface.

Operation 14a-1 was excavated in the southwest portion of the property (Figure 8.9). The objective of the unit was simply to determine the occupational chronology of this location and to evaluate the potential for finding domestic features or midden beneath the disturbed surface soil. The area had been in use for maize cultivation but was clear of vegetation at the time of the excavation.

Operation 14a-1

Operation 14a-1 was excavated in three arbitrary levels to a total depth of just 50 cm below the surface (60 cm below the datum) (Figure 8.10). Excavation was terminated at this depth due to the paucity of artifacts and the presence of natural subsoil. Only one cultural stratum was observed above the subsoil and consisted of the disturbed agricultural soil.

- Stratum 1.* Stratum 1 extended from the ground surface to a depth of approximately 35 cm below surface. The soil consisted of a loose brown (10YR 4/3) sandy loam mottled with patches of a more compact, yellowish brown (10YR 4/6) sandy loam, indicating some mixing of the first and second soil Stratum.
- Stratum 2.* Stratum 2 extended from approximately 35cm below the surface to at least 50 cm below surface where excavation was discontinued. This was a natural soil deposit which consisted of a compact, yellowish brown (10YR 4/6) sandy loam with common fine to medium angular stones and extensive root disturbance. The few sherds recovered from this Stratum are believed to have been transported by root or animal action.

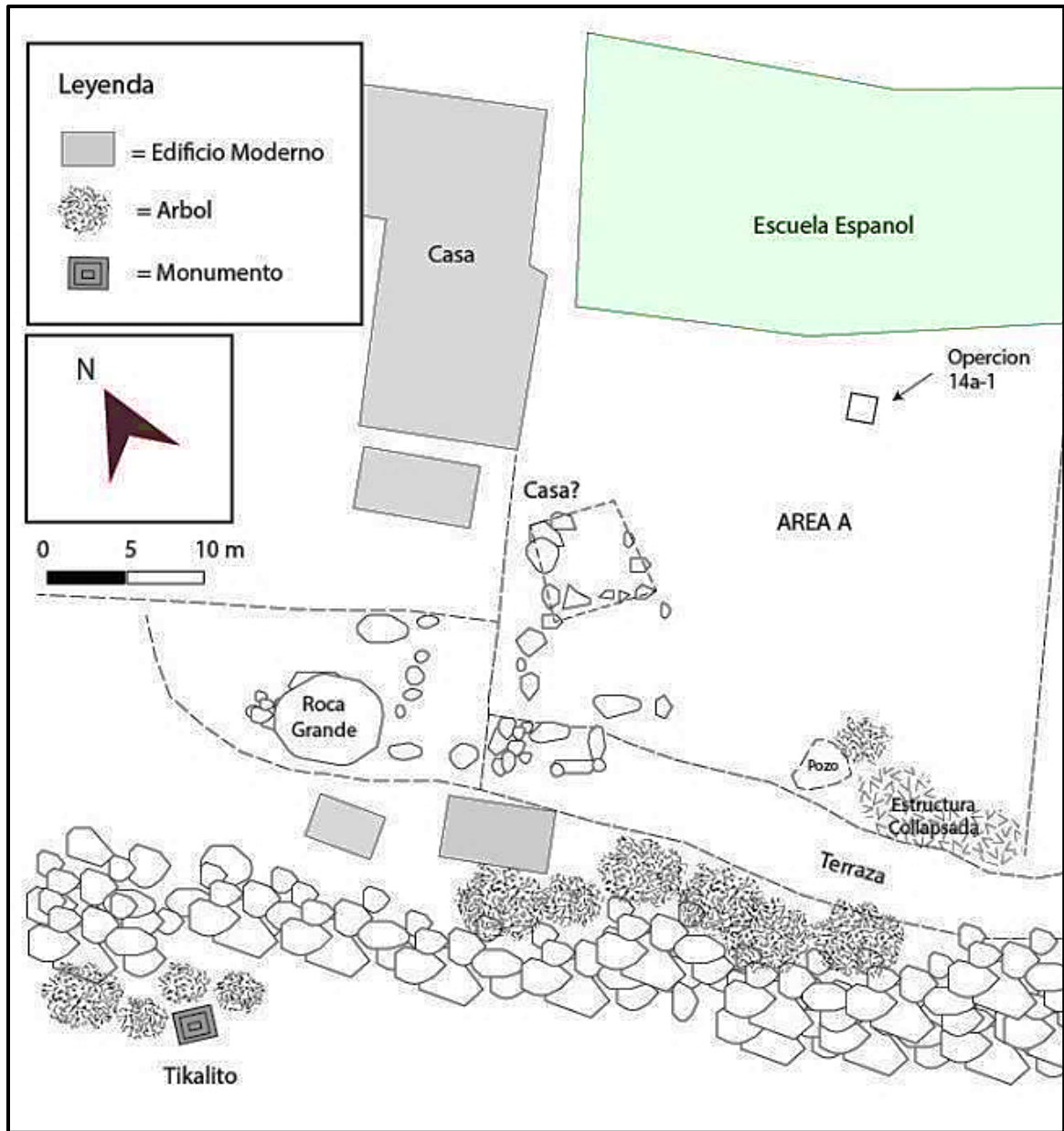


Figure 8.9. Schematic map of Rachaq Abaj, Area A, showing the location of Op 14-1.

Ceramics

A total of 517 pieces of ceramic were recovered from Operation 14A-1. The vast majority of these ($n = 437$) were recovered from level 1. The ceramic density for this portion of the unit was determined to be 3121 sherds per m^3 . After level 1, the ceramic density decreased rapidly, reflecting the surface nature of the deposits at this site and the high degree of erosion due to agriculture.

Of the 517 sherds recovered, 436 (84%) consisted of sherds less than 2 "in diameter and were not analyzed. Of the remaining 81 sherds, 64 (79%) were identified as San Pedro Burnished Ware indicating that the main use of the site occurred from Terminal Classic to Postclassic times. Within this local ware, the most common type was San Pedro Tan Cafe (n = 25), with San Pedro Red (n = 20), San Pedro Black Brown (n = 16), and smaller quantities of San Pedro Gray Brown (n = 2) and Polished Brown (n = 1). The remaining 17 sherds included Esperanza Flesh (n = 3) and Kaminaljuyu Café-Negro, indicating limited use of the site during the Early Classic and the Late Preclassic, respectively.



Figure 8.10. Plan and southwest facing profile of Operation 14a-1.

Obsidian

Fourteen pieces of obsidian were recovered from Operation 14a-1, all of which were prismatic blade fragments. The source of the obsidian has not yet been determined.

Summary

Although Operation 14a-1 produced a high density of ceramic materials, these were unfortunately restricted to the topsoil and no evidence of sub-surface deposits or features was identified. For this reason, no further excavations were conducted on this property.

Xe'Tinamit (FS13)

The site of Xe'Tinamit (FS13) was located approximately 300 meters north of the center of San Pedro, just below the escarpment, and occupied one of the few remaining milpa plots within the urban limits of San Pedro. The site was in the process of being developed at the time of the current investigation and construction workers had already excavated ten foundation pits by the time the PALA team arrived (Figure 8.11).

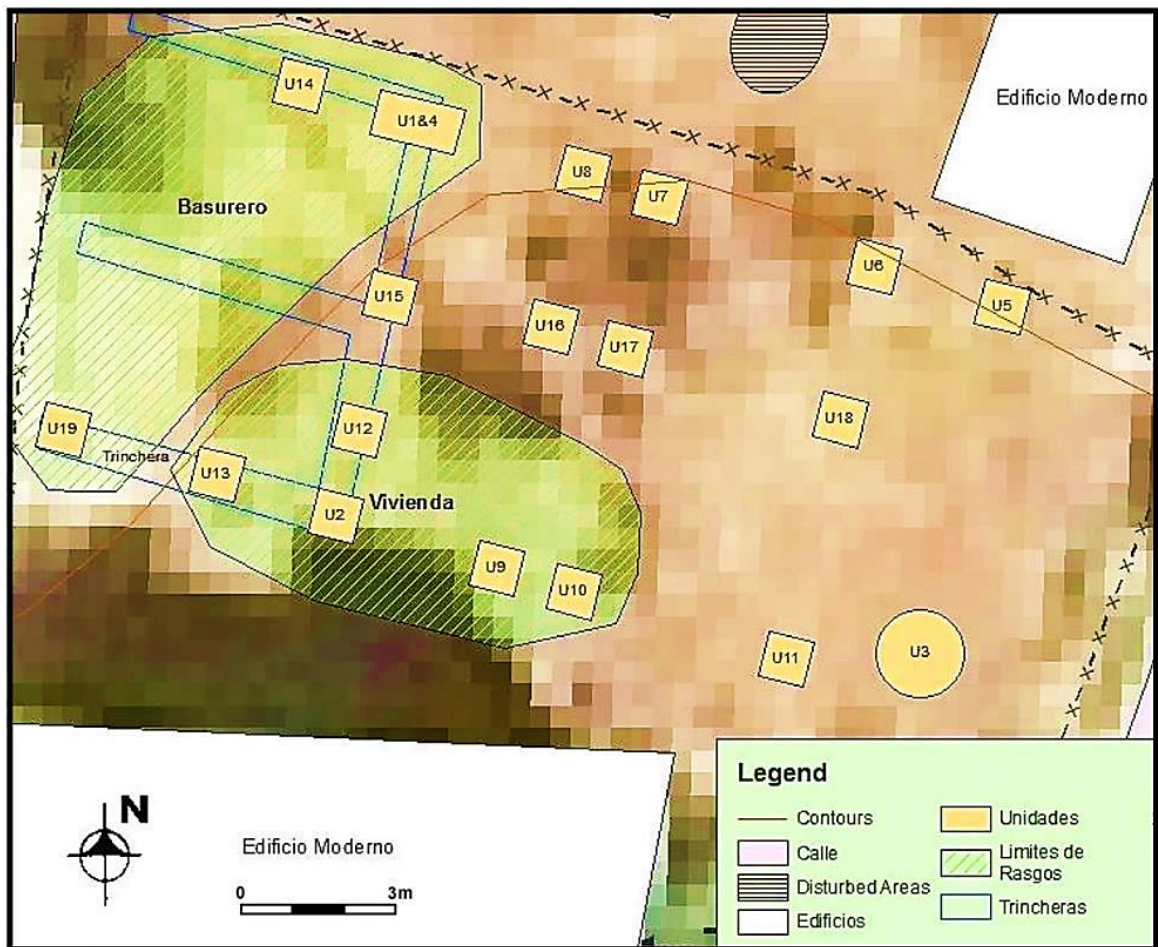


Figure 8.11. Schematic plan of Xe'Tinamit, showing unit locations and proposed extent of houselot (labelled as “viviendo”) and natural depression (labelled as “basurero”).

As can be observed in Figure 8.11, the foundation pits (all except for U3, U4 and U12) were excavated in three parallel rows that ran roughly east-west. Due to the natural slope of the terrain which ran roughly perpendicular to these rows, descending from south to north, the stratigraphy was generally consistent within each row but varied between rows. Burrowing animals had clearly been very active at the site, sometimes introducing modern trash and clothing into otherwise undisturbed deposits and causing some initial confusion over the stratigraphy of the site.

Operation 13-4

Upon arrival at the site, the PALA team was informed that the construction workers had recovered an almost complete skeleton from one of their pits (Unit 1) and a few small bone fragments were still visible in the east profile, between 40 and 60 cm below the surface. Operation 13-4 was therefore excavated in order to investigate the context of these human remains.

In order to expedite this excavation, the first soil stratum, which contained obvious deposits of modern trash, was removed without screening. At the base of this stratum, we encountered a roughly oval area of soil whose texture and color differed slightly from the surrounding matrix. This was treated as a cultural feature and was excavated in arbitrary 10 cm levels until a new soil stratum was encountered at 87 cm below surface at which point the feature excavation was terminated.

The poorly defined shape of the feature and lack of internal stratigraphy indicates that this feature, if real, probably represented a single event directly associated with the burial of the human remains. The dimensions of the “pit” (Max diameter = 60 cm, Max depth = 46 cm) indicate that this body, which has been determined to be that of an adult male, must have been tied or bundled, and perhaps placed within a sack, basket, or cloth made of perishable material.

Strata

As our controlled excavation unit Operation 13-4 was excavated immediately adjacent to the foundation pit excavated by the construction workers (Operation 13-1) this afforded us a 2-m long profile and the strata described below are based on this profile. Seven strata were identified in total, including two disturbed strata (Strata 1 and 2), three cultural strata (Strata 4 to 6) and two natural strata (Strata 3 and 7) (Figures 8.12 and 8.13). Please note that the strata depths provided below were measured on the north profile wall from the datum, which was located in the southeast corner of Op 4 and that the ground surface at the northeast corner was 20 cm lower than at the southeast corner.

- Stratum 1.* Stratum 1 extended from 30-47 cmbd and consisted of a layer of sand, containing a high frequency of modern trash. This Stratum was removed without screening.
- Stratum 2.* Stratum 2 extended from 47 to 90 cmbd and consisted of a yellowish brown (10YR 5/4), compact, sandy loam, with fine roots, a few rounded stones and occasional pieces of brightly colored thread. The human remains described in Appendix ? were recovered from this Stratum. Although it contained prehispanic ceramics and no obvious modern materials, the stratigraphy observed in Trench 1 and described later in this chapter indicates that this was a recent/modern deposit.
- Stratum 3.* Stratum 3 extended from 90 to 94 cmbd and consisted of a thin (4-5 cm) deposit of coarse pumice sand (granules up to 1 cm diameter), possibly deposited here by water or by a burrowing animal. The water hypothesis is supported by the fact that the ceramics encountered below this depth all appeared discolored and oxidized, indicating that they were submerged for a period. However, this thin sand lens did not extend across the entire profile and so appears to have been of limited horizontal extent.
- Stratum 4.* Stratum 4 was the first intact cultural zone encountered in Unit 1 and extended from 94 to 143 cmbd. It consisted of a greyish-brown (10YR 4/2) sandy loam with a few, fine to medium angular stones. Ceramics recovered from this layer showed signs of oxidation.

- Stratum 5.* Stratum 5 extended from 133 to 150 cmbd. The soil was essentially the same as that in the preceding Stratum so could be considered the same Stratum but was noted as being more compact and containing a higher density of pumice and angular stones. As in the previous level, all ceramics recovered from this layer showed signs of oxidation.
- Stratum 6* Stratum 6 extended from 150 to 170 cmbd and consisted of a compact, brown (10YR 4/3) sandy loam, containing a small quantity of angular stones and ceramics bearing signs of oxidation. Less rocks than the two previous layers.
- Stratum 7.* Stratum 7 extended from 170 to at least 180 cmbd where excavation was terminated. This was a very compact pumice sand.



Figure 8.12. North wall profile of Operations 13-1 (left side) and 13-4 (right side).

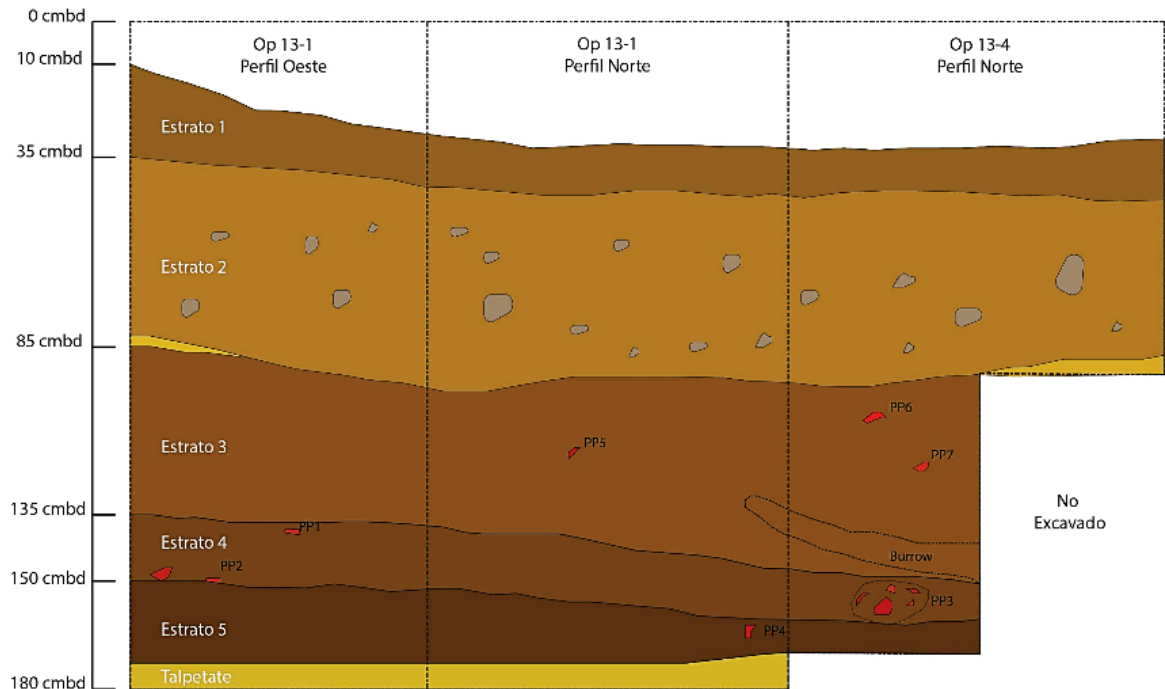


Figure 8.13. North profile of Operations 13-1 and 13-4.

Artifacts and Chronology

Only strata 4 to 7 appeared to be entirely undisturbed, so only the ceramics of these strata were used to interpret the chronology of the site. A total of 416 pieces of pottery, seven pieces of obsidian and one piece of flint were recovered from these strata. Of the 416 ceramics recovered from these strata, 176 were classified by type and analyzed. Unfortunately, many of these appeared to have been eroded by water, making the original slip colors difficult to determine.

As with most Xe'Tinamit units, the ceramics recovered from Operation 13-4 were dominated by local monochrome types of the San Pedro group. These types are problematic for chronology because they have a long history of manufacture and use, probably starting in the latter part of the Early Classic. San Pedro Tan Rosado however (Figure 8.14) is consistently found in higher densities in the deeper strata at Xe'Tinamit, and at least a portion of the forms appear to belong to the Classic period. Thus, this local San Pedro type has been tentatively dated to the Late Classic.



Figure 8.14. San Pedro Tan Rosado rims recovered from strata 3 and 4 of Op 13-4.

Operations 13-2 and 13-9

Several of the foundation pits excavated by workers at Xe'Tinamit (e.g. Units 2, 9 and 10), as well as one of our own excavated units (Unit 12) identified a well preserved occupation layer consisting of a compact dark grey soil, laden with ceramic debris, that directly overlays a layer of modified talpetate (Figures 8.15 and 8.16).

In Unit 9, this layer contained what appeared to be two *in situ* paving slabs. This occupation layer, which covered an area of at least 10 x 5 m (see Figure 10.12), has been interpreted as representing the yard area / external portion of a houselot. And while the southern edge of the lot and the dwelling itself were probably located just beyond the property edge to the south, the northern boundary of the houselot was apparently located between the southernmost and middle rows of foundation pits (see Figure 8.11). This interpretation is based on the fact that this occupation layer was completely absent from the profiles of Units 15-17 and also because these units produced the highest quantities of large reconstructable sherds, indicating that this was where the houselot had been depositing their trash; downhill and to the front of the main dwelling.

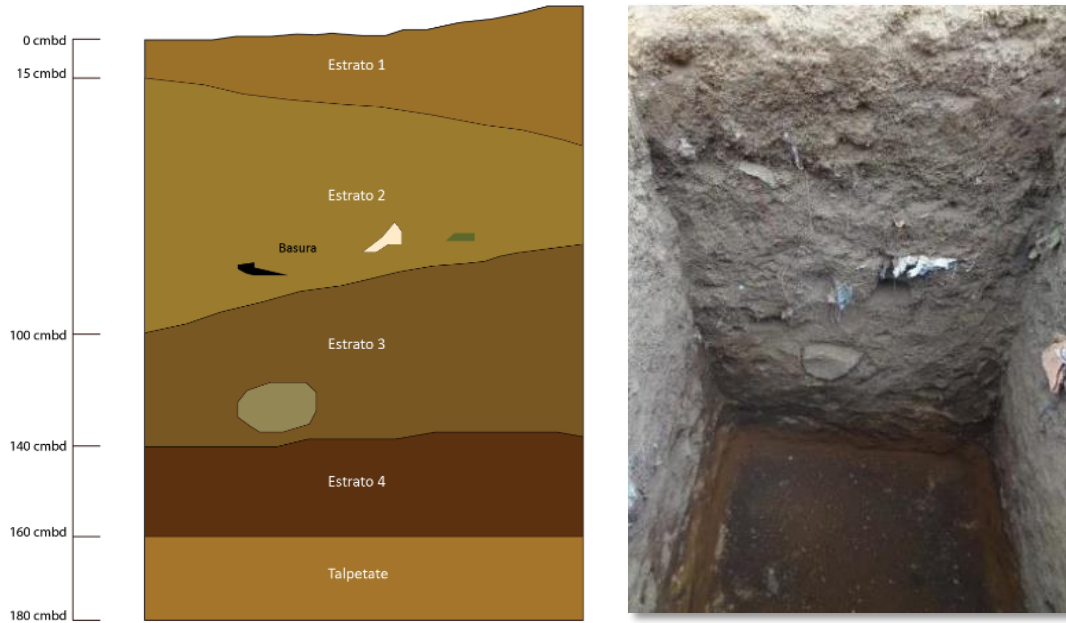


Figure 8.15. North facing profile of Operation 13-2.



Figure 8.16. North facing (left) and south facing (right) profiles of Operation 13-9 showing dark occupation layer overlying talpetate.

Operation 13-10

Operation 13-10 was another foundation pit which was begun by construction workers. The excavation of this unit began before the arrival of the PALA team on site. However, excavation of the pit was delayed due to the presence of a large boulder (Figure 8.17) and this allowed PALA an opportunity to enter the pit, record profiles, and retrieve PPs (individual artifacts recovered from profile walls) from each strata. After the boulder was removed, PALA members were then able to re-enter the pit to excavate.

This excavation revealed that the large boulder had directly overlain a prepared talpetate floor. The boulder thus appears to have been part of the domestic space that was also indicated by the packed floors identified in Operations 13-2, 13-9, 13-11, and 13-12. Talpetate brick fragments and pieces of bajareque recovered in Operation 13-10 also support the theory that this area once supported structures made of perishable materials. Operation 13-10 contained four strata overlying the natural talpetate.



Figure 8.17. Operation 13-10 showing large boulder.

As in other pits at the site (egg U2 and U12), the floor observed in U10 was artificially modified, with different areas cut at different depths and leaving some raised areas to serve as walls, foundations or boundary markers. For example, a narrow crest of talpetate remains, while the areas on both sides have been excavated out. Sitting slightly above the talpetate floor, in the south-west corner, a cylindrical piece of bajareque (wood encased in clay). was identified (Figure 8.18), apparently still in situ, and directly below this was a small, shallow posthole (Figure 8.19). These features combined with the numerous fragments of talpetate and adobe that were recovered from the layers above indicate that the structures that existed here used a combination of bajareque and adobe walls.

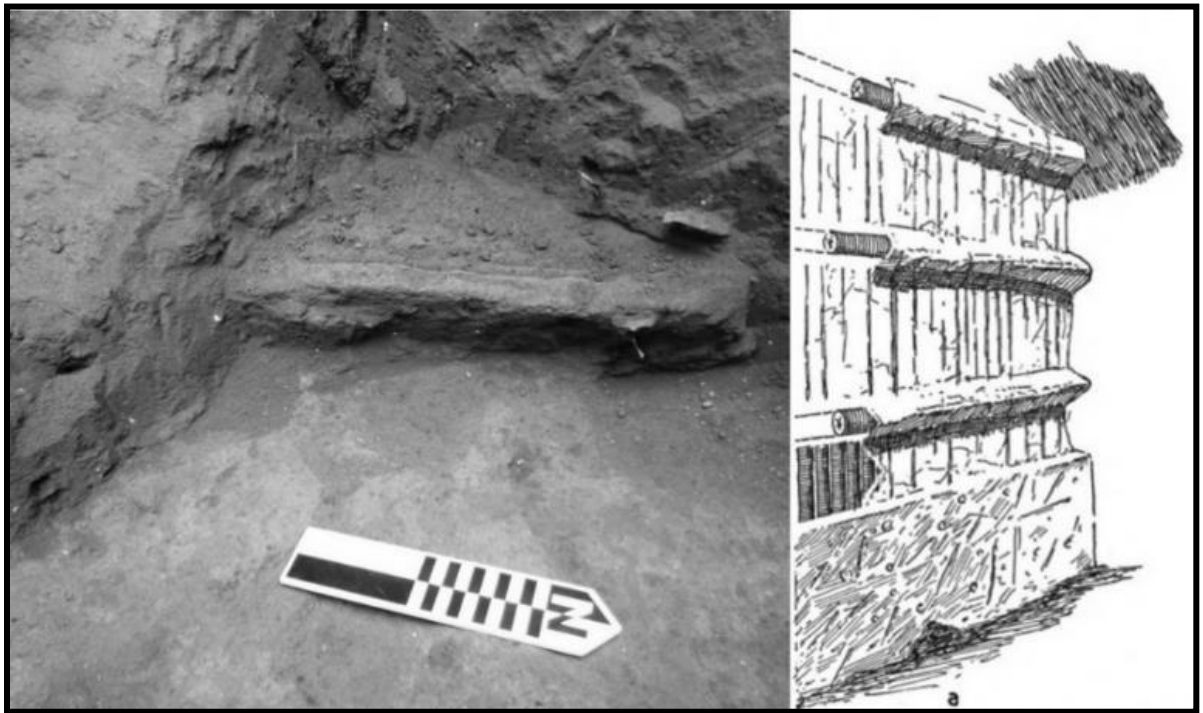


Figure 8.18. Piece of bajareque, in situ at base of Operation 13-10 and comparison with bajareque construction illustrated by Wauchope (1938).



Figure 8.19. Posthole located beneath bajareque in Operation 13-10.

Operation 13-12

Unit 12 was one of the two units at Xe'Tinamit that was excavated completely by PALA. It was located between Units 9, 2 and 15, and the objective was to examine in more detail the nature of the occupation layer observed in Units 9 and 2, and to recover a ceramic sample in a more controlled manner. The occupation layer in question was encountered at a depth of 0.68 m below the datum (0.58 m below the surface) (Figure 8.20) and the ceramics recovered from this layer indicated that it was probably produced in the Postclassic period but over a talpetate surface created around the transition from the Early to Late Classic.

Strata

Four strata were observed in Operation 13-12. They consisted of a modern stratum that was not sifted and 3 intact cultural strata without evidence of significant disturbance. The strata are described below and illustrated in Figure 8.21.

- Stratum 1* Modern soil disturbed by agriculture and containing trash and roots.
- Stratum 2* Stratum 2 consisted of a brown to dark-brown (10YR 3/3) sandy loam that contained a variety of small pumice stones and roots and also fragments of talpetate, adobe and charcoal.
- Stratum 3* This was the suspected occupation layer, which extended from 68 to 75 cm below the datum, and consisted of a compact, dark greyish brown (10YR 3/2) sandy loam containing a high density of ceramic debris and charcoal
- Stratum 4* Directly below Stratum 3, beginning at approximately 75 cmbd there was an abrupt soil change to a compact brownish-yellowish soil (10YR 3/4) containing small pieces of pumice and a low density of cultural materials. This extended to a depth of 130 cm below the datum. A piece of bajareque recovered from the first half of this stratum produced a calibrated radiocarbon date of 570 - 690 AD.
- Stratum 5* Strata 5 consisted of sterile talpetate..



Figure 8.20. Surface of compact occupation layer with ceramic debris at 68 cmbd in Operation 13-12.

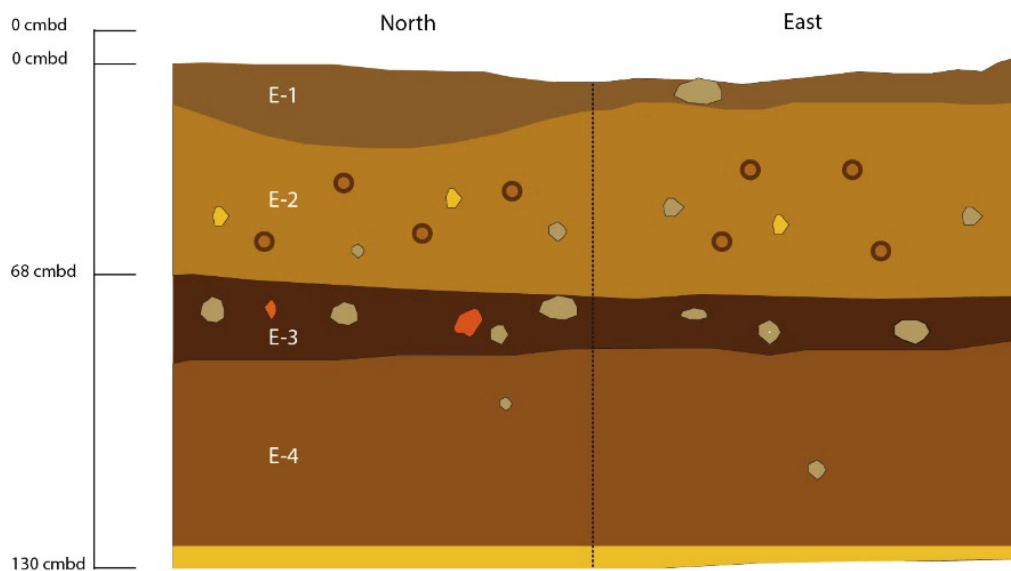


Figure 8.21. North and east profiles of Operation 13-12. Circles in strata 2 represent dung beetle pods.

Ceramics and Chronology

A total of 986 ceramics was recovered from Operation 13-12. The highest density of material was recovered from Stratum 3 (2557 sherds per m³). Of the total of 986 ceramics, 416 were classified by type and analyzed.

The highest percentages of the ceramics recovered from each stratum in Operation 13-12 were local monochrome types of the San Pedro group, which were used from the Early Classic to the Postclassic and are not very useful for dating. However, Stratum 4 produced a high percentage of diagnostic types from the Middle to Late Classic, and only a single Postclassic diagnostic which is believed to have been intrusive.

A piece of bajareque recovered from this stratum was analyzed by International Chemical Analysis Inc. (ICA) of Miami, Florida, and was dated to 1390 +/- 40 BP or Cal 570 - 690 AD. These data indicate that the compact occupation layer that constituted Stratum 3, which was encountered in Operations 13-2 and 13-9, was produced by activities dating from the Late Classic to Postclassic periods but that this overlay earlier deposits dating to the Early to Late Classic transition or Middle Classic.

Pan Alujaay (FS7)

As discussed in Chapter 7, the site of Pan Alujaay is located approximately 1.8 km east of San Pedro and occupies a series of broad, level terraces constructed on a gradually inclined part of the northern slopes of San Pedro volcano.

Our excavations at Pan Alujaay were conducted in Area C, which was located uphill and southwest of the monumental core (Figure 8.22). A total of 16 units were excavated in this area and their locations are shown in Figure 8.23. With the exception of Units 1 and 2, all of the units excavated at Pan Alujaay were excavated within two adjacent terraces (Terraces 3 and 4) located between 100 and 120 m southwest of the central plaza (Area A).



Figure 8.22. Pan Alujaay location on Google Earth, showing investigated areas (yellow polygons) and estimated site extent (green polygons).

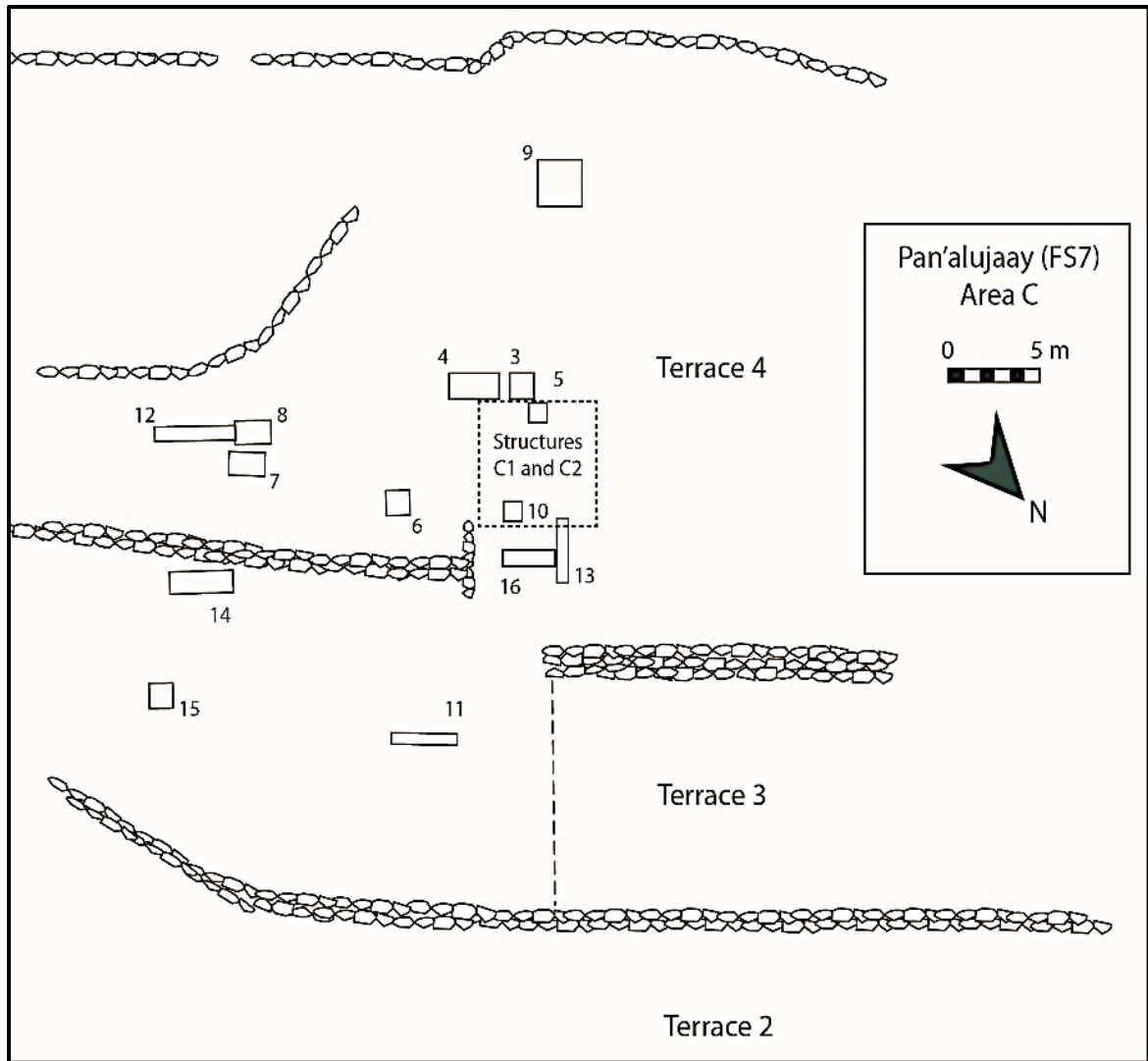


Figure 8.23. Location of Units 3-16 in Area C of Pan Alujaay.

Operation 7c-3

The first unit excavated in this area was Operation 7c-3. This was excavated immediately to the north of Structure C-1 (a historic altar constructed partially out of prehispanic blocks) (Figure 8.24). The objective of the unit was to determine if structure C-1, or at least its construction materials were associated with a prehispanic structure in this location. This was considered a strong possibility given that the landowner had reported finding urn burials here as a child and given that our surface survey had recovered high densities of materials in this area.



Figure 8.24. General view of Operation 7c-3, showing relationship of buried prehispanic structure C-3 to historic altar on surface (Structure C-1).

Four strata were observed during the excavation of Operation 7c-3 and these are described below and illustrated in Figure 8.25.

- Stratum 1.* Extended from the surface to approximately 26 cm below the surface and consisted of a brown (10YR4/3) fine sandy loam with common fine to medium roots and common fine angular rocks.
- Stratum 2.* Extended from approximately 26 cm below the surface to approximately 40 cm below the surface and consisted of a dark brown (10YR 3/3) fine sandy loam with a few fine to medium roots, frequent fine sub-rounded - angular rocks (primarily pumice) and a few larger angular rocks.
- Stratum 3.* Extended from approximately 40 cm below the surface to approximately 95 cm below the surface consisted of a very dark grayish brown fine sandy loam containing a few fine to medium angular rocks and a few talpetate and adobe fragments. Small specks of charcoal were also observed throughout this Stratum but without any discernible concentration
- Stratum 4.* Extended from approximately 95 cm below surface to approximately 136 cm below surface consisted of a compact yellowish brown sandy loam which contained frequent fine pumice gravel and common fine to medium pieces of adobe and talpetate.
- Str. C3.* Near the base of Stratum 4, at approximately 123 cm below the surface, excavation encountered an oblong stone that extended at a right-angle from the east wall, near the center of the unit. Cleaning of the East profile revealed that this single block of cut stone abutted the facing wall of Structure C-3 (Figure 8.26). Troweling around this stone revealed that it sat upon a hard-packed earthen surface which coincided with the base of the wall.

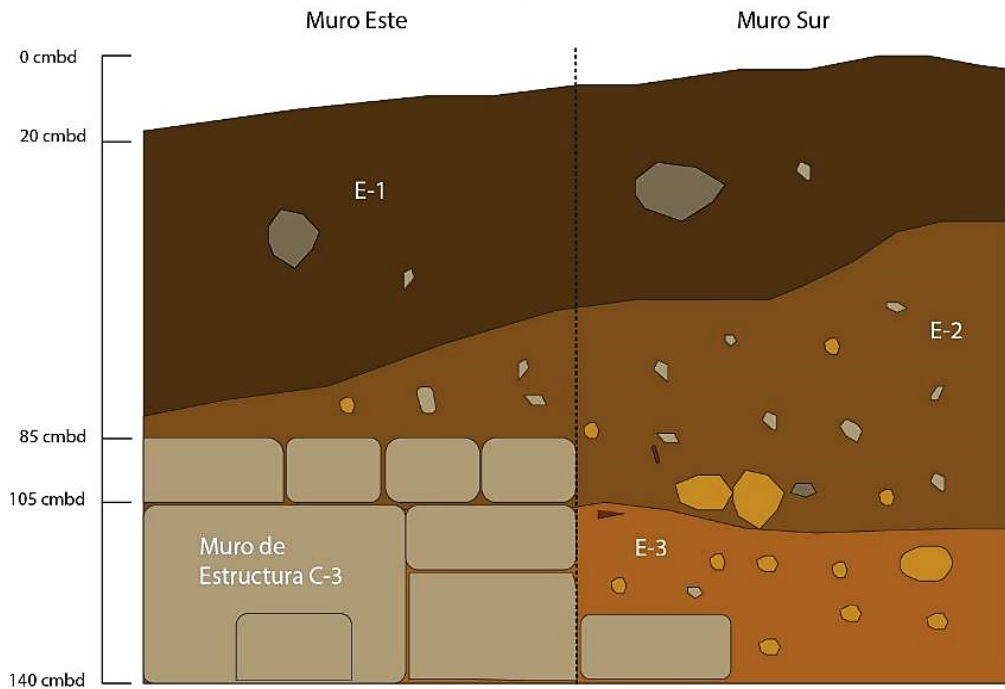


Figure 8.25. E and S profiles of Operation 7c-3, Pan Alujaay, showing Structure C-3.



Figure 8.26. NW facing wall of structure C3, shown in Operation 7c-3, 85-145 cmbd.

Ceramics

A total of 2,437 ceramics were recovered in Operation 7c-3. Of these, 597 were classified according to group or type and subjected to attribute analysis. This ceramic sample was dominated by San Pedro Monochrome types (n=526, 88%) which span the Terminal Classic through Late Postclassic, but which were most common during the Late Postclassic phase. These included San Pedro Tan-Cafe (n=197), San Pedro Black-Brown (n=184), San Pedro Red (n=61), and San Pedro Grey-Brown (n=20). Other plain Postclassic ceramics identified in Operation 7c-3 included a moderate quantity of Xola Naranja (n=52) and small quantities of Patzam (n=8), Santa Rita Micaceous (n=4), and Esponja (n=2).

In addition to the monochrome sherds, Operation 7c-3 yielded a number of bichrome and polychrome sherds belonging to the Postclassic period including Fortress White on Red (n=13), Acropolis Red on White (n=3), and Chinautla Polychrome (n=1). Fortress White on Red, which is a well-known diagnostic of the Late Postclassic period (see Navarrete; Wauchope 1970), was found throughout the stratigraphic sequence in Operation 7c-3, with one example being recovered from Level 9 (Stratum 3). This evidence indicates that Structure C-3 was constructed in the Late Postclassic period and that operation 7c-3 consisted entirely of mixed fill.

Mixed with the abundant Postclassic material was evidence of earlier occupations, however. The presence of small quantities of Santa Marta (n=8), Crema-Rosado (n=6), Esperanza Flesh (n=3), and Amatlé (n=1) all indicate occupation of the site during the Classic period, while a few sherds of Preclassic Red and Orange (n=4) indicate a very slight occupation during the Late Preclassic to Protoclassic period.

Structure C-3

The wall encountered the base of Operation 7c-3 (see Figure 8.27) was designated as Structure C-3. The high quality of this architectural feature clearly indicated that was part of an elite residence or a public / ceremonial structure. Additional excavations were deemed necessary to ascertain the size and function of this structure. Six additional units

(Units 4, 6, 10, 13, 15 and 16) excavated in the vicinity of Op 7c-3 yielded architectural remains that likely pertain to this same structure.

Operation 7c-4

Op. 7c-4, which was excavated directly east of Unit 3, encountered a compact, but uneven dirt floor, containing several small depressions, some of which were filled with rocks, and a small concentrated scatter of mud bricks (Figure 8.27 left) perhaps representing construction debris. Below this prepared but irregular surface, excavations encountered first a layer of small rough stones (Strata E-5), and then a more compact layer of larger stones (Figure 8.27 right) clearly representing construction fill for structure C-3.



Figure 8.27. Operation 7c-4, showing talpetate blocks encountered at 65 cmbd (left) and rubbed fill of platform C-3 encountered at 85 cmbd (right)

Operation 7c-10

Unit 10 at Pan Alujaay was excavated 10 m to the north of Unit 3 (see Figure 8.23) and successfully identified the same wall (Figure 8.28), although at a much shallower depth thanks to the fact that the soil on this terrace got shallower moving from the back of the terrace (south) towards the front of the terrace (north). Excavations at the base of this wall again identified a compact dirt floor overlying sterile soil. Abutting this wall, was a large, freestanding block of uncut stone whose function is unknown.

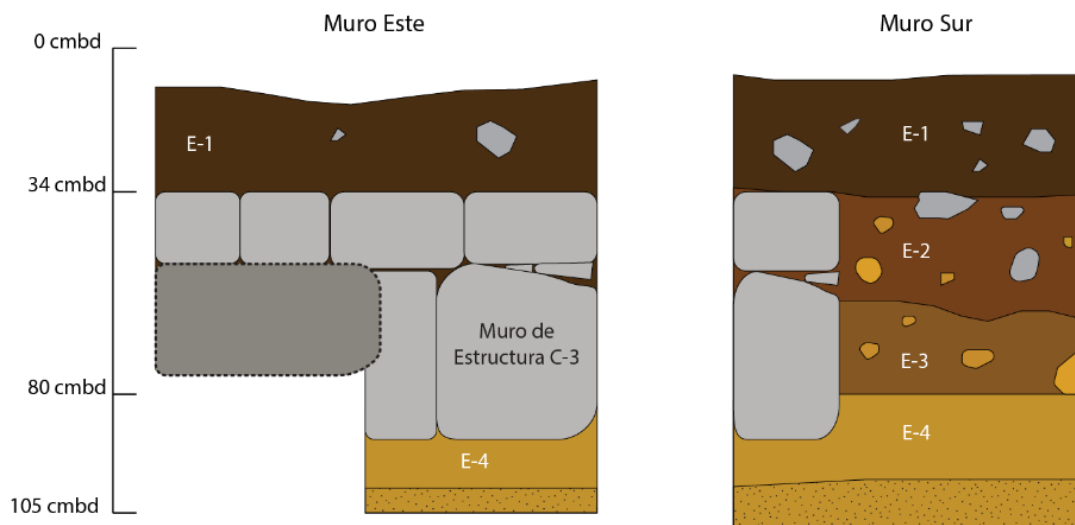


Figure 8.28. East and south profiles of Operation 7c-10.

Structure C4

Three units (Units 7, 8 and 12) excavated between 10 and 15 m east of the units discussed above, but on the same terrace, also encountered architectural features, but in this case the features pertained to a domestic structure, which we refer to here as Structure C4.

Operation 7c-7

Operation 7c-7, for instance encountered one corner of a line-of-stone foundation associated with this structure (Figure 8.29 left). The line of stones was oriented NE-SW and was constructed of cut stone blocks measuring approximately 15 cm wide x 20- 30 cm in length. Immediately in front of this line of stones there was a scatter of rough rock and then a line of mud-bricks running north-south, possibly delimiting a small portico (covered porch) area, similar to those seen on historic houses in San Pedro La Laguna (Figure 8.30 right).

Operation 7c-8

Operation 7c-8 was excavated just to the south of Op 7c-7 to confirm that the line of stone foundation observed in that unit continued in this direction and to gather more information on the size and function of this structure. Instead of coming straight down onto stone, however, Op 7c-8 encountered a set of mud-brick / talpetate steps which ascended to the east (Figure 8.29 right). Removal of a portion of these steps revealed that the line of stone foundation did indeed continue beneath these steps but that the blocks utilized in this hidden section of the wall had been less well finished.

Operation 7c-12

Operation 7c-12 was excavated to determine the east-west dimensions of Structure C4. The unit extended 4 m west of Operation 7c-8. To prevent the destruction of coffee trees, the unit was restricted to 0.50 m wide. It was found that the cobble stone floor identified at the eastern edge of Op 7c-8, continued more than 3 m east, at which point it ended in a mud-brick wall (Figure 8.31), probably representing the back wall of Structure C4. However, beyond this wall, to the east, another section of stone floor was identified, possibly representing the floor of an auxiliary structure.

After having exposed the floor and back wall of Structure C4, it was decided to excavate a small test unit through Floor 1 to search for buried deposits and organic samples that could be used to determine the date of construction. Levels 5 to 7 of Operation 7c-12 were restricted to this part of the unit and extended to a maximum depth of 0.90m below the datum (Figure 8.32).

Below Floor 1, we encountered three strata (Strata 3,4, and 5). Stratum 3 consisted of a fine dark brown soil containing a few angular cobbles, some fine charcoal pieces and few small animal bones. Below this, we encountered a second cobbled floor (Stratum 4), which was of similar construction to Floor 1. Finally, Stratum 5 was a layer of very dark soil which contained a low density of ceramics and numerous pieces of charcoal.



Figure 8.29. Pan Alujaay, Operations 7c-7 (left) showing corner of stone foundation of Structure C-4, and Operation 7c-8 (right) showing mud-brick steps leading up to floor level of structure. Looking east.



Figure 8.30. Traditional mud-brick house in central San Pedro La Laguna, showing covered porch area.

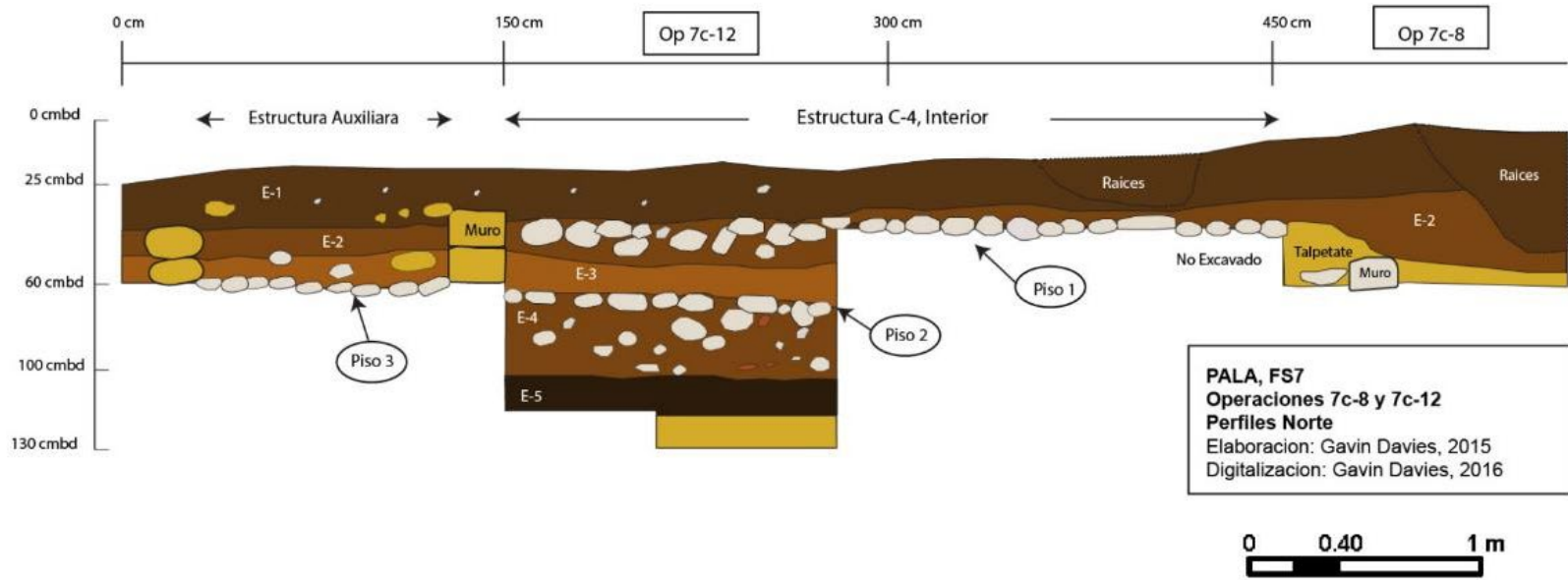


Figure 8.31. North profile of Operation 7c-12 showing floors 1 and 2 of Structure C-4.



Figure 8.32. North profile of test pit excavated within Operation 7c-12 showing floors 1 and 2 of Structure C-4.

Ceramics and Chronology

The range of ceramics recovered from Operation 7c-12 was similar to that of other units at the site and although the deeper levels included proportionally more Classic sherds (such as Esperanza Flesh), postclassic diagnostics were still present. There was, however, a notable difference in the relative percentages of the monochrome types between the higher and the lower levels (Figure 8.33). Figure 8.33 shows that, in level 2, the percentages of each surface color are almost equal, but in level 6 black-browns are clearly dominant constituting more than 70% of the total. A charcoal sample recovered from the lowest stratum (Stratum 5) in Unit 12 was analyzed by ICA and was dated to 730 +/- 40 BP or Cal 1220 - 1300 AD (with 89.2% certitude) indicating that the older floor level (Floor 2) of Structure C-4 was constructed around the beginning of the Late Postclassic period.

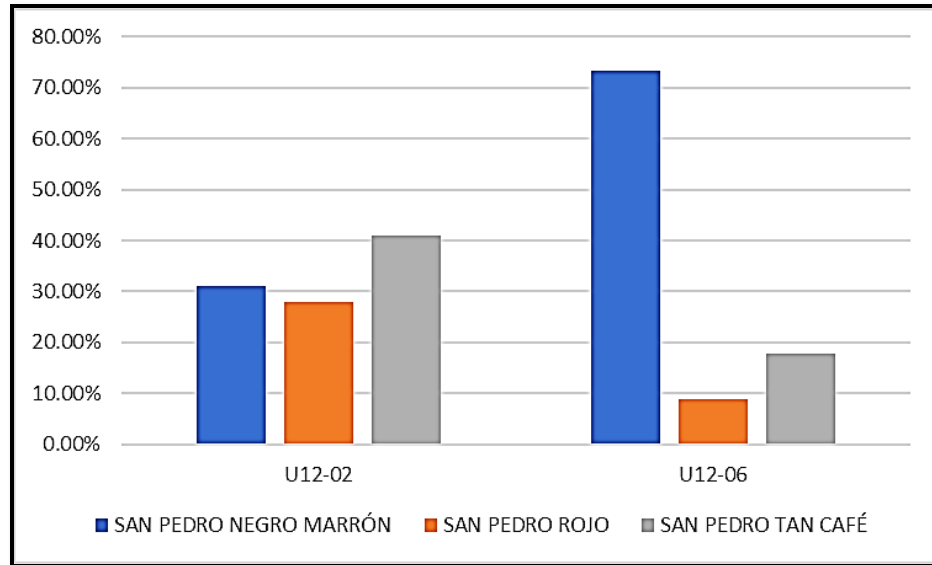


Figure 8.33. Comparison of relative percentages of different San Pedro monochrome types between levels 2 and 6 of Unit 12.

Obsidian

A relatively large number of obsidian artifacts ($n = 52$) was recovered from Operation 7c-12, with the highest frequency occurring in Level 6, below Floor 2. The majority of these ($n=45$, 86.5%) were prismatic blade fragments. The remaining fragments included four flakes, one core, and one small basal-notched arrowhead. The core and arrowhead were both recovered from Level 2, which terminated at the surface of Floor 1.

Structure C5 - Kitchen?

Operation 7c-6, which was excavated approximately 6 m northeast of Op 7c-4, revealed a sub-circular arrangement of stones, with evidence of burning in the center. The function of this ephemeral feature is not clear, and its circular appearance may be illusory, caused by the limited extent of the exposure. Nevertheless, it does bear a striking resemblance to a feature which Fauvet-Berthelot encountered at the Late Postclassic site of Cawinal in the Chixoy Basin (Ichon and Fauvet-Berthelot 1980) (Figure 8.34) and which she interpreted as a kitchen.

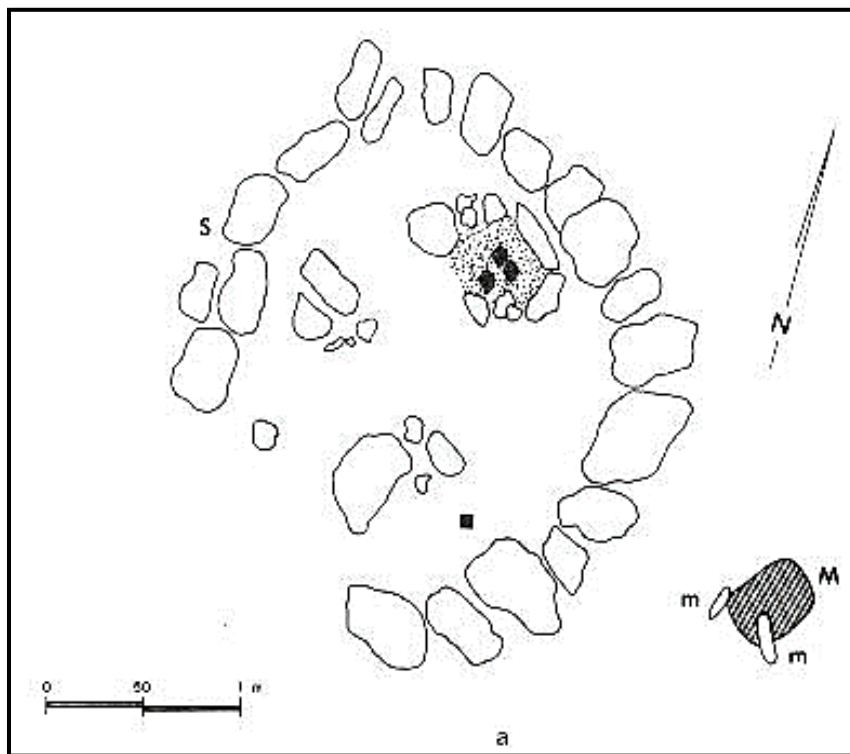


Figure 8.34. Comparison of feature identified in Operation 7c-6 with kitchen feature identified at Cawinal (Fauvet-Berthelot)

Structure C6 – Temezcal?

Operation 7c-13 was excavated to investigate a pile of lajas (naturally flat stone slabs) and other rocks that were encountered sitting on the surface and which were suspected to have represented a collapsed structure (Structure C-2). Operation 7c-13 measured just 0.5 m wide by 3 m long and extended from southwest to northeast. Approximately 36 cm below the surface, two linear (east-west) stone features began to emerge.

Operation 7c-16 was excavated to investigate these walls further and revealed what may have been a temezcal, with the lajas forming the sides of a central alley and a bench located on the north side of the alley (Figure 8.35). The stones lining this channel consisted of smooth lajas, similar to the ones lying on the ground surface to the north of Unit 13, adjacent to the historic shrine (Structure C-1). Those lajas are thus suspected to have originally been associated with the temezcal (Structure C-6). The whole structure appears to have abutted the north-south facing wall of the residential platform (Structure C-3).

Midden Area

Operation 7c-14 was excavated on Terrace 3, wall of Terrace 4, where the terrace height was approximately 2 m (Figure 8.36). This location was selected because of the high density of ceramics that had been recovered from this area during the surface collection.

Artifacts and Interpretation

Operation 7c-14 was the most productive unit in the entire site from the perspective of artifacts, although it was also one of the largest units. The ceramics found in this unit were more complete than those found in other units and this fact combined with the presence of a large quantity of obsidian, burnt animal bones and other artifacts, e.g. ear spools, indicated that this had been the garbage dump for the domestic unit located on the terrace above (Structure C-4).

The amount of obsidian recovered from Operation 7c-14 was the largest and most diverse of the entire project. A total of 168 pieces was recovered. The majority of these (n=102) were prismatic blade fragments, but other blade forms (n = 27), fragments (n =

17), nuclei ($n = 3$) and a spear tip were also recovered. A preliminary visual analysis carried out by María Corado, using samples donated by Edgar Carpio, indicates that the majority of the obsidian derives from the San Martín Jilotepeque source.

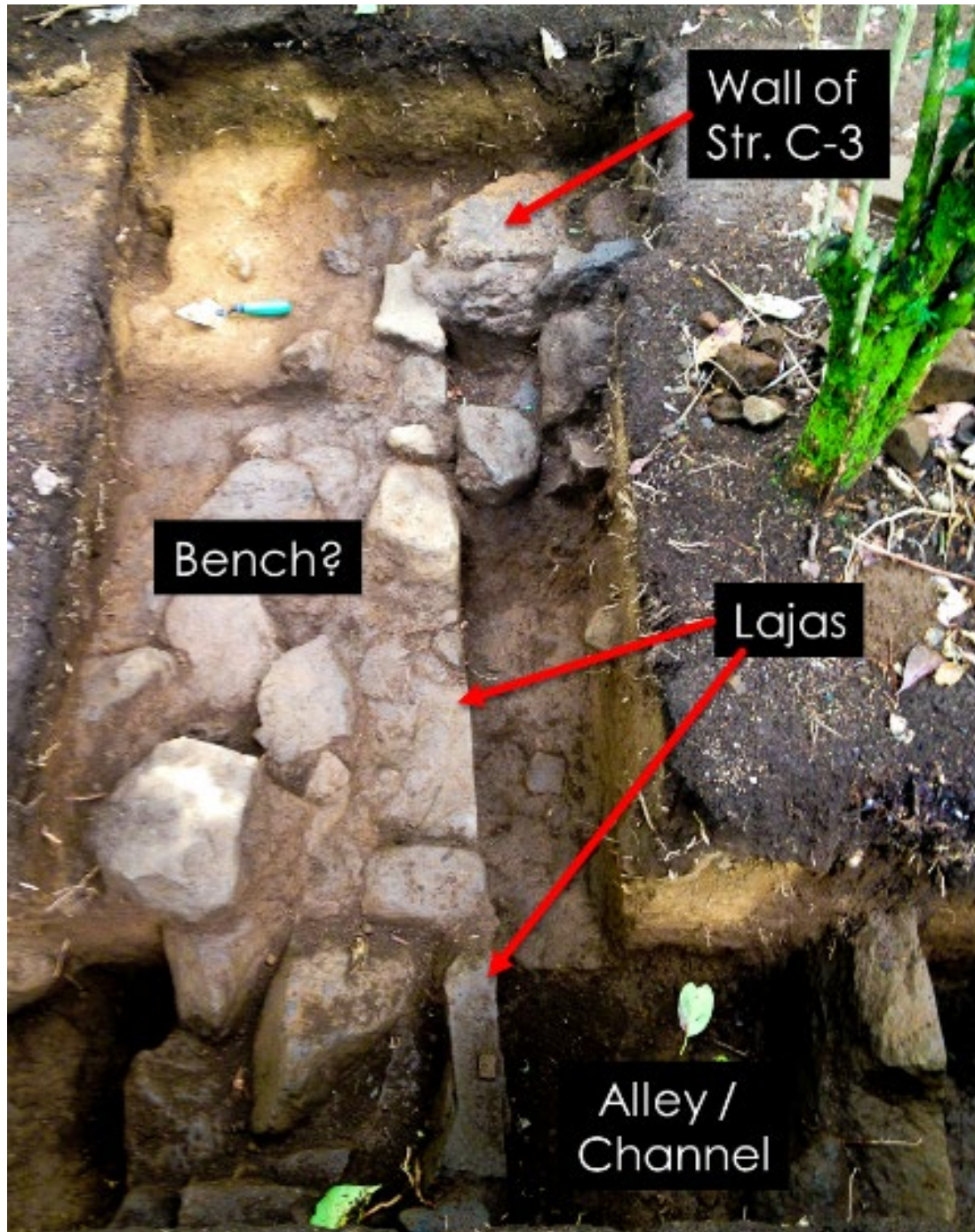


Figure 8.35. Possible temezcal revealed in Operation 7c-16, Pan Alujaay.



Figure 8.36. Location of Operation 7c-14, with wall of Terrace 3 in background. Looking southwest.

Pan Alujaay Area C Summary

Operations 7c-3, 7c-4, and 7c-10 identified portions of a rubble-filled platform or cimiento (Structure C-3) that was oriented northwest-southeast and measured at least 10 m in length and approximately 55 cm in height. The frontage of this platform was constructed of dressed stone blocks.

Operations 7c-7, 7c-8 and 7c-12 revealed a low stone foundation, a cobble-stone floor, adobe walls, and adobe steps, all of which appear to be associated with a single domestic structure (C4), which was constructed on a natural surface which was modified

and extended by a well-constructed platform / cimientó (Structure C3). The construction style (i.e. adobe walls constructed on a low stone base) and the dimensions of this house are analogous to the adobe houses that existed in San Pedro from colonial times until the middle of the last century. Structure C4 seems to have had a rectangular plan instead of a square plan, but rectangular structures were also common in downtown San Pedro until the last century.

Operations 7c-13 and 7c-16 revealed a linear alley and bench that extended perpendicular from the northeastern terminus of Structure C-3 and which appear to represent the remnants of a temezcal. Finally, Operations 7c-14 and 7c-15 revealed a dense midden deposit which was clearly associated with this affluent Late Postclassic household.

CHAPTER 9. CERAMICS AND CHRONOLOGY

This chapter describes the PALA ceramic collection and the methodology used for the analysis, which was conducted in a temporary laboratory in San Pedro La Laguna, between August of 2015 and June 2016. The principle goal of the PALA ceramic analysis was to identify well-established diagnostics (e.g. Glossy Orange, Esperanza Flesh, Amatlé, and Fortress White on Red) and to use these to determine the duration and relative chronology of the local utilitarian wares, which dominated the majority of the site assemblages.

9.1 ANALYSIS METHODS

A modified type-variety system, similar to the one utilized by Parsons (1967) at Bilbao and, more recently, by Urban et al (2013) in Honduras, was utilized for the initial sorting of the ceramics into groups and types, with groups being based on primary surface treatments (e.g. slip color) and types being based on secondary surface treatments such as burnishing, polishing, incising or painting.

The initial sorting enabled us to see that the PALA assemblage included a good sample of Late Preclassic through to Early Classic ceramics and a large collection of Late Postclassic material. With the exception of a handful of Amatlé, Jelic Red on Cream, and plumbate sherds, however, the assemblage revealed very few obvious Late Classic or Terminal Classic ceramic types. Rather than documenting continuity across the Classic to Postclassic Transition (as was expected), the results thus appeared to indicate a worryingly long period of abandonment or decline.

As such a long hiatus seemed improbable, we began to re-examine what were originally viewed as the local Postclassic and Early Classic monochrome types, specifically San Pedro Burnished Ware and Santa Marta Ware. It was ultimately recognized that each of these local wares had a much longer history than was originally believed and thus that they needed to be treated separately from the imported wares. Because of the difficulty of aligning the long, slow changes of the local ceramics with the faster changes of the imported ceramics, these are presented separately below.

9.2 ATTRIBUTE ANALYSIS

In addition to classifying the ceramics into groups, types and wares, a basic set of measurements was recorded for each sherd in the assemblage. For body sherds this was limited to maximum and minimum sherd thicknesses. When multiple body sherds of the same type/ware and from the same context were recorded, the maximum thickness was taken from the thickest sherd and the minimum thickness, from the thinnest sherd.

In the case of rim sherds, additional formal attributes were recorded including rim orientation and lip form. Orifice diameter was also recorded for all rims that were not too fragmentary (i.e. rims that had more than 2 cm of rim preserved). Base, handle, and support forms and heights were also recorded. Finally, notes were made about the location and style of any decoration, as well as the presence or absence of fire clouds as these can sometimes be used to infer vessel function.

9.3 COLLECTION OVERVIEW

The survey and excavations conducted for the PALA project generated a collection of just over 38,000 ceramic sherds, of which 13,119 were selected for classification and attribute analysis. Undecorated body sherds measuring less than 2 inches in diameter were counted and weighed only but not classified. The primary reason for not spending time on these is because they were more time-consuming to identify and yielded less overall information due to their small size and lack of diagnostic attributes.

Of the 13,119 sherds selected from the total amount recovered, classification and analysis was completed for 10,761. The remaining 2358 sherds, most of which were from surface contexts at Pan Alujaay, were not classified due to insufficient time and funding.

It should be noted that due to the fact that the PALA laboratory was located in San Pedro La Laguna, direct comparisons of these ceramics with collections held at IDAEH in Guatemala City was not possible and we were therefore forced to rely heavily on published descriptions and photographs for comparisons and identification. However, several visits were made to both the Ceramoteca and the Universidad del Valle, where we were able to consult with other collections recovered from sites around the lake (e.g. Chuitinamit,

Chuk'muk and Chuitinamit. Marion Popenoe de Hatch also generously travelled to San Pedro to offer her thoughts and the ceramics.

9.4 NOTES ON CHRONOLOGY

One of the main obstacles for the PALA ceramic analysis was that most of the ceramic assemblage was derived from surface contexts or excavated lots with high levels of agricultural disturbance. As a result, a large portion of the assemblage consisted of small sherds, making it often difficult to identify the original vessel forms. In the case of surface sherds there was the additional problem that sherds had often lost their original slip. The difficulty of identifying both vessel shapes and slip colors means that a large percentage of the sherds could only be classified at the group or ware level.

As ceramic descriptions are rarely detailed enough to make identifications a hundred percent confidence, the designations and chronology presented here should be considered tentative, pending more direct comparisons with collections in the Ceramoteca.

The Kaminaljuyu Debate

As most readers of this dissertation will now be aware, Takeshi Inomata et al (2014) recently proposed a radical revision to the chronology of the southern highlands which has ignited significant debate among researchers working in this region (Braswell and Robinson 2014; Demarest 2017; Inomata and Henderson 2016; Kaplan and Paredes Umaña 2018; Love 2018; Mendelsohn 2018; Ortiz Vallejos 2014).

Based on a Bayesian analysis of radio-carbon dates recovered from past excavations at Kaminaljuyu, Semetabaj, Naranjo and the Antigua Valley, and supported by ceramic cross-ties from a wide range of sites across southern Mesoamerica, Inomata et al (2014) have argued that the beginnings of the *Providencia* and *Verbena* phases of Kaminaljuyu (Table 11.1) need to be brought forward by 300 years. Such a shift, they argue, is necessary to bring key cultural developments in the southern highlands and Pacific Coast into closer alignment with processes in the lowlands and Gulf Coast.

The responses to these proposals have so far ranged from unquestioning acceptance (e.g. Kaplan 2018; Ortiz 2014) to outright rejection (e.g. Love 2018), with others (e.g. Braswell and Robinson 2014; Demarest 2014; Mendelsohn 2018) opting for a more neutral middle ground.

Given that the proposals of Inomata et al. directly impact on the ceramic chronologies of Semetabaj, Chuk'muk and Chocoma, they also directly impinge on the dating of the Preclassic phases of the PALA project area. As no radiocarbon dates were recovered from Preclassic contexts, however, I have opted to defer engaging in this debate fully until such dates can be obtained and further comparative analysis can be conducted on the Preclassic ceramics in the PALA collection. As the relative chronology of the Kaminaljuyu phases (Table 9.1) continues to be supported, however, I have opted to use the Kaminaljuyu phases to anchor the Preclassic ceramics to other developments in the southern Maya region.

Table 9.1. Comparison of Shook / Hatch and Inomata chronologies for Preclassic to Early Classic Phases at Kaminaljuyu.

Kaminaljuyu Phase	Shook / Hatch (1999)	Love (2018)	Inomata (2014)
Aurora	200 – 400 AD		250 – 400 AD
Santa Clara	100 – 200 AD		150 – 250 AD
Arenal	300 BC – 100 AD	100 BC – 100 AD	50 – 150 AD
Verbena	400 - 300 BC	300 – 100 BC	100 BC – 50 AD
Providencia	700 – 400 BC	500 – 300 BC	350 – 100 BC
Las Charcas	1000 – 750 BC		800 – 350 BC

9.5 IMPORTED CERAMICS

Despite attempts to separate the Preclassic ceramics from San Juan Antigua into distinct phases based on published descriptions, the mixing of deposits at that site, the highly fragmented nature of the ceramics, and the poorly understood chronology of several

key ceramic types (particularly glossy orange and glossy black), greatly hindered this process and so after considerable effort, it was decided that the definition of phases for the Preclassic period would have to await more direct comparative analysis with collections in the Ceramoteca.

An advantage of this is that it will allow more time to consider the specific implications of the Inomata et al. chronological proposals and how the current assemblage may help inform or refine these ideas. At the current stage, however the Preclassic phase assignments should be considered preliminary. Full descriptions of the potential Preclassic diagnostics and of the imported wares from later periods are provided in Appendix A.

The Middle Preclassic (Providencia Phase)

The Preclassic phase in the project area is considered as beginning around 600 BC and extending until around 200 AD. It therefore spans the Providencia / Verbena transition through to the Santa Clara phases at Kaminaljuyu, as per Love 2018. Middle Preclassic / Providencia phase diagnostics recovered from the project area included Xuc Ware, Santa Cruz Red Ware, Siquinala Red on Buff, Monte Alto Red Ware, Semetabaj Red on Brown, Sumpango Ware, and Utatlan Zoned Red and Black Ware (Table 9.2).

Table 9.2. Providencia phase ceramic types identified in project area.

Group	Type / Ware	Count
Preclassic White or Cream	Xuc Ware	2
Preclassic Red	Specular Red	22
	Santa Cruz Red	2
Red on Buff, Brown or Orange	Sumpango	8
	Monte Alto Rojo	2
	Siquinala Red on Buff	6
Preclassic Brown	Semetabaj Brown	1
Red on Black	Utatlan Ware	2
Total		45

These Middle Preclassic ceramics may represent the remains of an ephemeral Middle Preclassic occupation. However, it is also possible that these types were still in circulation in the first half of the Verbena phase and that they were either brought here by the first settlers or imported slightly after this time. i.e. between c.300 and 100 BC.

Xuc Ware (n=3)

Shook et al (1979:38) describe Xuc Ware as having a medium-fine textured, white colored paste containing fine mica flakes and often displaying a light gray core. The surface is typically unslipped but well-smoothed and polished and with the addition of red paint. Izote ware evolved from Xuc Ware in the Late Preclassic period and is closely similar, with the primary differences being the use of zones of purple paint bounded by incised lines (Braswell 1996).

Three sherds closely matching descriptions of Xuc Ware were recovered from the current project area, from FS3, FS8, and FS18b. One of these sherds (a rim from FS8) displayed traces of red paint just below the rim, while another (from FS18b) had a shallow encircling groove. Xuc Ware has been recovered from other sites in the Lake Atitlan Basin including Semetabaj, Chuk'muk and sites on the Northern shore (Bruchez 1994).

Santa Cruz Rojo (n=2)

Two sherds recovered from Level 7 in Unit 1 of San Juan Antigua, Area A were identified as Santa Cruz Rojo (Parsons 1967: 68) based on their bright red, lustrous slips and the presence of thin walls and medial flanges (Figure 9.1). The walls are thin, and the flanges are sharp. Parsons (1967: 67-68) notes that this type is common in Kaminaljuyu where it is a diagnostic of the Providencia phase.



Figure 9.1. Santa Cruz Rojo sherd with medial flange recovered from San Juan Antigua.

Sumpango Ware (n=2)

Sumpango was one of the most common utilitarian wares at Kaminaljuyu during the Middle and Late Preclassic periods. It was also common in the departments of Sacatepéquez, Chimaltenango and Guatemala during the Middle Preclassic but was largely restricted to the Valley of Guatemala during the Late Preclassic. The paste is dark red or reddish-brown and has frequent pumice inclusions. The surface is smoothed and polished and the primary slip ranges in color from orange to beige. Applique decoration was added to this and painted red. Only two sherds of Sumpango Ware were recovered during the current project (Figure 9.2) and these were recovered from Unit 1, Level 6, in Area A of San Juan Antigua.



Figure 9.2. Sumpango ware sherds recovered from San Juan Antigua, Area A.

Red on Buff (n=6)

Several jar rims with low flaring necks and a few Red on Buff body sherds recovered from the project area (FS3, FS18, and FS20) may be linked to Siquinala Red on Buff Ware (Parsons 1967) which Parsons assigned to the Middle Preclassic Alagoes Alago Phase. Parsons describes this ware as having a brown to dark yellowish-brown paste, sparse inclusions and a medium texture (1969:63). The decoration on the sherd recovered from Chi Kaqajaay (Figure 9.3) closely resembles that described by Parsons for the Recreo Group.



Figure 9.3. Red on Buff rim sherd from Chi Kaqajaay (FS3).

Monte Alto Rojo (n=2)

Monte Alto Rojo is a well-known dichrome, which has been identified at Kaminaljuyu, Semetabaj, Chiche, and Takalik Abaj. Popenoe de Hatch states that the production of this type began in Middle Preclassic times and that it continued in use through to the beginning of the Early Classic (Popenoe de Hatch 2005). At the site of Monte Alto, this ceramic type is thought to have evolved from *Sumpango Ware*, which was the dominant utilitarian ware at Kaminaljuyu during the Middle Preclassic and into the Late Preclassic (Popenoe de Hatch 1997). *Monte Alto Rojo Sobre Ante* forms part of Parsons'

Siquinala Red on Buff Ware, which he places in the Middle Preclassic *Algo es Algo* phases. At Kaminaljuyu it is a diagnostic of the Providencia phase (500/300-300/100 BC).

The body sherd recovered from excavations in San Juan (Figure 9.4) appears to belong to a composite silhouette bowl or a wide-mouthed jar. As it was found in association with Protoclassic and Early Classic types, this sherd is tentatively dated to the Protoclassic period.

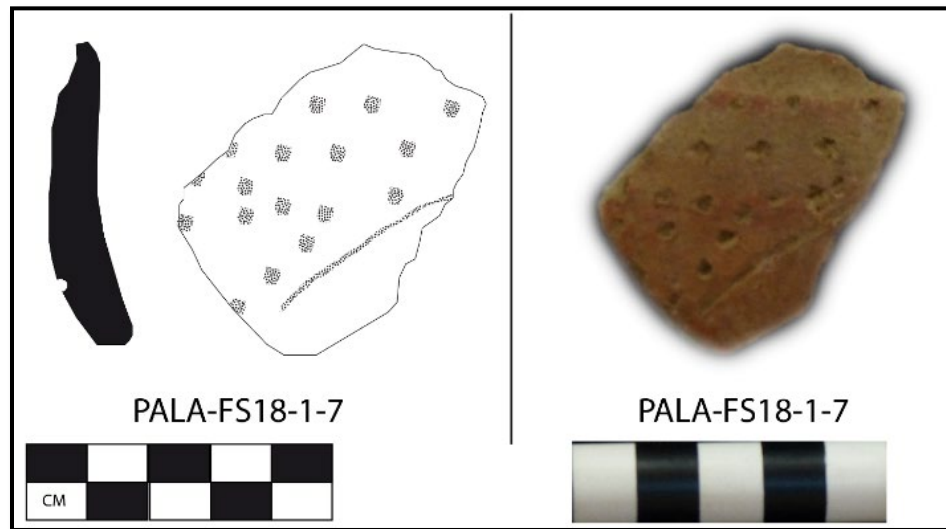


Figure 9.4. Monte Alto Rojo from San Juan Antigua. Photo and drawing by Hari Castillo.

Semetabaj Red on Brown (n=1)

Only one sherd of Semetabaj Red on Brown with its characteristic all over brown slip with red rim and single row of punctations was recovered during the current project. Surprisingly, this was not recovered from either of the large Preclassic sites in the project area but from an excavated context at Pan Alujaay, indicating that that site's early phase may have begun as early as the late Middle Preclassic.

A single sherd of Semetabaj Red on Brown was also observed in the Ceramoteca collection from Chuk'muk although it appeared to have been mistaken for a Late Classic type.

Utatlan Red and Black (n=2)

Utatlan Ware was first identified by Lothrop (1933: 112) and is common in the Quiche area. Shook et al. (1979) postulated that it was restricted to the Middle Preclassic period, but more recent analyses tend to view it as diagnostic of the Late Preclassic (Ortiz 2014). Only two sherds of Utatlan Ware were recovered in the current project area and both were recovered from mixed contexts at San Juan Antigua, Area A. The recovered sherds included one flat base and one body with basal junction.

Verbena – Santa Clara Phases (c.300 BC – 200 AD)

The use of vessel supports became increasingly common through the Late Preclassic, with most early forms consisting of small, solid “nubbin” feet. By Protoclassic times, however, these had evolved into the large, hollow, mammiform feet that are one of the characteristics of this final phase of the Preclassic (Popenoe de Hatch 1999). Common forms in the Late Preclassic highlands included:

- flat-based bowls with labial flanges or horizontally everted rims bearing incised or excised decoration (Popenoe de Hatch 1999; Rands and Smith 1969).
- Zoomorphic or anthropomorphic effigy bowls with applique decoration
- incensarios with three spikes.

In terms of decoration, incised and punctate decoration were common and were often combined on the same vessel, with geometrically incised zones being filled with either punctations, additional lines or red or purple paint. Resist decorative techniques also entered the region at this time and were particularly common on glossy orange vessels.

Ceramics dating to the Verbena and Arenal phases recovered during the current project included glossy orange (plain and with Usulután decoration) and glossy black, black-brown sherds bearing geometric, coarse incising, and a number of other ceramic types bearing nubbin supports (Table 9.3).

Table 9.3. Verbena and Arenal Phase ceramics identified in the project area

Group	Type / Ware	Count
Preclassic Glossy Orange	Undecorated	89
	With Usulután	20
Preclassic Black or Black-Brown	Glossy Black	61
	Kaminaljuyu Black-Brown	58
Preclassic White	Izote, Marfil, Verbena Ivory?	68
Preclassic Brown	Café Acanalado	1
Preclassic Reddish Brown	Café Rojizo Inciso	1
Rojo Rosado	Not Defined	23
Red and Orange Zoned	Maruca Red on Orange	1
Nubbin Supports		8
Total		451

There were also a number sherds with white, greyish-white or pinkish white paste, cream or white slips and remnants of red-painted decoration. These sherds likely include examples of Izote Ware, Marfil and Verbena Ivory (Popenoe de Hatch 1997; Wetherington 1975) but further comparative analysis will be needed to confirm this. Three sherds of Verbena White with its characteristic reddish brown paste and incising were, however, clearly identifiable. The presence of the above-mentioned types indicates that the project area almost certainly contained nucleated settlements by the Verbena phase.

Glossy Orange with Usulután (n=20)

Glossy Orange sherds with Usulután decoration were most common during the Verbena phase (Love 2016) but continued into the Arenal phase at Kaminaljuyu. Small quantities of Usulután decorated ceramics were recovered from Chi Kaqajaay (FS3), Punta de Oro (FS54) and Chuwa Jul Ya' (FS17). These included a partially reconstructable face / effigy bowl with nubbin feet, recovered from Chi Kaqajaay, Area H (Figure 9.5) and a glossy orange rim with a fine-incised labial flange recovered from FS17 (Figure 9.6). Both of these have close analogues with examples from Parsons' Rio Santiago group from Bilbao (1967: Figures 38-40).



Figure 9.5. Glossy orange effigy bowl recovered from Chi Kaqajaay, Area H.



Figure 9.6. Glossy orange rim with Usulután decoration from Chuwa Jul Ya' (FS17)

Glossy Black

Glossy Black is well known in the departments of Quiché, Quetzaltenango, and Totonicapán and has been found in low quantities at most sites with Preclassic occupations in the lake, including Chuk'muk and Semetabaj. Chinchilla et al. (Unpubl.) also found it near Santiago Atitlán, at Tzanchali and Isla Cojolya. This type is called "Victory Incised Waxy" at Bilbao (Parsons 1969: 79) and a significant portion of the glossy black ceramics bore pre-slip or post-slip incised decoration similar to examples illustrated by Parsons (Figs. 34 and 35). A familiar motif consisted of panels of pendant triangles infilled with either incised lines or punctations (Figure 9.7).



Figure 9.7. Preclassic Glossy Black ceramics from FS3 and FS18.

A total of 70 sherds were classified as Glossy Black during the current Project. The majority of these (n=38, 54.3%) were recovered from Zone 4, with most deriving from test units excavated at San Juan Antigua (FS18). The majority of the glossy black sherds appear to have come from shallow bowls, some of which had slightly incurving rims. These are thought to have been imported to the area and to have functioned as either serving bowls or grave items.

One of our key diagnostic ceramics, recovered from the lowest strata at San Juan Antigua, consisted of a fragment of a glossy black vessel with horizontally everted rim (Figure 9.8) which appears very similar to an Orfeo orange bowl recovered from Tomb 2, in Structure A7 at La Lagunita, in the Chixoy Valley. The La Lagunita tomb was dated to 80 AD +/- 100, giving a potential range of approximately 20 BC – 180 AD. Inomata et al (2014:397) noted that the radiocarbon date from this burial “exhibits a wide probability distribution from cal A.D. 1 to 400” , but that this was “not inconsistent with its early Protoclassic placement”. They added that the vessel shapes in the tomb could be tied to the Istmo / Ix phase of the Grijalva River.



Figure 9.8. Comparison of Glossy Black everted rim fragment from San Juan Antigua, Unit 1, Level 10 and Orfeo Orange Bowl from La Lagunita.

Kaminaljuyu Black-Brown (n=89)

This type was first identified by Shook and Kidder (1952) at Kaminaljuyu where it was likely produced. It began in the Providencia phase and continued until the Arenal Phase. It was part of the Miraflores sphere and had a wide distribution. It was also found by Demarest in Santa Leticia (Popenoe de Hatch 1997). The paste is medium-fine brown to reddish brown with a dark gray core. It has white / light gray and fine inclusions. The surface is covered with a black or dark brown slip, which has a waxy or velvety feel. The surface typically is polished but has a matte appearance.

A total of 89 sherds of Kaminaljuyu Café Negro were recovered from the project area, with the majority coming from San Juan Antigua and Chi Kaqajaay. Some of the best pieces were recovered from Operation 18a-1 and included several fragments of a tripod bowl with large solid, hemispherical supports (Figure 9.9), and the rim of a hemispherical bowl with applique buttons covering most of the exterior (Figure 9.10). The decorative style of the latter bowl is identical to that seen on some Protoclassic vessels in the Robles collection from the Salcaja area, near Quetzaltenango (Ciudad Ruiz and Ponce de Leon 1984).



Figure 9.9. Kaminaljuyu Café Negro sherds from Operation 18A-1, San Juan Antigua. Drawings by Hari Castillo.



Figure 9.10. Comparison of Kaminaljuyu Café Negro sherd from Operation 18A-1, San Juan Antigua and bowls from the Robles collection, after Ciudad Ruiz y Ponce de Leon 1984:Figures 5g and 6d.

Red and Orange Zoned and Incised

An important Arenal phase diagnostic recovered during the current project consisted of a red and orange zoned effigy tripod bowl with modelled decoration, recovered from the surface at Chi Kaqajaay (Figure 9.11) and apparently designed to appear like the head of a pisote when upturned.

Parsons (1967:69-70) assigned red and orange zoned and incised ceramics to the Middle Preclassic Maruca and Late Preclassic Socorro Groups (1967: 69-70 and 90-91). However, in the four decades since Parsons' research, similar types have been recovered from a number of sites on the lower Pacific Coast, including La Victoria, Sin Cabezas, El Ujuxte, and Izapa and the consensus now is that these types are more appropriately assigned to the Terminal Preclassic period, c. 100 BC – 100 AD (Beaudry 1989: 141-143, Coe and Flannery 1967, Mendelsohn 2018)



Figure 9.11. Zoned red on orange, from Chi Kaqajaay. Photo by Joseph Coombe.

Aurora – Esperanza Phases (c. 200 – 550 AD)

The Early Classic phase in the project area corresponds with the Aurora (250 – 400 AD) and Esperanza phases at Kaminaljuyú. The 200 AD start date for this phase, however, is based on indications that ceramics of the Solano Tradition appeared in the lake area prior to their arrival at Kaminaljuyu and that they arrived here in a more accretional fashion.

In most of the highlands there was strong continuity in the ceramics from the Preclassic to the Early Classic periods (Rands and Smith 1969). Rands and Smith note that the popularity of black to black-brown pottery continued into the Early Classic. An important change in Early Classic ceramics was the appearance of harder pastes, most notably in the common Solano type of Esperanza Flesh. New forms appearing in the Early Classic included:

- Cylindrical tripods
- Tetrapods with stucco decoration and basal flanges
- Basal-flange bowls with ring-stand or tripod supports
- Tripod censers
- Cream Pitchers with spouts and pedestal bases
- Incensarios de cucharón – with solid cylindrical or trough-shaped handles.

Common imported types assigned to this phase included several red and reddish brown types including Rojo Burdo (n=113) and Mahogany Ware (n=102), possibly originating from the Semetabaj area, an unidentified cream slipped type (n=83), and a reddish-orange, red paste type that was originally classed as Glossy Orange but which more likely represents the Solano type known as Llanto (n=70) (Table 9.4).

Table 9.4. Imported ceramics dating to the Early Classic.

Group Name	Tipo	Frequency	% of Total
Classic Cream or White	Cream ND	83	17.44%
	Chuya Red on White	1	0.21%
Classic Red or Reddish-Orange	Maisillo Rojo	2	0.42%
	Fluted Reddish-Orange	26	5.46%
	Verbena Reddish-Orange	1	0.21%
	Thin Reddish-Orange	30	6.30%
	Llanto or similar	70	14.71%
Classic Reddish Brown	Mahogany	102	21.43%
	Mahogany Coarse Incised	21	4.41%
	Café-Rojizo Burdo (Rojo Burdo)	113	23.74%
Streaky	Streaky Brown	15	3.15%
	Streaky Orange Brown	12	2.52%
Total		476	100%

Mahogany Ware (n=102)

Mahogany Ware was common during the Early Classic at Semetabaj and thus may have been imported into the project area from that site which had recently been re-occupied after a Late Preclassic hiatus (Shook et al 1979). Common forms at Semetabaj, which were also encountered in the project area included:

- Comales with two thick loop handles bearing finger indents
- Comales or sartenes with solid, arcing bail handles
- Deep Bowls with coarse incised decoration and thickened rims (Figure 9.12), and
- Ladle Incensarios

Although used principally as an Early Classic diagnostic at Semetabaj, it is likely that Mahogany Ware continued to be used into the Late Classic. Shook et al (1979) note that both the loop and bail handled comal forms have been documented at Zacualpa, where they are included in Wauchope's red-brown slipped wares and span the Early Classic Balam phase and continue until at least the Balam-Pokom (Early-Late Classic) transition. Shook et al also note the presence of decorative modes such as undulating lines and dentate stamping, which suggest contemporaneity with Amatlé ware.



Figure 9.12. Mahogany, coarse incised bowl with bolstered rim..

Late Classic to Early Postclassic Periods (c.600 – 1200 AD)

Imported ceramics assigned to the Late Classic through Early Postclassic periods were sparse. However, a small amount of Amatle Ware (n=56), probably imported from the Kaqchikel or Cotzumalguapa regions was recovered as well as some Jelic Red on Orange (n=70) from the Totonacapan area (Table 9.5) (Figure 9.13). The type designated as Oxido (n=83) may be an antecedent of Xola Naranja and is tentatively assigned to the Late Classic. A few isolated finds of plumbate ware or similar (Figure 9.14) are presumed to have arrived here from the Pacific Coast or piedmont, perhaps from one of the Terminal Classic Cotzumalguapa centers.

Table 9.5. Imported ceramics dating to the Late Classic period

Group Name	Type	Frequency	% of Total
Amatle		56	23.05%
Plumbate	San Juan and Other	10	4.12%
	Tohil Plumbate	2	0.82%
Tiquisate	Tiquisate Undecorated	6	2.47%
Red on Cream or Orange	Jelic Red on Cream or Orange	70	28.81%
Unslipped Beige	Bulux Rojo	2	0.82%
Polished Greyish-Red Ware		14	5.76%
Reddish Brown	Oxido	83	34.16%
TOTAL		243	100%



Figure 9.13. Jelic Red on Cream or Orange, from Chi Kaqajaay, Area B.



Figure 9.14. Plumbate sherds recovered from San Juan and Chi Kaqajaay.

Late Postclassic Period (c. 1200 – 1524 AD)

The Late Postclassic period was well represented in the project area, both in terms of local utilitarian ceramics, and imports. Somewhat surprisingly, the assemblage included a number of apparent imports from the Quiche area, including Xola Naranja and Patzam Unslipped (Table 9.6). These types were the most common types found in the sites of Q'umarkaj (Macario and Burgos 2009) and Chisalin (Weeks 1983) and are not well represented in the Chuitinamit collection held at the Ceramoteca.

Only the most common Late Postclassic imports are discussed here. The remainder are described in Appendix A.

Table 9.6. Ceramics of the Terminal Classic / Early Postclassic Atitlan D Phase.

Ware	Type	Count	% of Total
Xola	Xola Naranja	395	45.29%
	Xola Red	22	2.52%
	Xola Bronze	26	2.98%
White on Red	Fortress White on Red	210	24.01%
Mud	Patzam	114	13.07%
Acropolis Carved Ware	Acropolis Red on White, Orange or Brown	38	4.35%
Chinautla	Chinautla Policromo	27	3.09%
Micaceous	Santa Rita Micaceous	15	1.72%
Esponja	Calcita	10	1.14%
	Esponja	9	1.03%
Misc Late Postclassic	Mold-made Incensarios	3	0.33%
Chuitinamit	Chuitinamit Ware	2	0.22%
	Chuitinamit Incensario	1	0.11%
TOTAL		872	100%

Xola Naranja (n=385)

This type was established by John Weeks during his investigations at Chisalin and was one of the most common types recovered from the K'iche' capital of Q'umarkaj. It appears to have had a wide distribution during the Postclassic period, being found throughout the Central and Southern Highlands as well as in the Pacific Coast, where it

forms part of the Sumatan Group (Batres 2009). It also appears to be the equivalent of Wauchope's Hard Orange from Zacualpa (Wauchope 1975). It was commonly used for cremation jars in the K'iche' and Kaqchikel zones (Navarrete; Wauchope 1970).

Batres (2009) found that this ceramic type was abundant in the Coastal Plain, particularly at the Late Postclassic site of Carolina, but that it was largely absent from the piedmont area, suggesting that it was imported directly to the coast from the highlands.

Most of the Xola Orange ceramics recovered from the project area had a light gray or light brown paste of fine-medium texture with a few ferruginous inclusions and occasional mica flecks. The exterior surface was slipped a burnt orange to brown color and was usually polished to a high luster (Figure 9.15). The presence of mica in the slip amplifies the brightness of the surface. The interior was almost always unslipped and bore pronounced horizontal striations.

In the current investigations, the vast majority (n=348, 88%) of the Xola Naranja was recovered from the site of Pan Alujaay. The only other location to produce a significant quantity was Xe'Tinamit (n=29, 7.3%).



Figure 9.15. Xola Naranja recovered from Unit 10 at FS7, Area C.

Fortress-Style, White on Red or Orange (n=210)

As several highland researchers (Macario and Burgos 2009; Wauchope 1970) have noted, Fortress White on Red (Figure 9.16) was more of a decorative mode than a distinct ceramic type or ware and it appears that over the course of the Late Postclassic period, chalky white decoration was applied with increasing frequency to a variety of both local and non-local monochrome types, including San Pedro Red and Xola Naranja.



Figure 9.16. Fortress white on Red sherds from FS7 and FS13.

A portion of the recovered sherds with chalky white decoration, however, combined a poor quality, pale pinkish-red slip with thick rectilinear white decoration and a coarse, probably non-local paste and thus probably represent an imported type.

A second group that was probably imported includes a polished red or reddish orange slip with fine curvilinear white-painted decoration, and a fine grey paste and appears to be closely related to the Xola Naranja group. Further studies are necessary to quantify these observed distinctions.

The vast majority of the sherds bearing Fortress-style decoration were recovered from Pan Alujaay (n=157, 76.96%) and Xe'Tinamit (n=35, 17.16%). The remaining surface finds were mostly recovered from sites in Zone 1 (FS9, FS11, FS12, FS14, FS36, and FS46), with only a handful being recovered from Zone 4. An almost complete, simple-silhouette bowl with Fortress White on Red decoration was observed in the Cumes collection from Xe'Tawal in San Pedro (Figure 9.17).



Figure 9.17. Fortress White on Red bowl from private collection, Xe'Tawal, San Pedro.

Mud Ware / Patzam Unslipped (n=114)

Mud Ware or "Patzam Unslipped" (Weeks 1983) is an unusual ceramic type that was manufactured in a unique way, by using holes in the earth as molds. The result of this manufacturing technique was that the exterior walls were uneven and bore impressions of leaves and grass. This type, which has a very coarse paste and an irregular surface, appears to have originated in the Early Classic in the Valley of Guatemala. Wetherington 1978 noted that at Kaminaljuyu it first appeared during the Esperanza phase, reached its highest frequency in the Late Classic period, but continued in use until the Late Postclassic period.

Although Weeks (1983) believes Mud Ware was produced by children, this technique of manufacturing pots seems to have been an ethnic marker of the Pokomam of

the Valley of Guatemala. Wetherington (1978), for example, notes that this production technique is still used in the village of Mixco. Not far from there, Shook reported recovering quantities of Esperanza Mud at the Late Classic site of Cotio. I think it is therefore possible that Mud Ware signifies the presence of foreign slaves or servants, possibly captives taken in war by the K'iche' or their affiliates. As this type was only recovered in any significant quantity from the site of Pan Alujaay, I view this as one line of evidence that the elite family living in Structure C-4 were affiliated with a Kaqchikel group who were "deployed" here during one of the K'iche's incursions during the 14th or 15th centuries.

The vast majority of the Patzam Unslipped recovered during the current project came from the elite residential area of Pan Alujaay, Area C (82.56%) but smaller amounts were recovered from other Postclassic sites such as Xe'Tinamit (15.12%), Chuwa Kante (1.16%) and Chuwa Sanayi' (1.16%). The principle forms represented included simple-silhouette bowls and short-necked jars (Figure 9.18).

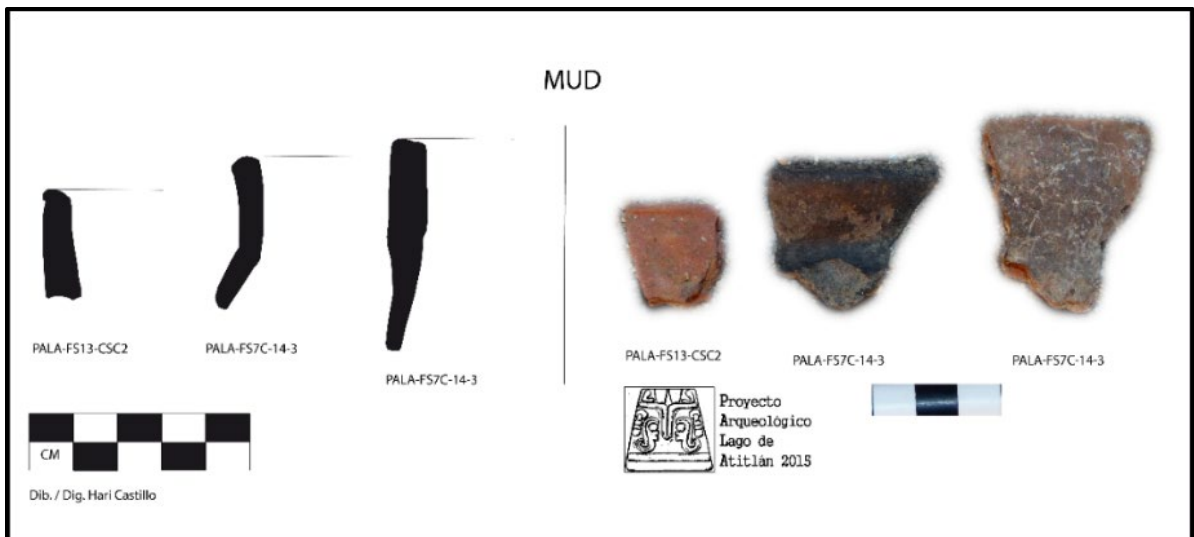


Figure 9.18. Patzam Mud Rims from FS13 and FS7c. Photos and profiles by Hari Castillo.

Chinautla Polychrome (n=27)

Compared to the other Late Postclassic diagnostic types, very few Chinautla Polychrome sherds were recovered in the project area. Most of these (n = 13) were recovered from Pan Alujaay and appear to represent the "bright" variety defined by Wauchope (1970). The decoration typically includes linear or curvilinear patterns of black or dark brown and red over a cream or beige slip. Most of the recovered sherds were small body sherds (Figure 9.19) and so the range of forms is not clear, but bowls with straight-divergent walls with direct rims and rounded lips were observed.



Figure 9.19. Chinautla Polychrome sherds from FS7a (left) and FS7c (right).

Acropolis Carved Ware (n=38)

The type which I dub here Acropolis Carved Ware is the same type that Lothrop referred to as Red on White Incised and which the Agua Azul project called Tzanchicham Modelado. Tracing the distribution of this type, which appears to have been extensive, with apparent equivalencies as far north as Chichen Itza and west to the Basin of Mexico, is greatly hindered by the fact that it has been given a different name by almost every project in which it has been encountered. In the current research, I have opted to call it Acropolis

Ware, following John Fox's recognition of the association of this type with Postclassic acropolis sites. The reason I have chosen to give it, yet another name is due to the fact that each of the existing names is problematic. Firstly, calling it "mold-made" or moldeado is confusing because the majority of the decoration is typically not mold made but incised. Secondly, referring to it as red on white is confusing because multiple surface-color combinations were utilized (i.e. Red on grey, Orange on brown etc.). Finally, naming it after a specific site suggests local production but as yet, no INAA studies have been conducted on this widely traded ceramic.

The most common form in Acropolis Ware at Chuitinamit and at most other sites where it has been encountered was the effigy tripod bowl (Figure 9.20). At Tajumulco in the western highlands, these bowls were encountered in sealed contexts alongside Tohil Plumbate (Dutton and Hobbs 1943), so it is clear that these vessel forms were in circulation by the Early Postclassic period c. 1000-1200 AD. However, effigy tripod feet have also been found in abundance in association with Late Postclassic Pipil sites on the Guatemala Coast (Mata Amado 2008) and at Aztec sites in the Soconusco area (Rosenswig 2012) and so it is possible, given the abundance of Aztec-style rock art at Chuitinamit, that these vessel types did not arrive at Chuitinamit until the Late Postclassic period.



Figure 9.20. Unprovenanced Acropolis ware tripod effigy, National Museum, Guatemala City. Photo by author, 2015.

The small number of sherds of this type recovered from the project area (n=38), and the lack of Nahua style rock art indicates that Nahua influence was not so significant in the project area. The fact that one or two sherds of this type were found at several small sites, however, suggests that some individuals in the project area were capable of acquiring small quantities of this ceramic type, possibly as a result of patron-client “gifting” (LeCount 2001) or through their participation in political or religious ceremonies at Chuitinamit itself.

Mold-made Incensarios (n=2)

These types of censers were popular between the end of the Early Postclassic and the Conquest and good examples were recovered from both Xe'Tinamit and Pan Alujaay (Figure 11.21). The contexts of these examples indicates that they may have been used for foundation rituals associated with the construction of Postclassic houses. The example from Pan Alujaay, for example, was recovered from the surface of the rubble fill of Structure C-3 (see discussion of Operation 7c-4), while the example from Xe'Tinamit was located on the prepared talpetate surface upon which a bajareque structure was built (see discussion of Operation 13-10 in Chapter 10).



Figure 9.21. Mold-made handled incensario from Xe'Tinamit. Photo by Joseph Coombe.

9.6 LOCAL CERAMICS

Although imported ceramics dating to the Late Preclassic Verbena and Arenal phases were identified in some of the surface collections and in the excavations conducted in San Juan, it has not yet been possible to identify the principal local ceramics being utilized in these periods. This is due to the fact that the deepest levels encountered in our excavations in San Juan were dominated by materials dating to the Protoclassic and Early Classic periods (Table 9.7). Our discussion of the local ceramic sequence thus necessarily begins with the Protoclassic period, which I view as spanning the latter part of the Arenal phase and the entire Santa Clara phase, i.e. approximately 50 – 200 AD in the traditional chronology. It is entirely possible, however, that the principal utilitarian types identified for the Protoclassic period originated during the preceding Verbena phase.

Late Preclassic to Early Classic

The principle local ceramics being used in Late Preclassic to Early Classic times in the San Juan area had a pink paste with varying amounts of mica. The most common of these types was named San Juan Morada due to the overall purple surface appearance which resulted from a thin black slip over a pink, slightly micaceous paste (Figure 9.22).

Table 9.7. Local ceramics dating to the Late Preclassic to Early Classic phases, San Juan Antigua (FS18).

Ware	Type	Count
San Juan Pink	Streaky Grey	12
	Morado Pulido	10
	San Juan Morado	157
San Juan Pink Micaceous	Unslipped	64
	Coarse and Unslipped	28
	Cream Slipped	32
TOTAL		303

San Juan Morado

San Juan Morada sounds similar to the *Pasta Rosado* ceramics described from Chocla (Kaplan and Umana 2018; Popenoe de Hatch 2005). Identifying characteristics include a thin and easily eroded exterior slip that ranges in color from purple to black (Figure 9.22), and a medium to coarse pinkish-brown paste that contains variable amounts of quartz, pumice, volcanic ash and mica. The full range of forms for this type is still being determined but included a) globular jars with medial ridges (not quite flanges), hemispherical bowls with bolstered rims and flattened lips with finger indent decoration, and jars with horizontally everted rims.



Figure 9.22. San Juan Morado sherds from excavations at San Juan Antigua (FS18).

Streaky Gray and Morado Pulido

A small number of thick body sherds with a streaky grey slip were recovered from deep levels at San Juan. These may be linked to the Streaky Gray-Brown types reported for Kaminaljuyu and several other areas (e.g. Sakajut). It appears in low densities at deep levels in San Juan Antigua and appears to be ancestral to the local *San Juan Morada* type (discussed below). All of the recovered sherds were thick and had a slightly curved outline indicating that they must have come from a large utilitarian vessel. The paste ranged from red (10R 5/6) to light red (10R 6/6) at the margins with a brown or gray (5YR 5/2 to 4/2) core. The principle inclusions were volcanic ash, quartz, and pumice with few pieces of mica. The slip was light gray (7.5YR 7/1) or gray (7.5YR 5/1) and burnished. The interior typically had no slip and sometimes has black fire clouds.

Early Classic Period (Aurora Phase) (c.200 AD – 400 AD)

The Early Classic period spans the Aurora (250 – 400 AD) and Esperanza (400 – 600 AD) at Kaminaljuyu. At Kaminaljuyu, during this period, the most important utilitarian wares of the preceding phase, such as Terra, Sumpango and Izote, were abruptly replaced, indicating the arrival of a new population. The ceramic tradition that replaced the earlier Kaminaljuyu (Las Vacas) tradition has been dubbed the *Solano* tradition by Marion Popenoe de Hatch (1991) and has been the subject of numerous articles and book chapters. The dominant utilitarian types of the Solano tradition were *Prisma*, *Llanto* and *Esperanza Flesh*, all of which appeared at sites throughout the southern highlands and Pacific piedmont.

Popenoe de Hatch (1995) notes that, in contrast to the abrupt changes occurring in the Valley of Guatemala at this time, the transition from the Late Preclassic to the Early Classic was a gradual one at Bilbao and at nearby sites such as Monte Alto, with the population associated with the *Achiguate Tradition* remaining in place but increasingly displaying connections with the highland Solano Tradition.

During the Early Classic period, most of the communities in the project area began using Esperanza Flesh Ware (Table 9.8), which Popenoe de Hatch views as part of the Solano tradition.

Table 9.8. Utilitarian ceramics in use during the Protoclassic and Early Classic periods.

Ware	Frequency
Esperanza Flesh Ware	381
Unslipped Tan	129
Classic Black or Black Brown Ware	126
Unslipped Greyish-Brown	52
Spiked Incensarios	3
Miniature face pots	1
Total	849

Esperanza Flesh Ware

Esperanza Flesh is an important diagnostic for the Early Classic in the highlands and on the Pacific Coast. It appeared at Kaminaljuyu together with other types associated with the Solano Tradition during the Aurora Phase (c.200-400 AD) (Popenoe de Hatch 1997). It is unclear if Esperanza Flesh Ware represented an import or if it was produced locally but as it was clearly popular in the area from c.200 AD onwards, it is included here as a local type.

Esperanza Flesh typically has a medium to coarse, red (2.5YR 7/6 to 6/8) paste, often with a core that is gray or light brown (10YR 7/2 - 7/3). The paste is easily recognizable due to its abundant quartz and pumice inclusions that sometimes break through the slip. It also has red or black ferruginous inclusions and mica. The exterior typically has a dull, streaky slip that is highly variable in color, typically ranging from cream to pale orange (Figure 9.23) but sometimes appearing grey or bluish-grey. The interior usually has a wash that is the same color as the interior portion of the paste, which is often a different color to the exterior due to incomplete firing.

Neutron activation of a number of Esperanza Flesh samples by Robinson et al (1998) indicated that this popular ware was probably being produced in a variety of large centers located in the coast (e.g. Balberta), and in the highlands (e.g. Kaminaljuyu). However,

some of the clay sources appeared to be from rural areas, including the San Martin Jilotepeque area, suggesting that small communities and individual households may also have been producing Flesh Ware ceramics (Robinson et al 1998).

A total of 349 Esperanza Flesh sherds were recovered during the current project. The majority of the sherds were bodies of simple bowls with thin walls, curved-divergent edges and round lips. But we also recovered fragments of cantaros, some decorated with punctations made with a cane (Figure 11.23).



Figure 9.23. Esperanza flesh neck sherd and ring base from Chi Kaqajaay..

Esperanza Flesh Ware appeared relatively early in the stratigraphic sequences from San Juan and was also found in abundance at contemporary Chi Kaqajaay. Due to the abundance of this type in the project area and the high degree of variability in the quality, it is suspected that Flesh Ware was being produced at Chi Kaqajaay and possibly also at San Juan. However, it is possible that it was being imported into the project area from another site on the lake such as Semetabaj or Chuk'muk as it would have been relatively easy to move large quantities of ceramics by boat.

Middle to Late Classic Period (c. 400 – 900 AD)

The Middle Classic period as utilized in the current research spans the Esperanza phase at Kaminaljuyu (c.400 – 600 AD). The dominant utilitarian ceramic in use during

this time appears to have been Santa Marta Ware, although it is clear that this type also continued well into the Late Classic period (c.600 – 900 AD) and perhaps even into the Terminal Classic (c.900-1100 AD).

Santa Marta Ware (n=1131)

Santa Marta Ware (Figure 9.24) was originally thought to be restricted to the Early Classic period, however, comparisons with published descriptions have revealed strong connections with a number of unslipped types in the region spanning the Protoclassic through to at least the Late Classic.



Figure 9.24. Santa Marta Ware – incensario handles. Photo by Maria Corado.

Based on similarities with Los Encuentros Beige Ware (Ichon and Popenoe de Hatch 1982) a Protoclassic type from the site of Los Encuentros in the Quiche region, it is suspected that this type emerged in the Protoclassic period but did not become an important local product until the Middle Classic period, c. 400-600 AD. Over the course of the Late

and Terminal Classic periods it was probably gradually replaced by San Pedro Burnished Ware (see discussion below).

At its peak of popularity, during the Late Classic period, the most common form consisted of a deep bowl with thick walls and horizontally everted or outcurved rims bearing a red slip. A second common form was the solid, trough-handled incensario (Figure 9.24). Both of these forms had a long history of use at Zacualpa in the Quiche region but reached their peak of popularity during the Late Classic Pokom phase (Wauchope 1975). After this time, at Zacualpa, the solid handled incensario was replaced by the hollow tubular handled incensario.

Terminal Classic to Postclassic Periods (c.900 – 1524 AD)

San Pedro Burnished Ware

San Pedro Burnished Ware was the largest ceramic group recovered during the current project (Table 9.9) and several lines of data indicate that this local ware began to be produced in the Late or Terminal Classic periods and continued to be used through to the Late Postclassic period, when it reached its peak of popularity. All sites in the project area produced at least small quantities of San Pedro Burnished Ware but the greatest frequencies and form-varieties were recovered from Late Postclassic sites such as Pan Alujaay and Xe'Tinamit.

Table 9.9. Utilitarian ceramics of Late Classic to Late Postclassic periods.

Ware	Type	Frequency
San Pedro Burnished Ware	SP Black-Brown	2860
	SP Tan Café	1651
	SP Red	1141
	SP Greyish Brown	374
	SP Tan Rosado	176
	SP Polished Brown	84
Total		6286

Surface Color

The division of San Pedro Burnished Ware into types based on surface color was a somewhat subjective process because the colors graded into each other at the extremes. It was easier to separate San Pedro Red than the Tan Cafés and Black-Browns, however there were some vessels that had red slips on the exterior and black or brown slips on the interior, which complicated this separation.

Seriation of San Pedro Burnished Ware sherds from Unit 12 at Xe'Tinamit by surface color, indicated that Black-Brown (a.k.a. negro-marron) slips were most common in the earlier deposits (Levels 4-6) but that by Postclassic times (Levels 2-3), Tan Café was more popular. San Pedro Red, on the other hand appears to have always made up a smaller percentage of the total assemblage. This same trend was observed at the site of Pan Alujaay (see discussions of Structure C-4 and Operation 7c-12 in Chapter 8).

Vessel Forms

The range of forms identified for San Pedro Burnished Ware was extensive and included the following:

- A) Comales without walls, with slightly curved rims and rounded lips that have beveled / flattened interiors. Usually slipped on interior only but some are slipped all over. Most have fine striations running horizontally around the outside of the rim. A few also have thin incisions running diagonally across the exterior body / base. Exteriors typically have black spots.
- B) Comales / sartenes with curved or recurved walls, direct rims and rounded lips that are beveled / sharp on the inside edge (Figure 9.25). In all other aspects they are the same as form A.
- C) Tecomates / neckless jars with globular bodies, direct and slightly thickened rims, and rounded or pointed lips (Figure 9.26). Like the Comales, they often have shallow horizontal striations around the outside of the rim and those with rounded lips also have a superficial finger-wide indent just below the lip. One example from Xe'Tinamit has a loop handle that starts 3.3 cm below the lip and ends in the middle of the body.

- D) Deep bowls with flaring walls (Figure 9.27);
- E) Tall-necked jars (cantaros) with globular bodies, flat or round bases and straight, flaring or out-curving necks (Figure 9.28). Most have band handles that project from slightly below the shoulder-neck junction (Figure 9.29).
- F) Short-necked jars with globular bodies and handles that are oval in section and project from just below the lip to the junction of the vessel shoulder
- G) Composite silhouette vessels (aka s-z shaped bowls or cuspidors) (Figure 9.30)
- H) Pichachas (steaming vessels with perforations). Only body fragments of pichachas were found so their original form is not known. Typically, these had a reddish paste and were unslipped although a couple of black slipped examples were encountered.

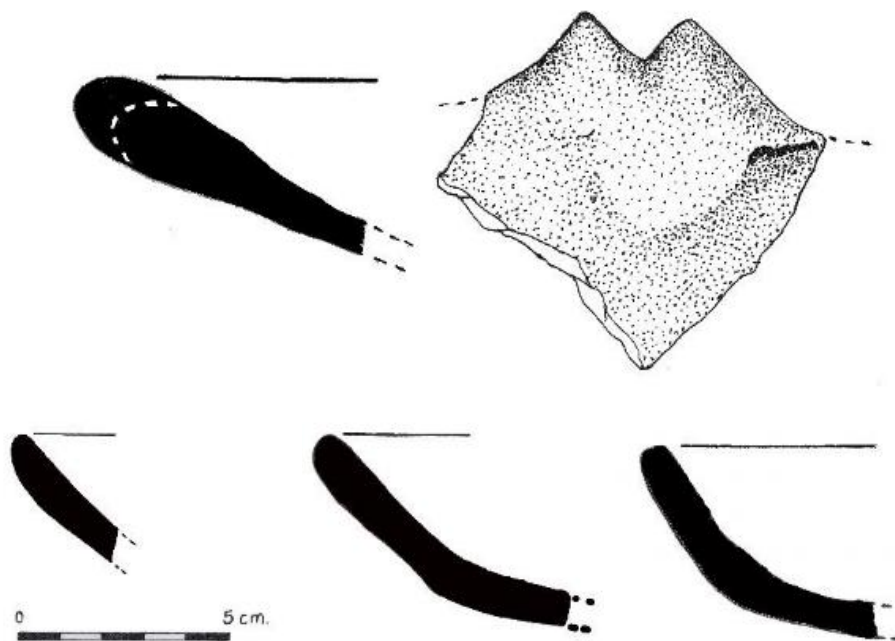


Figure 9.25. San Pedro Black-Brown, comales. Top example from FS7, bottom 3 from FS13. Illustrations by Efrain Tox.

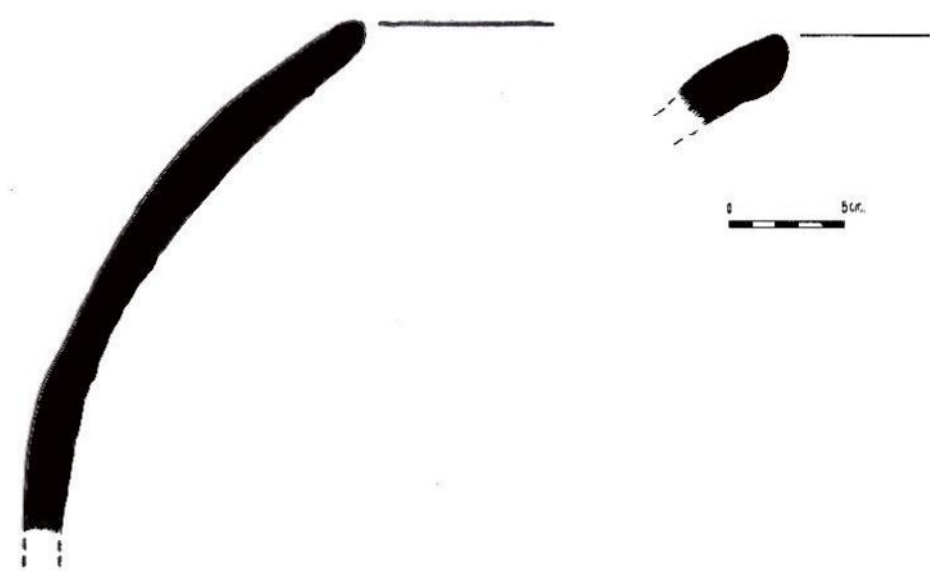


Figure 9.26. San Pedro Black-Brown Globular bowls (tecomates) with incurving rims.
Illustrations by Efrain Tox.



Figure 9.27. San Pedro Polished Brown deep bowl with flaring walls.



Figure 9.28. San Pedro Polished Brown Necked Jar (Right).



Figure 9.29. San Pedro Black-Brown handle forms

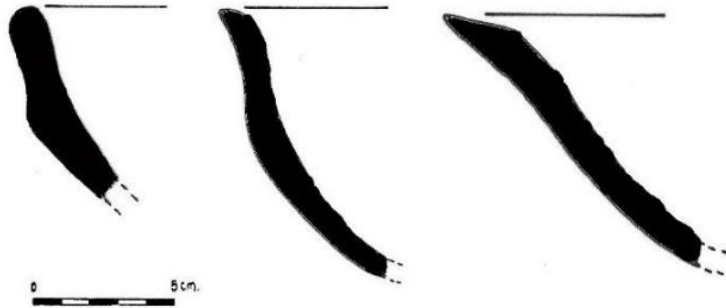


Figure 9.30. San Pedro Black-Brown composite silhouette vessels with direct or slightly outflaring rims - compare to Wauchope 1975:213, Fig 156. Probably Early Postclassic

Decoration

Decoration on San Pedro Burnished Ware was extremely rare. However, one large rim fragment that belonged to a necked jar with a slightly insloping neck, bore a modelled human face (Figure 9.31) reminiscent of the coffee-bean style faces that were common on Early Classic Esperanza Flesh vessels. Unfortunately, this sherd was recovered from the backdirt of Unit 16 at Xe'Tinamit and so its stratigraphic context is unknown. This vessel form, however, is quite rare in the assemblage and is suspected to be one of the earlier forms.

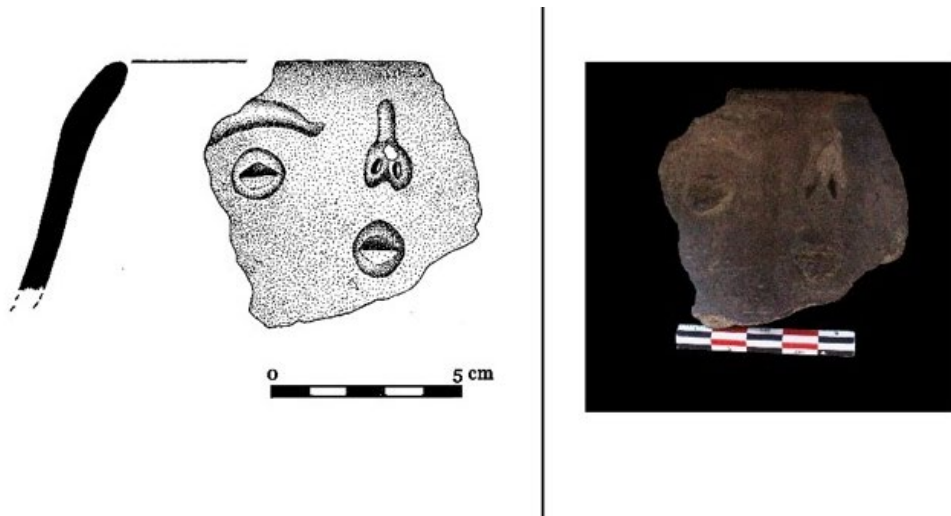


Figure 9.31. San Pedro Black-Brown necked jar with in-sloping neck and rim. Illustration by Efrain Tox.

Associations

San Pedro Burnished ware is part of a widespread tradition of monochrome wares that were popular across the highlands during the Late Postclassic period. They can be considered part of Wauchope's (1970) monochrome red-brown category and are probably also related to the Panchoy Complex of the Antigua Valley, which spans the Late Postclassic and Early Colonial periods (Robinson 1997; Robinson 1998; Sharer, et al. 1970). One of the principal types of the Panchoy Complex is Yepocapa Red, which Sharer et al (1970) describe as having fine-medium pastes, incomplete firing and burnished surfaces. The most common forms for Yepocapa Red in the Antigua Valley included: Apastes (large handled bowls), and Ollas (tall-necked jars) with everted rims and rounded lips (Figure 9.32)

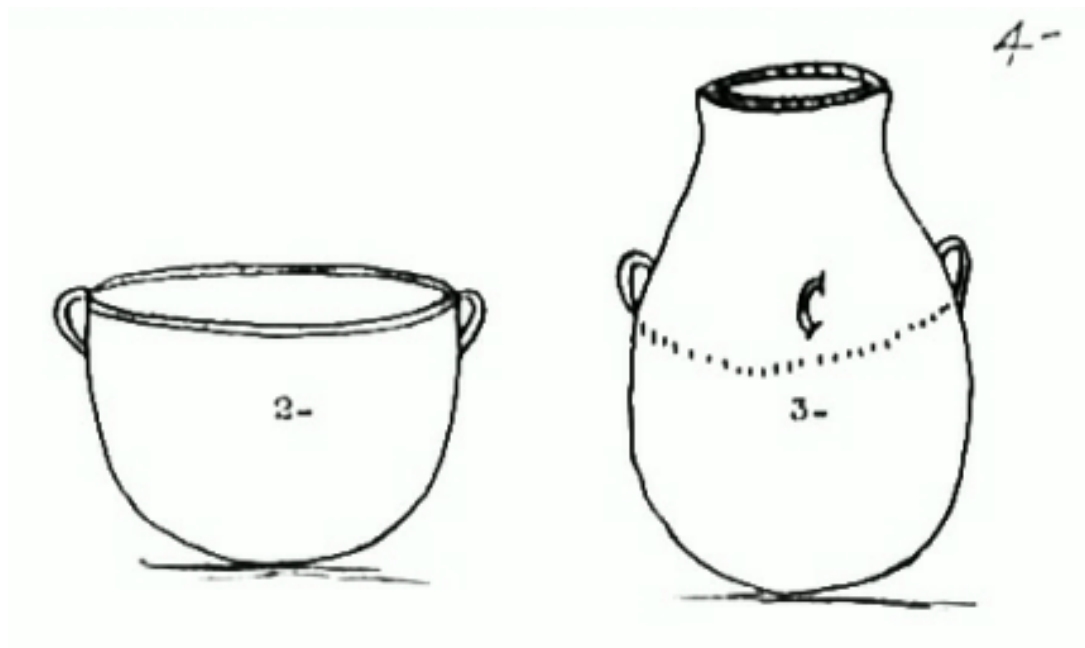


Figure 9.32. Apaste (left) and Olla (right) ceramic forms utilized in San Pedro La Laguna. After Dios Rosales (1949).

Late Postclassic – Colonial (c.1300 – 1600 AD)

San Pedro Bichromes (n=35)

Although the monochrome San Pedro types were clearly being produced throughout the Late Postclassic period, a number of bichrome varieties appear to represent the final phase in the evolution of this local type (Table 9.10). The bichrome varieties of San Pedro Burnished Ware included Red on Brown and Red on White (Figure 9.33), and Cream on Brown (Figure 9.34).

Table 9.10. Local ceramics dating to Late Postclassic and Colonial periods.

Ware	Type	Count
San Pedro Bichrome	SP Red on Brown	6
	SP Cream on Brown	1
	SP Red and Black	16
	SP Streaky Cream	10
	SP Red on White	2
Pa K'ucha'	Pa K'ucha' Café Negro	68
	Pa K'ucha' Café-Naranja	69
	Pa K'ucha' Rojo	88
Duro Delgado	Ante	31
	Others	13
Total		304

Pa K'ucha' Ware

Pa K'ucha' Ware was originally believed to represent a local Late Postclassic or Colonial development of the San Pedro Group due to the fact that it utilized a similarly diverse range of slips and was always well-burnished. However, Pa K'ucha' Ware has a finer, more homogenous paste and is consistently well fired, while San Pedro Ware typically has visible quartz inclusions and is incompletely fired, displaying a grey nucleus.



Figure 9.33. San Pedro Burnished Ware, Red on Brown and Red on White.



Figure 9.34. San Pedro Burnished Ware, Cream on Brown..

The surface finish of Pa K'ucha' Ware is also of a higher quality with slightly thicker slips and meticulous burnishing. Pa K'ucha' Café Naranja and Café Negro typically have a low polish and a matte finish, while Pa K'ucha' Red included both matte and lustrous finishes.

The range of forms in Pa K'ucha' Ware appears to have been slightly more limited than San Pedro Ware and included two principle forms: comales and open bowls (Figure 9.35).

Most of the Pa K'ucha' Ware recovered during the current project was recovered from Zone 1. This together with the low frequency of this ware at Pan Alujaay suggests that this ware was being produced into colonial times.



Figure 9.35. Pa K'ucha' Red and Black brown sherds from open bowls and comales..

Duro Delgado (Ante)

This group was named for its paste which is typically cream or light brown in color and hard and porous. Mica appears to have been the principal inclusion and occasional flakes can usually be seen on the interiors which are unslipped and occasionally on the

slipped exterior. The most common type in this ware was Ante, which appears to have developed from a type of post-classic cream slip. Ante was originally identified by the rescue excavations in Sololá (Corado 2014) and typically has a burnished, cream to yellow surface slip, often with orange to black fire clouds (Figure 9.36). The principle form appears to have been a thin-walled necked jar. In the PALA project area, this type was most common at sites with Late Postclassic and / or historic deposits, including Xe'Tinamit and Chi Kaqajaay, Area D.



Figure 9.36. Ante, body sherds from Chi Kaqajaay Area D.

9.7 SUMMARY

The PALA ceramic assemblage was dominated by two local ceramic wares (Santa Marta Ware and San Pedro Burnished Ware). Santa Marta Ware may have originated as early as Protoclassic times but appears to have reached its peak of popularity in Late Classic times. It is possible that it even continued into Postclassic times, although data from Zacualpa indicates that the solid handled incensario was not utilized after the Late Classic period.

San Pedro Burnished Ware was the most popular utilitarian ceramic in use during Postclassic times in San Pedro and Pan Alujaay but probably originated in the second half of the Early Classic period. Like Rapago Ware at Chuk'muk, this type appears to have steadily increased in popularity through the Classic period and reached its peak of popularity in the Late Postclassic. No doubt the inventory of forms represented in this local ceramic type also expanded gradually from Early Classic through to Postclassic times and a few distinctive vessel forms, such as the pichacha and comal may have only appeared in Postclassic times. Additional research will be needed to determine the chronological significance of the various forms identified within this long-lived local ware.

CHAPTER 10. LITHICS AND ORGANICS

Lithic artifacts were the second most common category of items recovered during the project and included obsidian tools, cores and fragments (n= 922), ground stone tools and fragments (n = 39), green stone (n = 6), and chert (n=1). Unfortunately, due to time and budget constraints and because the ceramic artifacts were more useful for chronological purposes, the analysis of lithic materials was deemed a lower priority and thus only a basic classification and quantification of the lithic materials can be provided at this time.

10.1 OBSIDIAN

Obsidian was called *chay* by the Quiche, Cakchiquel and Tz'utujil Maya and meant “piece of glass, knife or obsidian blade” (Orellana 1977:17). Obsidian was a vital resource for prehispanic Mesoamerican societies. The most common tools manufactured from this material were prismatic blades, which are long, thin blades with two parallel cutting edges and a trapezoidal shape in section (Woodward 1996). Other identifiable features include “a platform, bulb of force, and a concave, tapering distal tip” (Woodward 1996:103) “.

Prismatic blades were versatile tools that were used for a variety of everyday, household activities including: daily food preparation, shaving, haircutting, woodworking, and hunting (Orellana 1977). However, they were also used as the blades for a type of sword known as a *macana* or *macahuitl* (Orellana 1977), which was reputed to be so sharp that it could be used to cut the head off a horse or slice a man in two.

Woodward (1996:107) notes that “the production of prismatic blades requires much planning and forethought, [involving] core procurement, platform preparation, and pressure flaking”. It also requires “standardized cores, specialized tool kits, and a high degree of technical skill by the manufacturer” (Woodward 1996:107). Two main stages were involved in the manufacture of these blades. The first stage involved “use percussive blows with a hard indenter (rounded stone, for example) to remove the outer cortex of the obsidian [to create] ... a polyhedral core”. The second stage of prismatic blade production involved the removal of the blades from the polyhedral core using specialized tools and pressure flaking.

In addition to prismatic blade production, obsidian was also utilized to produce more specialized tools such as weapons, ornaments, and sacrificial knives (Orellana 1977). Obsidian weaponry is well documented in ethnohistoric sources and included arrowheads, lance points and macanas, which have already been discussed. The production of arrowheads and spear points required the use of bifacial and unifacial thinning technologies. This process begins with the shaping of preforms using percussive blows. Once the preform is created, the subsequent application of pressure flaking with a soft indenter creates the cutting edge of the tool, bifacial or unifacial.

Obsidian Sources and Procurement

Given that Lake Atitlán had no natural source of obsidian, it all had to be imported. Fortunately, however, there were at least three sources (Tajumulco, El Chayal, and San Martin Jilotepeque) within a relatively short distance of the lake, with the San Martin Jilotepeque (SMJ) source being the closest. Over the course of Mesoamerican history, the availability and importance of these sources ebbed and flowed due to changes in the political situation at the source. The following outline of those changes is based on the summaries provided by Woodward (1996) and Braswell (2002).

Preclassic Period

During the Middle Preclassic period (c. 900 – 400 BC), San Martin Jilotepeque (SMJ) was the most important obsidian source in southeastern Mesoamerica, supplying most of material utilized in the Maya lowlands, the western highlands, and the Pacific Coast (Braswell 2002). In the subsequent Late Preclassic period (c. 400 BC – 250 AD), there was a decline in the importance of the SMJ source for the Maya lowlands, however “it continued to be a critical resource for inhabitants of the southern Maya area”. At this time, Woodward (1996) notes “there was a general trend throughout sites in the Maya area from reliance on San Martin Jilotepeque obsidian to El Chayal obsidian. Also “small amounts of Ixtepeque obsidian began to move into the northern Lowland sites of Tikal and the Central Petén Lakes at the termination of the Late Preclassic.(Woodward 1996:86). The

main factors driving this change are thought to have been the decline of the Olmec in the Middle Preclassic and the increasing power of Kaminaljuyu during the Late Preclassic .(Woodward 1996:86), which caused the SMJ region to become largely abandoned (Braswell 1996).

Classic Period

From the Late Preclassic until the Terminal Classic period, El Chayal was the most popular source of obsidian in the Maya Lowlands, although minor amounts of obsidian were also imported from SMJ and Ixtepeque. During the Early Classic, obsidian from the Pachuca source in Hidalgo, Mexico, which was controlled by Teotihuacan, also began appearing in the Maya region. During the subsequent Late Classic (c.600-900 AD), however, when Teotihuacan's power declined, so did the quantities of Pachuca obsidian reach the Maya lowlands.

Another change that occurred in the Late Classic was the increasing popularity and availability of obsidian from the Ixtepeque source, which had then come under the control of Copan (Woodward 1996). As Woodward (1996) notes "The percentages of Ixtepeque obsidian at Late Classic sites generally increased with each settlement's location in relation to the Caribbean Coast". And by the close of the Classic period, so called "Putun traders" had begun transporting this material along the coasts of Yucatan and inland to Chichen Itza.

Postclassic Period

The abandonment of Kaminaljuyu at the end of the Late Classic brought about a significant decline in the amount of El Chayal obsidian being circulated and an increase in the distribution of Ixtepeque obsidian, which by Late Postclassic times was the primary source of obsidian for both the Maya Lowlands and the Pacific Coast regions.

Obsidian Data from Lake Atitlan

Bruchez recovered a total of 439 obsidian artifacts as a result of her investigations in the San Jose Chacaya area, on the north shore of Lake Atitlan, where she identified several sites with Middle to Late Preclassic occupations. The vast majority of the obsidian recovered from this area was sourced to the SMJ area, however, the collection also included 16 artifacts from the El Chayal source and 6 artifacts from the Pachuca source. Woodward noted that 74.3% of the obsidian artifacts were related to prismatic blade production and that only four bifacial implements and two unifacial implements were recovered.

Shook et al (1979:18-19) recovered a total of 609 obsidian blades and cores from the site of Semetabaj, whose principal occupations occurred during the Middle Preclassic and Early Classic. Almost all of this material (91%) was visually sourced to SMJ, the closest source to the lake. However, nine fragments of dark green obsidian from the Pachuca source were also recovered from the upper levels in several excavated pits, contexts that were believed to date to the Early Classic. In addition to blades and cores, Shook et al (1979) reported recovering a small number of flake “scrapers with re-touched edges”.

At the Late Preclassic to Late Classic site of Chuk'muk, Lothrop (1933:26-27) reported that: “Comparatively few objects of stone came to light” but that “obsidian blades ... occurred at all depths” and that large unbroken blades had been deposited with the decapitated individuals in the multiple burial that he identified there. He also recorded recovering several obsidian cores at the site.

Lothrop recovered considerably more obsidian from the Postclassic site of Chuitinamit, which also yielded a greater diversity of forms. Lothrop noted that both obsidian knives and cores “were frequently encountered” at the site and that “blades with secondary chipping [i.e. arrowheads and spearpoints] turned up in greater quantity than we have seen elsewhere in the Guatemalan highlands”. Lothrop also reported recovering a few “snub-nosed obsidian scrapers” from the site.

PALA Data

Turning now to the data from our own investigations, a total of 922 obsidian artifacts were recovered during the PALA investigations (Table 10.1). At least one obsidian artifact was recovered from 40 (61.5%) of the 65 field sites investigated during the project. The recovered obsidian artifacts were classified as follows: 1) prismatic blades, 2) Prismatic blade cores, 3) Bifaces / Points, 4) Flakes or fragments, and 5) Other (Table 12.1).

Table 10.1. Summary Data on Obsidian Artifacts Recovered During the PALA Investigations.

Class	Frequency	% de Total
Prismatic Blades	783	84.92
Cores	8	0.87
Points / Bifaces	10	1.01
Flakes / fragments	115	12.47
Other	6	0.65
Total	922	100

Prismatic Blades (n = 783, 84.92%),

Prismatic blades constituted 84.92% of the 922 obsidian artifacts recovered during the project and these were recovered from 35 of the 61 investigated field sites. The majority of these were fragmentary, like the ones depicted below (Figure 10.1).



Figure 10.1. Fragmentary prismatic blades from Pan Alujaay.

Prismatic Blade Cores (n=8, 0.84%)

A total of eight cores were recovered during the current project, five of which (62.5%), were recovered from the Late Postclassic site of Pan Alujaay (FS7) (Figure 10.2). Of the remaining three, two were recovered from sites whose main occupation occurred between the Terminal Preclassic and Early Classic periods (San Juan Antigua and Saqaribal), and the third was recovered from Xe'Tinamit (FS3) which was occupied from the end of the Early Classic through to Late Postclassic times. The fact that most of the cores were recovered from Postclassic sites could indicate that, by that time, obsidian blades were being produced locally from imported cores rather than being imported as finished artifacts.



Figure 10.2. Fragmentary prismatic blade core from Pan Alujaay, length = 3.4 cm.

Points and Bifaces (n=10, 1.01%)

Only 10 bifacial tools were recovered during the current project and all except one were recovered from Pan Alujaay. Four of the nine bifacial tools were sourced to SMJ and one was sourced to Ixtepeque. The remaining three have yet to be determined.

The most impressive bifacial tool recovered during the project was an almost complete spearhead recovered from level 4 of Operation 9 at Pan Alujaay (Figure 10.3), which measured 6.3 cm in length. The large size of this point contrasted strongly with the small (2.2 cm-long) notched arrowhead recovered from Operation 12 (Figure 10.4).



Figure 10.3. Bifacial spear point recovered from Pan Alujaay, Operation 7c-9. Photo by Joseph Coombe. Illustration by Efrain Tox.



Figure 10.4. Notched arrowhead from Pan Alujaay. Late Postclassic.

Flakes or Fragments (n = 115, 12.30%,

Flakes or fragments constituted 12.3% (n=115) of the obsidian recovered during the project (Table 10.2) and these were recovered in relatively large quantities from both early sites (e.g. San Juan Antigua) and late sites (e.g. Pan Alujaay). If all of the smaller sites from Zone 1 (i.e. FS12, 13, 15, 21, 43, and 46) were in fact part of the larger community

of San Pedro, then it would give the impression that the activities that produced these flakes were conducted only at large centers (i.e. Type 1 sites), although it is notable that none were recovered from the Type 1 site of Chi Kaqajaay.

Table 10.2. Counts and provenience data for flakes / fragments.

Zone	Site	Count
2	FS 07A	6
2	FS 07C	71
1	FS 12	5
1	FS 13	8
1	FS 15	1
4	FS 18A	18
4	FS 18B	2
4	FS 18C	1
1	FS 21	1
1	FS 43	1
1	FS 46	1
Total		115

PALA Obsidian Sources

A visual analysis of 403 (43.7%) of the 922 obsidian artifacts recovered by the PALA Project was carried out by María Corado in the summer of 2016 in San Pedro La Laguna. This analysis was based on samples from the three main sources found in Guatemala, which were generously donated by Edgar Carpio of the University of San Carlos de Guatemala. Of the 403 pieces of obsidian analyzed in 2016, the great majority (n = 390, 96.8%) were sourced to SMJ. The remaining 13 pieces included 6 pieces (1.5%) of El Chayal, 6 pieces of Ixtepeque, and a single piece of green obsidian from the Pachuca source in Central Mexico.

The 6 pieces of El Chayal obsidian were recovered from the following sites: Pan Alujaay (n = 3), Xe'Tinamit (n = 1), San Juan Antigua (n = 1), and Punta de Oro (n = 1). Given the low quantities of the material from this source, it is not possible to determine a pattern to their distribution. However, all four of these sites produced some Late or Terminal Preclassic ceramics and Braswell (2002) believes that the SMJ area was largely

abandoned at this time, which would have made it more difficult for communities in the project area to obtain this material. Furthermore, Shook et al (1979) have indicated that Semetabaj may also have been abandoned at this time. If Semetabaj had previously been the center responsible for redistributing obsidian from the SMJ source to the project area, then its abandonment may have forced these communities to seek their own means of importing obsidian, perhaps motivating increased interaction with nearby Pacific coast centers such as Chocoma, who would likely have been involved in the trade of El Chayal obsidian along the east-west route between Kaminaljuyu and Soconusco.

All 6 pieces of Ixtepeque obsidian were recovered from Pan Alujaay. The fact that the few pieces of obsidian from the Ixtepeque source were recovered from a site that was occupied mainly in the Late Postclassic is consistent with our knowledge that the Ixtepeque source was dominant in the Late Postclassic period. Material from this source most likely entered the lake via the Pacific Coast.

One piece of green obsidian was recovered during the project and consisted of a re-touched prismatic blade. This artifact was recovered from level 3 of Operation 9 at the site of Pan Alujaay (FS7). Given that green obsidian was more common in the Maya region during the Early Classic period and declined in the Late Classic (Braswell 2002; Woodward 1996), it seems likely that this artifact is associated with the Early Classic occupation of this site.

Obsidian Summary

There appears to have been little change in the obsidian procurement practices of Lake Atitlan communities over time, with the primary source being SMJ in all periods. However, the abandonment of the SMJ region and Semetabaj in the Late Preclassic (Braswell 2002; Shook et al 1979) may have prompted the communities in the project area to begin importing El Chayal obsidian from the nearby piedmont site of Chocoma. No evidence of lithic industry was identified in the project area prior to the Late Postclassic period, when households within the larger centers (e.g. San Pedro and Pan Alujaay) appear to have begun producing their own prismatic blades from imported cores.

10.2 GROUND STONE ARTIFACTS

Thirty-nine ground stone artifacts were recovered during the current investigations (Table 10.3). These artifacts were grouped based on form and tentative function into seven categories as follows: 1) Metates / grinding stones), 2) Manos (hand-stones), 3) Polishing Stones, 4) Donut Stones, 5) Mortars, 6) Bark-beaters, and 7) Whetstones.

Table 10.3. Summary of Ground Stone Artifacts recovered by PALA.

Artifact Type	Count
Metates	16
Manos	12
Polishing Stones	4
Donut Stones	3
Mortars	2
Barkbeaters	1
Whetstones	1
Total	39

Metates (n=16)

A total of 16 metate fragments were recovered during the current project (Table 10.4) and these grouped into two general shape categories: Type 1 metates (n = 4) were oval shaped basins that lacked supports (Figures 10.5 and 10.6) and Type 2 metates (n = 7) were rectangular shaped with supports (n = 7). The remaining five were too fragmentary to determine their original form.

Among the Type 2 metates there is considerable variation, particularly in terms of the placement and shape of the supports, and also in the raw material type. For this reason, we separate them into three sub-types: Type 2a - those that have conical-rounded supports and slightly rounded corners; and Type 2b - those that have wider, square supports and more angular corners. Type 2a metates (Figure 10.8) are smaller in overall size and would have been easier to transport and so these may have been imported to the area. The larger Type 2b metates (Figure 10.9), on the other hand, would have been too heavy to transport and appear to have been made of local andesite.

In terms of their distribution, Type 1 metates (n = 5) were recovered from FS2 (n = 1) and FS3 (n = 1) in Zone 3, FS7 (n = 2) in Zone 2, and FS14 (n = 1) in Zone 1. Type 2 metates (n=7) were recovered from FS3d in Zone 3, FS6 and FS7c in Zone 2, and FS20 in Zone 4.

Table 10.4. Metate types and proveniences.

Sitio	Type 1	Type 2	Fragment	Total
FS 02	1			1
FS 03A	1			1
FS 03D		2	1	3
FS 06		1		1
FS 07C	2	3	1	6
FS 14			2	2
FS 17			1	1
FS 20		1		1
Total	4	7	5	16



Figure 10.5. Type 1 metate from Pan Alujaay.



Figure 10.6. Type 2a metate with supports from Pan Alujaay.



Figure 10.7. Type 2b metate with support from Pa Mes Bajo (FS6).

A third type of metate with supports which we will call a Type 2c was observed only in a private collection from Xe'Tawal and consisted of a miniature metate with a raised border around the grinding surface (Figure 10.8). Its reduced size indicates that it may have been designed specifically for children or for the grinding of a specific material that was only used in small quantities.



Figure 10.8. Type 2c metate, private collection, Xe'Tawal, San Pedro La Laguna.

Expedient Grinding Stones

Boulders with smooth surfaces that appeared to have been utilized for grinding (Figure 10.10) were observed at several sites during the current project and were interpreted as expedient grinding stones. The example shown in Figure 10.10, from the site of Xe' Cruz (FS 1), was one of the clearer examples. It was located within the area that produced the highest density of materials. The use of such unmovable stones may imply regular repeated use of the site for ritual purposes rather than permanent occupation as it is presumed that permanently settled households would have invested in the acquisition of a more formal grinding stone.



Figure 10.9. Type 4 metate at the site of Xe'Cruz (FS 1).

Discussion

Local residents from San Pedro believe that Type 1 metates are the older form and the fact that Type 2 metates are still utilized by San Pedro households today supports this theory. At Takalik Abaj, Flores Lopez (2015) observes that the transition from oval to rectangular metates was a gradual one and that the earlier basin-shaped metates did not disappear completely from Takalik Abaj until the Postclassic period.

Manos (n=12)

Manos recovered during the current investigations were classified by their shape in cross section into three types: Type 1 - cylindrical, Type 2 - Trapezoidal, Type 3 = Oblong (Figure 10.10). Cylindrical types (N=8) were the most common, while the other two forms were represented by just two examples each.



Figure 10.10. Mano Fragments. Type 1 (left), Type 2 (center), and Type 3 (Right).

Mortars (n=2)

Only two ground stone artifacts were classified as mortars but were very small and may have served some other purpose. Both examples consisted of roughly hewn, conical shaped stones with a shallow indent in the widest part (Figure 10.11). One possibility is that they were used as whorls for a form of thigh-supported spinning, as has recently been argued for donut stones (Tomasic 2012). The PALA examples were recovered from surface contexts at San Juan Antigua and Chi Kaqajaay, whose main occupations dated to the Protoclassic through Early Classic.

Polishing Stones (n=4)

Four ground stone artifacts were classified as polishing stones because of their smooth, polished surfaces and their small size which would have enabled them to be used with one hand. Two types were identified: Type 1 was circular in plan, while type 2 was trapezoidal in plan (Figure 10.12). Both appear to have been made of a very hard, non-porous stone. Such stones are thought to have been used in the process of pottery production.



Figure 10.11. Stone mortar recovered from FS3, Area D.



Figure 10.12. Polishing Stones. Type 1 (left), and Type 2 (Right).

Donut Stones (n=3)

Two semi-spherical stones with conical holes on opposing sides were found during the current investigations (Figure 10.13) and appear to be “donut stones” that were broken during manufacture. One was recovered from San Juan Antigua (FS 18) and the other from Pa Mes Bajo (FS 6). Donut stones are typically interpreted as having been either mace / club heads or digging-stick weights. The idea that they served as mace or club heads appears to be supported by an image in the *Lienzo de Tlaxcala*, which depicts Tz’utujil warriors brandishing clubs consisting of wooden shafts with rounded stones attached to the ends (Figure 10.14). However, Shook et al (1979), favor the digging-stick hypothesis noting their close similarity to perforated stones used for this purpose in Eastern and Southern Africa. They also observe that Mesoamerican donut stones differ “in size and weight ... from the smaller artistically wrought and finely finished mace or war-club heads of Costa Rica, Panama, Colombia, and the Andean area of South America”.

Recently, John Tomasic (2012) has suggested that donut stones were used as whorls for “thigh-supported spinning”, however, the small mortar-shaped objects discussed above would appear better suited for this task. Both donut stones were recovered from areas that produced low densities of ceramics and that were outside of the main areas of residential settlement, but this does not help resolve the problem of their function.



Figure 10.13. Donut Stones recovered during the Current Project.



Figure 10.14. The Conquest of Atitlan as depicted on the Lienzo de Tlaxcala.

Bark-beaters

Only one artifact found during the current project was classified as a bark-beater (Figure 10.15 left) and this identification may be in error. It was classified as such because it generally follows the form of "bark beaters" found in other Mayan sites (e.g. Bilbao, Zaculeu, Zacualpa). Our example, which was found in Pan Alujaay (FS 7), is oval in shape and 10 cm long, 5 cm wide and 4.5 cm high. A more typical and much better-preserved example, apparently made of a different type of stone, was identified in the private collection of Vicente Cumes (Figure 10.15 right). One possible function of these tools may have been to remove the pulp from maguey leaves. Along with San Pablo, San Pedro was one of the main producers of maguey products on the lake and reportedly produced better quality maguey than anywhere else on the lake (McBryde 1945).



Figure 10.15. Barkbeaters from Pan Alujaay (left) and Xe'Tawal (Right).

Whetstones (n=1)

Whetstones, used for sharpening stone or metal tools, are known from modern houses in the Maya highlands (Hayden 1987) and it is possible that they were also used in prehispanic times. Only one example of this kind of artifact was recovered (Figure 10.16) and this was recovered from stratum 2 of Operation 10 at FS7. It consisted of a slab of volcanic tuff bearing a linear scar with sharp margins which ran the length of the stone. Another possible whetstone with a more rounded scar was observed at Chi Kaqajaay (Figure 10.16 right) but it was not collected.



Figure 10.16. Whetstones from Pan Alujaay (left) and Chi Kaqajaay (right).

10.3 GREEN STONE

Ethnohistoric sources from the highland Maya region utilize the Nahuatl word for jade *chalchihuitl*. Describing the items paid in tribute to the Tziquinahay by their subjects on the coast, for instance, the *Relacion Tz’utujil* (Ribera et al 1571) states that: “those people gave and paid them in tribute, men and women as slaves, as well as stones valued among us called chalchuitl (jade)”. The paucity of jade artifacts that have been recovered from the Lake Atitlan area, however, indicates that even the elites in this area had difficulty obtaining this valuable material in any quantity.

Shook et al (1979:18) recovered just one celt fragment in their investigations at Semetabaj but noted that their local workmen had encountered “ear flares, small pendants and beads” in their fields. They also reported that “a pair of jade earplug flares [were recovered] at a Late Preclassic habitation site of Xecotoj, on the north fringe of Semetabaj” but that these had later been sold in Panajachel. Lothrop (1933:27) recovered just a single jade bead from Chuk’ muk, in the decapitated burial he encountered there, but reported that “Polished stone celts [were] found in some numbers at Chuitinamit. No jade was reported from Bruchez’s survey along the northern shore.

PALA Data

Only six green stone artifacts were recovered during the current project (Table 10.5) and all came from the Postclassic site of Pan Alujaay. The green stone artifacts included beads (n=2), celt fragments (n=2), and a pendant fragment (n=1).

Table 10.5. Green stone artifacts recovered by PALA.

Artifact Type	Count
Beads	3
Pendant	1
Celts	2
Total	6

Beads (n=3)

The beads recovered during the current project included one flat, circular bead (Figure 10.17) and two tubular beads (not shown). The flat bead was recovered from level 1 of Operation 7c-10 and was made from a dark gray-green stone and shows a low polish with a matte finish. The following measurements were taken: maximum diameter = 1.32 cm; opening diameter = .27 cm; Maximum thickness = .41 cm. The two tubular beads were recovered from stratum 2 of Operation 15 and may therefore have been part of the midden deposits associated with Structure C-4.

Celt Fragments (n=2)

Two fragments of ceremonial axes or celts were recovered from Pan Alujaay (Figure 10.17 right). One of these was recovered from the surface and the other was recovered from level 3 of Operation 11. The first was made of dark green jade and consisted of a lateral fragment, representing a complete side of the tool. Unfortunately, it was not measured or photographed. The second fragment, which is shown in Figure 10.17 was made of a lighter-colored jade and had been polished to a high luster. high polish and a glossy finish.



Figure 10.17. Jade artifacts recovered from Pan Alujaay: Left = flat bead; Right = celt fragment.

Pendant Fragment (n=1)

A pendant fragment was recovered from Operation 11, Level 3 at Pan Alujaay (Figure 10.18). It was made from a dull gray-green colored stone. It shows no evidence of polish and has a matte finish. The following measurements were taken: maximum diameter = 3.9 cm; opening diameter = 1.1 cm; maximum thickness = .6 cm.



Figure 10.18. Green stone pendant fragment from Pan Alujaay, Operation 11, level 3.

10.4 ORGANIC MATERIALS

Organic materials were recovered from excavations carried out at the sites of Xe'Tinamit (FS13), Pan Alujaay (FS7) and San Juan Antigua (FS18). These included animal bones, construction materials (bajareque, adobe and talpetate), and carbon samples. Only the animal bones are discussed here.

Animal Bones

Animal bones were recovered only from excavations carried out at Pan Alujaay (FS7). The only significant densities were recovered from Operations 12, 14 and 15 (Table

12.7). All were associated with the domestic structure C-4, which was identified in this part of the site (FS7c). Operation 12, for example, was the unit in which the successive floors of the house were exposed while operations 14 and 15 seem to have been located in a midden area on the terrace directly below the house. The animal bones have not been analyzed but all appear to represent the bones of small mammals or birds.

Table 10.6. Excavated contexts containing animal bones

Op.	Levels	Quantity	Burned?
7c-5	1-3	1-5	Yes
7c-11	1-2	1-5	No
7c-12	5-6	10-15	No
7c-14	1-4	15-20	Yes
7c-15	1-6	15-20	Yes

10.5 NOTABLE ABSENCES

Notable absences in the artifact assemblage recovered during the PALA project included any tools associated with either fishing or weaving, activities that were predicted to have been important to the economy of the lake's communities in the past. Although spindle whorls could easily have been made from perishable materials, ceramic spindle whorls have been recovered in abundance from sites in the Pacific piedmont, including nearby Palo Gordo (Termer 1973).

As specialization in cotton production is evidenced at other piedmont sites bordering the Tz'utujil area, such as Patulul and Chicochin, this negative evidence for the PALA region might indicate the existence of a regional division of labor, with communities in the piedmont producing the thread and communities in the lake area producing the final products. This is essentially the pattern that existed in colonial times. As Feldman (1971:145) notes: 'Most weaving was in the highlands, and most cotton plantations were elsewhere (Table 14). Accordingly, weaving towns needed to import the raw material and growing towns needed to import the finished product'. Cotton growing towns within easy

reach of Lake Atitlan in colonial times included Mazatenango, Santo Tomas Chicochin, Patulul, and Santa Lucia Cotzumalguapa (Table 10.7).

Table 10.7. Cotton growing towns in Pacific piedmont and distances from Santiago Atitlan

Town	Distance from Santiago Atitlan
Santo Tomas Chicochin,	14
Patulul	25
Mazatenango	31
Santo Domingo Suchitepéquez	32
Santa Lucia Cotzumalguapa	40

Looking at the locations of these weaving towns on a map, however, we can see that, in Late Postclassic times all would have been located outside of Tz’utujil territory (Figure 10.19), in either Quiche or Kaqchikel lands. The Tz’utujil’s own Pacific coast colonies of San Bartolome (Xeoj), San Andres (Quioj), San Antonio Suchitepéquez (Kotzij), and Nagualapa either grew cotton or imported it from the only know Tz’utujil colony on the lower coast, Xicalapa.

That Atitlan was an important weaving center in prehispanic times is suggested by the ethnographic evidence. Madigan (1976:97-98), for instance notes that Atitlan was a pre-Columbian weaving center until the repartimientos of the 17th and 18th centuries (97-98), while Huxley (cited in Madigan 1976) dubbed Santiago Atitlan the “Manchester” of the altiplano because it had previously been an exporter of cloth to many other parts of the Department of Sololá. (Madigan (98). Feldman (1971:145) adds that 60% of the women of San Andres Semetabaj were dedicated to weaving cotton (Rosales 1968).

Another industry that is likely to have been important for the prehispanic communities in the Lake Atitlan area, and especially in the western towns, is the use of maguey for the production of net-bags, fishing nets and other products. The manufacture of products from maguey was a particular specialty for the people of San Pablo La Laguna, whose lack of good quality farm land, made this a vital lifeline, enabling them to exchange maguey products for essential such as corn and beans (Lothrop 1929b; Loucky 1979;

McBryde 1945). According to Lothrop, Loucky and McBryde, however, the best quality maguey was grown around San Pedro, motivating some Pablenos to purchase their maguey from San Pedro rather than grow it themselves in San Pablo.

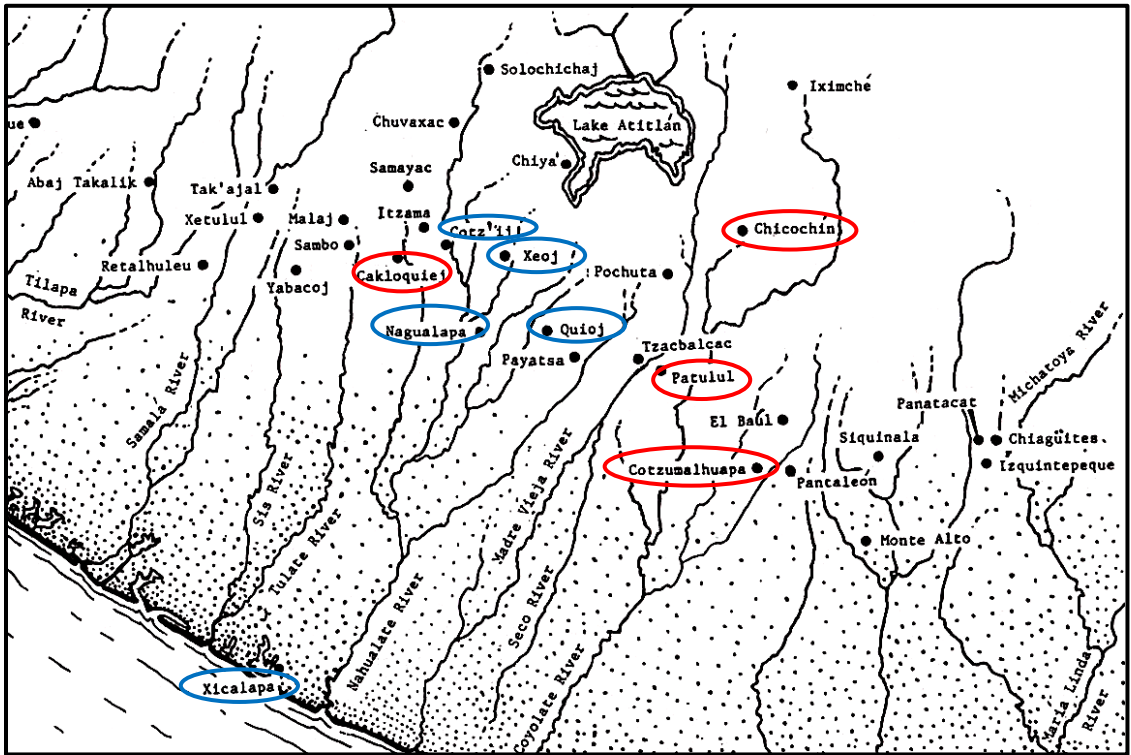


Figure 10.19. Map showing colonial cotton growing towns (red circles) and Tz'utujil colonies (blue circles). Adapted from original by Orellana (1993).

Although the majority of the tools used by maguey producers in San Pablo are made of wood and thus would not have survived, it seems that any stone small enough to be used with one hand and having at least one flat or slightly rounded surfaces and no sharp edges, would have been well suited for the initial process of maguey processing, which involved pounding the leaves to remove the pulp, while avoiding causing damage to the fiber itself.

CHAPTER 11. ROCK ART AND STONE SCULPTURE

In the current chapter, I provide descriptions and interpretations of the rock art and carved monuments identified during the current project, discussing comparative data from around the lake and beyond. Following David Whitley (2016:2-3), I define rock art as “pictures, motifs and designs placed on natural surfaces” and include in this category *pictographs* (paintings and drawings) and *petroglyphs* (engravings and carvings), most of which were created on bedrock or large unmovable boulders. I use the term sculpture to refer to more formal, two-dimensional (e.g. stelae and altars) and three-dimensional (full-round) sculptures (such as pedestal statues and columns), most of which are free-standing and appear to have been carved by professional sculptors. The skill involved in the production of these monuments and their association with monumental centers, indicates that they were probably commissioned by elites, either to communicate political or religious ideas or to commemorate a particular person or event.

Table 11.1. Rock art and monuments recorded in the PALA project area.

Class	Type	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Total
Pictographs	Ovals or Circles		1				1
Petroglyphs	Cupules / Mortars / Basins	5			1		6
	Escalinatas + Cupules	1	1				2
3D Sculpture	Offertories	2					2
	Anthropomorphic				1	1	1
	Colossal Head					1	1
	Zoomorphic Altar				2		1
	Pedestal	1					1
	Columns	2					2
2D Monuments	Composite				1		1
	Plain Altars				1		1
	Plain Stelae			1	2		1
	Carved Stelae	3					3
TOTAL		14	2	1	7	1	25

11.1 ATITLAN'S MONUMENTS: RECENT HISTORY

Jonathan Kaplan (2018) sums up the troubled history of the monumental sculpture in that area as a “tale of local destruction or diaspora, followed by complete disappearance”. As he explains, several monuments are thought to have been collected by a wealthy farm manager and transported to Petén for sale to looters and another group are believed to have been transported to Guatemala City to decorate the garden of a former president. Some monuments that likely originated at Chocoma, have found their way into nearby towns, such as the case of the Shook Altar, which was identified in San Antonio Suchitepéquez. Adding to the confusion, several monuments that originated at the nearby site of Palo Gordo were transported to the museum at Chocoma. As a result of these processes, Kaplan cautioned that any description of the monuments for that area is necessarily incomplete.

The same range of problems have also clearly impacted the corpus of stone monuments in the Lake Atitlan area. Many of the movable sculptures documented by Lothrop in the 1930s, for instance have now vanished and are probably in private collections. The two monuments that he recorded in the plaza at San Juan for instance have long since disappeared and local informants told us that the toad effigy metate that we documented there was the last of a much larger group of monuments that had gradually disappeared over the years. One extensive private collection housed near the town center contained an estimated 70-100 stone sculptures, but unfortunately it is unclear what percentage of these are local and which have been brought here from other areas. The presence of one probable lowland Maya sculpture and several clear modern fakes also makes the collection of limited use. However, two styles of small anthropomorphic sculptures appeared to be present in the collection and their ubiquity in the collection indicates that these from the local area. Unfortunately, the more unique monuments, by their very uniqueness, cannot be assumed to be local.

11.2 PICTOGRAPHS

Pictographs are defined as “paintings or drawings made ... with common mineral earths and other natural compounds” (Whitley 2016:3). Only one very faint pictograph was identified within the current project area, at the site of Alta Vista (FS60) in Zone 2 (Figure

11.1). It consisted of a simple red oval located on the upper surface of an oval-shaped boulder. Red pictographs similar to this one have been identified in other locations along the south shore of the lake, such as at Chuk'muk (Aguilar and Aguilar 2010), Tzanchicham (Lothrop 1933:69), and Patziapa (Davies 2012) (Figure 11.1 right). Eugenia Robinson recently recorded a large group of similar pictographs at the site of Las Golondrinas in the Valley of Antigua (Robinson, et al., 2005). One of these, consisting of a simple red circle, was radiocarbon dated to between 1450 and 1000 BC (Robinson, et al., 2005). These pictographs may therefore be among the earliest evidence of human activity in the lake area.



Figure 11.1. Red Pictographs at Alta Vista (San Pedro La Laguna) and Pa'Tziapa (Santiago Atitlán)

11.3 PETROGLYPHS / PETROGLYPHIC MONUMENTS

Although the term petroglyph usually refers to a 2-dimensional carved or pecked design, many of the examples discussed below might be better described as *petroglyphic monuments*. This is because, in many cases, the 2-dimensional petroglyphic elements appear to have been utilized to accentuate the natural shape of a particular rock or boulder, with the intent of transforming it into a living creature such as a toad (SP05) or snake (SP06). In all cases, the original form of the rock and its location in the landscape appear to have been integral to the final monument.

Cupules and Bedrock Mortars

On the rocky peninsula of Pa'Tawal at the northernmost point of San Pedro, several natural boulders and outcrops bear what appear to be carved or pecked basins or cupules. The most accomplished of these is SP09 (Figure 11.2, Left), which includes a pronounced circular cupule with a linear channel extending off this in one direction. Additional ridges or divisions to either side of this channel suggest that SP09 is more complex than a simple cupule. More advanced recording methods, however, will be needed to tease these forms out. SP10, in contrast, consisted of a shallow, hemispherical depression with a possibly associated zig-zag line (Figure 11.2, Right), both of which could have easily been produced in historic or modern times.



Figure 11.2. San Pedro Monuments 9 and 10, Pa'Tawal, San Pedro La Laguna. G. Davies 2015.

San Pedro Monument 11

A natural rock outcrop located at the highest point of Pa'Tawal bears two shallow oval basins that form a straight line with the top of San Pedro volcano. Very close to this outcrop there is a contemporary altar that is still used by Tz'utujil day-keepers to perform important calendar ceremonies such as the culmination of *Oxlajuj Baktun* in 2012 (John

McGraw personal communication). The antiquity of these basins is impossible to determine.

Escalinatas + Cupules

San Pedro Monuments 5 and 6 were originally classed as maquetas because they share features in common with the maqueta monuments from Lake Amatitlan (Carpio Rezzio 2012) and Central Mexico (Turner 2016), namely the combination of one or more escalinatas (columns of pecked or incised horizontal lines) and cupules. In both Central Mexico and Amatitlan, escalinatas and cupules have been utilized in combination to convert natural boulders or rock outcrops into temple pyramids or, in some cases, entire ceremonial complexes (Turner 2016).

Some of the more elaborate examples of these monuments thus appear to have invoked the *altepetl* concept that was so central to Postclassic Mexican political culture. One maqueta of this kind was identified by Chris Berhorst on the Reserva Pato Poc, to the northeast of Chuk'muk (Figure 11.3) and this example bears strong similarities to Maqueta 1 from Lake Amatitlan (Carpio 2010).



Figure 11.3. Maqueta on the Pato Poc Reserve near Chuk'muk. Photo by Chris Behrhorst 1978. and part of Shook Archive, Universidad del Valle de Guatemala.

The practice of combining pecked horizontal lines and cupules to invoke water and fertility almost certainly predates the creation of these more standardized maquetas, and two monuments in the project area (SP05 and SP06) appear to have used these conventions in a more liberal and imaginative manner, to transform natural boulders into animals, specifically toads or reptiles, both of which had strong associations with water and fertility for the Preclassic Maya (Guernsey 2012).

San Pedro Monument 5

San Pedro Monument 5 is a large oval-shaped boulder, which is located adjacent to the main tourist street of San Pedro, and which overlooks our site of Las Gradass (FS15). The monument bears a 25-cm deep bedrock mortar near its upper surface, which is encircled by five smaller depressions (Figure 11.4). Extending down the side of the monument from the mortar is a single, slightly curving escalinata. Viewing the monument from the southeast, it appears that these features have been placed so as to transform this natural boulder into the head of a toad. The most common species of toad in the Lake Atitlan area is the Cane Toad (*Bufo Marinus*) which is known to have been a prolific breeder and is utilized as a method of pest control on agricultural fields due to its enormous appetite. If the monument was intended to give the appearance of a cane toad, the bedrock mortar would represent the eye and the curving escalinata would represent the poison paratoid gland.

Comparative Data

Escalinatas have been observed at other sites around the lake including Chuk'muk and Chuitinamit on the south shore (Chocano Alfaro and Sanchez 2009; Lothrop 1933) and at the sites of Kaqbatzulu and Estrada Escobar 1 on the north shore (Bruchez 1997). Lothrop (1933), for instance, documented a boulder sculpture in the Pachivak area, which had been sculpted to represent a jaguar or lion. In addition to having a circular basin in its back, Lothrop observed that the animal's legs and tail had been decorated with pecked horizontal lines, similar to ones he had observed on monuments at the site of Chuitinamit (Lothrop 1933:69). More recently, several escalinatas have been documented around the Chuk'muk site as a result of rescue work there (Chocano Alfaro and Sanchez 2009).



Figure 11.4. San Pedro Monument 5, Las Gradass (FS15), San Pedro La Laguna, looking northwest. G. Davies 2015



Figure 11.5. San Pedro Monument 6 located near the site of Pachanay (FS29), Zone 2, San Pedro La Laguna. Looking northeast. G. Davies 2015.

11.4 3D SCULPTURES

Offertories

Two monuments identified in the project area (SP07 and SP08) were classified as offertories due to the fact that they both included shallow stone trays which appear to have been designed to receive offerings. Both of these monuments were located in Zone 1.

Tikalito (SP07)

The Tikalito monument (Figure 11.6) consists of a miniature pyramid carved out of a natural rock outcrop. The pyramid has 3 tiers, each of which rises vertically before being capped by a slightly projecting bench. A single set of balustraded steps leads up the front side of the pyramid and at the base of the steps there is a small square box for holding offerings. The structure sits on a low cimientó, which in turn sits on the natural rock surface. Two shallow cupules have been pecked into this surface on either side of the monument.

The Tikalito monument bears quite a striking resemblance to a miniature temple from the La Ventilla compound at Teotihuacan (see Turner 2016, Figure 4.4), with which it shares the three-step form and balustraded stairway. However, the architectural style represented in the Tikalito is also comparable to certain Late Postclassic temples at sites in Quintana Roo, such as the three-tiered temple platform from Tancah. As the ceramics recovered from the small collection made around the Tikalito were predominantly Postclassic and included a Late Postclassic stamp seal, I consider it likely that the Tikalito is of Late Postclassic date and suggest that it may have served as place for people to make offerings before taking boats out to Pa'Tawal, which was an island at times when the lake was higher.



Figure 11.6. The Tikalito, San Pedro La Laguna, looking southwest. G. Davies 2015.

San Pedro Monument 8

The second offertory identified in the project area (SP08), is located just two blocks from San Pedro's central plaza. Unfortunately, this monument has been almost entirely encased in concrete (see Figure 11.7). and so, it is impossible to determine its original form or how much of this monument remains buried beneath street level. Given that it appears to have served a similar function to the Tikalito, i.e. to receive offerings, it can probably be assumed to date to either the Terminal Classic or Postclassic periods.



Figure 11.7. Offertory in the town center of San Pedro La Laguna. G. Davies 2016

El Rey Descansando (SJ01)

El Rey Descansando (San Juan Monument 1) is unique among the monuments in the project area. This monument, which is carved from a natural rock outcrop, combines three-dimensional sculpture with two-dimensional relief-carving and may represent a palimpsest

of carvings from different periods (Figure 11.8). At the center of the relief panel is the profile depiction of a jaguar or tiger with its tail curving upwards (Figure 11.9). Flanking this figure on both sides are two circular symbols which may represent suns, while a capital “I” shaped symbol located above the animal appears to be a reference to a Late Postclassic ballcourt. In addition to these symbols, a hand holding a club or *macana* enters the scene from above, and a spear floats nearby the animal’s head. Further research is needed to identify the symbols depicted on this monument and to interpret their meaning. However, one possible interpretation is that this is a hunting scene and that the three-dimensional figure represents the Chichimec god Mixcoatl, who is often depicted with hunting paraphernalia.



Figure 11.8. General overview of Monument SJ01, showing anthropomorphic figure on the left and the carved panel on the flat surface to the right. G. Davies 2011.



Figure 11.9. Plan view of Relief panel, Monument SJ01. Carved, three-dimensional picture is at left edge of picture.

Pedestal Monuments

One pedestal monument (SP01) was recorded in the current project area at the site of Saqaribal (FS 28) where it was associated with three other carved monuments (SP02-SP04), comprising two columns and a fragmentary ruler stela (discussed below). Based on stylistic comparisons, all four monuments are believed to date to the Late Preclassic or Terminal Preclassic. SP01 depicts a now headless figure with ligatures around his calves, kneeling upon a short, square pedestal (Figure 11.10, left). The monument is similar to one of the three pedestal monuments that Lothrop (1933:Figure 63) documented at Finca Chicayal, to the south of Chuitinamit. Originally, however, SP01 may have depicted a bound captive, like the complete example from Palo Gordo illustrated by Termer (1973:220, Plate 103) and more recently by Paredes Umana (2005:168, Figures 34b and 34d).



Figure 11.10. Comparison of Pedestal Monument SP01, Saqaribal, San Pedro La Laguna and Palo Gordo Monument 21, after Termer 1973:220, Plate 103.

Pedestal monuments are a well-known monument type whose distribution extends from the Gulf Coast Olmec region in the west to El Salvador in the east (Grube 1995) and appear to have been produced from the end of the Middle Preclassic (c. 500 BC) through to the Early Classic period (Parsons 1981). An important site for the evolution of this style appears to have been Sin Cabezas in the Tiquisate region of the Pacific Coast, where Edwin Shook identified three headless statues sitting with legs crossed on large, roughly carved pedestals. However, the Sin Cabezas monuments appear to display stylistic continuity with Olmec sculptures (e.g. the wrestler), suggesting they are likely much older than the San Pedro monuments. Furthermore, the position of the Sin Cabezas figures (i.e. cross legged as opposed to kneeling) suggests a different message was being communicated. Thus, the general category of “pedestal monument” may not be an especially useful one.

Within the general category of pedestal monument there is significant variety in the subject matter, with many of the known pedestals depicting animals such as jaguars or monkeys (e.g. at Izapa and La Argelia). In contrast, the pedestal statues from San Pedro, Finca Chicayal, Chocola, Palo Gordo, and San Francisco Zapotitlan all depict kneeling males (Lothrop 1933; Termer 1973; Schwarz et al. 2010) and are virtually identical in their carving style, and in their use of short square pedestals with overhanging benches. And while the figures in the San Pedro, Finca Chicayal and San Francisco monuments do not appear to have had their hands bound, the kneeling posture suggests submission and their likeness to the more complete monument from Palo Gordo (see Termer 1973, Plate 103) suggests that they also depicted defeated enemies or captives. The thematic focus of these monuments thus appears related to that of the ruler stelae of Kaminaljuyú, Chocola, Takalik Abaj, Izapa, El Jobo and El Baul (Fahsen 2002; 2010; Kaplan 2011; Love 2010; Shook 1965). What’s more, their stylistic similarities to the excavated example from El Porton, which was dated to the final part of the Terminal Preclassic, suggests that these types of pedestal monuments and the ruler portraits were contemporary (Fahsen 2010; Sharer and Sedat 1987). As Fahsen (2000) notes, it was around this time (c.200 AD) that Kaminaljuyu incorporated the El Porton area into its political sphere. The distribution of these monuments thus appears to correspond with Kaminaljuyu’s Late Preclassic economic sphere (Kaplan 2011; Kaplan and Paredes Umaña 2018) and suggests that they may have been part of a coordinated effort to repel the K’iche’an invaders (Fahsen 2002).

Table 11.2. Full-round Monuments depicting kneeling figures or bound captives

Department	Site	Count	Reference
Baja Verapaz	El Porton	2	Sharer and Sedat 1987
Chimaltenango	Patzun	1	Paredes Umana 2005
Retalhuleu	Takalik Abaj	1	Paredes Umana 2005
San Marcos	Unknown	1	Paredes Umana 2005
Sololá	Finca Chicayal	3	Lothrop
	San Pedro	1	Chapter 13
Suchitepéquez	Palo Gordo	2	Termer 1973
	Chocola	1	Kaplan and Paredes Umana 2018

Columns

Two well-carved stone columns (SP02 and SP03) were identified at Saqaribal (FS28), San Pedro. San Pedro Monument 2 (Figure 11.11 left) is a cylindrical, slightly barrel-shaped column with a series of three bands around the top and a flat base. It has a height of 1.2 m and a diameter of 60 cm. San Pedro Monument 3 (Figure 11.11 right) is oblong in shape, with an irregular, bulging base and what is probably a later engraving consisting of a circle and 4 spokes, on its upper surface. The lighter color and greater degree of weathering observed in the upper portion of this monument probably indicates that it was partially buried or submerged for a time. Like the majority of the stone monuments in the region, the type of rock used for these monuments appears to be the local andesite. A large, dark, ferruginous concretion, embedded in the side of Monument 1, confirms the volcanic nature of the rock.

Comparisons and Chronology

In the Lake Atitlan region, Chris Berhorst registered and photographed a stone column on *Isla de los Gatos* located in the Bay of Santiago, between Santiago Atitlan and Chuitinamit, which he noted had “Loriz bands at top similar to columns at San Pedro La Laguna” (Behrhorst 1978) (Figure 11.12). Plain stone columns have been documented at several early sites in the Pacific Coast and highlands, including the sites of Naranjo and Kaminaljuyú in the Valley of Guatemala. Closer parallels with San Pedro Monument 1, however, are the three stone columns associated with Group B, Mound 30 at the site of

Izapa (Norman 1976). Although somewhat larger than San Pedro Monument 1, *Miscellaneous Monuments 5 and 9* (130 x 75-90 and 135 x 93 cm) are both cylindrical, slightly bulging plain columns. The columns were all apparently designed to support stone balls (Miscellaneous Monuments 6,8, and 10) and Norman (1973:264-5) has interpreted these column and ball combinations as symbolic representations of the moon, the stars and Venus.



Figure 11.11. Columns SP02 (left) and SP03 (right). G. Davies 2015.



Figure 11.12. Column photographed by Chris Behrhorst on Isla de Gatos (1978). Part of Shook collection, Universidad del Valle de Guatemala.

Jab'el Wiaaj (SJ02)

Ja'bel Wiaaj (SJ02) is a large stone head measuring approximately 1 m in diameter, located on an otherwise indistinct coffee terrace, 2 km to the northwest of San Juan (Figure 11.13). The mere fact that the monument represents a head has prompted speculation, particularly among tourists, about Olmec influence in the lake area. However, the head is much smaller than the known Olmec heads and bears none of the characteristic Olmec features. Nor does the monument bear more than a thematic similarity to other monumental heads of the Preclassic era such as those of Monte Alto.

Stylistically, the head appears to be more closely related to the Late Classic Cotzumalguapa style, which proliferated in the Pacific piedmont and Antigua Valley during the Terminal Classic period (c. 850-1000 AD). The sharp cheek ridges beneath the eyes resemble the facial markings on Monument 3 from El Baúl (Figure 11.14 left) and on the two death's head monuments from La Chacra in the Antigua Valley (Figure 11.14 right). Such markings are also found on clay effigies from the Tiquisate region of the Pacific Coast (see Vankirk and Vankirk 1996:30) and are often considered to be representations of *Huehuetotl*, the old Mexican Fire God. The almond shaped eyes with multiple outlines and the straight, expressionless mouth are also features seen in Cotzumalguapa art (e.g. on Monument 21 from El Baul).

The connections with the Antigua branch of the Cotzumalguapan art style may indicate that these influences were arriving in San Juan from the Kaqchikel area to the north and west of the lake, rather than directly from Cotzumalguapa. Local historian Benedicto Ixtamer writes in his blog that prior to the conquest, the people of San Juan obtained obsidian from the Kaqchikeles with whom they had good relations (Ixtamer 2012) and the Annals of the Kaqchikeles notes that the inhabitants of Xe' Kaak'a Aab'aj sought refuge among the Kaqchikeles in the wake of a revolt against the Tziquinahay in 1521 (Recinos and Goetz 1953).



Figure 11.13. Colossal head, Xe Kaka Abaj, San Juan La Laguna.



Figure 11.14. Monument 3 from El Baul, Cotzumalguapa and Monument 1, La Chacra, Antigua after Perrot-Minot (2001: Figure 6).

Mujer Embarazada (SJ03)

The monument known by residents of San Juan as the "Mujer Embarazada" (SJ03) (Figure 11.15 left) is located next to a dirt road, approximately 50 m south of El Rey Descansando (SJ01). In its theme, the position of the figure (especially the open legs) and the shape of the rock, it appears similar to Monument 78 of El Baúl (Chinchilla Mazariegos 2016) (Figure 11.15 right). Both appear to depict female skeletons in the process of giving birth and so it appears that the monuments are depicting a deity associated with both death and child birth. One difference, however, is the presence of a circular glyph above the individual's head in the San Juan monument, a symbol that was also appeared on Monument SJ01. Given the possible Cotzumalguapa connection, SJ03 is tentatively dated to the Terminal Classic (c.900-1100 AD).



Figure 11.15. Comparison of SJ03 from San Juan and Mon 78 from El Baul, Cotzumalguapa.

Zoomorphic Basin / Metate (SJ04)

Monument SJ04 (Figure 11.16) is a zoomorphic stone sculpture resembling a frog or toad, with a shallow triangular basin in its back. It is approximately 75 cm long, 60 cm wide and 50 cm tall. Given the shallow depth of the basin, and the fact that it has two channels located at the corners, it seems likely that the monument was utilized as a metate.

According to locals, Monument SJ04 is the last of several monuments that used to occupy the central plaza of San Juan. The rest have presumably been sold or have found their way into one of the many private collections that exist in San Juan. Thanks to the quick work of the staff of the community library in San Juan, Monument SJ04 has now been relocated to the new museum which is located directly above the library.



Figure 11.16. San Juan Monument 4, zoomorphic basin or metate.

11.5 2D SCULPTURES

Plain Stelae and Altars

Near the base of Mound 1 of San Juan Antigua there are what appear to be two plain monuments, SJ09 and SJ10. One of these is (SJ09) is still standing and appears to represent a stela (Figure 11.17 left). The second stone (SJ10) is thicker and may represent an altar. Approximately 30 m southeast of SJ09, adjacent to the property boundary, is a second stela (SJ11), which like the first one, is also partially still standing and is thus presumed to be in situ (Figure 11.17 right). As stelae were often positioned in front of mounds, the location of this stela indicates that one of the four missing mounds may be located on the adjacent property to the southeast.



Figure 11.17. Plain stelae SJ09 (left) and SJ11 (right) near Cerro Encantado, San Juan Antigua.

Distribution

An oblong stone, perhaps representing the base of a plain stela, was also observed at Chi Kaqajaay. The presence of smooth stelae at both of these sites supports the ceramic data which indicates that these sites were established in the Late Preclassic period and that

they shared cultural practices and ideology with the contemporary site of Samabaj, which boasted fourteen plain monuments.

Plain stelae have been identified at sites throughout much of the Southern Maya Region (Figure 11.18) (Bove 2011). Shook (1952) recorded plain monuments at 13 sites in the Central Highlands, all but one of which were located in the Department of Guatemala:

Bove (2011) has drawn attention to the fact that there is a notable absence of these monuments at sites that Popenoe de Hatch identifies with the Naranjo ceramic tradition. Popenoe de Hatch argues that the Naranjo tradition originated during the Middle Preclassic at the site of La Blanca and then, during the Late Preclassic, shifted east to occupy sites in the Tiquisate zone (e.g. Sin Cabezas and La Noria), and in central Escuintla (e.g. Bonampak, La Selva, Vista Hermosa, Los Limones) (Popenoe de Hatch 1989) (Bove 2011).

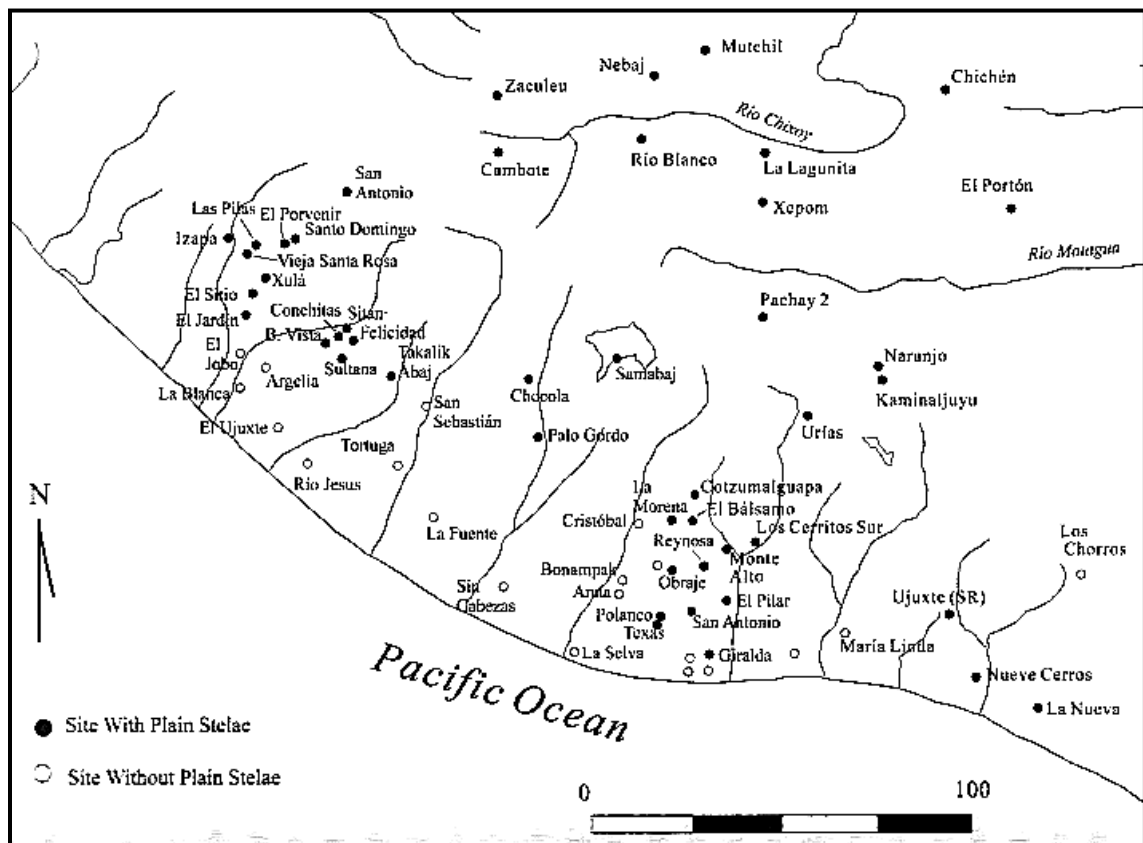


Figure 11.18. Distribution of plain stelae in the Southern Maya Region, after Bove 2011,

Cotzumalguapa Style Ballcourt Marker

One of the most impressive artifacts within the Cumes Collection from Xe'Tawal (Zone 1) is the lower third / half of a carved ballcourt marker which depicts a bound captive, on his knees with his hands tied behind his back (Figure 11.19). To the right of the captive, there is a severed head with long hair, which is identical to examples carved on Monument 63 of Bilbao (see Parsons 1967: Plate 44m and r). The monument is small, measuring only 35 cm wide and 10 cm thick and has rounded corners. Its original shape cannot be determined but may have been circular, suggesting a ballcourt marker rather than a stela.



Figure 11.19. Comparison of ballcourt marker from Xe'Tawal (top) and Mon. 55 from El Baul (bottom) after Parsons 1969:252, Plate 44r

Since its original context is unknown, it is impossible to interpret how or when this monument reached the lake. Given its small size, it could easily have been brought here from Cotzumalguapa at any time between its manufacture (probably during the Terminal Classic) and today. However, given the presence of Cotzumalguapa stylistic traits in several of the monuments around San Juan, it is also quite possible that this monument does reflect Terminal Classic connections between the project area and Cotzumalguapa.

Given the proximity of the Cotzumalguapa area to the lake, it is strange that, until the current project, no Cotzumalguapa style sculpture was known from the lake area. The few tantalizing traces of Cotzumalguapa influence identified during the current project suggests the possibility that such monuments were once common in the area.

Ruler Portrait (San Pedro Monument 4)

San Pedro Monument 4 is a highly eroded fragment of what originally must have been a substantial carved monument (Figures 11.20). All that is now visible is the lower portion of the figure's legs and a reverse-c shaped symbol to the figures left, which may signify blood coming from a severed trophy-head. Comparison of this monument with Late Preclassic monuments from sites in the Highlands and Pacific piedmont indicates that this is a Late Preclassic "ruler stela" (Kaplan 2018), similar to those that have been documented at major sites such as Kaminaljuyu, Chocola, El Jobo, and Takalik Abaj. The closest parallel to Monument SP04 appears to be Stela 3 from Takalik Abaj (Figure 11.21), which has been dated to the Late Preclassic, Ruth Phase (200 BC – 150 AD) (Schieber de Lavarreda and Corzo 2010).

Given that ruler stelae have thus far only been recovered from sites that Love (2010:160) identifies as "supra-regional centers....the capitals of state-level polities and/or entrepots for long-distance trade networks", the presence of a ruler stela in the vicinity of San Pedro La Laguna is puzzling. If the monument is close to its original context, it would suggest that the Saqaribal area was either a) a Terminal Preclassic regional capital on par with sites in the piedmont, or b) a boundary site / military outpost subject to one of these centers. Given that the closest piedmont center of Chocola spanned ? square km, the second scenario seems the more likely of the two.



Figure 11.20. Monument SP04, Saqaribal, San Pedro la Laguna.

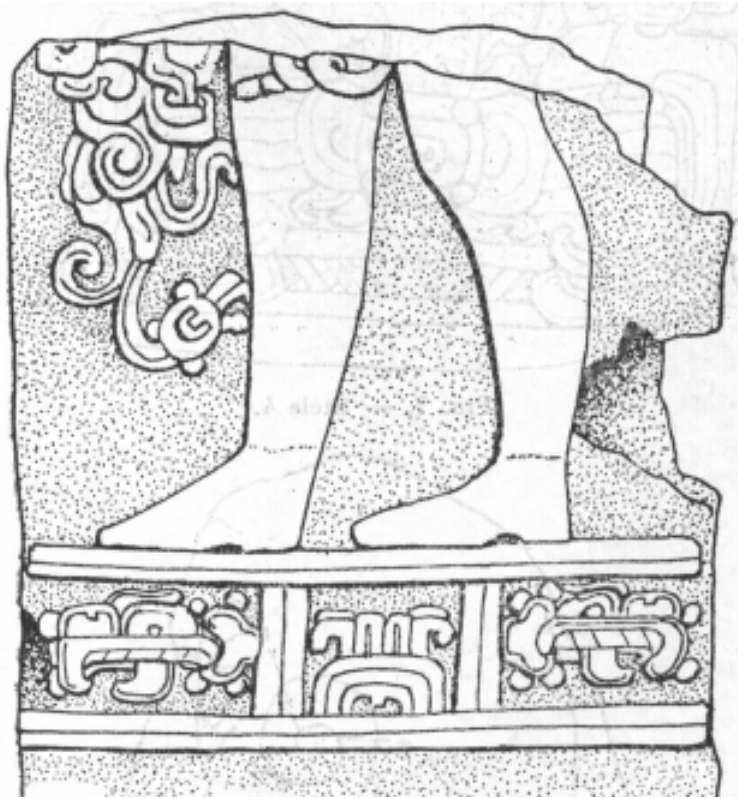


Figure 11.21. Stela 3 from Takalik Abaj after Cassier and Ichon (1978: Figure 9)

11.6 SMALL PORTABLE SCULPTURE

Although no portable sculptures were recovered during the field investigations, these items were relatively abundant in private collections (Figures 11.22 and 11.23). As the majority of these depict people or animals, these items would have made been attractive for casual collectors and thus it is not surprising that none were identified during the survey.



Figure 11.22. Small portable sculpture in private collections in San Juan La Laguna.



Figure 11.23. Small zoomorphic sculptures in private collections in San Juan La Laguna.

Small anthropomorphic and zoomorphic sculptures were particularly common in private collections in San Juan La Laguna. The anthropomorphic figures included a few with puffy faces and thick lips (see Figure 11.22) which are reminiscent of the small potbelly statues that Kaplan and Paredes Umana (2018:232, Figure 6.4) have documented from San Antonio Suchitepéquez, although the San Juan examples have a much flatter, almost 2-dimensional form.. The zoomorphic sculptures included depictions of frogs, snakes, iguanas and birds (see Figure 11.23).

One portable sculpture that formed part of a small private collection in San Pedro consisted of a stone incensario in the form of a monkey with a stone bowl on his head (Figure 11.22). The owner of this sculpture reported that he recovered it from a milpa on route to his farm near Pan Alujaay.



Figure 11.24. Stone incensario (left).Private collections, San Pedro La Laguna..

Two-Dimensional Sculpture

Hachas

Only one hacha, in the form of a jaguar head with protruding tongue, was identified during the current project and this formed part of a small private collection in San Pedro (Figure 11.23). Hachas are believed to have originated in Veracruz, where they have been found in greater numbers (Shook and Marquis 1996). However, they are also common in southern Guatemala and adjacent parts of El Salvador and Honduras. Although they have often been considered to have an association with the Mesoamerican ballgame, Shook and Marquis (1996:63) state that the evidence for this association is not convincing. They also state that there is an “unresolved relationship between stone axes and stone yokes”, the two of which have been found together in burials at the sites of Apaneca, Tazumal and Patulul (Shook and Marquis 1996: 63).



Figure 11.25. Jaguar hacha. Private collections, San Pedro La Laguna.

CHAPTER 12. SYNTHESIS AND DISCUSSION

The current chapter provides a chronological synthesis of the PALA data and discusses comparative data and interpretations. Due to the fact that the majority of the sites documented during this project were defined based on surface ceramics and lacked architecture, the interpretations provided here should be regarded as preliminary.

12.1 PRECLASSIC PERIOD C. 600 BC – 200 AD)

A total of 20 out of the 35 sites recorded during the current project (57 %) produced evidence of Preclassic activity in the form of ceramics and / or monuments (Table 12.1). Table 12.1 lists these sites along with ceramic percentages based on the surface collections. Sites where Preclassic ceramics have been recovered but not in a controlled manner have a “Y” in the ceramic percentage column.

Three of the four Ritual-Admin (Type 1a) sites and two of the three invisible centers (Type 1b Sites) produced evidence of Preclassic occupation or use. In addition, ten residential zones produced evidence of Preclassic activity, with the site of Chuwa Julya, located on the outskirts of San Pedro to the south, producing the highest overall percentage of Preclassic ceramics (16.33 %) and San Juan Antigua producing the second highest percentage (11.28%). Two defensive / mirador sites (Type 3 Sites) and two ritual (Type 4) sites also produced Preclassic evidence. The distribution of sites with Preclassic and / or Early Classic ceramics is shown in Figure 2.1.

Middle Preclassic Period (c.600 – 400 BC)

The presence of a few possible Middle Preclassic diagnostics indicates that the project area may have had a small settled population by as early as 600 BC. As Xuc ware and Semetabaj Brown Ware have been recovered from both Semetabaj and Chocola, it is not clear from which direction these settlers would have originated and whether these first settlements in the project area represented colonies and were therefore subject to one of these larger centers. The presence of these ceramic types in the project area, however, suggests that the first settlers of the project area would probably have been aware of the

massive construction projects being undertaken at these sites. If any of these settlers had grown up or spent time at one of these large centers, this would have influenced their understanding of architecture and site planning and would have resulted in such conventions being brought to the lake.

Table 12.1. Sites with Preclassic evidence, showing ceramic percentages.

Type	Zone	Site	Preclassic Ceramics	Mons. / Architecture
1a	3	Chi Kaqajaay, Area B	7.46	
	4	San Juan Antigua	Y	Y
	2	Kiyakapek		Y
1b	1	Pa Tz'ununa'	2.04	
	1	Saqaribal		Y
2a	3	Chi Kaqajaay, Areas A and C	7.35	
	4	San Juan Antigua, Areas A-C	11.28	
	1	Las Gradass	5.26	
	4	Tza'n' Juyu'	3.33	
	1	Chuwa Kante	2.58	
	1	Cruz Bey	1.94	
2b	1	Chuwa Jul Ya'	16.33	
	2	Punta de Oro	Y	
2c	2	Pa Mes Bajo	6.25	
	4	Chi Nimaya'	Y	
3	1	Rachaq Abaj	3.53	
	1	Tzan Tinamit	0.58	
4	1	Pa'Tawal	6.21	
	2	Alta Vista		Y
5	1	Chuwa Sanayi'	2.94	

Popenoe de Hatch (2006) notes that Chocoma was strategically located for exchanges with the highlands and observes that the ceramic evidence indicates particularly strong connections with Semetabaj, located in the northeast corner of the lake (Popenoe de Hatch 2007; Popenoe de Hatch 2010). As the most direct and therefore fastest route between Chocoma and Semetabaj would have followed the Rio Yatz'a and passed through San Juan Antigua (Figure 12.2), it is plausible that San Juan Antigua was established to facilitate trans-lake trade between these two large centers.

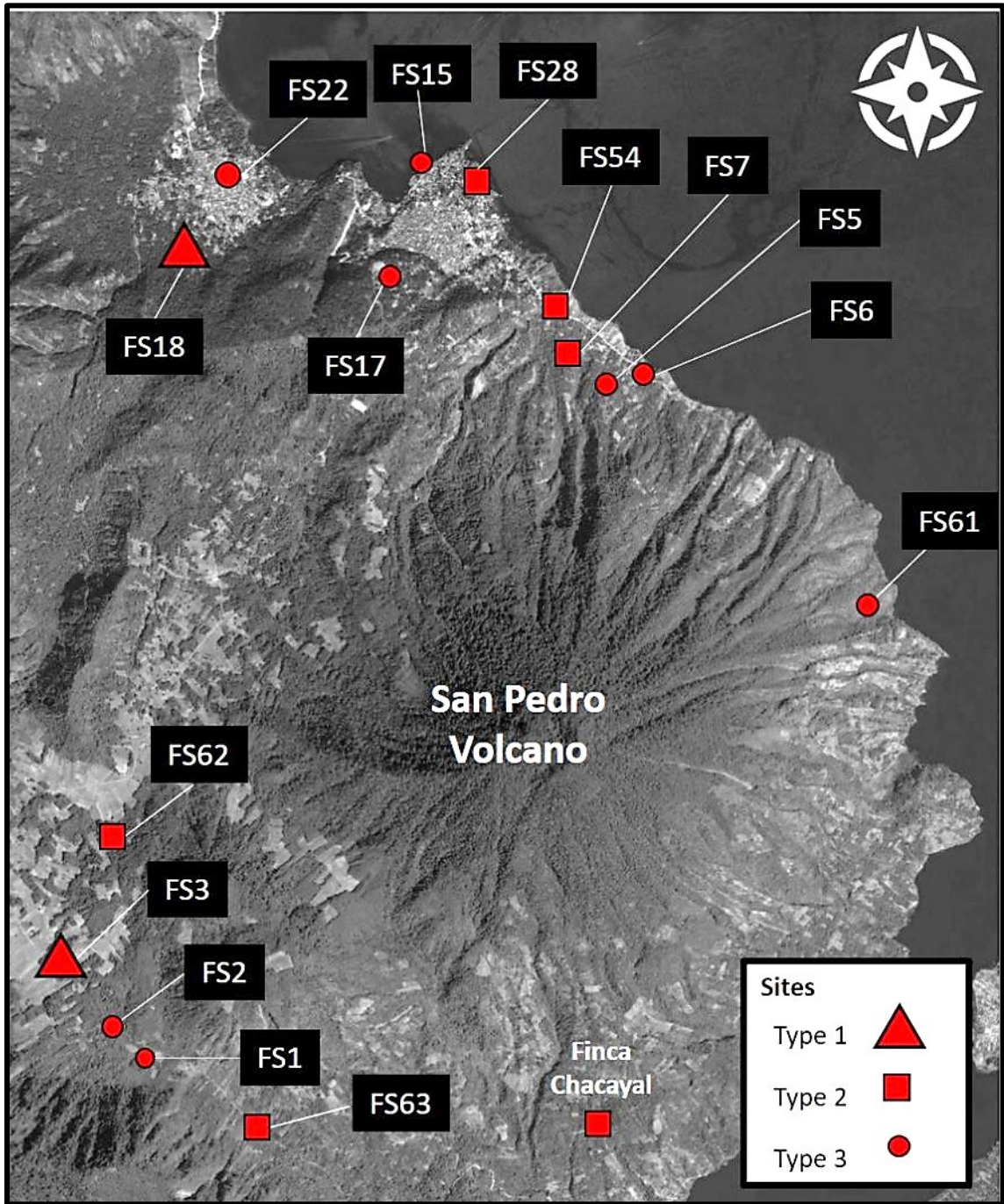


Figure 12.1. Locations of sites with Preclassic and/or Early Classic ceramics

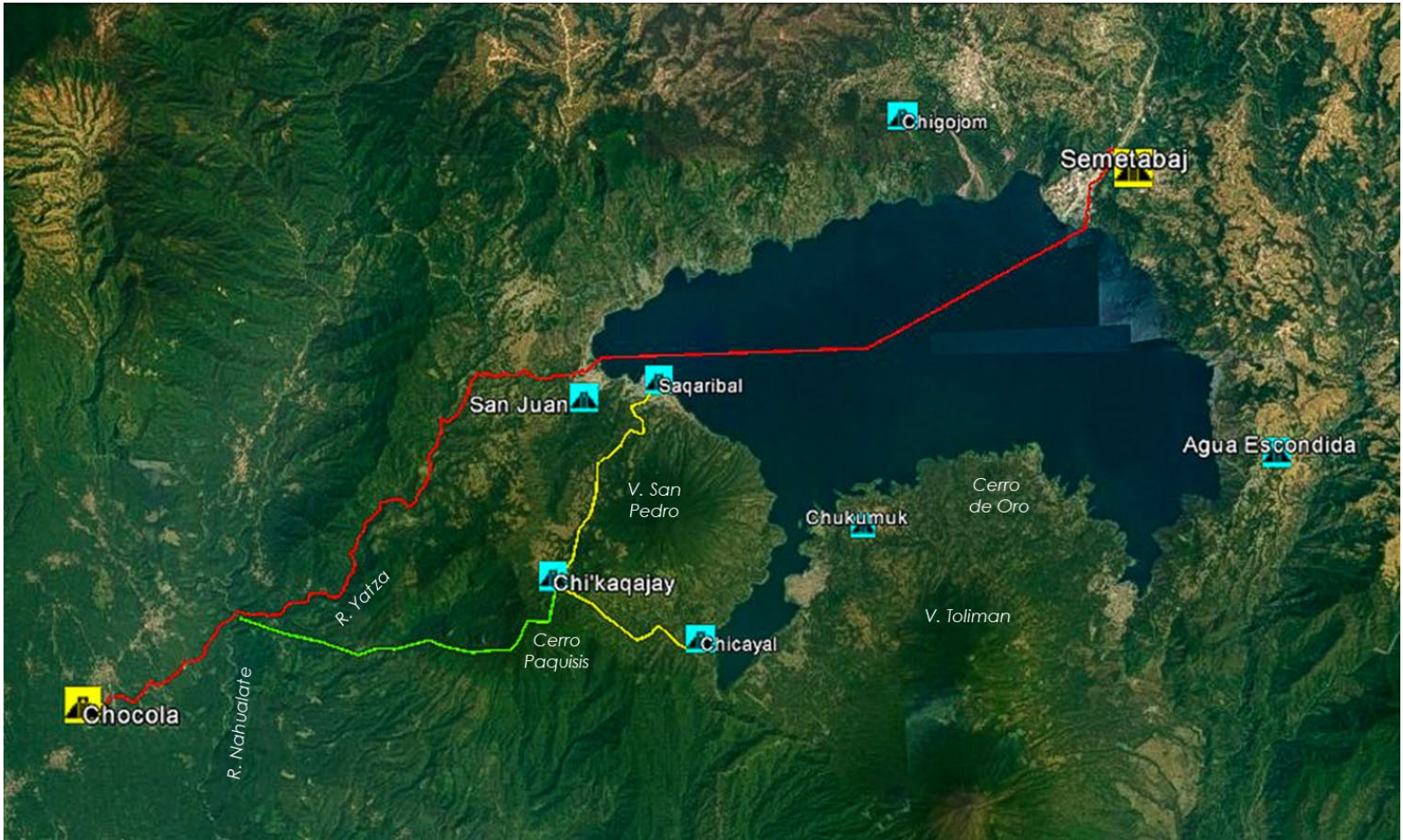


Figure 12.2. Map showing least cost route between Chocola and Semetabaj (red line), principle access routes to Chi Kaqajaay from Saqaribal and Finca Chicayal (yellow lines) and possible route from Chi Kaqajaay to Chocola (green line).

However, interaction between Semetabaj and Chocoma need not have followed the most direct route and it is not clear if canoe transportation was well developed by this time. Contact between the two sites could have instead passed through Palo Gordo and Chuk'muk, or via a site positioned on the Madre Vieja route such as Cocala-Saltona (Perrot-Minnot 2004; Perrot-Minnot 2005), although no Middle Preclassic ceramics have yet been identified there. The fact that only a small quantity of Middle Preclassic ceramics were recovered from San Juan, indicates that it was probably a small site in the Middle Preclassic and the use of stone in the mounds there indicates that monumental construction at the site probably did not begin until the Late Preclassic period.

Late Preclassic Period (c.300 BC – 200 AD)

The ceramics recovered from San Juan Antigua and Chi Kaqajaay indicate that both of these sites increased in population and importance during the Verbena phase (c.300-100 BC) of the Late Preclassic and that they continued to expand through the Arenal and Santa Clara phases (c. 100 BC – 200 AD). The steady growth of these sites through the Late Preclassic parallels the growth of the nearby sites of Chuk'muk and Samabaj. Including their contiguous residential areas, San Juan and Chi Kaqajaay are each estimated to have covered a total area of between 10 and 15 hectares. Each was centered around a small plaza, with between 3 and 5 earth and stone mounds fronted by plain stelae. The comparable size of their centers and their residential zones indicates that they probably had similar populations and political status, while the plain stelae suggests shared norms of political or religious practice.

Love (2011) notes that plain stelae were associated with second tier (multi-plaza) and third tier (single plaza) sites within the areas controlled by Late Preclassic Kaminaljuyú and Takalik Abaj, both of which he suggests administered 5-tier settlement hierarchies and had state-levels of organization. If the plain stelae at these sites date to the Late Preclassic period as is commonly believed (Bove 2011; Parsons 1976), and Semetabaj was abandoned by this time, the most likely candidate for a controlling regional center would have been Chocoma.

Table 12.3 lists the imported Preclassic ceramic diagnostics recovered from the project area with their possible place of origin. Although several of these types may have had their origin at Kaminaljuyu or Monte Alto to the east and southeast of the lake respectively, most of these types have also been recovered from nearby sites like Chocola, Bilbao and Semetabaj and so it is likely that they arrived in the project area via one of these routes. Imports from the Quetzaltenango and Totonicapan areas may also have been acquired at Chocola, due to the fact that the footpaths between San Juan and these areas were long and arduous (Prybot personal communication). Imports from the Quiche region would likely have entered the lake directly from the north, possibly passing first through Semetabaj in the Middle Preclassic or Chuk'muk or Samabaj in the Late Preclassic.

Table 12.2. Preclassic imports identified in the PALA project area and possible places of origin.

Phase	Type / Ware	Probable Place of Origin
Providencia Phase (600-400 BC)	Xuc Ware	Semetabaj
	Specular Red	Escuintla
	Santa Cruz Red	Escuintla
	Sumpango	Kaminaljuyu
	Monte Alto Rojo	Escuintla
	Siquinala Red on Buff	Escuintla
	Semetabaj Brown	Semetabaj
	Utatlan Ware	Quiche
Verbena - Arenal Phases (c.300 BC - 200 AD)	Glossy Orange	Quiche / Quetzaltenango
	Glossy Orange with Usulután	Escuintla
	Glossy Black	Quiche / Quetzaltenango
	Kaminaljuyu Black-Brown	Kaminaljuyu
	Izote, Marfil, Verbena Ivory?	Kaminaljuyu
	Rojo Rosado	Quetzaltenango / Totonicapan
	Maruca Zoned Incised	Suchitepéquez / Retalhuleu / San Marcos

Most of the Late Preclassic ceramic types recovered from the project area are considered part of the Miraflores Ceramic Sphere (Demarest and Sharer 1986), which was centered on Late Preclassic Kaminaljuyu and extended to El Salvador in the east. Taken together with the possible carved monument connections represented by the pedestal statue and the ruler portrait monument, this evidence suggests that the lake was well within Kaminaljuyu's sphere of influence at this time.

Monuments and Politics

As discussed in Chapter 11, the pedestal monument and ruler stela fragment documented at Saqaribal, San Pedro, show clear stylistic affinities with monuments from large piedmont sites such as Chocola and Takalik Abaj. Like the pedestal statues at Finca Chicayal, Chocola, Palo Gordo, and San Francisco Zapotitlan, the pedestal from Saqaribal depicts a kneeling male and was beheaded sometime in the past. And although the San Pedro and Finca Chicayal monuments do not appear to have had their hands bound, the kneeling posture suggests submission (Fahsen 2010), and their likeness to the more complete monument from Palo Gordo (see Termer 1973:221, Figure 103) suggests that they depicted defeated enemies or captives.

The presence of a fragmentary ruler portrait (SP04) in the same location supports the idea that these monuments were erected during the Terminal Classic period (Love 2010; Parsons and Allen 1986). Given that ruler portraits have only previously been recovered from large, state-level sites, the presence of this monument in San Pedro suggests that either the Saqaribal area was the focus of an important site during the Terminal Preclassic period or that it came under the control of a larger center during this time. Given the paucity of Preclassic ceramics in the Saqaribal area, the latter scenario seems more likely.

Following Federico Fahsen's (2002; 2010) suggestion that the ruler stela of Kaminaljuyú were designed to humiliate members of the invading K'iche', one possibility is that the monuments at Saqaribal and Finca Chicayal were placed here with similar intentions and marked the northern limit of Chocola's territory. Their positioning at the shore in Saqaribal and Finca Chicayal may indicate that they were placed specifically at the principle access routes to Chi Kaqajaay (see Figure 12.1). Chocola's territory, as

defined by the locations of these statues, would have extended from the Samala River in the west to just beyond the Nahualate River in the east, with the southern boundary lying near Palo Gordo, and the northern boundary at Saqaribal / San Pedro (Figure 12.2). It is possible, however, that Chocola's territory was even larger, extending as far east as the Madre Vieja, and therefore encompassing most of the Department of Suchitepéquez (Perrot-Minnot 2005).

Alternatively, as the majority of these monuments have been found at sites with strong economic ties to Kaminaljuyu, it may be that the erection of these monuments was orchestrated by this highland center, which was reaching its peak of power at this time. Such an idea would lend support to Kaplan's (2011) argument that Late Preclassic Kaminaljuyu was the head of a hegemonic empire that encompassed much of the area included in the Miraflores Ceramic Sphere, an idea that has been viewed as hyperbolic by most scholars (e.g., Braswell and Robinson 2011; Demarest 2011).



Figure 12.3. Proposed extent of Chocola's political territory in the Late Preclassic (black polygon) on Google Earth.

12.2 THE EARLY CLASSIC PERIOD (C. 200 – 400 AD)

A total of 21 out of the 35 sites recorded during the current project (57 %) produced evidence of Early Classic activity (Table 12.4). The sites of Chi Kaqajaay and San Juan appear to have increased substantially in size and there was also an increase in the number of rural homesteads, indicating that the project area experienced significant population growth during this phase. But while the increase in rural homesteads would seem to suggest a time of relative security, there is also an increase in the use of sites in defensive locations, although we cannot say for certain that they were being used for defense at this time. Finally, an increase in ritual activity is suggested by a significant increase in the percentage of Early Classic ceramics over Preclassic ceramics at Pa Tawal.

Table 12.3. Sites with evidence of Early Classic activity in PALA project area.

Type	Zone	Name	Early Classic
1a	3	Chi Kaqajaay, Area B	51.28
1b	1	Pa Tz'ununa'	2.04
2a	3	Chi Kaqajaay, Areas A and C	28.30
	4	San Juan Antigua, Areas A-C	35.41
	2	Pan Alujaay, D and E	9.47
	4	Tza'n' Juyu'	46.67
	1	Las Gradass	3.95
	1	Chuwa Kante	3.87
	1	Cruz Bey	2.91
2b	1	Chuwa Jul Ya'	12.24
	2	Punta de Oro	Y
2c	2	Pa Mes Alto	21.43
	3	Xe'Juyu'	3.70
	5	Pa K'waa'	Y
3	2	Pa Ch'anay Alto	Y
	1	Tzan Tinamit	5.85
	1	Rachaq Abaj	4.12
	5	Tzujk'abal	Y
4	1	Pa'Tawal	10.17
5	1	Chuwa Sanayi'	11.76
	1	Pa Q'am	9.52

The overthrow of Kaminaljuyú by the Solano groups and the collapse of several sites in the coast must have caused a significant disruption to commerce travelling along the Pacific piedmont and many of the piedmont centers, including Chocola and Bilbao, appear to have suffered population declines. In the Lake Atitlán area, however, San Juan and Semetabaj appear to have thrived through the first part of the Early Classic, probably as a result of an influx of people from the K'iche' region. The site of Chuwa Kiyakapek, located approximately midway between the established communities of San Pedro and Chuk'muk was likely founded by these new K'iche'an arrivals, who constructed a site that closely replicated the center of La Lagunita. Like other Classic period sites that emerged in areas conquered by Solano groups (i.e. Cotio in the Valley of Guatemala), the site of Chuwa Kiyakapek included a sunken palangana-style ballcourt.

The appearance of Solano ceramics at sites throughout the Atitlán region at this time indicates that the population increase that occurred during the Early Classic brought with it an increase in interaction and commerce, perhaps indicating the presence of a market at Chuk'muk. This increase in the wealth and power of Chuk'muk appears to have been made possible by the collapse of the piedmont exchange route, which appears to have caused a shift in the direction of trade crossing the lake from the east-west orientation, which had favored the sites of San Juan and Semetabaj, to a north-south orientation, which favored the site of Chuk'muk, and may have also motivated the foundation of new settlements on the north shore at Panajachel and Sololá (Corado 2013).

12.3 THE MIDDLE CLASSIC PERIOD (C.400 – 600 AD)

As discussed in Chapter 4, rescue excavations conducted both at Chuk'muk and just outside Santiago Atitlán, in 2007 and 2010, identified burials containing Teotihuacan style tripod vessels and candelarios similar to ones recovered from the site of *Montana*, in the Escuintla region of the Pacific coast (Bove and Medrano 2003). Given the rarity of these items in the western highlands and even in other parts of the coast, the presence of these items in graves in Chuk'muk implies the existence of a special relationship between the lake and this large coastal center. And while the precise nature of the Teotihuacan presence

at Montana is still being debated (Bove and Medrano 2003), Chinchilla et al. (2001) surmise that Teotihuacan merchants likely established themselves in such locations to secure access to trade items desired by Teotihuacan's elites.

The archaeological evidence from both Chuk'muk and Chiche (near Santa Cruz del Quiche), indicates that soon after the appearance of small quantities of Teotihuacan-style items, each of these emerging centers experienced significant growth and prosperity, leading ultimately to the centralization of settlement in their respective regions and probably an increase in political power (Brown 1985; Brown and Majewski 1983). The parallel evolution of the centers of Chuk'muk and Chiche suggests that these sites may have re-established a trade route, which Brown (1984) argues emerged in the Middle Preclassic, for the transport of jade from the Motagua source, and obsidian from the Jilotepeque source, to the Pacific coast. As Brown (1984:229) explains, this route, which he calls the *Northern Upper Motagua River Valley Route*: "began in Guaytan, ran westward along the Motagua River to its headwaters in the Quiche Basin, crossed the mountains into the Atitlán Basin,- and finally passed onto the Pacific Lowlands". As this route would have avoided passing through Kaminaljuyú, it might be that this exchange route only operated for a short time, prior to Teotihuacan's establishment of commercial relations with Kaminaljuyú, during the Esperanza phase (c.400-550 AD).

The large quantities of Santa Marta Ware and Esperanza Flesh recovered from the site of Chi Kaqajaay indicate that this site experienced its peak of population during the second half of the Early Classic (c.400-600 AD) and that this prosperity continued into the Late Classic (c.600-800 AD). The expanding population of this site towards the end of the Early Classic may indicate that some of the former residents of San Juan and Semetabaj were relocating to this site.

The center of Pa Tz'ununa' also appears to have been more densely settled during this time, with most of its contiguous residential zones also continuing to be occupied. Meanwhile, activity within the residential sector of San Juan Antigua appears to have declined. All of the small rural sites appear to have continued in use during this period and at least one new residential cluster was established at Xe Kaak'a Aab'aj.

12.4 THE LATE CLASSIC PERIOD (C. 600-800 AD)

The paucity of well-known Late Classic diagnostics such as Amatle Ware and Tiquisate Ware in the project area confirms that the Late Classic was a time of regionalism and division, as has been noted for other parts of the highlands around this time (Brown and Majewski 1983; Brown 1982). Given that Amatle was still being utilized in the south shore area (Chinchilla et al. 1994), the lack of Amatle in the San Pedro area also suggests that there was a breakdown in communication and exchange between the eastern and western portions of the lake, perhaps reflecting continued population nucleation at Chuk'muk and corresponding depopulation of the project area.

The only site in the project area to produce more than a couple of sherds of Amatle was Chi Kaqajaay. The presence of Amatle ware and also stone house walls at Chi Kaqajaay indicates that this community was becoming increasingly integrated with Chuk'muk. Chuk'muk's interest in this area in the Late Classic may have been driven by population growth and the need to secure more agricultural land. However, Chi Kaqajaay was also located adjacent to an important trade route and was also a source of valuable raw materials such as cypress wood, which the emerging merchant class of Chuk'muk would have needed to construct their large commercial canoes. Chuk'muk's increasing influence over Chi Kaqajaay during the Late Classic would have made it increasingly difficult for Pa Tz'ununa' to maintain its independence and so it seems likely that the latter settlement would have begun paying tribute to Chuk'muk around this time.

Table 12.4. Sites with evidence of Middle to Late Classic activity.

Zone	Site Type	Site	MLC	
3	1a	Chi Kaqajaay, Area B	33.33	
1	1b	Pa Tz'ununa'	24.48	
4	2a	San Juan Antigua, Areas A-C	24.15	
3		Chi Kaqajaay, Areas A and C	59.00	
4		Tza'n' Juyu'	36.67	
2		Pan Alujaay D and E	26.32	
1		Chuwa Kante	12.90	
1		Cruz Bey	9.71	
1		Las Gradass	6.58	
1		Xe'Tinamit	Y	
1		2b	Chuwa Jul Ya'	59.18
2			Punta de Oro	Y
5	Xe' Kaak'a Aab'aj		Y	
3	2c	Xe'Juyu''	46.30	
2		Pa Mes Bajo	31.26	
2		Pa Mes Alto	16.67	
3		Xe'Cruz	10.26	
4		Chi Nimaya'	Y	
3		Jaay Aab'aj	Y	
2		Pa Ch'anay Bajo	Y	
2		3	Pa Ch'anay Alto	Y
1	Rachaq Abaj		12.35	
1	Tzan Tinamit		5.84	
5	Tzujk'abal		Y	
1	4	Pa'Tawal	22.03	
1		Xe'Tawal	11.11	
1	5	Chuwa Sanayi'	8.82	
1		Pa'Q'am	2.58	

12.5 THE CLASSIC TO POSTCLASSIC TRANSITION (C. 800 – 1200 AD)

The dearth of Late Classic, Terminal Classic and Early Postclassic diagnostics in the project area made clarifying the nature of Classic to Postclassic transition even more challenging than expected. Excavations at the small residential site of Xe'Tinamit (FS13) came closest to identifying deposits spanning this transition (Figure 12.4). As illustrated in Figure 12.4, stratum 4 contained significantly higher percentages of Early and Middle to Late Classic ceramics than Strata 3 and suggested the potential for continuity between this early occupation of the site and the more intensive Late Postclassic occupation. Radiocarbon dating of a piece of bajareque from this stratum produced a calibrated radiocarbon date of 570 - 690 AD. Nevertheless, a small number of Postclassic diagnostics were also present in this stratum, indicating that it represented a mixed deposit.

One ceramic type identified in this stratum and also in other excavated strata at Xe'Tinamit only, was dubbed San Pedro Tan Rosada. In both its paste composition and its range of forms, this type bears similarities to both Middle to Late Classic Santa Marta Ware, and Terminal Classic to Postclassic San Pedro Tan Café. San Pedro Tan Rosada may therefore represent a transitional type dating to the Late Classic.

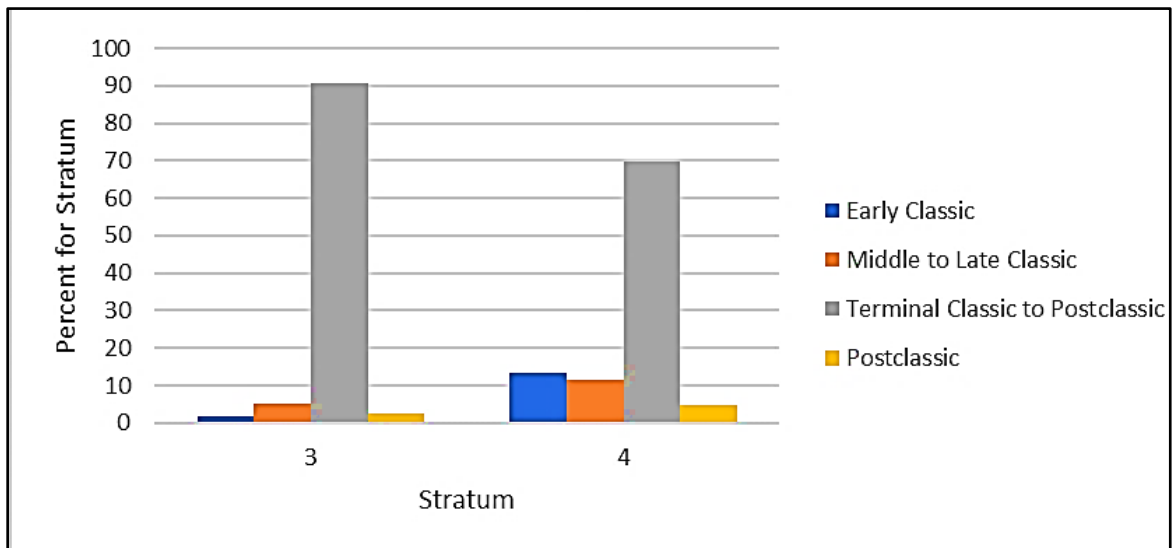


Figure 12.4. Graph of ceramic percentages for Xe Tinamit, Op 12, Strata 3 and 4 at FS13, Early Classic through Postclassic phases.

In Operation 12 at Xe 'Tinamit, San Pedro Tan Rosada made up 25% of the ceramics recovered from Stratum 4 but only 7 % of the ceramics from Stratum 3, while San Pedro Tan Café went from making up only 2 % of the total in Stratum 4 to 33% in Stratum 3, suggesting an inverse correlation (Figure 12.5). Based on this data, I conclude that San Pedro Tan Rosada is primarily a Late Classic type and that in Terminal Classic times it was replaced by San Pedro Tan Café. The idea that the latter type did not become common until the Terminal Classic is supported by the fact that the site of Chi Kaqajaay produced Amatlé and other Late Classic diagnostics such as Jelic Red on Orange but lacked San Pedro Tan Café.

During the Late Classic, Chuk'muk also appears to have developed its own local style, which consisted of a plain red-slipped ceramic type that Popenoe de Hatch (2009) has called Rapago Ware. Popenoe de Hatch notes strong similarities between this type and types that made up the later K'iche'an inventory, most notably Xola Naranja (a.k.a Cinnamon Ware), with which it shares a similar range of forms and decorative attributes, particularly the use of wide, shallow grooves around the mid-section and ridges around the necks of large cantaros. The appearance of these attributes on Late-Terminal Classic Rapago ware at Chuk'muk suggests that the ceramic style that became synonymous with the later K'iche' ceramic complex may have originated and diffused from this area.

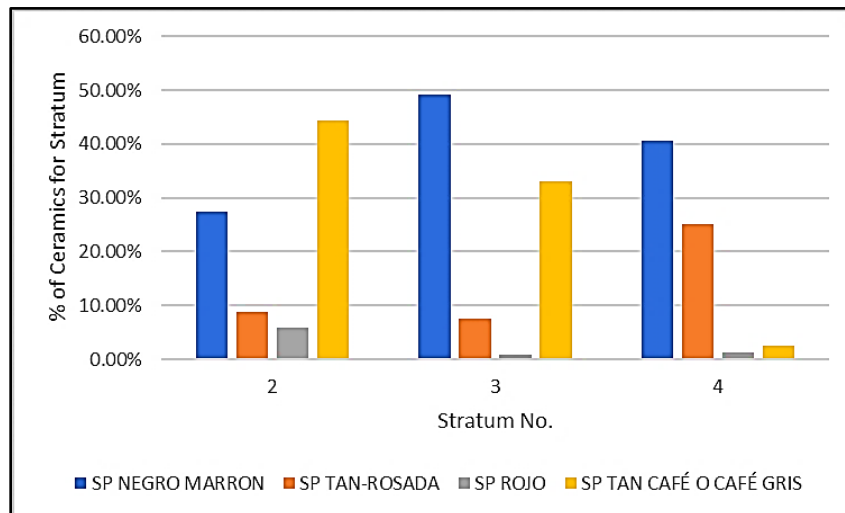


Figure 12.5. Changing percentages of San Pedro Monochrome types in Xe Tinamit, Op 12, Strata 2-4.

Despite some localized differences in slip colors and decoration, Chuk'muk's Ropago Ware and San Pedro's Burnished Ware appear to represent part of the same widespread ceramic complex that Wauchope (1970) described as simply "Monochrome Red, Tan or Brown". As Macario and Burgos (2009) note, this was a versatile ceramic type, whose range of forms could be adapted to a variety of purposes and which was also capable of absorbing regional stylistic trends. The Fortaleza style of decoration for example, appears to have been simply applied to different monochrome types, such that Wauchope (1970:103) considered both to be essentially the same type.

Interestingly, Popenoe de Hatch has noted that such K'iche'an ceramics also make their appearance at Takalik Abaj around 1000 AD. On this basis, she suggests that the K'iche' conquest of this region, which is described in the colonial chronicles as occurring in the 1300s AD, may in fact describe events that occurred around 3 centuries earlier. However, the appearance of Kichean ceramics at Takalik Abaj may instead simply signify increased economic integration.

The apparent homogenization of ceramics over a broad portion of the highlands and encompassing areas of the Pacific piedmont, combined with the relative lack of foreign imports, indicates that this area constituted what Carol Smith (1976) would call a "bounded network system" (see also Braswell 1996a; Braswell 2002). The principal characteristics of a bounded network system, as summarized by Braswell (2002:291) are as follows:

- Households or communities are linked to a nodal center that allocates some degree of specialization, but majority of the population are not full-time specialists
- Little exchange outside of the system so few imported goods at most sites
- Exchange outside system is limited to exchange of small quantities of status goods among elites.
- More specialized and stratified than extended network but still uncommercialized.
- Elites only at organizational nodes, not at the majority of sites (production nodes).
- Two or three levels in the settlement hierarchy
- Support complex "chiefdoms" and some simple states.

Cotzumalguapa Connections

Some influences from the Cotzumalguapa area do appear to have been arriving in the lake at this time, perhaps via the site of Palo Gordo, which was located directly south of the lake, and which has produced the most Cotzumalguapa style monuments outside of the Cotzumalguapa zone (Chinchilla, et al. 2001). In contrast with Palo Gordo, Chocola has yielded no Cotzumalguapa art, indicating that Palo Gordo represented the western limit of Cotzumalguapa' territory. Other Cotzumalguapa-affiliated sites in the piedmont directly south of the lake appear to have included Patulul (Gamio 1926) and Cocales-Saltona, both of which were located at the intersection of the piedmont trade route and the Madre Vieja; and San Jose el Idolo, located near Palo Gordo, where two Cotzumalguapa style sculptures were recently identified (Schwarz et al 2010).

The dearth of imports arriving in the Lake Atitlan area during the Terminal Classic and Early Postclassic (Chinchilla et al 1994) may indicate that the Cotzumalguapa-affiliated communities located in the piedmont were blocking Chuk'muk's access to trade with the lower coast. Given the paucity of Terminal Classic and Early Postclassic diagnostics recovered from Chuk'muk, however, it is perhaps also important to consider that, during this time, a portion of the Classic population of Chuk'muk may have relocated to the piedmont zone, perhaps settling at Palo Gordo, which Termer (1973) notes was reoccupied in the Late Classic and Postclassic eras. Such a population shift to the wetter, more fertile piedmont zone, may have been precipitated by successive crop failures in the highland region as a result of drought (Freidel et al 2011; Velez et al 2007).

Dorothy Freidel has found evidence that the nearby Antigua Valley suffered "one or more significant desiccations" around 785 AD, thus corresponding to the period of the Lowland Maya collapse. This therefore provides an indication that "droughts were not confined to the Maya Lowlands of the southern Yucatan, but extended over a much wider area to include the Guatemalan highlands" (Freidel et al 2011:24). Add notes from Velez and Neff.

Cotzumalguapa Connections in the PALA Area

Cotzumalguapa traits in the project area were restricted to stylistic features on monuments. A general likeness to Cotzumalguapa sculpture is represented by the stone head at Xe Kaka Abaj, which appears to have been associated with a small Classic-to-Postclassic settlement located in the far northern portion of San Juan's territory. Located close to natural defensive features (Chuwa Tzujkabal) and a permanent spring, Xe Kaka Abaj may have been established by a small group of refugees from the earlier settlement of San Juan Antigua. Alternatively, it may have been established by later Kaqchikel groups entering the area from the north or east and bringing with them a localized version of the Cotzumalguapa art style. As discussed in Chapter 13, Cotzumalguapa influence is evident in numerous stone sculptures located within the Kaqchikel area (Braswell 1996b; Perrot-Minnot 2001), with the famous death head monuments at La Chacra in the Antigua Valley providing an important example.

A more direct connection to the Cotzumalguapa zone is represented by the severed head depicted beside a kneeling figure on the ballcourt marker from Xe'Tawal, which is identical to the heads depicted on Monument 55 from Bilbao (Figure 14.8). Unfortunately, however, this fragment was recovered from a secondary context and, given its small size, we cannot rule out the possibility that it was brought to the area sometime after Cotzumalguapa's decline.

12.6 THE LATE POSTCLASSIC (C.1200-1524 AD)

It is still unclear exactly when the site of Chuitinamit was established, but the ceramic evidence suggests that it was likely around the transition from the Early to Late Postclassic, i.e. around 1200-1250 AD. The close timing of the collapse of Cotzumalguapa and the emergence of the Tz'utujil in Lake Atitlan has long suggested that these events may have been related but thus far no archaeological evidence has been produced to support this.

Following the suggestions of a Terminal Classic-Early Postclassic drought on the Pacific Coast (Neff, et al. 2006), Van Akkeren (2005) makes the argument that there was a large-scale migration of coastal populations into the highlands at this time and therefore that many of the important highland lineages of the Postclassic period had their origins in

the Late Classic period sites of the coast such as Chocola, Takalik Abaj and Palo Gordo. Some support for this thesis is suggested by the close similarities in the site plans of Palo Gordo and Chuitinamit and also the sharing of some ceramic types including Acropolis Ware (Termer 1973).

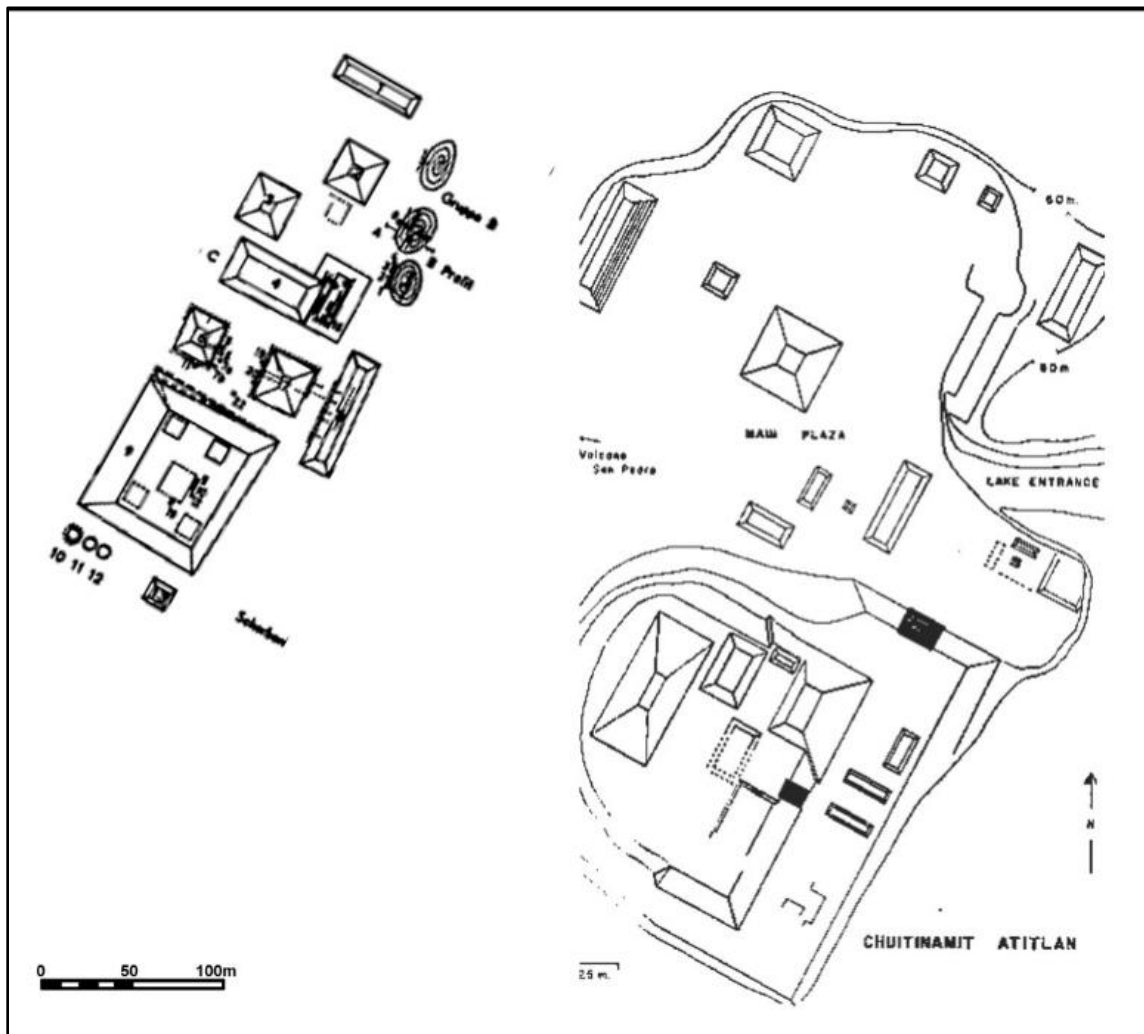


Figure 12.6. Scaled comparison of site layouts of Palo Gordo (left) and Chuitinamit, with orientation of Palo Gordo altered to match that of Chuitinamit.

Acropolis Ware and Alliance Building

One of the most common ceramic types recovered from Chuitinamit was the type that Lothrop called Red on White Incised and which I have dubbed Acropolis Ware (see Chapter 10), following Fox's (1980; 1987) correlation of this type with a group of related highland sites dating to the end of the Early Postclassic. The high frequency of this ceramic type at Chuitinamit suggests that it was either produced there or that it was imported to the site in bulk.

Made with a fine paste and bearing a thick slip, Acropolis Ware most commonly occurred as effigy tripod vessels, the exteriors of which were typically decorated with International / Mixteca-Puebla-style symbols, arranged in four symmetrical panels. The symbols, which included circle and dot (chalchuitl) symbols, U-shaped symbols, sun symbols, and step-frets, appear to have emphasized natural themes and the feathered serpent cult (Fox 1987), while the mold-made feet often represented exotic animals such as serpents, crocodiles, and eagles.

The complex workmanship and knowledge that went into the production of these vessels indicates that they would have been difficult to reproduce outside of large centers. However, the incised decoration on the bowls recovered from Chuitinamit often appears to have been poorly executed, suggesting that they may have been mass-produced over a short period of time, perhaps for a specific ceremony or event and perhaps that they were designed to be viewed from a distance.

Interestingly, Janet Berlo (1989:157) made a similar observation regarding the Teotihuacan-style tripod cylinders from Escuintla, noting that: "the shoddy workmanship of the surface decoration implies an unfamiliarity with the iconography, or haste in execution, as if local potters were being asked to work with foreign designs, and to produce such objects very quickly". Given that these Middle Classic vessels included panels of incised / excised decoration depicting Central Mexican themes, it may be that these vessels were somehow ancestral to the Acropolis Ware of Atitlan and the other highland sites, perhaps lending support to the idea of connections between the Postclassic elites and the Pacific Coast.

Given the equitable appearance of small quantities of this prestige ceramic, at sites of all sizes in the PALA project area (Table 14.2), I suggest that the Tz'utujil elite may

have gifted these bowls to lineage heads in an effort to promote solidarity and interdependence (LeCount 2001). The bowls may therefore have been utilized for diacritical feasts (Dietler 1999; LeCount 2001), which LeCount (2001:935) describes as “exclusionary events ... hosted by the wealthy and powerful members of society”, and often involving “the use of specialty festival foods and serving vessels”.

Allen Christenson (2010) notes that, in Santiago Atitlan, feasting is still an important component of *cofradia* rituals, and that during these rituals, the *cofradia* members are served *maatx*, a maize atole, sometimes mixed with cacao (Christenson 2010). Given that the Tz’utujil leadership controlled the production and distribution of cacao (Orellana 1984), the serving of *maatx* or cacao at feasts or ceremonies would have served to highlight their power and wealth. For local lineage heads, on the other hand, the use or display of these vessels in their own communities would have served to symbolize their leadership positions and their privileged access to elite events, persons, and knowledge. If Acropolis Ware was only being produced at the Tz’utujil capital, the elaborate style of these vessels may have acted as symbolic referents to the city-state of Chiya. The U-symbols and *chalchuitl* symbols (circle and dot motifs) may have both referenced sacred water (Berlo 1983) and been employed as an indirect reference to “Chiya”, which means in front of the water.

Pan Alujaay and the Tz’utujil-K’iche’ Frontier

Located less than 2 km east of San Pedro, the site of Pan Alujaay appears to have begun as a small village during the Early Classic, become archaeologically invisible during the Late Classic and then been reoccupied in the Late Postclassic by a group who appears to have been closely affiliated with the K’iche’ of Q’umarkaj. Our investigations at the site indicate that this K’iche’-affiliated group likely established themselves at the site sometime after 1300 AD. The establishment of Pan Alujaay may therefore be connected to one of the historically documented conquests of the lake area, which were reportedly conducted during the reigns of Kucumatz-Cotuja (c.1375-1425 AD) and his successor Quicab-Cavizimah (c.1425-1475).

Our excavations in Area C of Pan Alujaay, on a wide terrace located 100 m southwest of the ceremonial center, identified the well-preserved remains of a rubble-filled platform

or cimientos upon which the remains of a residential structure (Structure C-4), constructed with adobe walls upon a low stone foundation, were identified.

Dense deposits of ceramics and obsidian associated with this building indicate that it was the residence of an elite family and one with strong connections to the Central K'iche' region. The ceramics recovered from the excavations here included a high density of Xola Naranja, Fortaleza White on Red, and Patzam unslipped, all of which were most common at the K'iche' capital of Q'umarkaj (Macario and Burgos 2009) and its subordinate site of Chisalin (Weeks 1980).

Radiocarbon dating of charcoal recovered from beneath the earliest floor level of Structure C-4 indicate that the construction of this residence occurred between 1200 and 1380 AD. The Postclassic settlement, or at least this residential complex, may therefore have been established during the reign of either Kucumatz Cotuja or Quicab.

Double Pyramids and the Kaqchikel

The center of Pan Alujaay focused on a small (approximately 1 hectare) rectangular plaza with a double pyramid on its northeast side and two low rectangular or square mounds on its east side (Figure 12.7). Twin pyramids are relatively rare in the highlands and Fox (1981:331) notes that they mostly occur at sites located on the frontier of the K'iche' state, with several being found in the Sacapulas region. Fox (1975) suggests that the building of twin temples among the Sacapultec may have represented the imposition of K'iche' deities and religious beliefs at these sites. However, as there were no double pyramids at the K'iche' capital of Q'umarkaj or at either of its subsidiaries of Chisalin or Ismachi, it seems unlikely that double-pyramids were linked to the beliefs of the Central K'iche'. Double-pyramids instead appear to have been associated with the Kaqchikel, who, served as the military arm of the K'iche' until gaining their independence and founding Iximche in 1470-75 AD.

The Late Postclassic capital of the Eastern Kaqchikel (the Akahal or Chajoma) at Jilotepeque Viejo, and the nearby site of Los Cimientos Pachalum, for instance, both have double pyramids in their main plazas. A double pyramid was also the focus of one of the three plazas at Patzac, which Fox argues was the Kaqchikel's penultimate capital of

Chiavar. The presence of double pyramids in the Sacapulas region on the other hand can probably be explained as resulting from the Kaqchikel conquests of that region while serving under the K'iche' King Quicab (c.1425-75 AD).

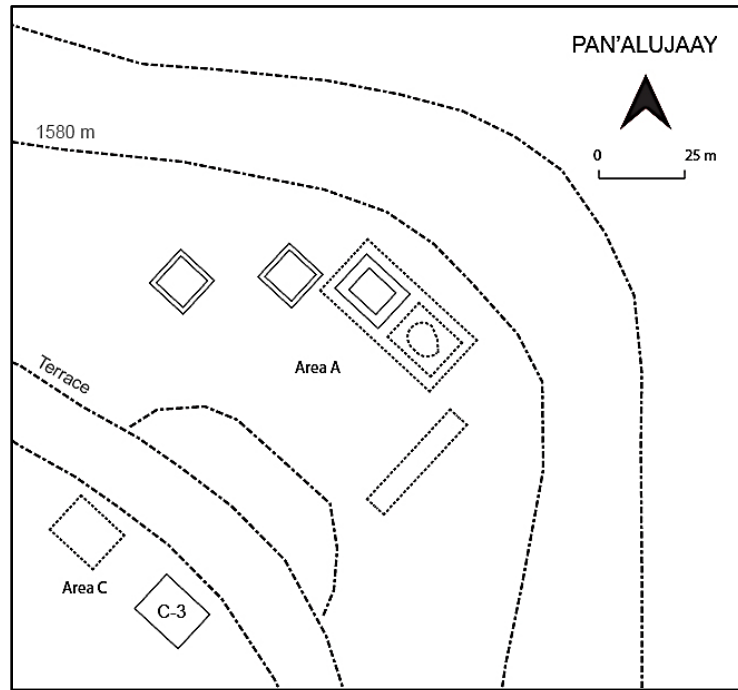


Figure 12.7. Site center of Pan Alujaay showing double pyramid, G. Davies 2018.

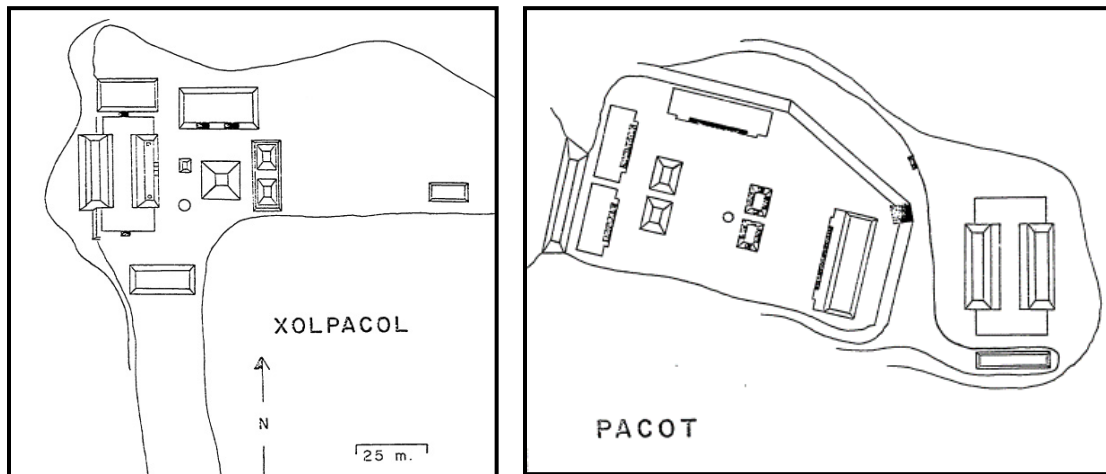


Figure 12.8. Possible Kaqchikel garrison sites of Xolpacol and Pacot in the Sacapulas area, after Fox 1975:Figures 13 and 14.

The *Testamento de los Xpantzay* (Berlin 1950; Recinos 1953), describes how the Zotzil and Tukuche branches of the Kaqchikel moved and grouped the conquered towns of “Cumatz” and “Tuhul Vinac”, as well as a number of other important towns in the southwestern highlands including Zaculeu, Totonicapan (Chimekenyá), and Xelahub (Quetzaltenango). Fox (1975) identifies Cumatz and Tuhul Vinac (Tuhalha) with the large sites of Chutixtiox and Chuitinamit-Sacapulas respectively. Neither of these sites had double pyramids, but the smaller sites of Xolpacol and Pacot, located a short distance to the west of these centers did (Figure 12.9). Fox (1978) suggests that one or both of these latter sites may have been associated with the Uchabaja, a lower ranked Sacapultec group. However, it seems more likely, in light of the evidence just discussed, that these sites were constructed by the Kaqchikel for use as either garrisons or as new settlements for the conquered groups, which the Xpantzay document (quoted above) notes, were “relocated, and grouped together” (Recinos 1957). This passage of the Xpantzay document combined with the settlement pattern data indicates that the Kaqchikel may have incorporated some of these already conquered groups into their army and that they may have also attempted to convert them to Kaqchikel belief systems through the use of these temples.

San Pedro Pa’Tzununa

Support for our hypothesis that the site of Pan Alujaay was settled by a Kaqchikel group comes from the *Primero Libro de Matrimonios* of San Pedro. This document indicates that two of the most common family names within the Uluhay chinamit were *Chicbal* and *Perez*, both of which are strongly associated with the Xpantzay branch of the Kaqchikel (Berlin 1950). Additionally, the name Hulahui appears as both a family name and a chinamit name. This name suggests a connection to the Kaqchikel ruler *Hulahuh Can*, who ruled when Kaqchikel moved their capital from Chiavar to Iximche in 1470-75 (Berlin 1950:48).

The *Primero Libro de Matrimonios* also includes families with ties to the Sacapulas region, The most obvious of these is the Cumatz lineage, which was the ruling lineage at the Postclassic site of Chuitinamit-Sacapulas. Given their etymological similarities, it also

seems likely that the (*Aj*)*Chavajay* lineage of San Pedro is related to the (*U*)*chabaja* lineage of Sacapulas.

Given the presence of these specific Kaqchikel and Sacapultec groups in the San Pedro area, and the settlement patterns similarities between Pan Alujaay and the sites of Xolpacol and Pacot, I suggest that these groups arrived in the Lake Atitlan area as a result of the Kaqchikel conquests under King Quicab. Supporting this idea is another passage from the Testamento de los Xpantzay, which indicates that immediately after conquering the Sacapulas towns of Cumatz and Tuhul, the Kaqchikel warriors moved onto the lake area and occupied the towns of “Tzolola, Coon and Payan Chocol” (Recinos 1953:419). From there, Quicab’s route, which is described in the *Titulo de Santa Clara* and *Titulo de Totonicapan*, passed through Xe Kaka Abaj (San Juan) and behind San Pedro Volcano (thus through Chi Kaqajaay), before arriving in front of Chuitinamit and then descending to the Pacific Coast (Carmack and Mondloch 1983; Van Akkeren 2009).

Despite the presence of this K’iche’ or Kaqchikel outpost just 2 km to the east, the community of San Pedro appears to have thrived during the Late Postclassic period. Our best evidence for San Pedro’s prosperity during this period was provided by the large assemblage of ceramics and obsidian recovered from Xe’Tinamit, a single houselot site located approximately 350 m north of the current center of San Pedro. Although we did not identify the footprint of the residence itself, we did identify structural remains, including fragments of adobe and bajareque, and evidence of landscaping in the form of a paved walkway. We also identified a dense midden deposit, which contained a large selection of local monochrome ceramics, as well as a smaller selection of imported types including Xola Naranja, Acropolis Red on White Incised and Fortress White on Red. Additional items recovered from the site included some well-made ceramic earspools, a mold-made handled incensario and a number of complete obsidian blades.

The presence of a thin layer of pumice sand in some of the units combined with apparent water erosion on the sherds beneath, suggests that Xe’Tinamit was located close to the lake shore at this time and thus near the northern limit of the town. If the standard of living for the Xe’Tinamit houselot is representative of the rest of the community, it suggests that the town of San Pedro was therefore quite prosperous prior to the conquest.

CHAPTER 13. CONCLUSIONS

The current research began by asking how individual communities in the Lake Atitlan Basin adapted to the challenges of the Classic to Postclassic transition. However, due to the nature of the data being recovered, the central question changed to consider how Lake Atitlan society more generally, i.e. the socio-cultural system, adapted to changes in the world system and how they maintained access to critical resources despite the unpredictable fluctuations in this broader system.

The PALA data, while supporting earlier studies that indicated substantial periods of continuity and stability also highlighted periods of significant change that had previously been obscured due to the focus of most previous work on the Bay of Santiago and South Shore. In this section, I reflect on these findings and explain their significance for highland Maya archaeology and for our understanding for the historical development of the Lake Atitlan Basin.

13.1 RESILIENCE AND ADAPTATION IN LAKE ATITLAN

The PALA investigations have greatly expanded our knowledge of the settlement and population changes that occurred in the Lake Atitlan Basin between the Late Preclassic period and the Spanish Conquest. However, the task of reconstructing the lake's political organization for the Late Preclassic and Early Classic periods remains challenging due to the invisibility of a large portion of the settlement remains. This makes it difficult to assess how these populations adapted to the region-wide changes occurring around the time of the Preclassic to Early Classic transition, which other researchers have highlighted as a period of dramatic changes in the Southern Maya Region (Bove 2011; Bove and Heller 1989; Love 2011a; Love 2016).

The collection of Late Preclassic monuments at Saqaribal and the existence of a large, now submerged area of open land directly north of this, provide a tantalizing indication that there may once have been an important political center here, perhaps representing an outpost of Chocoma. If this interpretation is correct, the incoming K'ichean groups, who clearly did not share the traditions and beliefs of the large piedmont centers

(Fahsen 2002), may have destroyed this site and its monuments when they arrived in the area.

The subsequent resurgence of Semetabaj and the contemporary increase in population at Chuk'muk indicates that these new K'ichean speaking arrivals ushered in a period of increased prosperity and interaction and may have helped the growing Chuk'muk to establish new connections with coastal groups. The increase in Chuk'muk's population, brought about by these groups and by the slightly later arrival of refugees from Samabaj may have sparked innovations such as the construction of larger, faster canoes. In this regard, it is interesting to note that canoe-building, because it requires the co-ordination of multiple households (i.e. to fell and transport the trees, carve the boats and make the expeditions), may precipitate the emergence of new forms of co-operative labor and therefore more complex forms of leadership and management (Stanish 1992).

In spite of Chuk'muk's rapid growth, the evidence from the PALA area indicates that the communities of San Juan and Chi'kaqajaay did not immediately disappear but persisted through much of the Early Classic and into the Middle Classic, although the lack of new construction or monuments may indicate that they were now less autonomous than in earlier times. Meanwhile, if there was a sizeable community centered on Saqaribal, this population most likely relocated to the elevated plateau upon which San Pedro now stands, although some may have fled to Chocoma or joined the community at Chuk'muk.

Middle to Late Classic Periods (c. 400-800 AD)

The Middle Classic period appears to be when the general prosperity and co-operation of the lake's communities gave way to competition. This is suggested by the abandonment of Semetabaj around 400 AD and the decline in population of San Juan Antigua. Chuk'muk therefore appears to have been expanding at the expense of these more peripheral centers, probably due to its contacts with Montana, the enormous coastal site that was established by Teotihuacan merchants (Bove and Medrano 2003). Whether individuals connected to Teotihuacan had any direct contact in the lake is doubtful. Nevertheless, the wealth of Chuk'muk's leaders indicates that there was an increasing centralization of political and economic power at that site and that, beginning in the Middle

Classic and continuing into the Late Classic, settlements around the eastern and western peripheries of the lake became increasingly unsustainable and were gradually abandoned (although probably not entirely).

Chi Kaqajaay appears to have been an exception to this rule, probably due to its vast expanses of agricultural land and its natural spring, which must have made this location of great economic and religious importance for the communities of the lake. And although it seems likely that in earlier times, when populations levels were lower, the land around Chi Kaqajaay would have been considered communal land and shared between San Juan, San Pedro (Pa Tz'ununa') and Chuk'muk, the higher frequencies of imports originating to the east of the lake (e.g. Amatlé), combined with the introduction of stone house construction, and the appearance of a possible guard house overlooking one of the main access routes at Jaay Abaj, indicates that by the Late Classic, Chuk'muk may have begun to control access to this land.

Classic to Postclassic Transition (c.800-1200 AD)

The Classic to Postclassic transition, which was the original focus of this research, is still frustratingly obscure in the lake area. However, the PALA data suggests that this may simply be due to the lack of foreign imports, or at least the restriction of these imports to the site of Chuk'muk and their deposition in elite graves. It is suggested here, admittedly on sparse evidence, that the lake area formed part of a bounded network system (Smith 1976) at this time, a network which extended northwards as far as the K'iche region and southwards as far as the Pacific piedmont. As a result of trading only with each other, the communities within this region began to produce a homologous suite of ceramics, that differed only in minor ways from one town to the next. This idea is supported by findings of "K'iche'an" ceramics" at sites as widely separated as Zaculeu, Takalik Abaj and Chuk'muk..

The increasing homogeneity of material culture over this wide area indicates frequent contact between the communities of this region and suggests that the famous solar market system of the midwestern highlands was likely in operation by this time. The development of extensive exchange networks within this symbiotic region may have been a response to

the increasingly dry climate, which research in the Antigua Valley has suggested involved significant drought.

The strong ceramic connections between the piedmont centers and the highlands as well as the close similarity in the site plans of Palo Gordo and Chuitinamit (see Chapter 12) strongly suggest that the Tz'utujil elite (the Tzikina Jaay) were based in the piedmont in the period immediately preceding Chuitinamit's founding -around the beginning of the Late Postclassic (c.1200 AD). However, given the high levels of integration across the highlands and piedmont in the two centuries prior to their establishment in the lake, the Tz'utujil elite were probably not perceived as foreigners, even if they had adopted practices and symbols derived from their Nahua speaking neighbors, the Pipil. That the Tz'utujil elite were seen as legitimate rulers is evidenced by the fact that the general populace of the lake appears to have been willing to accompany them into battle.

13.2 CONTRIBUTIONS TO HIGHLAND MAYA ARCHAEOLOGY

Although the PALA investigations failed to significantly close the gap of knowledge surrounding the Classic to Postclassic transition, they did provide several other important contributions to highland Maya research in general and to our understanding of the historical and cultural development in the Lake Atitlan area in particular. The most important contributions were in the areas of settlement patterns and political organization, domestic patterns, and interregional interaction.

Settlement and Political Organization

In spite of the poor survival of prehispanic architecture in the project area, the PALA investigations did provide some important data on settlement patterns and political organization. Some of the most important achievements of the PALA investigations in this area included:

- The documentation of three significant Preclassic to Early Classic settlements at Chi Kaqajaay, San Juan Antigua, and Chuwa Kiyakapek;

- The identification of a significant group of Preclassic sculptures at Saqaribal, suggesting political ties to the Pacific piedmont;
- The identification of the only known ballcourt in the Lake Atitlan Basin, situated on the municipal boundary between San Pedro and Santiago Atitlan;
- The recovery of evidence of alliance building between the elites of Chuitinamit and Postclassic communities in the project area, and
- The identification of a possible Kaqchikel garrison site with a double pyramid at Pan Alujaay

Domestic Patterns

A significant achievement of the PALA investigations for highland Maya archaeology was that it demonstrated the potential for the survival of domestic architectural features including house floors, foundations and wall materials. The PALA investigations found that such features were most likely to survive at the bases of slopes (as at Xe Tinamit) or on ancient terraces (as at Pan Alujaay), settings in which the soil accumulation has been sufficient to protect these remains from the farmer's hoe, and which have so far been unattractive for modern construction. In more level terrain, such as around San Juan, however, it appeared that simple tilling of the soil by hand over several centuries, had disturbed the archaeological deposits to depths of up to 60 cm (2 feet).

The discovery of an elite residence at Pan Alujaay was significant for what it revealed about domestic architecture and household practices in the Postclassic highlands. Our excavations there revealed that such elite houses were constructed on top of platforms or cimientos faced with dressed stone blocks. In other respects, however, these elite houses of the Postclassic period closely resembled the mudbrick houses that were being constructed in San Pedro and San Juan as late as the 1960s.

Our investigations at this site identified a dense midden deposit on the terrace immediately below the house, indicating that the residents of this structure deposited their trash to the side of the house and down slope. The discovery of a high density of obsidian in the area of the front porch, meanwhile indicated that stone tool production and repair activities were likely performed in this location.

Our investigations at Xe'Tinamit, on the other hand, identified the remains of what may have constituted a middle or lower class household. Although no house foundation was identified, a hard-packed earthen surface containing embedded pottery and a paved stone walkway indicated that we had probably located the interior of a small houselot. The recovery of numerous bajareque and talpetate brick fragments indicates that this house may have been a wattle and daub construction. However, the presence of clay ear spools, a relatively high quantity of obsidian and a fancy, mold-made incensario indicates that this household had access to a variety of non-local goods and therefore were relatively affluent.

At this site, like at Pan Alujaay, midden deposits appeared to have been deposited downslope from the residence itself.

Interregional Interaction

In the area of interregional interaction, the PALA investigations primarily helped to confirm many of the connections already discerned by Marion Popenoe de Hatch and others (e.g. Barrientos, Bruchez, and Medrano). However, the PALA investigations also provided some additional information regarding:

- a) The specific routes utilized in the Preclassic interactions between Semetabaj and Chocoma (e.g. , the least cost route through San Juan)
- b) The degree of interaction between the Solano / K'iche'' groups and the lake in the Terminal Preclassic and Early Classic (e.g. Chuwa Kiyakapek's copying of La Lagunita's site plan)
- c) The extent of interaction with the Cotzumalguapa zone in the Late-Terminal Classic period (e.g. the presence of Cotzumalguapa style monuments in San Pedro and San Juan , and
- d) The K'iche'' / Kaqchikel colonization of the lake during the Late Postclassic.

Resilience

As discussed in Chapter 2, the adaptive cycle with its four phases of exploitation, conservation, collapse, and reorganization was designed as a metaphor for understanding change in complex adaptive systems (Cumming and Collier 2005; Holling and Gunderson 2002). After considering various different types of resilience, including social / community resilience, the current research ultimately returned to the original theory of Holling and Gunderson (2002). And while the initial reason for dropping the community resilience approach that was originally proposed was related to the lack of fit between the data and the theoretical framework, the process of questioning why this hadn't worked led to some important realizations, including that:

- a) Communities of interaction, like the small communities of Lake Atitlan, cannot be studied in isolation, as individual or autonomous systems
- b) Community institutions as enduring structures, help organize and increase the efficiency of individuals, therefore making the community more system-like.
- c) However, communities are complex and made up of individuals and families, each with unique histories, connections, motivations and desires. For this reason, producing a system out of individuals and groups is inherently challenging and unlikely to succeed.
- d) The individual communities of Lake Atitlan participated in a variety of broad overlapping systems but usually indirectly, through their institutions and cultural norms.
- e) A community would begin to fail when leaders or institutions failed to generate access to essential services and resources or when out-performed by another community.

13.3 BROADER OUTCOMES AND RECOMMENDATIONS

As discussed in the Survey Methods chapter, the recent problems encountered by the Chocola and Samabaj projects encouraged the PALA team to expend considerable energy and time at the front end of the project in socialization efforts, which included:

- Establishing a social media presence early on in the process to survey public opinion and gain an idea of the types of questions that local residents might have regarding archaeology in general and our project in particular,
- Recruiting a respected local advisor,
- Conducting local TV and radio interviews,
- Inviting local residents to watch us work, both in the field and in the lab,
- Ensuring that local authorities understood our legal obligations regarding the curation of the artifacts,
- Being transparent about the sources of the funding,
- Employing well connected local workers who could communicate in the local language

Although the extra time spent on these activities meant less time for fieldwork and analysis, the reward for this was that we earned the trust and respect of the local communities and thus have the opportunity to return to the area to conduct further investigations in the future.

Continuing the dialogue beyond the project is also important. When the fieldwork and initial analysis were complete, we gave presentations in each of the communities to present our results (Figures 13.1) and made plans for the final report to be translated into Tz’utujil and distributed to the local libraries. And while the audiences for this first round of presentations were admittedly small, a second round of presentations made in 2018 (Figure 13.2) received much larger audiences, in part as a result of the recent publication of an article in the popular national paper, *El Periodico* (Figure 13.3).



Figure 13.1. Presentation given in the Concha, San Juan La Laguna, November 2016.



Figure 13.2. Presentation given in the community library of San Juan La Laguna, February 2018.



Figure 13.3. Cover of El Periódico, Domingo, January 21, 2018.

13.4 FUTURE CHALLENGES

There are currently many challenges facing the archeology of Guatemala, some of which have already been touched upon. One of the most significant and the most difficult to negotiate is the private ownership of most of the archaeological resources. In Lake Atitlan, this includes the former Tz'utujil capital of Chuitinamit as well as the majority of the sites described in this dissertation.

Since early 2018, Maria Corado and I have been working with IDAEH and the municipal authorities of San Pedro and San Juan to develop a stewardship program that we hope will incentivize private landowners to declare the presence of stone monuments on their land. However, this process has currently stalled due to a lack of funding and our other work and personal commitments. Given that several of the stone monuments documented during this project have already come under serious threats from development, it is my firm belief that if no action is taken soon, that the lake's remaining prehispanic monuments will not survive another 10 years. For this reason, we will continue to seek funding to promote the importance and fragility of this irreplaceable cultural heritage. We hope that others will be inspired to join this effort.

REFERENCES

- Adams, Richard Edward Wood
1972 Maya highland prehistory; new data and implications. *Studies in the Archaeology of Mexico and Guatemala*:16.
- Adger, W. Neil
2000 Social and ecological resilience: are they related? *Progress in Human Geography* 24(3):347-364.
- Aguilar, Erick, and Boris Aguilar
2010 Informe sobre: Acompañamiento profesional durante el proceso de movilización de una piedra con pintura rupestre y de la excavación de las lagunas de estabilización de la Estación Depuradora de Aguas Residuales (EDAR), Segunda Etapa, Urbanización Chuk'muk, Santiago Atitlán, Sololá. Informe entregado a la Dirección General de Patrimonio Cultural y Natural, Guatemala
- Alexander, Rani T
2008 The world according to Robert: macroregional systems theory in Mesoamerica. *Journal of Anthropological Research* 64(3):383-394.
- Alvarado Galindo, Carlos, Eduardo Bustamente, and John Rick
2013 Proyecto Arqueológico Semetabaj: Informe Temporada de Campo 2012-13. Universidad del Valle de Guatemala. .
- Arroyo, Barbara
2013 Comprendiendo los inicios de la complejidad social en la Costa del Pacífico y el Altiplano de Guatemala. *In* *Millenary Maya Societies: Past Crises and Resilience*. M.-C. Arnauld and A. Breton, eds. Pp. 169-186.
- Ashmore, Wendy
1981 Some Issues of Method and Theory in Lowland Maya Settlement Archaeology. *In* *Lowland Maya settlement patterns*. 1st edition. W. Ashmore, ed. Pp. 37-69. Albuquerque: University of New Mexico Press.
- Atwood, Roger
2015 Lost Island of the Maya. *Archaeology* 68(4):40-45.
- Babcock, Thomas F
2012 Utatlán: The Constituted Community of the K'iche'Maya of Q'umarkaj: University Press of Colorado.
- Barrientos Q., Tomas

- 2009 Guion Museografico del Museo del Pueblo Tz'utujil. Contenidos Arqueologicos y Etnohistoricos. Informe presentado a la Asociacion Vivamos Mejor, Panajachel. .
- Barrientos, Tomas, Marion Popenoe de Hatch, and Carlos Alvarado Galindo
2010 Procesos Culturales y Patrones de Interaccion en la Cuenca del Lago de Atitlan: 500 A. C. A 1,000 D. C.
- Bassie-Sweet, Karen
2008 Maya sacred geography and the creator deities. Norman: University of Oklahoma Press.
- Benitez, Henry, and Roberto Samayoa
1999 Samabaj y la Arqueologia Subacuatica en el Lago de Atitlan. XIII Simposio de Investoigaciones Arqueologicas en Guatemala, 1999, 1999, pp. 688-692. Museo Nacional de Arqueologia y Etnologia, Guatemala.
- Berlo, Janet Catherine
1983 The warrior and the butterfly: central Mexican ideologies of sacred warfare and Teotihuacan iconography. *Text and Image in Pre-Columbian Art: Essays on the Interrelationship of the Verbal and Visual Arts* 180:79.
- 1989 Art historical approaches to the study of Teotihuacan-related ceramics from Escuintla, Guatemala. *Anthropological Research Papers* 39:147-162.
- Betancor, A. P. , and P. de Arboleda
[1585] 1982Relacion de Santiago Atitlan. *In Relaciones geograficas del siglo XVI* 1a ed edition. R. Acuña, ed. Pp. 70-100. México: Universidad Nacional Autónoma de México, Instituto de Investigaciones Antropológicas.
- Blanton, Richard E
1978 Monte Albán: settlement patterns at the ancient Zapotec capital: Academic Press.
- Blanton, Richard, and Gary Feinman
1984 The Mesoamerican world system. *American Anthropologist* 86(3):673-682.
- Borgstede, Greg
2004 Ethnicity and Archaeology in the Western Maya Highlands, Anthropology, University of Pennsylvania.
- Bove, Frederick J, and Sonia Medrano
2003 Teotihuacan, militarism, and pacific Guatemala. *The Maya and Teotihuacan: Reinterpreting Early Classic Interaction*:45-79.
- Bove, Frederick J.

2011 The People with No Name: Some Observations about the Plain Stelae of Pacific Guatemala, El Salvador and Chiapas with Respect to Issues of Ethnicity and Rulership. *In* The southern Maya in the late preclassic : the rise and fall of an early Mesoamerican civilization. M. Love and J.H. Kaplan, eds. Pp. 77-114. Boulder: University Press of Colorado.

Bove, Frederick J., and Lynette Heller

1989 New Frontiers in the Archaeology of the Pacific Coast of Southern Mesoamerica: Sch of Human Evolution & Social.

Braswell, Geoffrey E, and Eugenia Robinson

2014 The Other Late Preclassic Maya: Interaction, growth and depopulation in the Eastern Kaqchikel highlands. *In* The Maya and Their Central American Neighbors: Settlement Patterns, Architecture, Hieroglyphic Texts and Ceramics. Pp. 115-149: Routledge.

Braswell, Geoffrey E.

1992 Obsidian-Hydration Dating, the Coner phase, and revisionist chronology at Copan, Honduras. *Latin American Antiquity* 3(2):130-147.

1996a A Maya Obsidian Source: The Geoarchaeology, Settlement History and Ancient Economy of San Martin Jilotepeque, Guatemala PhD, Anthropology, Tulane University.

1996b Sculpture of San Martin Jilotepeque: Cotzumalguapan influence in the highlands or highland influence on the Pacific Coast. Eighth Palenque Round Table, Pre-Columbian Art Research Institute, San Francisco:441-451.

2001 Postclassic Maya Courts of the Guatemalan Highlands: Archaeological and Ethnohistorical Approaches. *In* Royal Courts of the Ancient Maya. T. Inomata and S. Houston, eds. Pp. 308-334. Boulder: Westview Press.

2002 Praise the Gods and Pass the Obsidian? The Organization of Ancient Economy in San Martin Jilotepeque, Guatemala. *In* Ancient Maya political economies. M.A. Masson and D.A. Freidel, eds. Pp. 285-306. Walnut Creek: AltaMira Press.

2003 K'ichean Origins, Symbolic Emulation, and Ethnogenesis in the Maya Highlands, A.D. 1450-1524. *In* The Postclassic Mesoamerican World. M.E. Smith and F.F. Berdan, eds. Pp. 297-303. Salt Lake City: University of Utah Press.

Braswell, Geoffrey, and Eugenia Robinson

2011 The Eastern Caqchiquel Highlands during the Preclassic Period: Interaction, Growth, and Depopulation. *In* The southern Maya in the late preclassic : the rise

and fall of an early Mesoamerican civilization. M. Love and J.H. Kaplan, eds. Pp. 287-316. Boulder: University Press of Colorado.

Bristow, Gillian, and Adrian Healy

2014 Regional Resilience: An Agency Perspective. *Regional Studies* 48(5):923-935.

Brown, Kenneth L

1980 A brief report on Paleoindian-Archaic occupation in the Quiche Basin, Guatemala. *American Antiquity* 45(2):313-324.

—

1984 Hallucinogenic mushrooms, jade, obsidian and the Guatemalan Highlands: What did the Olmecs really want. *In Trade and Exchange in Early Mesoamerica*. Pp. 215-233: University of New Mexico Press Albuquerque.

—

1985 Postclassic relationships between the Highland and Lowland Maya. *The Lowland Maya Postclassic*:270-81.

Brown, Kenneth L, and Teresita Majewski

1983 Una historia cultural de los quichés centrales desde el punto de vista arqueológico. *Nuevas perspectivas sobre el Popol Vuh*:217-225.

Brown, Kenneth L.

1982 Prehistoric Demography within the Central Quiche Area. *In The Historical demography of highland Guatemala*. R.M. Carmack, J.D. Early, and C. Lutz, eds. Pp. 35-48, Vol. no 6. Albany, N.Y.: Institute for Mesoamerican Studies, State University of New York at Albany.

Brown, Linda A.

2005 Planting the Bones: Hunting Ceremonialism at Contemporary and Nineteenth-Century Shrines in the Guatemalan Highlands. *Latin American Antiquity* 16(2):131-146.

Bruchez, Margaret Sabom

1997 Archaeological investigations, Department of Solola, Southern Maya Highlands: pre-maya to postclassic settlement, northern terrestrial rim and subsurface shore Lake Atitlan, Guatemala Ph.D., Anthropology, Texas A&M University.

Bryant, Douglas D.

1988 Excavations at House 1, Yerba Buena, Chiapas Central Highlands, Mexico. Provo, Utah.: Brigham Young University.

Bullard, William R

1960 Maya settlement pattern in northeastern Peten, Guatemala. *American Antiquity* 25(3):355-372.

- Butler, James H, and Dean E Arnold
 1977 Tzutujil maize classification in San Pedro La Laguna. *Cognitive studies of southern Mesoamerica*:185-205.
- Butler, Mary
 1940 A Pottery Sequence from the Alta Verapaz, Guatemala. *In The Maya and their Neighbors: Essays on Middle American Anthropology and Archaeology*. C.L. Hay, R.L. Linton, S.K. Lothrop, H.L. Shapiro, and G.C. Vaillant, eds. Pp. 250-267. New York: Appleton-Century.
- Caravantes, Karla J., C.,
 2002 Arqueología, Etnohistoria y Conflictos de Tierra en la Region Sur del Lago de Atitlan, Solola. Universidad del Valle Guatemala.
- Carlsen, Robert S, and Martin Prechtel
 1991 The flowering of the dead: an interpretation of Highland Maya culture. *Man*:23-42.
- Carmack, Robert M, and James L Mondloch
 1983 Título de Totonicapán: texto, traducción y comentario. Volume 3: UNAM.
- Carmack, Robert M.
 1981 The Quiché Mayas of Uatatlán : the evolution of a highland Guatemala kingdom. Norman: University of Oklahoma Press.
- Carpio Rezzio, Edgar H.
 2012 Un punto estratégico en las relaciones entre el altiplano Mexicano y las tierras altas de Guatemala, durante el clásico: el sitio arqueológico Mejicanos, Amatitlán, Guatemala, Universidad Nacional Autónoma de México.
- Carrasco, Pedro
 1982 El Senorio Tzutujil de Atitlan en el Siglo XVI. *In Sobre los Indios de Guatemala*.
- Cassier, Jacques, and Alain Ichon
 1978 Les sculptures d'Abaj Takalik (Guatemala). *Journal de la Société des américanistes*:7-40.
- Chase-Dunn, Christopher, and Thomas Hall, D.
 1993 Comparing World Systems: Concepts and Working Hypotheses. *Social Forces* 71(4):851-886.
- Chase, Arlen F., et al.
 2011 Airborne LiDAR, archaeology, and the ancient Maya landscape at Caracol, Belize. *Journal of Archaeological Science* 38(2):387-398.
- Chase, Diane Z, and Arlen F Chase

- 2014 Ancient Maya markets and the economic integration of Caracol, Belize. *Ancient Mesoamerica* 25(1):239-250.
- Chinchilla, Oswaldo, Frederick J Bove, and José Vicente Genovez
2001 La cronología del periodo Clásico en la costa sur de Guatemala y el fechamiento del estilo escultórico Cotzumalguapa. V Coloquio Pedro Bosch Gimpera, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.
- Chinchilla, Teresita, Henry D. Benitez, and Tomas J. Barrientos Q.
1994 Proyecto Arqueologico Subacuatico Agua Azul. Informe del Temperado de Campo 1994. IDAEH, Guatemala.
- Chocano Alfaro, Guillermo
2009 Relaciones de Intercambio Mesoamericano Identificadas a Partir de la Ceramica y Arquitectura de Chuk Muk, Santiago Atitlan, Solola.
- Chocano Alfaro, Guillermo, and Sergio Cuyan Sanchez
2009 Arqueologia de Chuk'muk. Fundacion Guillermo Toriello; Cesal; Cooperacion Internacional de Tenerife.
- Chonay, Dionisio Jose
1953 Title of the Lords of Totonicapan. D. Goetz and D.J. Chonay, transl. Norman: University of Oklahoma Press.
- Christenson, Allen J
2001 Art and society in a Highland Maya community: The altarpiece of Santiago Atitlán: University of Texas Press.
- Ciudad Ruiz, Andrés, and Maria Josefa Iglesias Ponce de Leon
1984 La cerámica del Altiplano Oeste de Guatemala en la Colección Robles. *Mesoamérica* 8:351-388.
- Clark, John E., and Michael Blake
1994 The Power of Prestige: Competitive Generosity and the Emergence of Rank Societies in Lowland Mesoamerica. Pp. 17-30.
- Corado, Maria de los Angeles
2013 PROYECTO ARQUEOLÓGICO MERCADO DE SOLOLÁ. INFORME DEL RESCATE Y EXHUMACIONES 2012-13. GUATEMALA.
- Cote, Muriel, and Andrea J Nightingale
2012 Resilience thinking meets social theory: situating social change in socio-ecological systems (SES) research. *Progress in Human Geography* 36(4):475-489.
- Cumming, Graeme S
2011 Spatial resilience: integrating landscape ecology, resilience, and sustainability. *Landscape ecology* 26(7):899-909.

- Cumming, Graeme S, and John Collier
2005 Change and identity in complex systems. *Ecology and society* 10(1).
- Davidson, D.
2010a The Applicability of the Concept of Resilience to Social Systems: Some Sources of Optimism and Nagging Doubts. *SOCIETY AND NATURAL RESOURCES* 23(12):1135-1149.
- Davidson, Debra J
2010b The applicability of the concept of resilience to social systems: some sources of optimism and nagging doubts. *Society and Natural Resources* 23(12):1135-1149.
- Davies, Gavin R.
2012 The Bird House, the Maize Flower and the Hummingbird: Socio-political evolution, corporate identity and Place-making at Lake Atitlan, Guatemala. Paper presented at the University of Kentucky's Archaeology Roundtable, February 2012, Lexington Kentucky. .
- de Montmollin, Oliver
1989 Settlement Survey in the Rosario Valley, Chiapas, Mexico.

1988 Scales of Settlement Study for Complex Societies: Analytical Issues from the Classic Maya Area. *Journal of Field Archaeology* 15(2):151-168.
- Deevey, Edward S, et al.
1979 Mayan urbanism: impact on a tropical karst environment. *Science* 206(4416):298-306.
- Demarest, Arthur
2011 The Political, Economic, and Cultural Correlates of Late Preclassic Southern Highland Material Culture: Evidence, Analyses, and Controversies. *In* The southern Maya in the late preclassic : the rise and fall of an early Mesoamerican civilization. M. Love and J.H. Kaplan, eds. Pp. 345-386. Boulder: University Press of Colorado.
- 2017 Investigations at San Andres Semetabaj and the Problematics of Middle to Late PreClassic Highland Archaeology. *In* Society for American Archaeology 82nd Annual Meeting. .
- Demarest, Arthur A, and Robert J Sharer
1986 Late Preclassic ceramic spheres, culture areas, and cultural evolution in the southeastern highlands of Mesoamerica. *The Southwest Maya Periphery*, University of Texas Press, Austin:194-223.
- Dietler, Michael

- 1999 Rituals of commensality and the politics of state formation in the "princely" societies of Early Iron Age Europe. *COLLECTION-ECOLE FRANCAISE DE ROME* 252:135-152.
- Dix, M, I Fortin, and O Medinilla
2003 Diagnóstico Ecológico-Social y Plan Preliminar de Conservación del Área de Atilán. TNC, UVG.
- Donkin, Robin A.
1979 *Agricultural Terracing in the Aboriginal New World*. Viking Fund Publications in Anthropology (56).
- Drennan, Robert D.
1988 Household Location and Compact Versus Dispersed Settlement in Prehispanic Mesoamerica. *In Household and Community in the Mesoamerican Past*. R. Wilk and W. Ashmore, eds. Pp. 273-293. Albuquerque: New Mexico.
- Drexler, John W, et al.
1980 The Los Chocoyos Ash, Guatemala: a major stratigraphic marker in Middle America and in three ocean basins. *Quaternary Research* 13(3):327-345.
- Dunnell, Robert C., and William S. Dancey
1983 The Siteless Survey: A Regional Scale Data Collection Strategy. *Advances in Archaeological Method and Theory* 6(ArticleType: research-article / Full publication date: 1983 / Copyright © 1983 Springer):267-287.
- Dunning, Nicholas P, Timothy P Beach, and Sheryl Luzzadder-Beach
2012 Kax and kol: Collapse and resilience in lowland Maya civilization. *Proceedings of the National Academy of Sciences* 109(10):3652-3657.
- Dutton, Bertha Pauline
1943 *A History of Plumbate Ware*: Archaeological Institute of American.
- Dutton, Bertha Pauline, and Hulda R Hobbs
1943 *Excavations at Tajumulco, Guatemala*: University of New Mexico Press.
- Emery, Mary, and Cornelia Flora
2006 Spiraling-up: Mapping community transformation with community capitals framework. *Community development* 37(1):19-35.
- Fahsen, Federico
2000 From chiefdom to statehood in the highlands of Guatemala. *Maya, Divine Kings of the Rain Forest*, Konemann, Cologne:87-95.
-
- 2002 Who are the prisoners in Kaminaljuyú monuments. *Incidents of Archaeology in Central America and Yucatan: Studies in Honor of Edwin M. Shook*, University Press of America, Lanham, MD:360-374.

-
- 2010 Preclassic Stone Sculpture in the Guatemalan Highlands. The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition:231.
- Faulseit, Ronald K
2015 Beyond Collapse: Archaeological Perspectives on Resilience, Revitalization, and Transformation in Complex Societies: SIU Press.
- Fauvet-Berthelot, Marie-France
1986 Ethnopréhistoire de la maison maya : Guatemala, 1250-1525. Mexico: Centre d'études mexicaines et centraméricaines.
- Feinman, Gary M
1999 The changing structure of macroregional Mesoamerica: the Classic-Postclassic transition in the Valley of Oaxaca. World-systems theory in practice: Leadership, production, and exchange:53-62.
- Flora, Cornelia Butler
2018 Rural communities: Legacy+ change: Routledge.
- Flora, Cornelia Butler, et al.
2005 Community capitals: A tool for evaluating strategic interventions and projects. Ames, IA: North Central Regional Center for Rural Development. Retrieved on February 27:2007.
- Flores Lopez, Victor Hugo
2015 Historia en piedra: los metates de Tak'alik Ab'aj. In XXVIII Simposio de Investigaciones Arqueológicas en Guatemala, 2014. B. Arroyo, L.M. Salinas, and L. Paiz, eds. Pp. 867-878. Guatemala: Ministerio de Cultura y Deportes, Instituto de Antropología, Asociacion Tikal.
- Fox, John W.
1978 Quiche Conquest: Centralism and Regionalism in Highland Guatemala State Development. Albuquerque: University of New Mexico Press.
-
- 1980 Lowland to highland Mexicanization processes in southern Mesoamerica. American antiquity 45:43-54.
-
- 1987 Maya postclassic state formation : segmentary lineage migration in advancing frontiers. Cambridge: Cambridge University Press.
- Gamio, Manuel
1926 Cultural evolution in Guatemala and its geographic and historic handicaps: Archaeological Soc.

- Garrison, Thomas G, Stephen Houston, and Omar Alcover Firpi
 2019 Recentering the rural: Lidar and articulated landscapes among the Maya. *Journal of Anthropological Archaeology* 53:133-146.
- Grube, Nikolai
 1995 The emergence of Lowland Maya civilization : the transition from the Preclassic to the Early Classic : a conference at Hildesheim, November 1992. Möckmühl, Germany: A. Saurwein.
- Guernsey, Julia
 2012 Sculpture and social dynamics in Preclassic Mesoamerica: Cambridge University Press.
- Haapala, JM, et al.
 2006 Volcanic hazards at Atitlan volcano, Guatemala. 2331-1258.
- Hassink, Robert
 2010 Regional resilience: a promising concept to explain differences in regional economic adaptability? *Cambridge journal of regions, economy and society* 3(1):45-58.
- Hill, Robert M.
 1982 Ancient Maya houses at Cauinal and Pueblo Viejo Cbixoy, El Quiche, Guatemala. *Expedition, The University Museum Magazine*. University of Pennsylvania, Penn 24(2):40-48.
- Hill, Robert M., and John Monaghan
 1987 Continuities in highland Maya social organization : ethnohistory in Sacapulas, Guatemala. Philadelphia: University of Pennsylvania Press.
- Hinshaw, Robert E.
 1975 Panajachel: a Guatemalan town in thirty-year perspective. [Pittsburgh]: University of Pittsburgh Press.
- Hirth, Kenneth G
 1993 The household as an analytical unit: Problems in method and theory. *Prehispanic domestic units in Western Mesoamerica: studies of the household, compound, and residence*:21-36.
- Holling, Crawford S
 1973 Resilience and stability of ecological systems. *Annual review of ecology and systematics* 4(1):1-23.
- 2001 Understanding the complexity of economic, ecological, and social systems. *Ecosystems* 4(5):390-405.
- Holling, Crawford Stanley, and Lance H Gunderson

2002 *Panarchy: understanding transformations in human and natural systems*: Island Press.

Hutson, Scott R

2015 Adapting LiDAR data for regional variation in the tropics: A case study from the Northern Maya Lowlands. *Journal of Archaeological Science: Reports* 4:252-263.

Hutson, Scott R, Bruce H Dahlin, and Daniel Mazeau

2010 Commerce and Cooperation among the Classic Maya. *Cooperation in economy and society*:81.

Huxley, Aldous

1934 *Beyond the Mexique bay*. London: Chatto & Windus.

Iannone, Gyles

2014 Introduction: Resilience, Vulnerability, and the Study of Socioecological Dynamics. *In The Great Maya Droughts in Cultural Context: Case Studies in Resilience and Vulnerability*. G. Iannone, ed. Pp. 1-18: University Press of Colorado.

Iannone, Gyles, Keith Prufer, and Diane Z Chase

2014 11 Resilience and Vulnerability in the Maya Hinterlands. *Archeological Papers of the American Anthropological Association* 24(1):155-170.

Ichon, Alain

1975 Organización de un centro quiché protohistórico: Pueblo Viejo-Chichaj. Volume 9: Instituto de Antropología e Historia, Ministerio de Educación.

Ichon, Alain, and MF Fauvet-Berthelot

1980 *Archéologie de sauvetage dans la vallée du rio Chixoy. 2-Cauinal*. Paris, CNRS et Institut d'Ethnologie.

Inomata, Takeshi, and Lucia Henderson

2016 Time tested: re-thinking chronology and sculptural traditions in Preclassic southern Mesoamerica. *Antiquity* 90(350):456-471.

Inomata, Takeshi, et al.

2014 Chronological revision of Preclassic Kaminaljuyú, Guatemala: implications for social processes in the Southern Maya Area. *Latin American Antiquity* 25(4):377-408.

Inomata, Takeshi, et al.

2018 Archaeological application of airborne LiDAR to examine social changes in the Ceibal region of the Maya lowlands. *PloS one* 13(2):e0191619.

Ivic de Monterroso, Matilde

1998 Observaciones sobre los complejos ceramicos de Chirijuyu, Chimaltenango. XI Simposio de Investigaciones Arqueologicas en Guatemala, 1997., Museo Nacional de Arqueologia y Etnologia, Guatemala, 1998, pp. 733-750.

2012 Arqueologia y etnohistoria de la cuenca del lago de Atitlan (600 AC a 1840 DC). *Revista de la Universidad del Valle de Guatemala* 24:7-34.

Ivic de Monterroso, Matilde, and Carlos Alvarado Galindo

2010 La etnohistoria de los Tzutujiles, segun las cronicas y titulos indigenas: contribuciones para la reconstruccion de su antiguo territorio y cultura: Universidad del Valle, Guatemala.

2011 Dinámica de población y territorio en la cuenca del lago de Atitlán y sus zonas colindantes en los siglos XV y XVIII. *In* XXIV Simposio de Investigaciones Arqueologicas en Guatemala, 2010. B. Arroyo, L. Paiz, A. Linares, and A. Arroyave, eds. Pp. 568-583. Guatemala: Ministerio de Cultura y Deportes, Instituto de Antropologia, Asociacion Tikal.

2016 Chiya, tan cerca del agua y del olvido. *In* XXIX Simposio de Investigaciones Arqueologicas en Guatemala, 2015. B. Arroyo, L.M. Salinas, and G.A. Alvarez, eds. Guatemala: Ministerio de Cultura y Deportes, Instituto de Antropologia, Asociacion Tikal.

Kaplan, Jonathan

2011 Miraflores Kaminaljuyu: Corpse and Corpus Delicti. *In* The southern Maya in the late preclassic : the rise and fall of an early Mesoamerican civilization. M. Love and J.H. Kaplan, eds. Pp. 237-286. Boulder: University Press of Colorado.

Kaplan, Jonathan, and Federico Paredes Umaña

2018 Water, Cacao, and the Early Maya of Chocolá: University Press of Florida.

Kepecs, Susan

2007 Chichen Itza, Tula, and the Epiclassic/Early Postclassic Mesoamerican World System. *Twin Tollans: Chichén Itzá, Tula, and the Epiclassic to Early Postclassic Mesoamerican World*:129.

Kepecs, Susan, and Philip Kohl

2003 Conceptualizing macroregional interaction: World-systems theory and the archaeological record. *The Postclassic Mesoamerican World*, University of Utah Press, Salt Lake City:14-20.

Kirchoff, Paul

1981 Mesoamerica: Its Geographic Limits, Ethnic Composition and Cultural Characteristics (1943). *Ancient Mesoamerica: Selected Readings*, ed. John A. Graham:1-10.

- Kolb, Michael, J., and James Snead, E.
1997 Its a Small World After All: Comparative Analyses of
Community Organization in Archaeology. *American Antiquity* 62(4):609-628.
- Kraemer, A. E.
2008 Unearthing Collaboration: Community and Multivocal Archaeology in
Highland Guatemala.
- Kramer, Wendy
1994 Encomienda politics in early colonial Guatemala, 1524-1544 : dividing
the spoils. Boulder, Colo ; Oxford: Westview.
- LaBastille, Anne
1974 Ecology and management of the Atitlán Grebe, lake Atitlán,
Guatemala. *Wildlife Monographs*:3-66.
- LeCount, Lisa
2001 Like Water for Chocolate: Feasting and Political Ritual among the Late
Classic Maya at Xunantunich, Belize. *American Anthropologist* 103(4):935-953.
- Linares Palma, Adriana, and Sonia Medrano
2010 CONSTRUCCIONES PRECLÁSICAS CUBIERTAS DE AGUA. XXIII
Simposio de Investigaciones Arqueológicas en Guatemala, 2009 Museo
Nacional de Arqueología y Etnología, Guatemala 2010, pp. 307-323.
- Lothrop, Eleanor Bachman
1948 Throw me a bone: what happens when you marry an archaeologist:
Whittlesey House.
- Lothrop, S. K.
1928 Santiago Atitlan, Guatemala. *In* Indian Notes. Pp. 370-395: Museum of
the American Indian, Heye Foundation.
- 1929a Canoes of Lake Atitlan, Guatemala. Museum of the American Indian-
Heye foundation *Indian Notes* 6(3):216-221.
- 1929b The Henequen Industry of San Pablo, Guatemala. Museum of the
American Indian-Heye foundation *Indian Notes* 6(2):120-129.
- Loucky, James
1979 Production and the Patterning of Social Relations and Values in
Two Guatemalan Villages. *American Ethnologist* 6(4):702-722.
- Love, Michael
1999a Economic patterns in the development of complex society in
Pacific Guatemala. *The Development of Agriculture and the Development of
Formative*

Civilizations in the Pacific Region, Washington State University Press, Pullman:89-100.

1999b Ideology, material culture, and daily practice in Pre-Classic Mesoamerica: A Pacific Coast perspective. *Social patterns in pre-Classic Mesoamerica*:127-54.

2002a Domination, Resistance, and Political Cycling in Formative Period Pacific Guatemala. *In The Dynamics of Power*. M. O'Donovan, ed. Pp. 214-237. Carbondale: Center for Archaeological investigations, Southern Illinois University.

2002b Early complex society in Pacific Guatemala: settlements and chronology of the Rio Naranjo, Guatemala: New World Archaeological Foundation, Brigham Young University.

2010 Varieties of Preclassic Sculpture in Pacific Guatemala and Their Political Significance. *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*:149.

2011a Cities, States and City-State Culture in the Late Preclassic Southern Maya Region. *In The southern Maya in the late preclassic : the rise and fall of an early Mesoamerican civilization*. M. Love and J.H. Kaplan, eds. Pp. 47-75. Boulder: University Press of Colorado.

2011b Critical Issues in the Southern Maya Region and the Late Preclassic Period. *In The southern Maya in the late preclassic : the rise and fall of an early Mesoamerican civilization*. M. Love and J.H. Kaplan, eds. Pp. 3-23. Boulder: University Press of Colorado.

2016 Early States in the Southern Maya Region. *In The origins of Maya states*. L.P. Traxler and R.J. Sharer, eds. Pp. 271-327: University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia.

2018 KAMINALJUYU CHRONOLOGY AND CERAMIC ANALYSIS: AN ALTERNATIVE VIEW. *Latin American Antiquity* 29(2):260-278.

Macario, Raquel, and Walter Burgos

2009 Avances del estudio cerámico y lítico de Q'umarkaj: Proyecto Ethnoarqueológico Q'umarkaj. *In XXII Simposio de Investigaciones Arqueológicas*. J.P. Laporte, B. Arroyo, and H. Mejía, eds. Guatemala.

- Madigan, D.G.
1976 *Santiago Atitlán, Guatemala: A Socioeconomic and Demographic History*: University of Pittsburgh.
- Magis, Kristen
2010 *Community Resilience: An Indicator of Social Sustainability*. *Society & Natural Resources* 23(5):401-416.
- Martin, Ron
2011 *Regional economic resilience, hysteresis and recessionary shocks*. *Journal of economic geography* 12(1):1-32.
- Masson, Marilyn A, and David A Freidel
2012 *An argument for Classic era Maya market exchange*. *Journal of Anthropological Archaeology* 31(4):455-484.
- Mata Amado, G.
2011 *Investigaciones Arqueológicas en Los Lagos de Guatemala*. In *Arqueología subacuática : Amatitlan Atitlan*. 1. edition. O.C. Mazariegos, ed. Pp. 243 p. Guatemala: Museo Popol Vuh, Universidad Francisco Marroquin.
- Mata Amado, G., and Sonia Medrano
2011 *Arqueología subacuática : Amatitlan Atitlan*. Guatemala: Museo Popol Vuh, Universidad Francisco Marroquin.
- Mathewson, Kent
1984 *Irrigation horticulture in highland Guatemala : the tablón system of Panajachel*. Boulder, Colo: Westview.
- Maudslay, Anne Cary, and Alfred Percival Maudslay
1899 *A glimpse of Guatemala, and some notes on the ancient monuments of Central America*. London,: J. Murray.
- Maxwell, Judith M., and Ajpub Garcia Ixmata
2008 *Power in Places: Investigating the Sacred Landscape of Iximche, Guatemala*.
- McAnany, Patricia A, and Norman Yoffee
2009 *Questioning collapse: human resilience, ecological vulnerability, and the aftermath of empire*: Cambridge University Press.
- McBryde, F. Webster
1945 *Cultural and Historical Geography of Southwest Guatemala*. Washington: Smithsonian Institution.
- Medrano, Sonia
2009 *Samabaj; Un Sitio Sumergido en el Lago de Atitlan*. In *III Congreso de Arqueología Centroamericana*. San Salvador.

-
- 2011 Samabaj. Un Sitio Subacuático en el Lago de Atitlán. *In* Arqueología subacuática : Amatitlán Atitlán. 1. edición. O. Chinchilla Mazariegos, ed. Pp. 93-110. Guatemala: Museo Popol Vuh, Universidad Francisco Marroquín.
-
- 2015 Samabaj: A Submerged Site in Lake Atitlán. *In* Culture and Development. Pp. 96-99: UNESCO Regional Office for Culture in Latin America and the Caribbean.
- Mendelsohn, Rebecca R
2018 The Chronology of the Formative to Classic Period Transition at Izapa: A Reevaluation. *Latin American Antiquity* 29(2):239-259.
- Miller, Arthur G
1983 Interdisciplinary approaches to Highland-lowland interaction in Mesoamerica: Some Introductory Remarks. *In* Highland-lowland interaction in Mesoamerica: interdisciplinary approaches: a conference at Dumbarton Oaks, October 18th and 19th, 1980. A.G. Miller, ed. Pp. 1-11: Dumbarton Oaks.
- Modica, Marco, and Aura Reggiani
2015 Spatial economic resilience: overview and perspectives. *Networks and Spatial Economics* 15(2):211-233.
- Murdy, Carson
1990 Prehispanic Agriculture and Its Effects in the Valley of Guatemala. *Forest & Conservation History* 34(4):179-190.
- Murdy, CN
1996 Prehispanic settlement and society in the Valley of Guatemala, 1500 BC–AD 1524. *Arqueología Mesoamericana, homenaje a William T. Sanders*:79-108.
- Nash, Manning
1969 Guatemalan Highlands. *In* Handbook of Middle American Indians, Volume 7: Ethnology, Part One. R. Wauchoppe, ed. Pp. 30-45. Austin: University of Texas Press.
- Navichoc, Lorenzo Tuy, and Felipe Tuy Navichoc
1998 Geografía de San Pedro La Laguna. *In* Nuestra Geografía del Lago de Atitlán, 2da. edición. C.O. García, ed. Pp. 99-134. Colección Xokomil Vol. 7. Guatemala: Casa de Estudios de los Pueblos del Lago Atitlán.
- Neff, Hector, et al.
2019 IZAPA'S INDUSTRIAL HINTERLAND: THE EASTERN SOCONUSCO MANGROVE ZONE DURING ARCHAIC AND FORMATIVE TIMES. *Ancient Mesoamerica* 29(2):395-411.
- Neff, Hector, et al.

- 2006 Climate change and population history in the Pacific lowlands of southern Mesoamerica. *Quaternary Research* 65(3):390-400.
- Newhall, CG, et al.
1987 Recent geologic history of Lake Atitlán, a caldera lake in western Guatemala. *Journal of volcanology and Geothermal Research* 33(1):81-107.
- Newhall, Christopher G
1987 Geology of the Lake Atitlan region, western Guatemala. *Journal of Volcanology and Geothermal Research* 33(1-3):23-55.
- Norman, V Garth
1973 *Izapa sculpture. Volume 1: New World Archaeological Foundation, Brigham Young University.*
- 1976 *Izapa Sculpture, Part 2. New World Archaeological Foundation, Provo.*
- Norris, F. H., et al.
2008 Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *Am J Community Psychol* 41(1-2):127-50.
- Nunez, Laura
2012-13 Mapa Hidrogeologico de Guatemala: Cuenca de Atitlan, 1: 25,000, Hoja III, Santiago Atitlan. *In Proyecto GARICLA. Guatemala: Geólogos del Mundo y Vivamos Mejor.*
- Orellana, Sandra L.
1973 Ethnohistorical and Archaeological Boundaries of the Tzutujil Maya. *Ethnohistory* 20(2):125-142.
- 1984 *Tzutujil Mayas: Continuity and Change, 1250-1630. Norman: University of Oklahoma Press.*
- Ortiz Vallejos, José Raúl
2014 RE-EVALUATING PRECLASSIC CERAMICS FROM KAMINALJUYU, GUATEMALA SCHOOL OF ANTHROPOLOGY, THE UNIVERSITY OF ARIZONA, THE UNIVERSITY OF ARIZONA.
- Paredes Umaña, Federico
2005 *Las Esculturas de Chocoma, Suchitepequez, Escuela de Historia, Area de Arqueología., Universidad de San Carlos de Guatemala.*
- Paris, Elizabeth H.
2008 METALLURGY, MAYAPAN, AND THE POSTCLASSIC MESOAMERICAN WORLD SYSTEM. *Ancient Mesoamerica* 19(01):43-66.

Parsons, Lee A

1981 Post-Olmec Stone Sculpture: The Olmec-Izapan Transition on the Southern Pacific Coast and Highlands. *The Olmec and Their Neighbors: Essays in Memory of Matthew W. Stirling*:257-88.

Parsons, Lee Allen, and Lee Allen

1986 *The Origins of Maya Art: Monumental Stone Sculpture of Kaminaljuyu, Guatemala and the Southern Pacific Coast. Studies in Pre-Columbian Art and Archaeology*: Dumbarton Oaks Washington, DC.

Peltan, Ithan D

2009 Disaster Relief and Recovery after a Landslide at a Small, Rural Hospital in Guatemala. *Prehospital and disaster medicine* 24(6):542.

Perrot-Minnot, Sébastien

2001 Las esculturas prehispánicas de la región de Antigua Guatemala. XV Simposio de Investigaciones Arqueológicas en Guatemala, 2001, pp. 617-628.

—

2004 Un Reconocimiento Arqueológico en los Municipios de Patulul, Santa Barbara y San Juan Bautista (Suchitepequez). Informe entregado al Instituto de Antropología e Historia de Guatemala, October 2004.

—

2005 El Sitio de Cocales-Saltona, Departamento de Suchitepequez, Guatemala. *Utz'ib* 3(8):1-10.

Plodinec, MJ

2013 *Definitions of community resilience: an analysis*. Community & Regional Resilience Institute: Washington, DC, USA.

Popenoe de Hatch, Marion

1989 Observaciones sobre el desarrollo cultural prehistórico en la costa sur de Guatemala. En *Investigaciones Arqueológicas en la Costa Sur de Guatemala*. David S. Whitley y Marilyn P. Beaudry (eds.):38-81.

—

1997 Kaminaljuyú/San Jorge: evidencia arqueológica de la actividad económica en el Valle de Guatemala, 300 aC a 300: Universidad del Valle de Guatemala.

—

2005 La cerámica de Chocó de la temporada 2005: Conclusiones preliminares *In* PROYECTO ARQUEOLÓGICO CHOCOLÁ: INFORME NO. 3. . J. Kaplan and R.U. Rivera, eds. .

—

2009 Informe de la cerámica de Chuk'muk: Universidad del Valle de Guatemala.

Popenoe de Hatch, Marion

2007 Las Relaciones entre Takalik Abaj, Chocoma, Semetabaj y Kaminaljuyu: La Evidencia Cerámica. XX Simposio de Investigaciones Arqueológicas en Guatemala, 2006, 2007, pp. 944-958. Museo Nacional de Arqueología y Etnología, Guatemala.

2010 Rutas comerciales del Preclásico entre el altiplano y la costa sur de Guatemala: Implicaciones sociopolíticas. . XXIII Simposio de Investigaciones Arqueológicas en Guatemala, 2009 2010, pp. 11-25. Museo Nacional de Arqueología y Etnología, Guatemala.

Popenoe de Hatch, Marion, et al.

1999 Observaciones sobre el desarrollo cultural en Takalik Abaj, Departamento de Retalhuleu, Guatemala. XIII Simposio de Investigaciones Arqueológicas en Guatemala, 1999, pp. 159-170.

Popenoe de Hatch, Marion, et al.

2002 Climate and technological innovation at Kaminaljuyu, Guatemala. *Ancient Mesoamerica* 13(1):103-114.

Puleston, Dennis E

1974 Intersite areas in the vicinity of Tikal and Uaxactun. *Mesoamerican archaeology: new approaches*:303-312.

Purvis, Matt

2012 Geology of Lake Atitlan Volcanoes. <http://www.atitlansol.com/Geology-Lake-Atitlan-volcanoes.html>.

Rathje, William L, et al.

1978 Mesoamerican communication routes and cultural contacts.

Recinos, Adrián

1957 Crónicas indígenas de Guatemala. Guatemala: Editorial Universitaria.

Recinos, Adrián, and Delia Goetz

1953 *The Annals of the Cakchiuels*. Norman: University of Oklahoma Press.

Reyes-Morales, Fátima, Domingo Ujpan, and Samuel Valiente

2018 Batimetría y análisis morfométrico del lago de Atitlán (Guatemala). *Revista Científica de la Facultad de Ciencias Químicas y Farmacia* 27(2):48-58.

Reynolds, J

1979 Residential architecture at Kaminaljuyu. Settlement pattern excavations at Kaminaljuyu, Guatemala:223.

Ribera, Francisco, de, et al.

2007 [1571]Letter to the King of Spain by the Tz'utujil Maya Rulers of Santiago Atitlan, Written in 1571. *In Invading Guatemala : Spanish, Nahua, and Maya accounts of the conquest wars.* M. Restall and F.G.L. Asselbergs, eds. Pp. xvi, 132 p, Vol. 2. University Park, PA: Pennsylvania University Press.

Rice, Don S, and Prudence M Rice

1980The northeast Peten revisited. *American Antiquity* 45(3):432-454.

Rick, John, ed.

2005Stanford-Universidad de Valle Semetebaj Project. Unpublished Report.

Rick, John, et al.

2008Proyecto Arqueologico de Rescate Estacion de Campo, Semetebaj: Informe Final. Guatemala.

Robinson, Eugenia, et al.

2005aLos fechamientos del arte rupestre y la arqueología en la Casa de las Golondrinas, San Miguel Dueñas, Sacatepéquez. XX Simposio de Investigaciones Arqueológicas en Guatemala, 2005a, pp. 959-972.

Robinson, Eugenia, et al.

1998La Cultura y el Ambiente Preclasico de Urias en el Valle de Panchoy, Guatemala. XII Simposio de Investigaciones Arqueologicas en Guatemala, 1998, pp. 537-551.

Robinson, Eugenia J

1997Protohistoric to colonial settlement transition in the Antigua Valley, Guatemala. *Approaches to the Historical Archaeology of Mexico, Central, and South America*, Monograph 38:59-70.

1998Organización del estado kaqchikel: el centro regional de Chitak Tzak. *Mesoamerica* 19(35):49-71.

2014THE OTHER LATE CLASSIC MAYA. *The Maya and Their Central American Neighbors: Settlement Patterns, Architecture, Hieroglyphic Texts and Ceramics*:150.

Robinson, Eugenia, et al.

2005b The Formative archaeological cultures of the Guatemalan highlands and Pacific Coast: Interregional interaction and cultural evolution. *New Perspectives on Formative Mesoamerican Cultures*, edited by Terry G. Powis:85-94.

Rosales, Juan de Dios

1949Notes on San Pedro La Laguna. Chicago,: University of Chicago Library.

Rose, William I

2009 VOLCANIC AND OTHER NATURAL HAZARDS OF THE LAKE ATITLÁN REGION, GUATEMALA. Geological Society of America Abstracts with Programs, 2009. Vol. 41, pp. 75.

Rose, William I, et al.

1987 Quaternary silicic pyroclastic deposits of Atitlán Caldera, Guatemala. *Journal of volcanology and geothermal research* 33(1):57-80.

Rosenswig, Robert

2012 The Southern Pacific Coastal Region of Mesoamerica: A Corridor of Interaction from Olmec to Aztec Times. *In The Oxford Handbook of Mesoamerican Archaeology*. D.L. Nichols and C.A. Pool, eds. Pp. 419-433: Oxford University Press.

Rosenswig, Robert M

2016 Olmec globalization. *The Routledge Handbook of Archaeology and Globalization*:177.

Rosenswig, Robert M, Ricardo López-Torrijos, and Caroline E Antonelli

2015 Lidar data and the Izapa polity: new results and methodological issues from tropical Mesoamerica. *Archaeological and Anthropological Sciences* 7(4):487-504.

Rosenswig, Robert M., et al.

2013 Lidar mapping and surface survey of the Izapa state on the tropical piedmont of Chiapas, Mexico. *Journal of Archaeological Science* 40(3):1493-1507.

Rotarangi, Stephanie J, and Janet Stephenson

2014 Resilience pivots: stability and identity in a social-ecological-cultural system. *Ecology and Society* 19(1).

Sabloff, Jeremy A, et al.

1985 Settlement and Community Patterns at Sayil, Yucatan, Mexico: The 1984 Season.

Sánchez, Mariana; Gilberto Cruz, Alejandro González y Rubén Morales

2015 Entre palmas y montículos: resultados de la Temporada 2013 del Proyecto Arqueológico Río Seco, La Gomera, Escuintla. En (editado por z), pp. . . XXVIII Simposio de Investigaciones Arqueológicas en Guatemala, 2014., Museo Nacional de Arqueología y Etnología, Guatemala., 2015, pp. 241-253.

Sanders, William T

1965 The cultural ecology of the Teotihuacan Valley: A preliminary report of the results of the Teotihuacan Valley Project: Department of Sociology & Anthropology, Pennsylvania State University.

Sanders, William T, Jeffrey Parsons, and Robert Santley

1979 The basin of Mexico: the cultural ecology of a civilization: New York: Academic Press.

- Sanders, William T., and Carson Murdy
 1982 Population and Agricultural Adaptation in the Humid Highlands of Guatemala. *In* The Historical demography of highland Guatemala. R.M. Carmack, J.D. Early, and C. Lutz, eds. Pp. 23-34, Vol. no 6. Albany, N.Y.: Institute for Mesoamerican Studies, State University of New York at Albany.
- Scarborough, Vernon Lee
 1980 THE SETTLEMENT SYSTEM IN A LATE PRECLASSIC MAYA COMMUNITY: CERROS, NORTHERN BELIZE, Southern Methodist University.
- Schieber de Lavarreda, Christa, and Miguel Orrego Corzo
 2010 Preclassic Olmec and Maya monuments and architecture at Takalik Abaj. The place of stone monuments: context, use, and meaning in Mesoamerica's Preclassic tradition:177-205.
- Schortman, Edward M
 1989 Interregional interaction in prehistory: The need for a new perspective. *American Antiquity* 54(1):52-65.
- Schortman, Edward M., and Patricia A. Urban
 1992 Current Trends in Interaction Research. *In* Interdisciplinary contributions to archaeology. E.M. Schortman and P.A. Urban, eds. Pp. 235-255. New York: Plenum Press.
- Schwarz, Claudia Blanca Verónica Wolley, Edgar René Ortega Guzmán, and Víctor René Mendoza González
 2010 LA ESCULTURA PREHISPANICA DE LA COSTA SUR GUATEMALTECA: UN ESTUDIO PREVIO A SU INMINENTE PÉRDIDA EN EL SIGLO XXI. Universidad de San Carlos de Guatemala (USAC).
- Scott, Ann M
 2009 Communicating with the sacred earthscape: ethnoarchaeological investigation of Kaqchikel Maya ceremonies in highland Guatemala, Austin.
- Sharer, R., W. Ashmore, and R. Hill
 1970 The Pottery of Antigua Guatemala. .
- Sharer, Robert James, and David W Sedat
 1987 Archaeological Investigations of the Northern Maya Highlands, Guatemala: Interaction and Development of Maya Civilization. Volume 59: UPenn Museum of Archaeology.
- Shaw, Leslie C.
 2012 The Elusive Maya Marketplace: An Archaeological Consideration of the Evidence. *Journal of Archaeological Research* 20(2):117-155.

- Sherrieb, Kathleen, Fran H. Norris, and Sandro Galea
2010 Measuring Capacities for Community Resilience. *Social Indicators Research* 99(2):227-247.
- Shook, Edwin M
1965 Archaeological survey of the Pacific coast of Guatemala: publisher not identified.
- Shook, Edwin M, and Marion Popenoe de Hatch
1994 The Early Preclassic Sequence in the Ocos-Salinas La Blanca Area, South Coast of Guatemala: publisher not identified.
- Shook, Edwin, Marion Popenoe de Hatch, and Jamie Donaldson
1979 The Ruins of Semetabaj, Department of Solola, Guatemala. *In* University of California Research Facility Contributions No. 41. Pp. 7-142. Berkeley: UCLA.
- Simmie, James, and Ron Martin
2010 The economic resilience of regions: towards an evolutionary approach. *Cambridge journal of regions, economy and society* 3(1):27-43.
- Smith, Carol A
1976 Exchange Systems and the Spatial Distribution of Elites. The Organization of Stratification on Agrarian Societies *In* *Social Systems*. C.A. Smith, ed. Pp. 390-474. New York: Academic Press.
- Smith, Michael E
2001 The Aztec empire and the Mesoamerican world system. *Empires: Perspectives from archaeology and history* 122:128.
- Smith, Michael E.
2015 Quality of Life and Prosperity in Ancient Households and Communities. *In* *The Oxford Handbook of Historical Ecology and Applied Archaeology*. Online Version. C. Isendahl and D. Stump, eds: Oxford University Press.
- Smith, Michael E., et al.
2014 Quantitative Measures of Wealth Inequality in Ancient Central Mexican Communities. *Advances in Archaeological Practice* 2(4):311-323.
- Smith, Michael Ernest, and Frances Berdan
2003 The postclassic Mesoamerican world. Salt Lake City: University of Utah Press.
- Stanish, Charles
1992 The Evolution of Chiefdoms: An Economic Anthropological Model. *In* *Ancient Andean political economy*. Pp. xi, 195 p. Austin: University of Texas Press.
- Stephens, John L, and Frederick Catherwood

1969 Incidents of Travel in Central America, Chiapas and Yucatan (2 vols), first published by Harper & Brothers, New York, 1841: reprinted by Dover Publications, New York.

Stephens, John Lloyd, and Frederick Catherwood

1854 Incidents of travel in Central America, Chiapas, and Yucatan. London,: A. Hall, Virtue & co.

Swanstrom, Todd

2008 Regional resilience: a critical examination of the ecological framework. working paper.

Szybist, Richard Morgan

2004 The Lake Atitlan Reference Guide: The Definitive Eco-Cultural Guidebook on Lake Atitlan.

Tax, Sol, and Robert Hinshaw

1969 The Maya of the Midwestern Highlands. *In* Handbook of Middle American Indians, Volume 7: Ethnology, Part One. R. Wauchope, ed. Pp. 30-45. Austin: University of Texas Press.

Timmerman, Peter

1981 Vulnerability, resilience and the collapse of society: a review of models and possible climatic applications: Institute for Environmental Studies, University of Toronto.

Tomasic, John J

2012 Donut Stones as Thigh-Supported Spindle Whorls: Evidence of Ancient Maya Household Yarn and Cordage Production. *Latin American Antiquity* 23(2):215-228.

Urban, Patricia A., Edward M. Schortman, and Marne T. Ausec

2013 Looking for Times: How Type-Variety Analysis Helps Us See the Early Postclassic in Northwestern Honduras. *In* Ancient Maya Pottery. J.J. Aimers, ed. Pp. 163-184. Gainesville, Florida: University Press of Florida.

Van Akkeren, Ruud

2004 Getting Acquainted with the Pipils from the Pacific Coast of Guatemala: An Ethnohistoric Study of Indigenous Documents and of the General Archive of Central America. Symposium of Archaeological Investigations in Guatemala, 2004. Museo Nacional de Arqueología y Ethnología.

2005 Conociendo a los Pipiles de la Costa del Pacifico de Guatemala: Un estudio Etno-historico de documentos indigenas y del archivo general de centroamerica: Guatemala: FAMSI.

- 2009 Titulo de Los Indios de Santa Clara La Laguna. *In* *Cronicas Mesoamericanas*. Pp. 69-86: Universidad Mesoamericana.
- VanKirk, Jacques, and Parney Bassett-VanKirk
1996 Remarkable Remains of the Ancient Peoples of Guatemala: University of Oklahoma Press.
- Velez, Maria I, et al.
2011 Environmental and cultural changes in highland Guatemala inferred from Lake Amatitlán sediments. *Geoarchaeology* 26(3):346-364.
- Wauchope, Robert
1970 Protohistoric Pottery of the Guatemala Highlands. *In* *Maya Archaeology*. W.R.B. Jr., ed. Pp. 89-244. Cambridge: Peabody Museum of Archaeology and Ethnology, Harvard University.
- Wells, E. Christian
2006 Recent Trends in Theorizing Prehispanic Mesoamerican Economies. *Journal of Archaeological Research* 14(4):265-312.
- Whitley, David S
2016 Introduction to rock art research: Routledge.
- Wilson, Richard
1993 Anchored Communities: Identity and History of the Maya-Q'eqchi'. *Man* 28(1):121-138.
- Yaeger, Jason, and Marcello-Andrea Canuto
2000 Introducing an archaeology of communities. *In* *Archaeology of communities : a new world perspective*. M. Canuto and J. Yaeger, eds. Pp. 1-15. London: Routledge.
- Zamora Acosta, Elias
1979 El control vertical de diferentes pisos ecológicos: aplicación del modelo al occidente de Guatemala. (J. Alcina, editor), *Revista de la Universidad Complutense*, XXVIII, núm. 117, pp. 245-272. Universidad Complutense. Madrid. (Dep. Legal: M. 1939-1958). *Economía y Sociedad en los Andes y Mesoamérica* (J. Alcina, editor), *Revista de la Universidad Complutense* 28(117):245-272.

VITA

EDUCATION

- 2006-7 MSc in European Archaeology, University of Edinburgh, Scotland
2001-2 Postgraduate Diploma in Professional Archaeology, University of Oxford
1996-9 BA (Hons) in Archaeology, University of Liverpool, England

WORK HISTORY

- 2015-18 Project Director - Lake Atitlán Archaeological Project, Sololá, Guatemala.
2016 Teaching Assistant - Anthropology, University of Kentucky
2012-15 Staff Archaeologist - Cultural Resource Analysts, Inc., Lexington
2009-12 Teaching Assistant - Anthropology, University of Kentucky
2008-9 Grants Assistant - Heritage Lottery Fund, Edinburgh, Scotland
2006-8 Field Archaeologist - AOC Archaeology Group, Edinburgh, Scotland
2003-6 Staff Archaeologist - Cultural Resource Analysts, Inc., Lexington

PUBLICATIONS

Davies, Gavin R. and María de Los Ángeles Corado M.

- 2018 Pan'alujaay: El Último Chinamit de la Cuenca de Atitlán y sus Conexiones con el Área K'iche' en el Postclásico Tardío. In *Proceedings del XXVII Simposio de Investigaciones Arqueológicas en Guatemala, 2017*.
2017 Tradiciones y Transformaciones dentro el Territorio Tz'utujil entre el Preclásico y Postclásico Tardío. In *Proceedings del XXV Simposio de Investigaciones Arqueológicas en Guatemala, 2016*.

Davies, Gavin R.

- 2016 Laying the Foundations for Collaboration in Lake Atitlan, Guatemala. *American Anthropological Association Ethics Blog*. Available online at <http://ethics.americananthro.org>.

Davies, Gavin R. and María de Los Ángeles Corado M.

2016 El Crecimiento de Chuitinamit y la Transición Clásico a Postclásico en la Cuenca de Atitlán, Sololá. In *Proceedings del XXIV Simposio de Investigaciones Arqueológicas en Guatemala, 2015*.

Hutson, Scott R. and Gavin R. Davies

2015 How Material Culture Acted on the Ancient Maya of Yucatan, Mexico. In *Archaeological Papers of the American Anthropological Association*, Vol. 26, pp. 10–26.

GAVIN R. DAVIES