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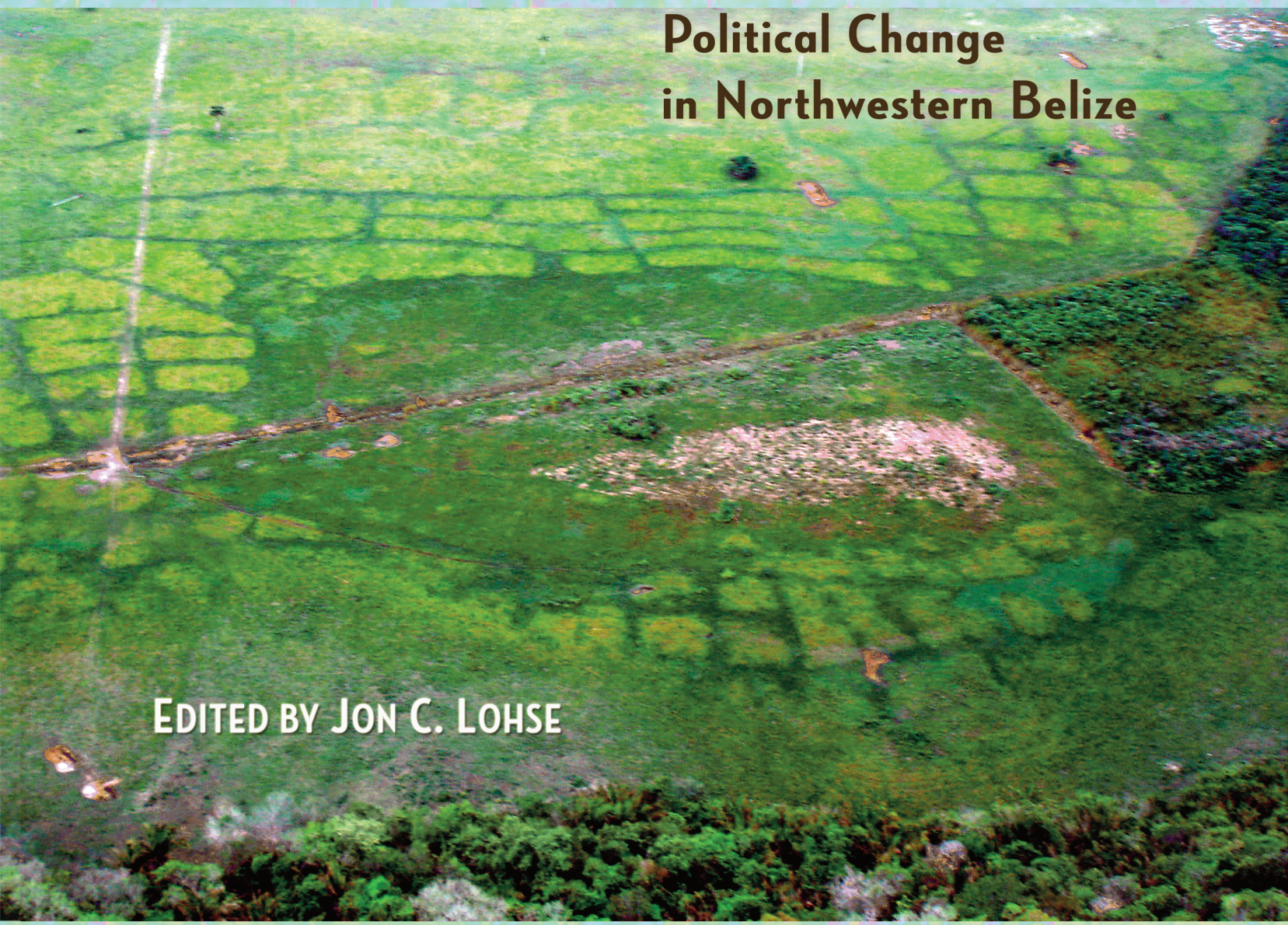

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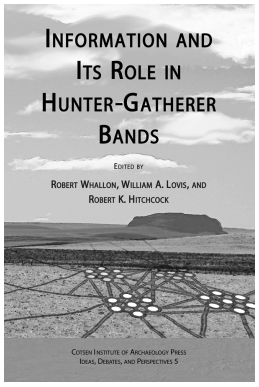

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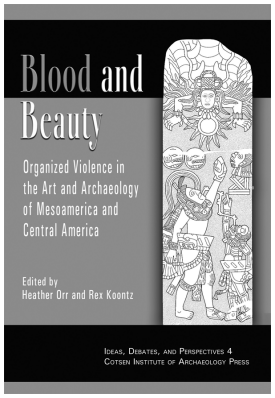

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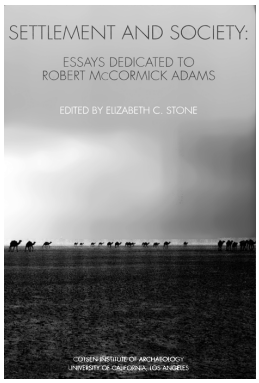

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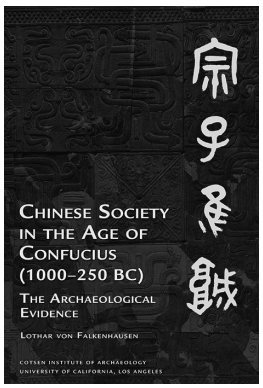

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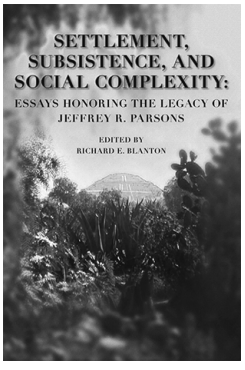

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Dedicated to Margaretha and Ben Dyck
and to Ed and Carolyn Reimer and their family

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About the Editor

Jon C. Lohse is director of the Center for Archaeological Studies at Texas State University-San Marcos. His research interests include complexity in social relations, particularly as expressed in situational and institutional inequality. In addition to directing multidisciplinary research in the Maya lowlands, he is also investigating the preceramic origins of sedentary societies that eventually developed in southern Mesoamerica and Paleoindian and Archaic traditions of central Texas. Other volumes he has edited include *Ancient Maya Commoners* (2004) and *Commoner Ritual and Ideology in Ancient Mesoamerica* (2007).

List of Contributors

Joanne P. Baron
Department of Anthropology
University of Pennsylvania, Philadelphia
Timothy P. Beach
School of Foreign Service
Georgetown University
Washington, DC
Sarah C. Clayton
Department of Anthropology
University of Wisconsin, Madison
W. David Driver
Moore Archeological Consulting, Inc.
Houston, TX
Jason J. González
Department of Anthropology
University of Georgia, Athens
Brett A. Houk
Department of Sociology, Anthropology, and Social Work
Texas Tech University, Lubbock
Scott R. Hutson
Department of Anthropology
University of Kentucky, Lexington
Laura J. Kosakowsky
School of Anthropology
University of Arizona, Tucson
Nicole C. Little
Smithsonian Museum Conservation Institute
Suitland, MD
Jon C. Lohse
Center for Archaeological Studies
Texas State University-San Marcos
Sheryl Luzzadder-Beach
Department of Geography and Geoinformation Science
George Mason University, Fairfax, VA
Molly Morgan
Northeast Lakeview College
Universal City, TX
Antonio E. Padilla
SWCA
Arlington, TX
Kerry L. Sagebiel
Department of Anthropology
Northern Illinois University
DeKalb, IL
Robert J. Speakman
Center for Applied Isotope Studies
University of Georgia, Athens

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PREFACE

This volume addresses aspects of ancient Maya social and political organization as observed in the archaeological record of upper northwestern Belize. This area lies in what is termed the Three Rivers Region, an area of the central lowlands arbitrarily defined by Booth's River on the east and Rio Azul on the north and west. Regional case studies such as this one are the best way for archaeologists to identify and fit together the many different social units, interest groups, coalitions, and classes that contributed in various ways to Maya political sustainability and change prior to the arrival of the Spanish. When working at regional scales, however, difficulties persist in theorizing how prehistoric people of different social roles, standings, and obligations contributed to the "big picture" from their respective positions. In particular, the ways non-elites participated in and at times helped guide the process of cultural development are highly complex and worthy of thought and attention. Although commoners are highlighted in many studies contained herein, this volume is motivated by a desire to understand the roles of *all* kinds of Maya inhabitants of this region, not just those at the top and not just those at the bottom.

From 2002 to 2005, multidisciplinary research was carried out in the Blue Creek area of northwestern Belize, approximately 220,000 acres lying adjacent to where the borders of Belize, Mexico, and Guatemala come together. This effort was a continuation of the long-running Blue Creek project, started by Thomas Guderjan, funded by the nonprofit Maya Research Program, and focusing primarily though not exclusively on the Blue Creek monumental center. Over these four seasons, however, attention was focused across much of the rest of the study area in an effort to understand this part of the Three Rivers Region from the perspective of multitiered settlements and political and economic networks that are to be found here. The project name from 2002 to 2005—Blue Creek Regional Political Ecology Project (BCRPEP)—reflects this theoretical reorientation.

In accomplishing the goals of this research, contributors to this volume follow two primary guidelines: (1) They apply broad and in some cases cross-cultural perspectives to their subject matter. (2) They focus their analyses on specific historical periods and important transitions in Maya prehistory. With respect to the first guideline, the kinds of epigraphic and site-center data commonly used to understand Maya politics are, in many cases, not available or, when present, do not mention commoners. We must therefore look elsewhere to see how Maya farmers,

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potters, and toolmakers maintained their livelihoods as part of changing political circumstances. Concerning the second guideline, it seems naive to assume that the alliances, conflicts, and tumult that occurred elsewhere in the Classic Maya world, particularly between Tikal and Calakmul, did not impact the local affairs of northwestern Belize. A larger historical context is therefore important to understanding the political history of any study area. In part to compensate for these lacunae, an ecologically informed, ground-up perspective was applied to the study of political realities in our research area over time. The result, a version of political ecology specifically adapted to the ancient Maya of the central lowlands, foregrounds class processes as shaping historic events.

To contribute to the larger understanding of the region, an effort was made to integrate our findings with others from across permit-area boundaries, including Boston University's La Milpa Project directed by Norman Hammond and Gair Tourtellot and the Programme for Belize Archaeological Project (PfBAP) started by Richard E. W. Adams in 1993 and continued under the direction of Fred Valdez, Jr., and Vernon L. Scarborough. This was accomplished by drawing on existing studies that had been conducted by the PfBAP and at La Milpa, as well as during earlier seasons at Blue Creek, and that could easily be added to with new data drawn from our study area (see chapters 2, 5–7, this volume). A second way this was accomplished was by staffing BCRPEP with several researchers who had spent time on the PfB or La Milpa projects. Their expertise with and awareness of other parts of the region did much to enrich BCRPEP's investigations. A final effort included working with Fred Valdez and Belize's Institute of Archaeology to access parts of the Programme for Belize lands that were within range of the Blue Creek research station so that certain sites might be brought into better focus. Specifically, this included Gran Cacao, which had been discovered by the PfBAP in 1993, and the Birds of Paradise ditched-fields agricultural complex, which I had seen from the air in 1996 and first visited on the ground in 2004. In retrospect, these efforts were highly beneficial to the research, and I appreciate the cooperation that made this sharing of permit areas possible.

Our research in the Blue Creek area would not have been possible without the financial support of the Maya Research Program (MRP). This volunteer-based operation provided the majority of funds that paid for fieldwork as well as many energetic people to carry it out. I am extremely grateful to the members of the MRP Board of Directors (Bill Collins, Kim Cox, Scott Essex, Tom Guderjan, Dale Pastrana, Keith Peacock, and Jerry Reed) during my tenure on the project for making the opportunity available to me and for supporting most of my initiatives. In particular, Kim Cox and Jerry Reed were enthusiastic about much of what was accomplished, and Kim provided a substantial amount of support to facilitate student participation in the project through the Lambert Trust. Additional support was obtained from the National Geographic Society in the form of two research grants to Tim Beach, Sheryl Luzzadder-Beach, and myself to aid our work in the wetland fields and agricultural systems. Laura Kosakowsky and I were awarded a generous grant from Peter Harrison and the Ahau Foundation to further regional ceramic studies. Finally, the Missouri University Research Reactor (MURR) graciously processed ceramic samples by instrumental neutron activation analysis as part of Nicole Little's master's research, reported on in chapter 6.

Fieldwork of the kind presented here can only be accomplished through the collaboration of multiple individuals. I was fortunate at Blue Creek to have a number of excellent colleagues, staff, and friends to help shoulder the load. Many of these people are represented here as chapter authors, others made contributions that appear as maps or analyzed data, while some contributed important excavation notes and records that are used in these studies. I owe a debt of gratitude to the following individuals: Jimmy Barrera, Jason Barrett, Tim Beach, Sarah Clayton, David Driver, Marcela Esqueda, Kristen Gardella, Antoine Giacometti, Jason González, Hayley Kanipe, Larkin Kennedy, Laura Kosakowsky, Dane LaLonde, Nicole Little, Candida Lonsdale, Sheryl Luzzadder-Beach, Jo Mincher, Ryan Mongelluzzo, Molly Morgan, Antonio Padilla, Jerry Reed, Kerry Sagebiel, Lauren Sullivan, Justin Telepak, Rissa Trachman, Debora Trein, Marc Wolf, and Greg Zaro.

During my tenure on the BCRPEP I received much encouragement and guidance from Belize's Institute of Archaeology, National Institute of Culture and History. Jaime Awe, John Morris, and the Institute's staff were relentlessly supportive, and I deeply

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appreciate their help and admire them for the important role they play in Belizean archaeology. Other members of the Institute who administered permits are George Thompson and Brian Woodye; they, too, are sincerely thanked for helping make this research possible.

I am grateful to the Cotsen Institute of Archaeology for accepting this manuscript for publication. Earlier versions benefited from numerous reviews by many anonymous readers as well as by Norman Hammond and Marilyn Masson. All the thoughtful commentary that was received through this process helped clarify the presentation of complex data sets and ideas. Additional thanks and sources of support are found in the acknowledgments of various chapters in this volume.

Finally, enough cannot be said of the long-time friends and supporters I have found in the Blue Creek community. The project certainly might have been able to "get by" without so much good will and companionship, but my experiences and time away from home would have been very much the poorer. Very special thanks are extended to Margaretha and Ben Dyck for their love and support; to the Peter Remple family—Frank, Jake, Abe, and Albert—for mechanical help and good companionship; and to Ed and Carolyn Reimer and their family for providing me with hours of excellent conversations and interesting excursions and with lasting friendship.

Jon C. Lohse
San Marcos, Texas

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Introduction

Jon C. Lohse

This volume discusses the political and economic organization of part of a lowland Maya polity in northwestern Belize during the Classic period (Figure Intro 1). The ultimate capital of that polity was probably Tikal, though it is not certain that this was always the case, nor is it clear where the outer boundaries of this polity were or when it began or came to an end. Northwestern Belize is close to territories that fell under the sway of Tikal's rival, Calakmul, and data show that the polity underwent considerable changes in response to geopolitical fluctuations through the Early Classic and into the Late Classic. Indeed, it has much in common with many other lowland polities with dynamic and poorly known geographic and temporal boundaries. Another aspect of such political systems that is not well understood by archaeologists is the nature of social relationships between their constituent members. It is in this context that this study makes its most notable contribution to Maya politics: taking a close look at the roles of non-elites in political processes. Blanton and Fargher (2010, 5) coin the phrase "consensus politics" to describe inclusionary political strategies based on other than absolute divinity or coercive power, which, they note, are improbable in the ancient world despite the attention these exclusionary options receive in scholarly literature.

The following chapters examine non-urban Maya political organization from several perspectives using a variety of data. This volume addresses the question through the lens of political ecology, a useful framework that centralizes and politicizes the roles of utilitarian and subsistence producers as a complement to pre-Columbian personages more traditionally recognized as political agents: elites. Political ecology is relatively new to ancient Maya studies, and some important methodological issues must be considered when employing this perspective. In addition to illustrating just how commoners' roles in politics can be identified, these include scales of organization and agency, the negotiation of social relationships that revolve around power and empowerment, and the processual nature of political formations and how they change over time. Blanton and Fargher (2010) address some of the theoretical elements of these issues in their discussion of collective-action theory.

The reams of settlement and household data now available from the Maya area provide a wealth of information about many kinds of social constituencies. These kinds of studies, however, typically do not consider commoners' relationships to elites as members of dynamic political systems per se (for important examples to the contrary, see LeCount and Yaeger 2010 and Robin 2012). In this way and despite the advances

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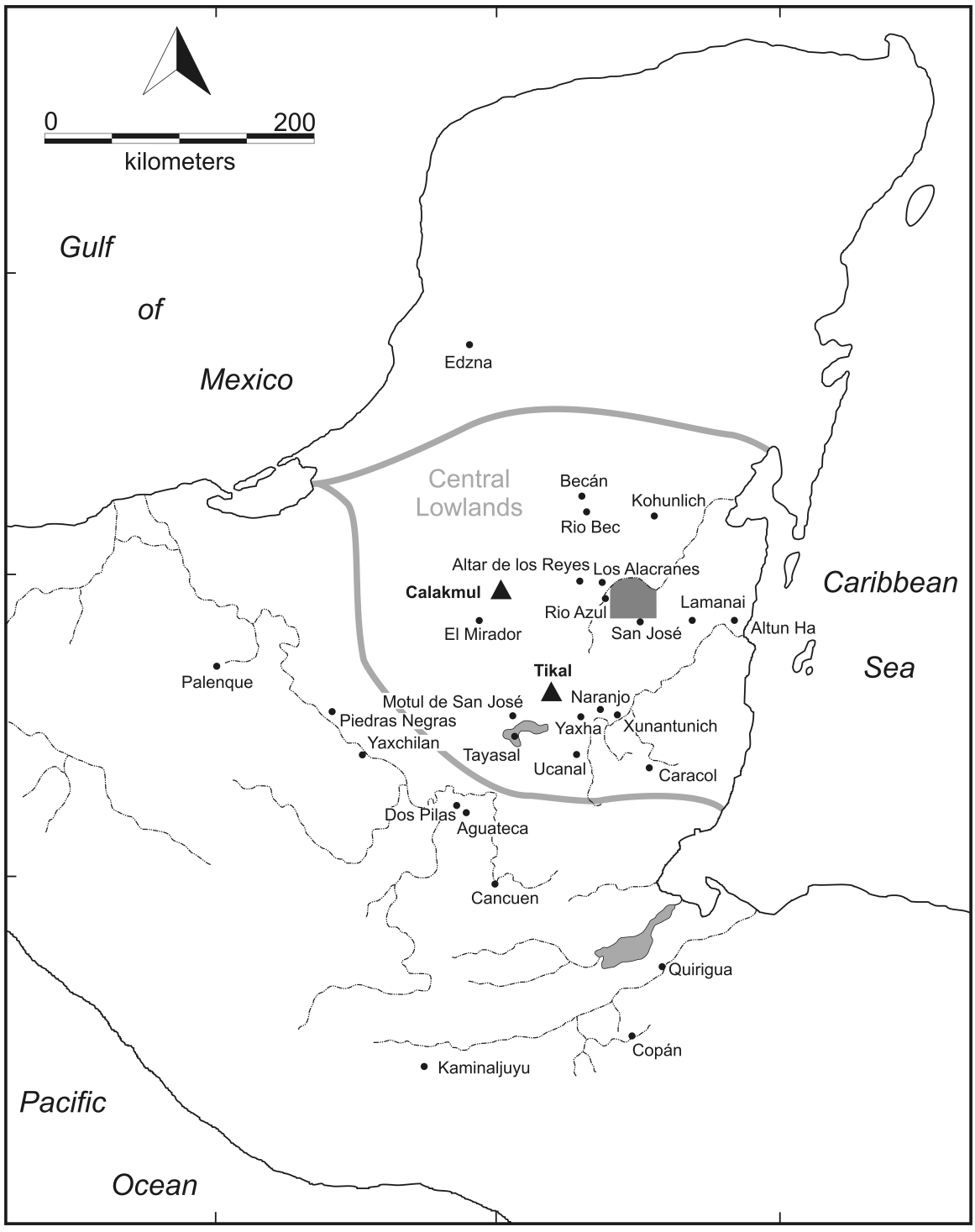

FIGURE INTRO 1. Upper northwestern Belize and adjacent sites in the central lowlands.

of household and settlement-pattern studies, ancient Maya commoners arguably remain disembedded from the political realms they occupied. Indeed, identifying commoners as political actors seems fundamentally incongruous with notions of how complex societies are organized (Blanton and Fargher 2010; Yoffee 2005). Yet, granting that non-elite behaviors occasionally had political implications (Brumfiel

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1992) requires that archaeologists seek out and examine the linkages by which these peoples influenced, even if just faintly, trajectories of political growth, development, and perhaps demise (Joyce, Bustamante, and Levine 2001; Joyce and Winter 1996).

This volume is timely, as Demarest, P. Rice, and D. Rice (2004, 547) have recently noted that integrated, regionally scaled research programs are vital to understanding the rise, sustainability, and decline of pre-Hispanic Maya society. As new data describing political systems and environmental change come to light, it is increasingly clear that regional research is required to explain the transformations that occurred at the end of the Classic period, not to mention other periods. Additionally, the recent development of sympathetic approaches such as relationality (Hutson 2010; also chapter 10, this volume) and collective-action theory (Blanton and Fargher 2010; Saitta 2007) help define the void that exists in current complex-society literature with respect to commoner agency in political processes or theoretically informed discussions of underclassed persons (Durrenberger 2012).

An earlier volume (Scarborough, Valdez, and Dunning 2003; also Scarborough and Valdez 2009) focuses on the interdependent nature of resource-specialized communities in examining the political economy of northwestern Belize. While many of those chapters offer insights into how individual sites were organized, as a whole the 2003 volume includes a wide array of theoretical viewpoints, and few overarching conclusions of regional-scale political processes are sustained from one case to the next. The current collection addresses some of the same questions, such as how managers of local resources affected larger political structures, and builds on the contributions of that earlier work. This volume, organized around the political ecology perspective, helps clarify our common understanding of precisely how commoner agency contributed to the viability of political communities, systems, and landscapes. This is accomplished in part by centralizing concepts such as negotiated social ties and obligations between commoners and elites and contested views of power. In his summary Scott Hutson (chapter 10) details the merits of this "relational" approach (also Hutson 2010). Factors considered are the embedded nature of elites and commoners in pan-lowland social (economic, political) and natural (ecological) contexts and the historical and recursive nature of their relationships as expressed in local communities and in regional political hierarchies.

VOLUME ORGANIZATION

Chapter 1 includes two parts. The first describes political ecology as an approach amenable to archaeologists working in the Maya area. First, I review some political-economic models common to Mesoamerican studies, focusing on the problematic separation of subsistence and utilitarian production from prestige economies, and the imbalanced focus on control relationships that results. Recent reviews of Mesoamerican economies and their place in political processes are provided by Schortman and Urban (2004), Smith (2004), Smith and Schreiber (2005), and Wells (2006). I then describe political ecology, discussing the perspectives, approaches, and methodologies that set it apart from political economy as a useful framework for understanding local and regional political systems and the class histories that shaped them. This framework is discussed in the context of household and regional research programs.

The second part discusses how scholars might view commoners as political agents. Here, I discuss the political role(s) of commoners in complex cultural systems. This discussion is informed by historical, archaeological, and epigraphic data from the Maya area and is a direct extension of earlier work regarding Mesoamerican non-elites (Gonlin and Lohse 2007; Lohse and Valdez 2004). It is hoped that this discussion also proves useful to researchers in other world regions where the contributions of laborers, potters, stone toolmakers, masons, farmers, and other commoners often go overlooked. Relationships between elites and commoners are exceedingly complex and involve many considerations, some of which have yet to be treated by archaeologists.

In terms of volume organization chapters 2–3 provide important information about northwestern Belize. Chapter 2 reviews the region's political history and places it in the geopolitical context of the central lowlands. Data indicate that northwestern Belize was deeply affected by fierce competition between Tikal and Calakmul, often expressed through their surrogates. The chapter focuses on the transition from the Early to Late Classic and presents data

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characterizing the nature of political relations between centers within the region. Chapter 3 provides a detailed history of natural and human-induced environmental changes occurring in the region from the Late Archaic to the Early Postclassic and even, in some instances, to the present.

Chapters 4 and 5 examine, from the perspective of site centers, changes in community and regional relationships over key time periods. The study by Driver and Kosakowsky (chapter 4) is a detailed look at architectural and ceramic evidence for four major sociopolitical transitions at Blue Creek. This chapter contextualizes the historical nature of shifting relations within a community and shows how the ties that bound a Maya town together as a political and social entity changed according to both internal and external forces. In chapter 5 Lohse, Sagebiel, and Baron look at regional site-to-site relationships from the perspective of the ball game. Ball court chronologies are used to reconstruct when, how, and by whom mechanisms were put into place to facilitate political interactions. The rapid spread of ball courts in the Late Classic suggests a focus on "service-oriented" strategies on the part of elites as they sought to integrate increasing, and perhaps increasingly diverse, populations while responding to new political climates in the lowlands. Data from Gran Cacao demonstrate how these regional developments also drew heavily on local community traditions.

Chapters 6 and 7 also compare data from multiple sites and question to just what extent intraregional networks extending to the household level were hierarchical in nature. Kosakowsky et al. (chapter 6) use a type-variety system and instrumental neutron activation analysis to consider how local pottery-production spheres together with long-distance trade goods comprised ceramic economies in the Early and Late Classic periods. The appearance of Fine Gray Chablekal pottery from the Palenque Region helps illustrate how political events elsewhere affected the ability of local elites to link themselves with the rest of the Maya world. In chapter 7 González compares the settlements of La Milpa and Ixno'ha. La Milpa is by far the region's largest site during the Late Classic, while Ixno'ha was one of many smaller satellite centers during this period. González's comparison clearly reveals the limits of La Milpa's influence on other populations and communities in the region despite its political role.

Chapters 8 and 9 examine the political histories of regional hinterland settlements and reveal the diversity of commoner adaptations to shifting environmental and political conditions. In chapter 8 Clayton presents excavation data from Chan Cahal and Rio Hondo, located approximately two and five kilometers, respectively, from the Blue Creek center. Each shows significant variation in architectural elaboration, settlement longevity, and degrees to which they were integrated into centralized economic and ritual networks. Differences are not only ascribed to environment but also to political histories. Chapter 9, by Padilla, Morgan, and Sagebiel, offers the best evidence from the region for perseverance through the so-called collapse and into the Early Postclassic. During the Classic period the site of Akab Muclil enjoyed the benefits of equal access to goods and services available from both Blue Creek and Gran Cacao. Its setting close to the banks of the Rio Bravo and its probable role in the construction and maintenance of the Birds of Paradise ditched-field complex allowed it to persist and even thrive into the Postclassic. Clearly, the "collapse" was a complex process that affected regions, and sites within regions, in very different ways.

In his recap Hutson (chapter 10) presents the central tenets of this volume in the context of relationality (Hutson 2010). This view describes the constructed nature of social identities, which in the current study focus on rulers and commoners, in relation to one another, and posits that neither can be understood without the other. The implications of a relational approach are far reaching and promise to shape archaeological research into all manner of social relations for years to come. One widely accepted view of ancient Maya social and political life that stands to be revised through a relational framework, that elites "ran" society's political institutions, is discussed. Through relationality, political and economic outcomes are instead seen as negotiated by the parties that participated in them. The political ecology approach highlighted in this volume is, if nothing else, a relational one.

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Chapter 1

Classic Maya Political Ecology, Class Histories, and Political Change in Northwestern Belize

Jon C. Lohse

Part 1: Political Economy and Political Ecology

According to two original architects of the term, Marx and Engels, political economy focuses on the structural relationships between class factions around the control of labor and its products (Hirth 1996, 204). In anthropological application (Wallerstein 1974; Wolf 1982), attention is often given to international linkages and integrated systems that span the globe. Roseberry (1988, 163, original emphasis), reviewing the field through the work of Steward, Wolf, Mintz, Leacock, and Nash, notes that one of the goals of research informed by political economy has historically been "to understand the formation of anthropological subjects at the *intersection* of local interactions and relationships and the larger processes of state and empire making." In this sense, traditions and historical contingencies strongly shape local manifestations of political-economic processes. As such, even when speaking at global scales, it is important to consider how a political economy might include multiple parts that, together, make up an integrated system. Important themes emerging from this view of political economy that have implications for the current study are the dialectic between the local and the supralocal; emphasis on relationships defined by labor and resource allocation, access, and appropriation; and the historical nature of potentially unequal social formations.

Archaeology and Political Economy

If anthropologists examine multiscalar relations based on unequal access to wealth and power, archaeologists working with political economy frameworks have tended to emphasize control dynamics and elite strategies for maintaining inequality. Political economy is an important topic when interests turn to how polities were sustained through the simultaneous mobilization of staple surpluses and the preferential distribution of exotics (Blanton et al. 1996; Cobb 1993; D'Altroy and Earle 1985; Earle 1997, 2002; Feinman and Nicholas 2004; Hirth 1996; Hodge and Smith 1994; Lucero 2006; Masson and Freidel 2002; Scarborough and Clark 2007; Schortman and Urban 2004). For archaeologists influenced by both Marxist and neoclassical viewpoints, political economy often refers to the many different ways that elites funded economies, marshaled political power, and generated and controlled wealth (Schortman and Urban 2004, 195; Wells 2006, 267). M. Estellie Smith (1991, 34, emphasis added), for example, defines "political economy" as "those policy-centered, decision-making activities *of governing personnel* that center around the management of resources deemed germane to the

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polity's macrosystematic welfare as located in the interdependency of . . . constituent sectors, groups, and factions." It is important to distinguish this thread of discussion from that of "economic organization," for example, in state-level societies (Michael E. Smith 2004), which, while adding considerably to the understanding of commoner agency and activity, is by definition at least somewhat disarticulated from political processes.

Traditional archaeological thought on systems for allocating wealth, managing resources, and engineering infrastructural developments has been summarized by Brumfiel and Earle (1987). They identify three general kinds of approaches, termed commercial development, adaptationalist, and political, each of which potentially includes many different variations. These approaches illustrate how archaeologists often consider commoner inputs to developing or sustaining political complexity.

Commercial development involves gradual increases in specialization and exchange that are partly rooted in technological improvements and that contribute to "burgeoning social heterogeneity" (Brumfiel and Earle 1987, 1). Specialized production emerges in response to ecological variables as a matter of increasing efficiency, and exchange of goods soon follows. Local elites are not viewed as assuming any key or central roles in organizing these processes. Brumfiel and Earle (1987, 1–2) view this model with some skepticism, noting that "sustained commercial development requires that sizeable profits accumulate in private hands, escaping political appropriation. This would have rarely happened."

Adaptationalist models differ in that they view political elites as economic administrators, especially in the realms of subsistence and utilitarian production. An important trait shared by adaptationalist models is that local societies benefit from elite intervention in production and exchange networks. Some versions emphasize the role elites play in accumulating and redistributing subsistence surpluses as a means of leveling environmental irregularities (Service 1962). Sanders (1956) ascribed this task to centralized authorities who developed systems of market exchange in areas of high-resource diversity. In other versions elites are presumed to have managed complex, labor-intensive projects such as irrigation and large earthworks (Wittfogel 1957). Finally, in yet other models the responsibility for organizing and maintaining long-distance trade was placed with an emerging elite stratum that coordinated with other faraway elites to attain goods and materials necessary for daily life (Rathje 1971, 1972) or for ensuring security (Flannery 1968). These early perspectives brought attention to how elites integrated different parts of society, particularly those not directly involved in subsistence production from the "local resource base" (Brumfiel and Earle 1987, 3).

One difference between commercial-development and adaptationalist approaches and the third approach, the political model, is that while in the first two rulers are important in administering local systems of increasing production and attaining exotic goods, in political models "they [rulers], rather than the population they administer, are regarded as the primary beneficiaries" (Brumfiel and Earle 1987, 3). This development in how elites are perceived as self-interested political actors is a significant development in archaeological studies of political economy. Strategies include underwriting specialized production for wealth or ideologically charged goods of limited circulation (DeMarrais, Castillo, and Earle 1996; Helms 1993; Inomata 2001); strengthening political coalitions through individual-based networks (Blanton et al. 1996; Brumfiel 1998; Demarest 1992); and sponsoring and creating new institutions of control whereby social distance between commoners and elites, as well as among growing ranks of elites, is reinforced (Brumfiel 1998; Clark and Blake 1994; Hayden 1995). In political models interdependencies between elites and non-elites are deemphasized and commoners are most often seen as passive participants in hierarchical social formations, when they are considered at all.

Not all applications of political economy in archaeology deviate quite so sharply from this concept as it was originally formulated. For example, Feinman (2004, 2) applies the term to the study of "socioeconomic contexts in which the production and circulation of goods clearly transcended domestic groups." One trait that distinguishes Feinman's model from others is an a priori focus on how economies are organized by domestic and supradomestic units rather than on how economic production by household and other groups is controlled by others. Dahlin (2009) provides an important case study of this kind of approach, arguing that the basic orientation (beyond subsistence and utilitarian goods circu-

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lated through a large-scale commercial market) of the economic system at Early Classic Chunchucmil, in northwest Yucatán, was servicing merchants who were traveling along maritime trade routes from the Gulf of Mexico to the Caribbean. Michael E. Smith (2004) provides another important overview of how economic systems can be evaluated in political contexts without unnecessarily drawing conclusions about top-down strategies for controlling production and distribution (also see chapter 10, this volume). The important factor distinguishing these views is on how control dynamics are understood; for many scholars simply discussing economic activities in political circumstances means that some form of control is unavoidable, while for others the question appears more open ended.

Maya Political Economies

According to this review, when distinctions are drawn between wealth production and long-distance exchange on the one hand and staple and utilitarian production on the other, non-elite householders are most often associated with utilitarian production. These householders are sometimes governed by elites who also control most practical options for achieving or maintaining social prestige. In cases where subsistence production is overseen by self-organizing commoners, this production has tended in some studies to be subordinated to or even disarticulated from larger political processes. Importantly, this is not always the case, and some contrasting approaches to political economy can be identified in this regard. This makes it all the more important in cases like the Classic Maya of the central lowlands, where regional economies were notoriously decentralized (King 2000; Pyburn 1996, 1998), to articulate theoretical expectations around certain key variables of economic systems as they functioned in political processes. These variables involve control relationships between social factions, such as rulers and ruled, and the contributions of both staple and wealth production to political sustainability.

The structure of regionally scaled Maya political-economic systems, systems that integrated neighboring sites and their catchments into regional political entities, can be mapped out along three intersecting dimensions: spatiality, intensity, and control (Figure 1.1; also, see chapters 8 and 10, this volume). The first involves the spatial nature of production, which was dispersed along continua between urban and hinterland settings. Recent attention to rural sectors (Iannone and Connell 2003) has revealed the rich complexity of noncenter components of Maya settlement systems, and some scholars (Fedick 1996a; also Erickson 2006 for South America) even advocate looking at rural landscape modifications and resource diversity as a way of understanding economic and political organization. A second dimension involves relationships between intensive, specialized production and nonintensive, generalized production. In apparent contrast to central Mexican polities, with nucleated workshops and state-sponsored production (Cowgill 1997; Hirth, Andrews, and Flenniken 2003; Hodge and Smith 1994; Spence 1967, 1984), lowland Maya economies tend to reflect the "mosaic-like" (Fedick 1996b) distribution of natural resources (Graham 1987). The resultant pattern is one in which most households and extended families were involved in *nonspecialized* production (King 2000; King and Potter 1994; Lohse 2001; Pyburn 1996, 1998), while elsewhere specialization occurred in areas where resources concentrate (Shafer and Hester 1983). "Nonspecialized" production may appear as the simultaneous or serial production at relatively low levels of time-labor intensity or output of several activities at the domestic scale. This kind of

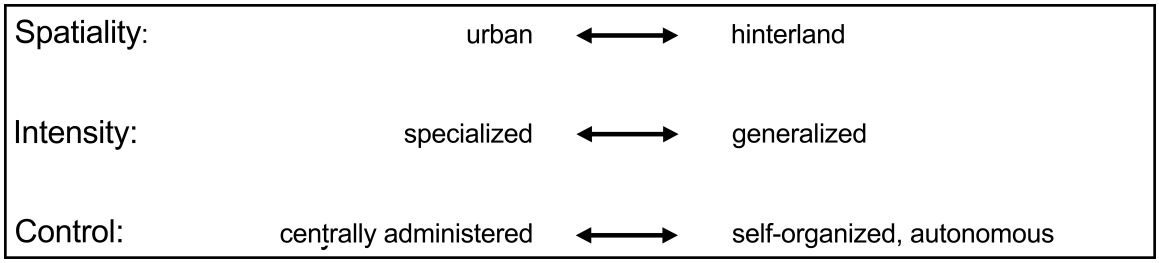

FIGURE 1.1. Organizational structure of regionally scaled Maya economic systems.

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activity falls into the categories of domestic economy that Hirth (2010) refers to as intermittent crafting and multicrafting. The third dimension involves control over facets of the economy. Roscoe (1993) describes how control relationships tend to both decay with distance and conform to uneven or prohibitive terrain. Both factors (distance and terrain) would have shaped asymmetrical control networks that integrated urban and hinterland areas through direct authority, public rituals, and market events. A fourth consideration, organizational units of production, will be discussed in greater detail.

Together, these three dimensions shaped most Maya strategies for managing resources and sustaining local polities. How each is organized in any given case depends heavily on environmental factors; technological choices for exploiting resources; and the resolution of control dialectics between rulers, administrators, and local producers. Many models of Maya economies, however, omit one or even two of these variables, resulting in incomplete views of how relationships between commoners and elites changed through time or were organized across space. More data are needed before these relationships can be well understood (on this point, see Masson 2002, 3).

In the Maya lowlands small-scale settlements were clearly arrayed according to the availability of natural resources and were somehow linked by interdependencies into regional economic and political systems (Scarborough and Valdez 2009; Scarborough, Valdez, and Dunning 2003). Specific mechanisms integrating these communities are, however, often difficult to define, and simply modeling community-level specialization as a form of organic solidarity does not adequately specify how polity-scale integration was achieved. Markets undoubtedly played a central role in this regard (Dahlin 2009; Dahlin et al. 2010; Feinman and Garrity 2010; Freidel 1981) but can be difficult to identify (Cap 2012; Dahlin et al. 2007). Appropriation was probably another mechanism for integrating dispersed or variable production. McAnany (2004) describes "appropriative economies" and discusses the Yucatec term *caluac* (after Tozzer 1941), a palace-based person apparently in charge of ensuring the movement of labor and provisions into capitals from sustaining areas that a court would have needed. Research at the Chan farming community, in the hinterlands of the Belize River Valley, however, suggests that small hamlets likely had options in how much and to whom their tribute was directed (Robin 2012, 330–31).

Absent specific examples of how integration was achieved, different views exist about how many economic systems were administered or controlled or what role they played in political centralization. Some researchers (Chase and Chase 1996; Ford 1996; Neff 2010) theorize managerial elite control of intensive farming systems. These elites impel and appropriate surplus production "upward" through bureaucratic levels of administration. Others (Foias 2002; Hageman and Lohse 2003; Henderson 2003; King and Potter 1994; McAnany 1989; Potter and King 1995; Wyatt 2012) describe the locally organized nature of some craft and food production across an uneven landscape. Little consensus is found in terms of who oversaw or administered agricultural or utilitarian production and what impact that production had on political complexity, and most complex polities were probably sustained by both centrally controlled and decentralized production. Nevertheless, some previous research into Maya political-economic systems has resulted in a somewhat disjointed understanding of how various sectors of regional economies were articulated. As Demarest (2004, 173, original emphasis) notes, "we cannot specify the relationship between the institutional *structure* and the economic and subsistence *infrastructure* of Maya states. Were Maya kings substantially involved as managers of their complex rain forest subsistence systems? Were they part-time middlemen in trade and exchange? . . . Or were they simply . . . a 'parasitic elite' whose rituals, wars, and great constructions served only to legitimate their own needs? The honest answer to these questions is that we simply don't know." One reason "we simply don't know" is that in these models elites and non-elites are viewed through disconnected organizational schemes in which the actions of the latter, most often involved in subsistence and utilitarian production, hold little bearing on the former.

Political Ecology

Resolving the situation characterized by Demarest requires understanding that all participants in complex economic systems have contributed to the process of sustaining polities (Blanton and Fargher

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2010). When working with networks of urban centers and their supporting areas, this includes community members whose livelihoods were grounded in food and utilitarian production from localized resources.

Political ecology is ideally suited for addressing these issues. This discipline has emerged with influences from at least two major theoretical foundations: cultural and human ecology and political economy (Blaikie and Brookfield 1987b; Robbins 2004). Political ecology does not assume the nature of power asymmetries but rather requires that these be mapped out as researchers question how inhabitants of political centers provisioned themselves and examine the productive activities and negotiated interdependencies of different kinds of individuals, many of whom are deeply embedded in bioenvironmental relationships (Greenberg and Park 1994, 1). Political ecology has emerged today as a diverse field and includes many approaches and perspectives. For the lowland Maya of the Classic period the term has been used (without elaboration) as a way to understand how agrarian households managed important resources in the Copán Valley (Webster 2005) and also to describe the fundamental environmental concerns of Maya polities, if not to individual politicians (Scarborough 2007). I will elaborate how political ecology can be used in Maya studies to improve researchers' understanding of the past.

The term political ecology was coined by Eric Wolf, as it appears in the title of his 1972 paper addressing dialectics between resource management and intensification and systems of ownership and allocation (see Biersack 2006). Wolf (1972, 201–2) notes that "the property connexion in complex societies is not merely an outcome of local or regional ecological processes, but a battleground of contending forces which utilize jural patterns to maintain or restructure the economic, social and political relations of society." Blaikie and Brookfield (1987b) retain these core issues while triangulating political ecology within the relations between people of different standing, idealized in the present study as elites and commoners and the internal variability those categories contain, and a dynamic environment that sustains all social organizations dependent on natural resources. They note that "political ecology combines the concerns of ecology and a broadly defined political economy. Together this encompasses the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society itself" (Blaikie and Brookfield 1987a, 13). With respect to the applicability of this approach to the ancient Maya, Classic-period polities—and the institutions, networks, and rituals that sustained them—clearly had their roots in the collective success of local subsistence-production strategies.

For archaeology, political ecology has at least three important areas of inquiry: (1) contextualizing and understanding environmental change from the perspective of human societies, (2) understanding conflict over access to key environmental and social resources, and (3) exploring the ramifications of environmental change for political entities (Bryant 1992, 13). An important assumption shared by contributors to this volume is that as the availability or condition of different natural resources changed across the Maya lowlands, so too did relationships between social factions who were directly and indirectly reliant on those resources. In this sense, the current approach can be considered "bottom-up" in that weight is given to the roles of local householders in regional polities. This view is, however, balanced by a second assumption: relationships between householders and their superordinates were inherently political and were central to the sustainability of networks of communities and their economies. In this point, this volume diverges fundamentally from political-economic studies that focus on questions of specialization, long-distance trade, wealth and prestige production, and institutions of divine kingship. In examining how neighboring Maya communities fared through environmental and climatic changes as well as geopolitical fluctuations, we echo the sentiments of Scoones (1999, 485), who, describing political ecology, notes that "the fundamentally political issues of structural relations of power and domination over environmental resources [are] critical to understanding the relationships of social, political, and environmental processes."

Political Ecology and Archaeology: Household Agency and Units of Production

For many scholars, contemporary resource use and management, often by traditional or indigenous groups in conflict with national governments, multinational corporations, or international agencies, is an important component of political-ecological analyses

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(for examples, see Anderson 2005; Biersack and Greenberg 2006; Kull 2004; Paulson and Gezon 2005). As a result, some might question the suitability of this approach for prehistoric subjects where any understanding of how environmental knowledge was controlled, or of strategies enacted to contend with social pressures to increase productivity, remains incomplete. Political ecology, however, draws comfortably from household archaeology, which has to a large extent paralleled household studies in general. Developments at the intersection of peasant and household research contribute to the view of at least some nuclear and extended families as rational producers who have an intimate understanding of their surrounding environments and who ably contend with political forces and pressures originating from outside their domestic sphere. Tracing these developments shows how archaeologists can use models of agentive agrarian household behavior to understand larger political processes in the past.

Working in the early twentieth century, the Russian economist Alexander V. Chayanov (1986) argued that peasant households practiced their own brand of logic and rational decision making that prioritizes time efficiency and labor economy over profit or surplus maximization. This insight into labor-management practices of staple-producing households influenced Marshall Sahlins (1972), who described a domestic mode of production that is characterized by underproduction or that "harbors an antisurplus principle" (Sahlins 1972, 86). By concluding that agrarian households are inherently predisposed to underproduction, however, Sahlins misread Chayanov's work (Donham 1999). For Chayanov, peasant producers sought merely to maximize gain while also considering labor costs; no assumption is made regarding the point at which acceptable rewards for hard work end and drudgery, or the steep decline in labor returns, begins (Donham 1999, 24–25). According to Sahlins, households operating under the domestic mode of production (DMP) provide just enough to meet their own needs, with little motive or incentive to produce more. The difference between these readings may seem minor but can be put in terms of how each characterizes the economic motivations of farming households. For Sahlins, labor inputs are likely to end once essential needs have been met, meaning that little incentive exists within farming households for surplus production. Rather, such incentives are most likely to come from outside the household system, for example, from elites seeking to increase production. For Chayanov, inputs can continue so long as the opportunity for gain outweighs labor costs. Surplus production depends not only on technology and access to opportunity and resources but also on demands for tribute or circumstances that encourage or discourage increasing production. When considered in the context of control-based political-economic models discussed earlier, one can see how this thinking influenced the view of agrarian households as passive participants in regional political systems.

Despite his misrepresentation of Chayanov, Sahlins recognized that the key variables in household surplus production involved the relationships between additional labor inputs and declining returns. The viability of the DMP is facilitated by unlimited (or at least unchecked) access to, though not always direct ownership of, productive resources. Anticipating to some degree James Scott's (1976) discussion of moral economies, Sahlins (1972, 93) states that "no claim of any supervening group or authority legitimately goes as far as to deprive the household of its livelihood . . . the right of the family as a member of the proprietary group or community to directly and independently exploit for its own support a due share of the social resources."

This direct engagement with a resource base, together with comprehensive environmental knowledge, an ability to adapt to a variety of field conditions, and a peculiar form of rationality, formed the basis of Netting's (1993) smallholder model. As defined, "Smallholders are rural cultivators practicing intensive, permanent, diversified agriculture on relatively small farms in areas of dense population. The family household is the major corporate social unit for mobilizing agricultural labor, managing productive resources, and organizing consumption" (Netting 1993, 2). Although land is often a scarce commodity, smallholders maintain direct usufruct rights, either through ownership or "well-defined tenure rights that are long-term and often heritable" (Netting 1993, 2). Through ingenuity and scheduling flexibility, smallholders generate reliable surpluses capable of sustaining family enterprises. This type of family farm is permanently engaged in intensive agricultural production as a result of being situated in densely populated regions with relative land scarcity.

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Together, these circumstances have led some (Pyburn 1998; Pyburn et al. 1998) to apply the model to the Classic Maya.

One shortcoming of both the domestic mode of production and smallholder models, however, is the underdeveloped manner in which they treat households' responses to cultural institutions. Netting's primarily ecological approach overlooks many of the larger political and economic factors that condition family-farm behavior. He conceded that his model was largely based on groups with "few direct relationships with dominant economic or governmental elites" (Netting 1993, 19) and appeared uncomfortable with scholarship that framed peasant households within political-economic modes of production or that resulted in an overly simplistic understanding of agrarian behavior (see discussion of the limitations of a cultural ecology approach by Robbins 2004, 36–40).

Rhoda Halperin (1994), following Karl Polanyi (1944), addressed this important dimension in her discussion of householding. This strategy is viewed as a form of intensified subsistence production and social integration, similar to Netting's smallholders. Unlike smallholding, however, householding is also described as a form of political engagement and resistance; this point of departure is significant for how these models might be used to define a political role for agrarian producers. At the center of the householding strategy is adept participation in informal, generalized, or low-level processes of manufacture that effectively place the bulk of domestic production outside the domain of appropriable surpluses and the formal economy. As Halperin states, "the [householding] concept is designed potentially to handle complexity, change, and resistance to political and economic elites in cultural systems where there are constant tensions between the demands of elites and the material and cultural requirements of people who stand on the lower rungs of state stratification systems" (Halperin 1994, 143). This is not to say that householding precludes labor intensification or increases in production as responses to political incentives, only that these decisions are made at least in part at local levels by householding producers.

Akin to Sahlins's domestic mode of production, householding is a "primarily non-capitalist form of economic integration, precisely because it has nothing in common with either the motive of gain or with the institutions of the markets" (Halperin 1994, 147). (The markets referred to here are presumably not the open contexts of exchange that characterized Mesoamerican societies but rather are the capitalist free markets that today pose a threat to agrarian-peasant production.) Householding is ideally suited for modeling prehistoric suburban and hinterland producers within a political ecology framework in two ways. First, by definition, householders are placed in a dialectical context with larger political and economic systems, with diversified domestic economies representing mechanisms by which nuclear and extended families contribute to and resist the kinds of demands on surplus labor and production that sustained complex societies. In this regard, the model is deeply sympathetic with Scott's (1985) ideas of hidden transcripts and social resistance. Secondly, householding contains an element of horizontal integration by which households, while largely self-sufficient, also rely on assistance from their neighbors. Of householders in rural Kentucky, Halperin notes that "Although nuclear families usually maintained separate households, the economic support provided by relatives was essential for the maintenance of these households. *Kin were expected to help one another as needed*" (Halperin 1994, 153, emphasis added). These are precisely the kinds of kinship-based linkages, real or fictive, that have been described for the Maya and other agrarian societies (Carsten and Hugh-Jones 1995; Chance 2000; Collier 1975; Gillespie 2000; Hageman 2004; Hill and Monaghan 1987; Houston and McAnany 2003; R. Joyce and Gillespie 2000; McAnany 1995; Restall 1997; Vogt 1969). As a method for achieving the kind of economic integration discussed previously, many householding activities occur far beyond any possible mechanisms for elite control.

The manner in which farming households have come to be viewed makes significant contributions to how archaeologists can simultaneously understand commoners and centralizing forces of political organization. Indeed, many of these studies are well cited in Maya scholarship. Practitioners of subsistence economies clearly are well equipped for shaping political processes by dragging their feet, applying innovative productive techniques, or collaborating with fellow farmers or craftspersons in response to demands of time and energy. Further, with less emphasis on specialization (also Hirth 2010), householding opens

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the door for all commoner producers to contribute in some fashion to community sustainability. Informed by political ecology and viewing the productive capacities of agrarian householders in this way, the general approach advocated in the following studies "is most notable for its serious attention to the logic of local people taken on its own terms" (Robbins 2004, 33).

Political Ecology and Archaeology: Regional Analyses

Research presented in this volume was carried out at a regional scale, in the Three Rivers Region of upper northwestern Belize (see Figure Intro 1), to recover data pertaining to the spatially dispersed character of Maya political systems. Though studies of Maya social organization often center on the "community" as the focal unit of political organization, much research in Mesoamerica (Adams 1994; Blanton et al. 1999; DeMontmollin 1989; Estrada Belli 1999; LeCount and Yaeger 2010; Stark 2001; Webster, Freter, and Gonlin 2000; Whalen and Minnis 2001) has pushed the scope of inquiry beyond central urban zones. This emphasis, referred to as a "regional approach" (Whalen and Minnis 2001, 13–20), permits archaeologists to better understand the complex relations that existed not only between neighboring capitals but also among nearby hinterland settlements. Recognition of multiple organizational units of production—ranging from independent households to settlement clusters, communities, and large cities and polities—is one strength of regional studies.

This volume presents a combination of settlement surveys, household excavations, and site-center research to evaluate dialectical relations between hinterlanders and those residing in urban cores. In some cases previous surveys provided a catalog of settlements (chapter 8, this volume, Giacometti 2002; Lichtenstein 2000). Elsewhere, primary data are used to compare some of the region's important centers (chapter 7, this volume). Excavations provide information about how dispersed communities were sustained and integrated across an uneven natural landscape. Elite strategies for integrating populations are considered (chapters 4 and 5, this volume) alongside attempts by local householders to retain some elements of autonomy and cultural persistence in the face of shifting regional political currents (chapters 7–9, this volume). Again, when compared with earlier time periods, changes can be seen through time, with a greater apparent emphasis on service-oriented political strategizing in the Late Classic. One larger finding from these studies is that as populations increased through the Late Classic, local settlements and householder networks exerted new kinds of pressures on the political decision-making process by exercising productive autonomy in some quarters while relinquishing their autonomy elsewhere. Clearly, no single model of top-down or bottom-up resource management and political practice is capable of portraying this degree of complexity and dynamism.

An equally important component of the political ecological research described here involves reconstructing paleoenvironmental conditions. The environment played a significant role in conditioning the placement and density of settlement as well as the nature and intensity of economic production. Changes in soil aggradation and erosion, the quality of available water, and vegetation regimes all were central elements of economic, political, and even ideational aspects of Maya daily life and posed conditions to which farmers, specialists, and rulers were forced to constantly adapt through changes in production strategies, social organization, and even ritual practice. In addition to understanding transformations in Maya society over time, a regional approach is also essential to understanding changes in the Three Rivers Region environment (Beach et al. 2006, 2009; Dunning et al. 1999, 2003; Luzzadder-Beach, Beach, and Dunning 2012).

PART 2: COMMONERS, ELITES, AND POLITICS

The view of non-elites, whether organized by households or as parts of other social groups, as capable of shaping political orders is uncommon in archaeology (but see Joyce, Bustamante, and Levine 2001; Robin 2012; Yoffee 2005) but finds sympathy elsewhere in anthropology and social history. The English historian E. P. Thompson (1963, 1971) examined the recursive ties during the 1700s to late 1800s between English crowds, landlords and shop owners, and government officials. Labor, price, and wage protections granted to the citizenry during these times reflected evolving views of social justice and concern. In

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Southeast Asia, James Scott (1976) focused on the responsibilities of rulers in defining a peasant consciousness that viewed authority as legitimate or exploitative. The subaltern historiographer Ranajit Guha (1999) detailed conflicts and insurgencies against the British in India that shaped that country's colonial enterprise. He notes that "agrarian disturbances in many forms spread over many districts and were endemic until the very end of the nineteenth century. The developing state [was] ruptured again and again by these seismic upheavals until it was to learn to adjust by trial and error and consolidate itself by the increasing sophistication of legislative, administrative, and cultural controls" (Guha 1999, 1–2).

Processes similar to those described by Guha have been teased from the Yucatán's documentary record by Jones (1989), who examined the role of Maya resistance in shaping Spanish colonial policy. Parallels are evident between Jones's accounts and the more recent history of the mistreatments endured by left-leaning indigenous settlements, revealing that tensions between *indio* and government continue to this day (Fischer and Brown 1996; Warren 1998). Social-resistance theory has been further advanced by Scott (1985), who described minor conflicts initiated by the less well-off in Malaysia. Scott argues that, out of fear of reprisals, most acts of resistance—including poor work performance, petty theft, name calling and gossiping, and lack of appropriate respect—are small scale and anonymously conducted. Such acts constitute a "hidden transcript" and shape local economic and political outcomes. Adam T. Smith (2003) further implies a political role for commoners in cases where social action and identity comprising religion, economy, and family were often blended. Smith (2003, 11–12) defines "the political" as occurring "within a specific set of relationships central to the production, maintenance, and overthrow of sovereign authority. These include geopolitical relationships among polities, ties between subjects and regimes that inscribe the polity, links between elites and 'grassroots' organizations that constitute political regimes, and relations and rivalries among governing institutions."

These examples illustrate how interactions between elites and commoners affect political processes. Each shows that change occurs over time and reveals the recursive nature of this dialogue. In archaeology, the recursive nature of commoner-elite interactions is emphasized in recent critiques of overly individualistic conceptualizations of agency (Hutson 2010; McGuire and Wurst 2002; Saitta 2007) that see the social matrices in which individuals behave as equally important in shaping the decision-making process. Additional insight into the political contributions of commoners comes from collective-action theory (Blanton and Fargher 2010), which looks at how polities evolve through cooperation between rulers and their constituencies.

A third theme evident in the examples provided involves the moral tenor of relationships between elites and commoners, a tenor that is difficult to quantify yet remains no less in force. Common, if tacit, understandings exist of what is acceptable, permissible, or obligatory behavior; these understandings go far in framing social interactions. In Mesoamerica such a model has been developed on Oaxaca's Pacific Coast by Arthur Joyce and his colleagues (Barber and Joyce 2007; Joyce 2004, 2008; Joyce, Bustamante, and Levine 2001; Joyce and Winter 1996). From the Formative period onward, participation in long-distance exchanges led to fomenting elite identities that were increasingly distinguished from other community residents. Even so, commoners constrained the evolving exercise of elite authority and contested "dominant" ideologies by developing localized traditions and identities of their own. Oftentimes, this involved appropriating former symbols of rulership and political might, such as carved monuments and previously restricted spaces (Joyce, Bustamante, and Levine 2001, 346). Alternative strategies to these kinds of direct engagement with authorities included avoidance and acts of small-scale resistance, such as the increasing privatization of domestic space (Hutson 2002) to create room for hidden transcripts.

Class and Status Dialectics

The examples discussed here illustrate some ways archaeologists can understand political histories as negotiated outcomes involving all status groups, yet much work still needs to be done. Identifying elite and non-elite units of production and decision making and reconstructing strategies employed by these agents of change are but the first important steps of this process; the nature of relationships that integrate such units into functional polities warrants examination as well.

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The proposition that elites and commoners alike were meaningful contributors to political processes can best be understood through a dialectical approach that considers the structure of social relations that cohere people simultaneously across different scales of organization (McGuire and Wurst 2002). Randall McGuire (2002, 12) describes the dialectic as "relations [that] are made up of contradictions that bind individuals and groups with opposing and conflicting interests together, and because small changes in any part of this social whole will alter the structure of relations, this whole is always in flux." These contradictions occur between individuals and factions defined by tensions including age, ethnicity, gender, and status and class identity. Of these dimensions of variation, political ties between Maya rulers and others depended most heavily on the dialectical interplay between class and status.

Here, class refers to a dynamic process involving both vertical and horizontal flows of social labor; it does not refer only or exclusively to stratification but instead describes what people do with their productive energies. Status differences, in contrast, can be ranked according to prestige, honor, and veneration and can describe how people perceive and experience their social positions in relation to others. Status differences become stratified when converted to unequal access to basic goods and services.

A dialectical view of sociopolitical discourse around status and class or labor has at least three implications for archaeologists concerned with political complexity. First, mutually exclusive classes or status groups can be fully understood only in relation to one another. As Thompson (1963, 9) notes, "class happens when some men, as a result of common experiences, feel and articulate the identity of their interests as between themselves, and as against other men whose interests are different from theirs." That is, each may be partly understood on its own but does not come fully into being until posed against another such group. This point leaves definitions of an "elite class" that exclude any consideration of non-elites of marginal utility. Second, relations between class or status groups are not fixed or static but are continually negotiated. Important to this point is the fact that some interests from which tensions arise are temporarily situational while others are of long duration. Both hold implications for archaeological inquiry and affect the ways that scholars understand the nature of social relationships and how they change. Third, a dialectical approach means that these processes are historically contingent. They have followed specific historical trajectories from their beginnings and are resolved in unique ways that are dependent on time, place, and tradition. Class-as-labor and status-as-prestige will be discussed in more detail.

Class Process and Surplus Labor

Scholars including Eric Wolf (1982), Stephen Resnick and Richard Wolff (1987), and Dean Saitta (1994, 1997) have argued for class as a process defined according to flows of social labor that are visible in the movements of goods and services that sustain political entities. Defining class as dependent on labor in this way opens virtually any productive activity to analysis, as labor is arguably the single irreducible element shared by all economic systems regardless of output intensity, relations of production, or specialized knowledge. A second benefit is that it voids concerns regarding solidarity (Houston and Stuart 2001, 59; McAnany 2004, 154) that often accompany the term "class." Members of a labor class need not share all the same concerns or forge their identities in the same fashion. They only need to have a common relationship defined by how their labor is organized and carried out.

This view of class-as-labor follows Resnick and Wolff (1987), who identify two "fundamental" classes: producers and appropriators. These terms refer to the processes by which respective classes can be expressed; they are called fundamental because they exist in every society. Possible examples of fundamental class exchanges include reciprocity between local groups in providing food security, building houses, or maintaining fields. Another example would include commoners providing corvée labor for the construction of royal residences. Importantly, how labor is appropriated varies from case to case, must not be conflated with exploitation, and does not necessarily involve alienation. Given the closeness of fundamental class positions to the mechanisms for extracting labor surpluses, however, the potential for exploitation and alienation is quite real.

In addition to fundamental classes, different kinds of processes define two "subsumed" positions called distributors and receivers. Resnick and Wolff (1987, 118) describe the subsumed-class process as

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"unlike the fundamental class process because it is neither the production nor appropriation of surplus labor or its products. Rather, the subsumed-class process refers to the distribution of already appropriated surplus labor or its products." A merchant carrying obsidian nodules from volcanic highlands to the lowlands to be fashioned into prismatic cores is one example of a subsumed process of distribution. The redistribution of surplus foods from centralized storehouses is another example, and marketplace exchanges might constitute a third.

While fundamental processes are relatively straightforward, the roles of subsumed-class processes in Maya economies can be somewhat more complex and are important for two reasons. First, unlike fundamental processes, they are not always hierarchically ordered and so address the kinds of horizontal movements of labor and goods that make up the local, grassroots, embedded, or "informal" sectors of complex economies. Second, and related to the first, they are not as closely associated with exploitation and alienation as fundamental processes and so characterize a good deal of the internal workings of complex social institutions. Identifying both subsumed and fundamental processes therefore reveals the potentially complex and sophisticated nature of economic and political relationships.

This framework for understanding class organization allows archaeologists to identify variations in productive strategies in which domestic activities intersect with centralized regional activities in ways that are not necessarily contingent on socioeconomic affiliation. Importantly, classes defined in this manner must be considered analytical units and are therefore dependent on the scale and scope of inquiry. For instance, stone toolmakers might not necessarily contribute to economic systems in the same way as potters or specialized farmers, though they all could be identified as part of a utilitarian producer class at a regional scale.

Status, Prestige, and Social Hierarchy

In contrast to class/labor processes, which do not always mirror social ranking, status grades, based on differences in honor and prestige, do reflect social hierarchies and were central to how the Maya stratified their relationships. To illustrate, Diego De Landa described elaborate rituals of gifting and speaking in turn based on rank among Maya of the colonial period and noted how friars who failed to observe these differences were mocked: "on account of this the nobles laughed at the friars because they gave ear to the poor and rich without distinction" (Tozzer 1941, 97). Lower-status grades had clear service and tribute obligations, while those of higher rank were expected to provide security and patronage. Based on residential architecture, the consumption of exotics, and artistic expression, prestige and wealth differences between pre-Hispanic elites and commoners were also pronounced. Such differences were further reinforced by lineage and descent (Houston and McAnany 2003).

Epigraphic and ethnohistoric information concerning ranked or stratified statuses can be combined into a direct historical framework for understanding social inequality and associated roles in governance (Table 1.1). This framework changed over time and was far from static, yet changes over time primarily involved the elaboration of political offices and institutions rather than any fundamental reworking of important relationships or how they were defined on a daily basis. By the end of the Late Preclassic some inscriptions contain social titles that by the Classic period had become immutable. *Ajaw* has been translated as "true man" or "great lord," and increasing levels of "lordship" appeared throughout the Classic period. These include *kalomte'* (emperor, overlord, or supreme *ajaw*), and *sajal* (town governor appointed by an *ajaw* or *jalach winik;* the historic equivalent of *sajal* might have been *b'atab'*). The hierarchy of colonial political offices extends further into townships and districts to include the upper ranks of commoners. *Aj kuchkab'* refers in ethnohistoric documents to the head of one of four subdivisions or wards (*kuchte'el*), and *aj k'ul* (also *aj k'ujul*) is translated as an assistant to the *aj kuchkab'*. Both *aj k'ul* and *aj kuchkab'* appear to have been high-ranking commoners by birth (for an extended discussion of these terms and offices, see Rice 2004, 36–39). Classic-period equivalents to these two roles were probably noble (rather than commoner) heads of important extended families and corporate groups, as indicated by council houses like Structure 10L-22A at Copán (Fash et al. 1992). Parallels in the make-up and nested nature of governing offices and institutions from the Classic to colonial periods suggests that, while flexible and evolving over time, these hierarchical relations were exceedingly durable and long lasting. As with any model based on ethnographic or historical sources,

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Table 1.1. Political offices of pre-Hispanic and colonial periods, with areas of control

Pre-Hispanic Role	Office	Contact-Period Equivalent	Suggested Area of Control
Kalomte'	Emperor; overlord		Largest centers plus dependencies
Ajaw, *K'ul Ajaw*	True man; great lord	*jalach winik*	*kuchkab'al*, large, primary community and its sustaining area
Sajal	Town governor, appointed by *ajaw* or *jalach winik*	*b'atab'*	*B'atab'il*, second-order center and its sustaining area
Popol naj	Council house, perhaps council		
Important corporate group head	Head of town subdivisions or wards	*aj kuchkab'* or high-ranking commoner	*kuchte'el*, extended-family settlement cluster plus dependencies
Corporate group head	Deputies to *aj kuchkab'*	*aj k'ul*	Extended-family settlement cluster

Note: Italicized roles and translations from Rice 2004, 36–39.

the degree of fit with pre-Columbian cases should not be expected to be precise, and regional variation may be significant in certain cases.

Class and Status Dialectics

Clearly, class-as-labor and status-as-prestige are closely related in that prestige was central to how royals mobilized social labor. Increases in rank were accorded greater amounts of veneration, honor, and entitlement, eventually giving way to fully stratified status positions. This process is exemplified by the principle of first occupancy (McAnany 1995, 96–97), whereby colonizing families retain access to the best lands and rise to elevated positions through increased productivity and generations of filial peonage in return for usufruct rights. Labor and prestige were also allocated according to other principles (McAnany 1993, 68–69) that should not be conflated. Houston and Stuart (2001, 59) appropriately note that "Access to resources, as determined from material residue, does not equate to inherited status in an easily predictable fashion." I agree but argue that it was access to goods and resources that have been improved or modified through productive labor that held real value.

Maya scholars have described the relationship between increased access to the fruits of other people's labor and high rank, though some questions remain. These include how economic undertakings contributed to status gradients among commoners and how to describe nonhierarchical social distinctions based on principles other than honor and prestige. Moreover, rigid models of status hierarchy are difficult to reconcile with what Hendon (1991, 894) calls "internally ranked and externally stratified" extended family groups, where family ties crosscut social ranking. To overcome this problem, scholars can examine vertical and horizontal labor flows (class) in the context of organizational units of production (such as households) based on kinship[1] or other principles and in doing so give analytical priority to how people directed their productive energies in ways that were shaped by honor and prestige (status) or other motivators of prehistoric action.

Importantly, this methodology should be seen as complementary to those that focus on materialized

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ideologies and beliefs, which may be better suited to understanding the earliest developments of inequality or the rationales by which such relations are maintained (see Lucero 2006, 14–18). Among the clearest recent examples of this kind of work in the Maya area is Kovacevich's (2006, 2007) analysis of various stages of jade production from domestic workshops at Cancuen, Guatemala. Working with in-situ debris representing continuous stages of production, including raw boulders, roughly shaped blanks and cutouts, unfinished ornaments, and polished and inscribed products, Kovacevich traces the movements of these goods from commoner crafters involved at early stages of the process to elite specialists who applied finishing touches. Along the way, different forms of unskilled but specialized labor, restricted knowledge, control over appropriation, and ritual and ideological elaboration define the relationships between the entities involved. In this example, it is not access to raw materials alone that determined social role and status but rather the flow and control of labor through both horizontal and vertical channels within and between classes and stratified status groups.

Defining "Commoners" and "Elites"

In light of the foregoing discussion, the question remains: How can archaeologists use labor flows and status inequities to accurately identify "commoners" and "elites" from archaeological remains? Historically, problems arise when trying to recognize these social categories in a clearly uneven material record (Chase and Chase 1992; Michael E. Smith 1987). It should be noted that in these cases, it is not the extremes of social continua—the highest royals or commonest peasants—that are unclear but rather the middle positions. Here, it becomes important to differentiate "elites" and "commoners"[2] as analytical categories defined by researchers from historically contingent elites and commoners that existed in particular cultural traditions.

Recognizing the appropriation, production, distribution, and receipt of social labor is useful for teasing apart the complex strands that bind people together in stratified and horizontal relationships through kinship, reciprocity, and tribute obligations. In this sense "elites" as power holders become visible through their ability to appropriate goods and services via entitlements based on honor and prestige. It is important, however, not to confuse the situational nature of these power inequities with the categories of elites and commoners found in specific, historical contexts. In relationships defined by flows of surplus labor, commoners can also occupy any of four positions defined by the movement or transfer of surplus labor (producer, appropriator, distributor, or recipient). Thus, in some cases "commoner" and "elite" are defined in relation to situational interests and positions within a class process (Lohse and Gonlin 2007, xxxii–xxxiii).

Only over time and reinforced by tradition can these two situational positions, "elites" and "commoners," become institutionalized into dialectical, stratified opposition. For Maya scholars, this is perhaps the most frequently misunderstood component of complex social relationships: "elites" as situational power holders are not always or necessarily the same as elites of cultural institutions. Acquiring and maintaining access to other people's labor does not by itself define permanent membership in an elite stratum of a population; nor does overseeing some productive institution or technology or controlling the redistribution of goods and services provided by others. So, while the definitions of elites as "those who run society's institutions" (Chase and Chase 1992, 3) might in some cases be correct, it is not precise. This issue is more than just semantic; at stake is an accurate understanding of those who were clearly not of the royal or subroyal strata but who still wielded great influence at local levels. In this context, terms like "rural elite" that are common to Maya studies are probably referring to high-ranking or wealthy commoners. Clearly marking these distinctions helps in understanding Maya political processes that involved decidedly non-elite actors.

How is this terminological and analytical confusion to be resolved? Before the analytical categories "elite" and "commoner" can be identified and placed in a specific historical context (and their contributions to prehistoric societies understood), labor-based class processes here described must be examined in conjunction with textual or some other kind(s) of information that provide(s) evidence for the historical nature of the relationships between the two. This means that the same evidence—house size, for example—that distinguishes these categories in a particular time period should not be used to demonstrate how differences between elites and commoners first

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emerged or were maintained. Otherwise, something of a tautology develops and scholars are left no closer to understanding the historical nature of the relationships than was the case after the initial identification of "elites" and "commoners."

To help resolve this issue, the list of offices compiled through ethnohistoric and epigraphic accounts (see Table 1.1) represents a direct historical framework for mapping out hierarchical statuses and their social and political relations with one another and also with other members of ancient communities. A dialectically informed direct historical study of class and status processes has the benefit of contextualizing pre-Columbian social organization in a culturally specific model that privileges notions of prestige, honor, obligation, and reciprocity while accommodating those individuals who are all but omitted from the textual record. This kind of inclusive approach to understanding Maya politics is essential to balanced, holistic research that seeks to consider all social positions through the same lens of understanding (Lohse 2007, 3).

Clearly, not all ancient Maya social distance was merely a matter of analytical perspective; by the Early Classic, if not earlier, extreme differences in social position amounted to what Max Weber (1947, 424) defines as "status classes," or those based on "the kind and extent of control or lack of it which an individual has over goods and services" that are converted to labor through prestige and honor. In this sense, royals and commoners can be thought of as the "two great classes" of ancient Maya society, where status affiliation and class-as-labor, or class as a labor-based process, were in near perfect alignment. Each of these great classes was characterized by much internal variation and strongly influenced the other. For example, while a *kalomte'* might have been vulnerable to the pressures of council houses, or *popol naj* (Viel 1999), so too might *aj k'ul* have heeded the voices of their own extended families in advancing local concerns up the political ladder. As such, these "middlemen," nonroyals by birth, undoubtedly played a critical role in scheduling localized production, managing redistribution, and resolving disputes.

Each political office is likely to have been accorded its own honor and prestige, as later described by Spanish chroniclers. This is one reason why archaeologists see large houses in otherwise plebeian settlements. In these cases, honor and prestige became mechanisms for mobilizing social labor and extracting its products even while horizontal exchanges of surplus labor continued between individuals of similar ranks. As one moved farther up the ladder of political offices, the social distance between labor producers and appropriators increased, as did the potential for distributors and receivers to become involved. Two important implications emerge from this perspective. First, at lower levels, horizontal as well as vertical movements of labor resulted in economies that appear decentralized and loosely controlled (Masson 2002; McAnany 1993; Potter and King 1995; Sheets 2000). Second, research scaled to local communities, marking the intersection between broad regions and microscale households, is imperative for discerning commoner contributions to political processes.

The Moral Tenor of Commoner Politics

Given these considerations, it is important to ask: How can a theory of pre-Hispanic commoner political practice be advanced? First, distinctions must be recognized in the concept of social power as an element of political discourse. It is also necessary to understand exploitation, how and when it manifests and through what means might it be resisted, and its role in shaping social relations. These issues are taken up in turn.

Social Power

Shanks and Tilley (1992, 129), following Giddens (1979, 1984), have distinguished between productive power as "the capacity to act in and on the world, a component of all social practice" and power over, or "social control and domination" (also Joyce, Bustamante, and Levine 2001; Paynter and McGuire 1991). All prehistoric social agents had some measure of productive power and many also exercised "power over" in some aspects of their daily lives. This balanced, relational view has perhaps been best developed by Foucault (1980, 1983), who sees power as "deeply embedded in the network of social relations and basic, therefore, to any society" (Bell 1992, 200). For Foucault, top-down and bottom-up forces are involved in a recursive, ever-present contest to constrain or direct social thought and action on the one hand and resist such attempts on the other. In this sense, "power to" and "power over" become merely

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different elements of the same relationship and cannot be separated from one another and yet remain intact. Giddens (1979, 6) terms this balance the "dialectic of control," fundamentally defined as an "intrinsic relation between agency and power." That is, it refers to the ability of informed individuals to exercise agency in the face of "power over" strategies deployed by others. The recursivity of this kind of social power, exercised by urbanites and hinterlanders alike, has the effect of politicizing rural agency and implicates both elites and non-elites in local political configurations. This approach to understanding sociopolitical empowerment is fundamentally at odds with those who describe how ruling elites controlled docile populations through oratory and mystification (Clark 1997), statements that are flatly unsubstantiated by the material record of Formative and Classic Mesoamerica.

Exploitation

This leaves the thorny question of exploitation, the measure by which regimes are granted legitimacy by local populations. When rulers are deemed too exploitative, polities wear down from internal strife and resistance, similar to that described by Guha (1999) and Jones (1989), or collapse altogether through open rebellion. Scott (1976) addressed exploitation in examining the conditions of peasant consciousness that lead to uprising and revolt. He identifies two inalienable rights that frame the legitimacy of commoner-elite relations in agrarian societies: the norm of reciprocity and the right to subsistence. These expectations carry considerable moral weight, are reinforced by tradition, and serve as strong structuring principles in shaping daily interactions and long-term decisions made by elites regarding their treatment of non-elites.

The norm of reciprocity states that "a gift or service received creates . . . a reciprocal obligation to return a gift or service of at least comparable value at some future date" (Scott 1976, 167). This expectation holds that the exchange of services and goods or access to information and important resources between all parties should "even out" in the long run. In the case of unequal relationships, as between *ajaw* and *aj k'ul*, services exchanged will not be of the same nature but rather will vary according to each group's needs and abilities. Scott (1976, 169) states that, "as a general rule the patron is expected to protect his client and provide for his material needs whereas the client reciprocates with his labor and his loyalty." Based on their work at Piedras Negras, Guatemala, Houston, Andrews, and Flennikan (2003, 232) develop a similar view of moral authority by arguing that "public and private rituals dramatize collective values and help nurture a moral 'economy' of . . . reciprocal obligations." Consenting to this seemingly imbalanced exchange lends a moral weight to the commoner position. Through this vantage, commoners not only perceive the legitimacy of rulership but also determine when rulers have become exploitative in cases where they stray too far from their obligations.

If reciprocal exchanges between elites and commoners are culturally contingent, then meeting basic subsistence needs is the primary force that shapes these relations. Scott (1976, 176–77) argues that "the 'right to subsistence' [means] that all members of a community have a presumptive right to a living so far as local resources will allow. This subsistence claim is morally based on the common notion of a hierarchy of human needs, with the means for physical survival naturally taking priority over all other claims to village wealth. This right is surely the minimal claim an individual makes on his society and it is perhaps for this reason that it has such moral force." Sahlins (1972) also recognized this fact in his discussions of domestic production among agrarian societies (see here earlier discussion of DMP). This basic claim is the foundation on which all subsequent interactions between elites and non-elites, including demands for tribute in foodstuffs or corvée labor, are based. As Houston, Andrews, and Flenniken (2003, 232) argue regarding the viability of community life at Piedras Negras, "the system collapses when the 'subsistence claims' of peasants are violated irremediably." Scott (1976, 178) further observes that, because the historical contexts of no two culture are alike, what it means to meet "minimum" subsistence needs likewise varies.

For the ancient Maya, subsistence needs depended on the degree to which certain households and other groups engaged in nonfood craft production. Specialist potters or stone toolmakers, for example, required subsistence support from outside their sphere of production, while intensive farmers may have relied on others to manufacture stone tools, vessels, or other goods. In some cases these goods were obtained through informal or horizontally arranged networks of kinship, direct exchange, or reciprocity. In others, according to how the right

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to subsistence was negotiated within a community, elites might have been obligated to ensure an adequate food supply for their subjects, resulting in centrally directed or administered plots of land to provide security against inadequate harvests. Depending on the degree to which households and larger networks engaged in the manufacture of nonfood items or were tied to tracts of land with low-production potential, the definition of "minimal subsistence needs" varied considerably across politically and agriculturally uneven Maya landscapes.

Following these arguments, times of food scarcity or changes to agricultural or utilitarian systems of production requiring increased labor inputs would have strained community political relations as commoners would have been increasingly unable to attend to their tribute obligations. This would have been true for farmers attending to rapidly changing landscapes (see chapter 3, this volume) as well as utilitarian producers reliant on nonrenewable resource bases. Similarly, any disruption in the ability of elites to provide goods, services, and protections to which community populations had grown accustomed could have been perceived as a breach of moral obligation (see chapters 6 and 8, this volume). In this way, exchanges between elites and others carried important implications for the sustainability of local and regional polities. Likewise, periods of external turmoil, such as the mid-Classic rivalry between Tikal and Calakmul, may have disrupted otherwise stable local relationships.

CONCLUSIONS

The following chapters take up problems such as class processes, negotiated group status affiliation, and elite-commoner political discourse in northwestern Belize. Individually, each study pursued its own strategy for placing excavation units or survey areas or for emphasizing some lines of evidence over others. Collectively, however, this research focuses on interdependencies between people of varying social positions and on relationships between people and the environment. Contributors approach their cases informed, to varying degrees, by a political ecology framework that centralizes dialectically contested notions of social and political power and examines "how unequal power relations [were] often linked to conflicts over access to, and the use of, diverse environmental resources" (Bryant 1998, 85). The result is a series of multiscaled views of a diverse society comprised of different factions and status groups that were recursively bound together through power-laden relationships and that together sustained a regional polity for more than two millennia.

NOTES

1. Real or fictive (Carsten and Hugh-Jones 1995; Joyce and Gillespie 2000).

2. Use of quotes for "elites" and "commoners" indicates the use of these terms to refer to the situational, relative nature of power and status inequities. This usage is distinct from elites and commoners as historically contingent institutions.

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Chapter 2

Northwestern Belize and the Central Lowland Classic World

Brett A. Houk and Jon C. Lohse

Northwestern Belize is in a geographically defined study area known as the Three Rivers Region, which encompasses adjacent territory in northeastern Petén, Guatemala, and a small portion of Quintana Roo, Mexico. Adams (1995) coined the moniker "Three Rivers Region" when he began the Programme for Belize Archaeological Project (PfBAP), across the Belizean border from Rio Azul on lands owned by the newly created Programme for Belize. Adams never intended for the area to be a culturally significant "region"; rather, he used geographic features—Rio Azul on the west and north and Booth's River on the east (Rio Bravo is the third of the region's three rivers)—to circumscribe and define the limits of the study area (Adams 1994; Adams et al. 2004). The southern boundary, drawn to encompass the site of Chan Chich, was somewhat arbitrarily made without reference to a natural geographic feature (Adams 1994). The Three Rivers Region includes several large ancient Maya cities as well as many medium-to-large secondary centers, abundant outlying settlements, and an array of features modifying a highly productive landscape (Figure 2.1). Together, these provide an ideal laboratory within which to consider Maya political organization as expressed at a regional scale. The purpose of this chapter is to provide a geographical and temporal context for the study area (the Belizean portion of the Three Rivers Region as here defined), not to address any specific research questions. Subsequent chapters in this volume examine a variety of issues and questions related to the political organization of the region.

The primary temporal focus of this volume is the tempestuous period spanning the end of the Early Classic period and the Late Classic period, approximately AD 500–850/900 (Figure 2.2).[1] This is commonly thought of as the height of Maya civilization in the central lowlands, when competition intensified between the giant capitals of Tikal and Calakmul and their supporting allies. This volume presents indirect evidence that Tikal was probably the ultimate capital of the region (see chapter 6), though Calakmul's influence was also undoubtedly felt throughout important periods. Calakmul, for example, in AD 561 seated a ruler at Los Alacranes, perhaps 20 kilometers west of Ixno'ha (Martin and Grube 2000, 104). The result was a highly dynamic and somewhat unstable geopolitical climate that is sure to have affected areas that appear not to have been directly involved in these conflicts. Unfortunately, northwestern Belize is characterized by a dearth of the kinds of hieroglyphic texts that describe political histories and relationships elsewhere in the Maya world. Accordingly, archaeologists

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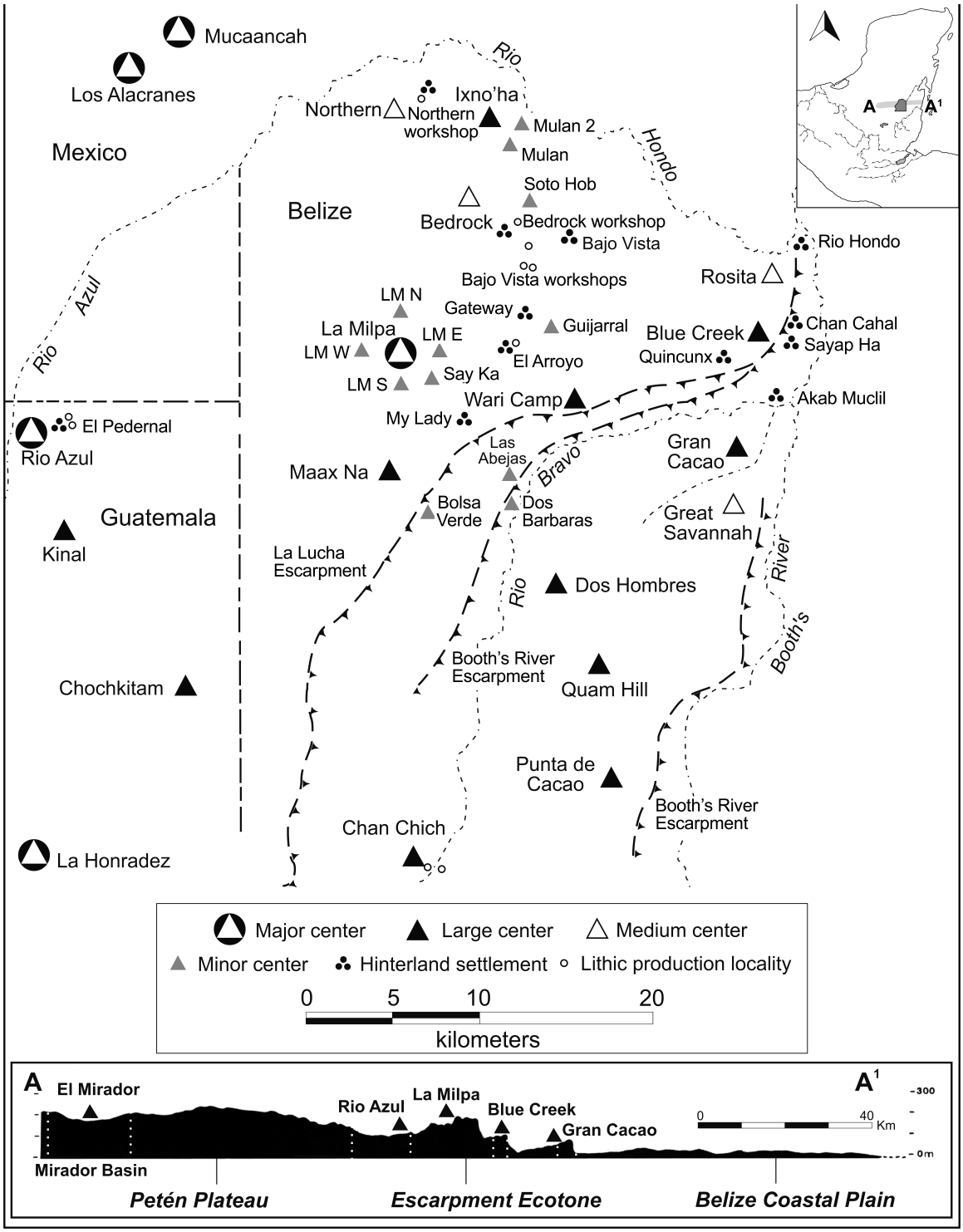

FIGURE 2.1. Three Rivers Region map.

working here are forced to rely on other lines of evidence in reconstructing the region's history and in understanding the role that it played in Classic-period political oscillations.

Prior to 1989, virtually nothing was known about the archaeology of the Belizean section of the Three Rivers Region. Beginning with Guderjan's (1991) reconnaissance-level investigations in 1989

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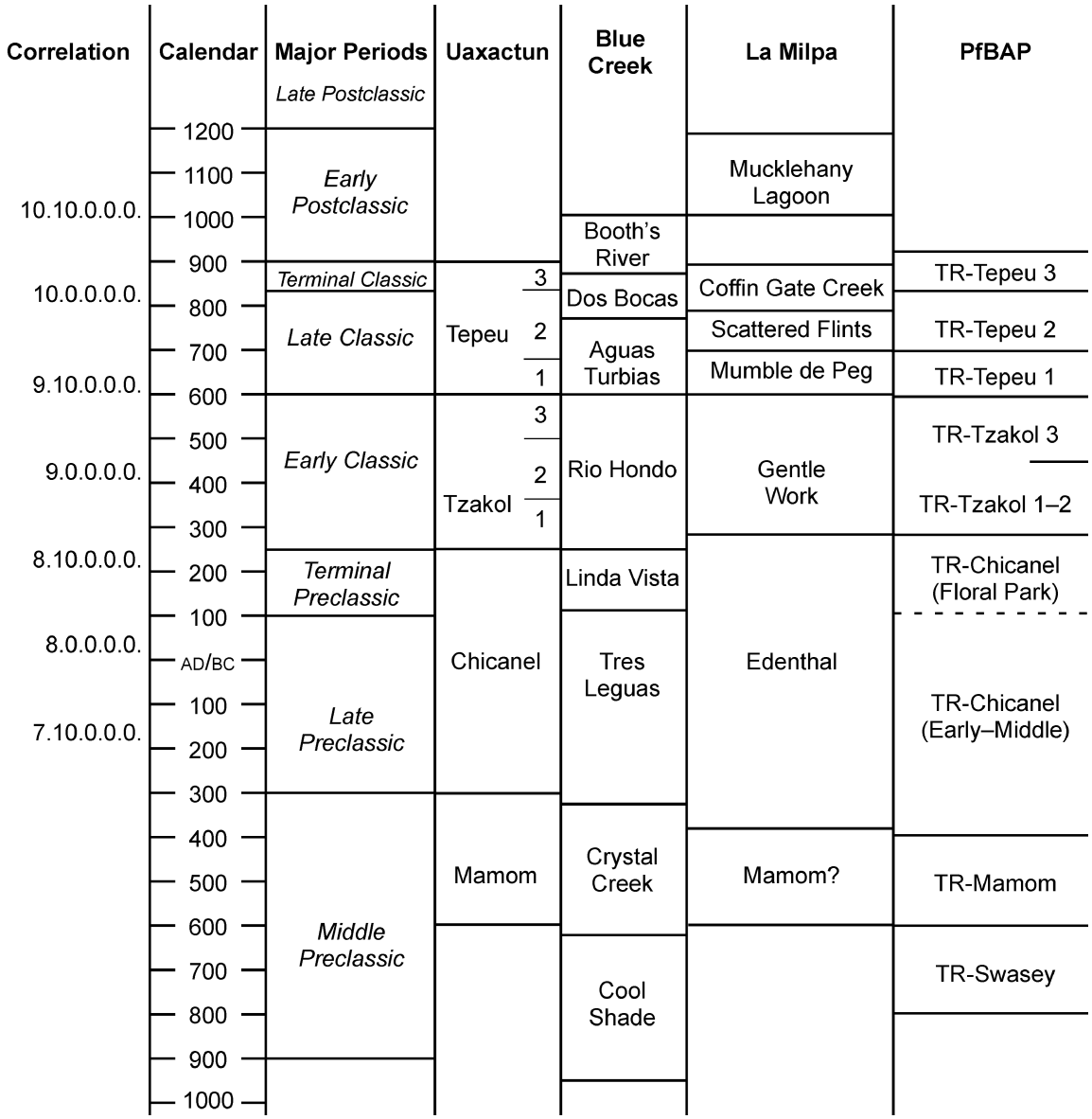

FIGURE 2.2. Ceramic chronologies for the Three Rivers Region. Uaxactún chronology from Smith (1955); Blue Creek chronology from Kosakowsky and Lohse (2003); La Milpa chronology from Sagebiel (2005); PfBAP chronology, which applies to the general region south and east of La Milpa, from Sullivan and Valdez (2003).

and 1990, however, the pace of research has accelerated to the point that the region has become one of the most intensively studied in the central lowlands. These investigations include site-centered projects at Chan Chich (Houk 2000), Punta de Cacao (Robichaux 2004), La Milpa (first by Boston University [Hammond and Tourtellot 2004; Tourtellot et al. 2003] and most recently by researchers from the University of Texas at Austin and Texas Tech University [Houk and Valdez 2009]), Blue Creek (Guderjan, Baker, and Lichtenstein 2003; Guderjan 2005, 2007), and at numerous other sites (Dos Hombres, Wari Camp, Maax Na, Gran Cacao, etc.) on the Programme for Belize lands conducted under the auspices of the PfBAP (Adams et al. 2004; Houk and Valdez 2009; Valdez and Sullivan 2006). Recently, both the PfBAP (Adams et al. 2004; Valdez and Houk 2011; Valdez and Sullivan 2006) and the Blue Creek Regional Political Ecology Project (BCRPEP) (Lohse et al. 2005) have incorporated a wide range of settlements and landscape modifications into their research agendas, thereby expanding the

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focus of investigations to include rural hinterlands. This chapter presents the environmental, demographic, and political background of the region, providing important context for the individual case studies that follow.

ENVIRONMENTAL, DEMOGRAPHIC, AND POLITICAL CONTEXT

Northwestern Belize lies at the edge of the central lowlands, home to some of the largest sites in the pre-Hispanic Maya world (see Figure Intro1). The region sits across the boundary between two large-scale environmental provinces that dominate the eastern portion of the central lowlands: the Petén Plateau to the west and the Belize Coastal Plain to the east. The line between these two is established by a series of three dramatic escarpments running southwest-to-northeast (see Figure 2.1). Topography, sources and availability of surface water, and distribution of other key resources stratify the environment into three general kinds of terrain: Petén Plateau to the west, Belize Coastal Plain to the east, and escarpment ecotone dividing the two. Our research has revealed that even while these settings were markedly different in the kinds of resources present, all were highly dynamic and susceptible to both human pressures and natural events (Beach et al. 2006). The chapters in this volume (also Scarborough and Valdez 2009) reveal the degree to which localized political arrangements were "mapped onto" differences in terrain and landscape while also changing in response to political events occurring elsewhere in the lowlands.

The Petén Plateau is characterized by large, low-lying seasonal wetlands (*bajos*) separated by karstic limestone hills. One northwestern Belize *bajo* in particular, the Dumbbell Bajo (Robichaux 1995), dominates the area, occupying as much as 42 square kilometers. *Bajos* cover much of the central lowlands and are associated with many of the largest sites in the Maya world (Beach et al. 2003; Culbert et al. 1996; Dunning 2003; Dunning et al. 2002; Fialko 1999; Harrison 1977; Kunen et al. 2000). Work outside La Milpa (Kunen 2004) has shown that requirements for gleaning subsistence from *bajo* habitats shaped much of community-level settlement and administrative organization. Previous research reveals that many of these depressions, now seasonally inundated, were once perennial wetlands that became infilled with sediments by centuries of proximate Maya occupation and settlement. This transformation had begun by the beginning of the Early Classic period, ca. AD 250 (Dunning 2002, 2003), and continued until the general abandonment of the area. In addition to arable soils, utilitarian resources found in *bajo* environs include deposits of high-quality clays suitable for pottery production (Little 2005; chapter 6, this volume) and concentrated chert and chalcedony outcrops for tool production (Barrett 2004; Lewis 1995). Importantly, similar stone outcrops are so far unknown in the eastern portion of the study area. Aside from these lithic sources, environmental variation in and around *bajo* margins has been characterized as "limited, fine-grained, and redundant" (Tourtellot et al. 2003, 50).

To the east, a series of three fault-block scarps—La Lucha, Rio Bravo, and Booth's River Escarpments (Brokaw and Mallory 1993)—run southwest-to-northeast; La Lucha and Rio Bravo Escarpments converge just south of the Blue Creek center. Each poses a sharp increase in elevation of up to 100 meters, and together these features represent a large-scale ecotonal boundary between the Belize Coastal Plain and the Petén Plateau. Numerous springs surface along the base of the Rio Bravo and Booth's River Escarpments, creating long, narrow, and highly productive microenvironments. As an escarpment ecotone, this area offers immediate access to a broad array of resources, including both those of the nearby Petén Plateau as well as of the flat but nutrient-rich coastal plain. Historically, ecologists and biologists have recognized ecotones as abundantly rich and capable of sustaining plentiful and diverse plant and animal populations as well as densely inhabited human communities (Crumley 1994).

One noteworthy adaptation recorded in the escarpment ecotone includes expansive sets of canalized-field agricultural systems, representing a response to increasingly inundated, aggrading landscapes (Baker 2003; Beach and Luzzadder-Beach 2004, 2005; Beach et al. 2009). Research in these low-lying wetland fields indicates that the ground surface was stable and dry around 2,000 years ago. Soon thereafter, however, local water tables began to noticeably rise, perhaps in response to rising sea levels. Coupled with human-induced soil runoff from nearby uplands and occasional catastrophic floods, rising water tables precipitated dramatic changes in

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sedimentation and aggradation rates throughout the Classic period. Preliminary investigations suggest that canalized agricultural fields appeared perhaps by the end of the Early Classic and reached their maximum extent during the Late Classic period as a response to these changing conditions (see chapter 3, this volume).

Since intensive investigations began in the early 1990s, researchers have consistently noted evidence for dense Maya settlement in northwestern Belize. According to survey figures compiled by Hageman (1997) and Tourtellot, Hammond, and Plank (1997) estimated non-urban population densities increased from approximately 110 persons per square kilometer to as high as 510 persons per square kilometer from the end of the Early Classic through Late Classic times (ca. AD 500–850), a rate of growth triple the figure suggested by Santley (1990) for the entire lowlands. Using survey data collected over several seasons, Adams et al. (2004, Table 15.1) offer more conservative non-urban populations densities for the entire Three Rivers Region: increasing from 108 persons per square kilometer to 177.5 persons per square kilometer in the same time frame. Adams et al. (2004, Table 15.1) have also reconstructed total population levels for the Three Rivers Region by time period—note that their chronological divisions differ somewhat from ours. Adams et al. (2004, Table 15.1) posit elevated populations (130,320 [52% urban) by the end of the Early Classic, followed by a sharp decline (34,761 [35% urban]) in Late Classic 1, AD 550–680, a dramatic increase (427,760 [52% urban) corresponding with Late Classic 2 (AD 680–810), and then another decrease (200,965 [52% urban]) in Late Classic 3 (AD 810–50). While these population curves are probably overly precipitous and are based on data only from Dos Hombres and La Milpa, they illustrate two important trends. First, settlement histories were significantly disrupted by the end of the Early Classic. Second, the region had begun to undergo heavy resettlement beginning by the late seventh century AD. This rate of increase almost certainly exceeds that possible through in-situ population recovery. Adams et al. (2004) and Hageman and Lohse (2003) have suggested that people moving into the region from elsewhere, including those fleeing conflicts in the central Petén, might help account for these figures. Tourtellot (1992, 225) earlier proposed that forced resettlement and the movement of farmers fleeing conflict were both potential processes at work in the lowlands during the Late Classic (also Inomata 2004). Regardless of the source, the sudden increase in regional occupations would not only have strained agricultural systems, necessitating new roles and perhaps even organizational strategies for local groups (Lohse 2004), but would also have required new or at least augmented mechanisms for integrating these people into coherent communities.

The history of elite culture and development in northwestern Belize has proven somewhat more difficult to reconstruct, due mostly to the near-total lack of epigraphic inscriptions. Nevertheless, by using monument erection, the limited epigraphic record, site-rank ordering, and ball-court chronologies, we can begin to piece together elite relationships and political histories for sites across the region. Only La Milpa (with 20 samples) has more than a very small handful of stelae; Dos Hombres has three known stelae; Gran Cacao two; and Blue Creek, Maax Na, and Ixno'ha one each. The number of monuments alone strongly implies that La Milpa was the primary political entity in northwestern Belize. This city's regional status is further supported by site-rank ordering, which reveals La Milpa to be by far the largest site in terms of monumental constructions (Figure 2.3). Houk (1996, Table 6.1) calculated the core area of La Milpa to be 92,000 square meters with a courtyard count of 20, after an older rank-ordering system proposed by Adams and Jones (1981). A second tier with site-core areas between 29,000 and 63,600 square meters (see Houk 1996, Table 6.1) is made up of the large centers shown in Figure 2.1, including Dos Hombres, Gran Cacao, Blue Creek, Maax Na, Wari Camp, and Ixno'ha. Dos Hombres and Gran Cacao, at 53,400 square meters and 63,600 square meters, respectively, are the largest cities in the second tier (Houk 1996, Table 6.1). Very little is known about Great Savannah other than it contains at least one very large plaza on the order of the main plazas illustrated in Figure 2.3. Wari Camp is included in this category based on descriptions by Laura J. Levi (personal communication, 2003) and the fact that it has a ball court.

In addition to being the largest site with the most monuments, La Milpa has the only stelae that retain any inscribed evidence of elite events and actions. The only other hieroglyphic texts potentially

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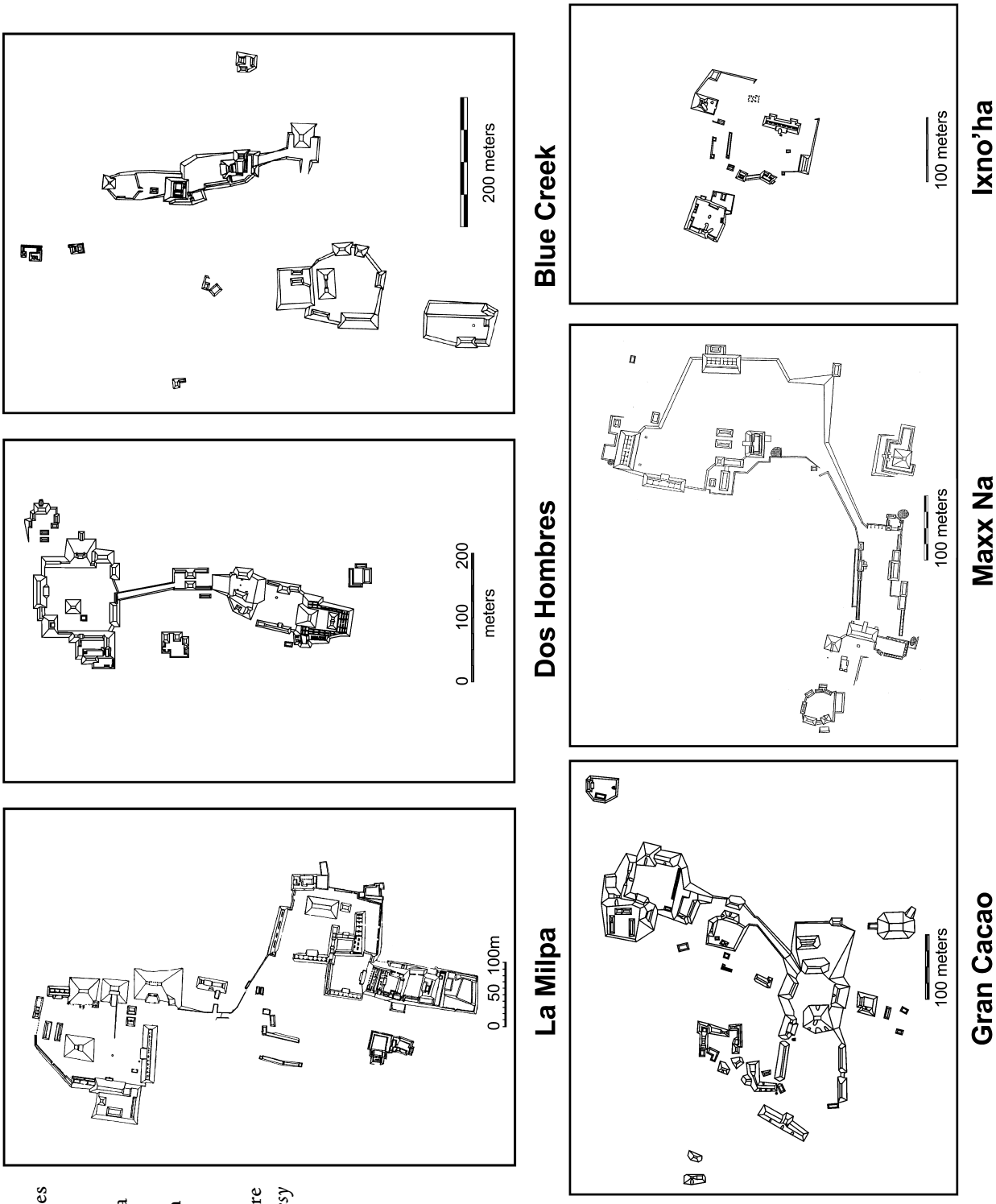

FIGURE 2.3. Central zones of major sites in upper northwestern Belize at the same scale. La Milpa *map by Gair Tourtellot*, Dos Hombres and Gran Cacao maps *courtesy PfBAP*, Blue Creek *map after Driver* (2002, Figure 4), Maax Na map *courtesy Leslie Shaw and Eleanor King*, Ixno'ha map *courtesy BCRPEP*.

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relevant to political relationships is from a plate fragment found at Dos Hombres.[2] All of La Milpa's monuments but three, Stelae 4, 7, and 20, are badly or completely eroded. On the basis of partial epigraphic decipherment, stylistic evaluations, placement and form, and accompanying dedication vessels, at least five, including Stelae 1, 6, 10, and 15–16, are thought to date from the Early Classic period. Of these, only Stela 10 is in its original location. Based on the same criteria, the remaining monuments are believed to date between AD 672 and the very early ninth century AD (Hammond and Tourtellot 2004, 295–96), revealing a peak in elite activity during the later part of the Late Classic. Only a partial text on Stela 7 (discussed later) provides any specific information about the identity of a Late Classic ruler at the site.

Compounding the poor epigraphic record is the fact that deep excavations necessary for recording monumental-construction histories or recovering evidence of public rituals that accompanied important accession events have been carried out to any real degree only at Blue Creek (Guderjan 2007; chapter 4, this volume) and, to lesser extents, at La Milpa and Dos Hombres. Limited excavations at Dos Hombres (Houk 1996), Gran Cacao (chapter 5, this volume), Ixno'ha (Lalonde 2003; chapter 7, this volume), and Maax Na (Shaw and King 2002) have all revealed significant Late Classic constructions. To be sure, earlier components are present at these sites but have been explored only briefly in comparison with later deposits and contexts. Detailed excavation data from sites in the region have previously been published (see Hammond and Tourtellot 2004; Scarborough, Dunning, and Valdez, 2003); this overview is intended only to highlight the volume of Late Classic data from the region.

Along with construction volume and erection of stelae, ball court chronologies are another indication of regional political developments (Santley, Berman, and Alexaner 1991). Ball courts are found at several sites, including three at Dos Hombres; two at La Milpa; and one each at Blue Creek, Gran Cacao, Ixno'ha, Maax Na, and Wari Camp. Additional courts are present farther south, at sites such as Chan Chich and Punta de Cacao; these sites would also have been included in regional interaction spheres. Of all the excavated ball courts in the region, only those found at Blue Creek and Ixno'ha date to the Early Classic. Almost all others are Late or even Terminal Classic.[3] Moreover, the presence of two ball courts each in the urban zones at La Milpa and Dos Hombres (the third ball court from Dos Hombres is in an outlying settlement zone [Scarborough and Valdez 2009; Walling 2011; Walling et al. 2005]) supports the rank ordering and epigraphic evidence to underscore the important status of those two sites in the regional political hierarchies.

In summary, earlier time periods are poorly understood in relation to later developments across upper northwestern Belize though will surely become better known through future excavations. Nevertheless, abundant data are available regarding population estimates and monumental constructions. Though subject to change, these data all contribute to an emerging view of dramatic, almost explosive growth in urban centers and surrounding populations immediately after ca. AD 680.

POLITICAL BACKDROP FOR THE THREE RIVERS REGION

The region's record of growth and development can only be fully understood in relation to the complex political history of the central lowlands. By the end of the Late Preclassic, royal dynasties had established regional states in the central Petén at Tikal, in southern Quintana Roo and Campeche at Calakmul, in the Rio Bec and Chenes areas farther to the north (Šprajc 2004), and elsewhere.

Starting at least in the Early Classic and probably earlier, increasingly intense rivalries developed between some of these polities. Status rivalries between Tikal and Calakmul, in particular, played out from the early sixth century for the next 300 years and involved secondary centers with shifting loyalties (Guenter 2003; Martin and Grube 2000). The root cause of the disagreement between these two centers is unknown, though Rice (2004) suggests it began with the displacement of one of Tikal's royal lineages on the arrival of Teotihuacanos in the fourth century AD. From the Late Preclassic onward, Tikal had assumed political and economic authority in the central Petén and likely played a significant role in organizing overland trade routes that supplied much of the lowlands with exotic goods and resources. Soon after the arrival of Teotihuacanos from central Mexico in AD 378, an event referred to as "*la entrada*"

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(see Stuart 2000), Tikal underwent fundamental changes in its style of rulership and politics (Houston 2000). Not long thereafter, Calakmul emerged as its chief rival. Details of the personal nature of the extended conflict between these city-states have been partly deciphered and summarized by Martin and Grube (2000).

Over the couple of centuries following the *la entrada*, Calakmul embarked on a program of isolating Tikal from its supporters and allies. The next several decades saw a slow but steady shift in the loyalties of secondary-center loyalties away from Tikal and toward Calakmul. Following this long period of increasing isolation, an important personage from Tikal was finally dispatched in a consequential event in AD 562. The perpetrator of this event has long been thought to have been Caracol (Chase and Chase 1987), as the event is described on Altar 21 from that site (Houston 1991). A recent rereading of the monument's poorly preserved glyphic sequence (Martin 2005), however , suggests that the primary antagonist was actually Calakmul, acting in concert with Caracol. This event signals the beginning of a Petén-centered period of relative inactivity in erecting or dedicating monuments that was to last for another approximately 130 years (Willey 1974).

Regardless of its origins or protagonists, this AD 562 event was only the beginning of a long period of turmoil for Tikal. These trials had much to do with Dos Pilas, first as a satellite center of Tikal and then as a status rival. Guenter (2003) has deciphered many events pertaining to Dos Pilas and its relations with Tikal. Despite it weakness after AD 562, Tikal's ruling dynasty remained intact and continued to actively seat or install loyal rulers in other regional centers. One such center was Dos Pilas, which in AD 632 was placed under the stewardship of B'ajlaj Chan K'awiil, a six-year-old brother or half-brother of Tikal's ruler, Nuun u Jol Chaahk. An intense sibling rivalry soon developed that culminated in AD 648 when B'ajlaj Chan K'awiil slew yet another Tikal lord, Lam Naah K'awiil. This act begins what Guenter (2003, 4) calls Tikal's civil war. Over the next 47 years, the sibling conflict between these two and their heirs was played out in increasingly violent encounters, orchestrated in part by Yuknoom Ch'een, Snake King of Calakmul.

Matters reached their darkest between AD 657 and 662, when B'ajlaj Chan K'awiil and Nuun u Jol Chaahk were forced to acknowledge Yuknoom Ch'een's overlordship in a ceremony that Guenter (2003) refers to as the Yaxha Agreement. This concord did little, however, to resolve animosities between B'ajlaj Chan K'awiil and Nuun u Jol Chaahk, and hostilities persisted until AD 679, when Nuun u Jol Chaahk was decisively defeated. Three years later, Jasaw Chan K'awiil I assumed both his father's throne at Tikal and his cause. Under Jasaw Chan K'awiil I's leadership, Tikal slowly began to turn the tides against both B'ajlaj Chan K'awiil and Calakmul's aged Snake King, who in AD 686 was replaced by his son Yuknoom Yich'aak K'ahk'. By AD 695 Jasaw Chan K'awiil I had defeated the new lord of Calakmul, marking the end of Tikal's political stagnation. Itzamnaaj K'awiil assumed the Dos Pilas throne in AD 698, only to be defeated in AD 705. With this conquest, Jasaw Chan K'awiil I finally brought an end to the long and violent Tikal civil war and in doing so marked Tikal's return to prominence for the remainder of the Late Classic.

Events between Tikal and Calakmul and subordinates like Caracol and Dos Pilas scarred the political landscape of the central lowlands for almost 200 years. We can see that the torture of captives in the murals at Bonampak or the sacking of palaces in the Petexbatun, events postdating the darkest relations between Tikal and Calakmul, were merely extensions of a long period of conflict and unrest. Many seeds of the Terminal Classic demise of elite culture in the central lowlands were sown in this earlier period (Demarest 2004a; Valdés and Fahsen 2004).

Northwestern Belize and the Central Lowlands

Understanding the role that sites in northwestern Belize may have played in the political theater of the central lowlands is difficult due to the lack of relevant epigraphic texts. Furthermore, there are surprisingly few radiometric dates from relevant contexts in the region, making it difficult to relate precisely events in northwestern Belize to those in other parts of the lowlands. We must rely heavily on the established ceramic chronologies, which are largely based on cross-dating with other sites (Adams and Jackson-Adams 2000; Kosakowsky and Lohse 2003; Sagebiel 2005; Sullivan and Valdez 2003). Nevertheless, some conclusions can be drawn by looking at Rio Azul to the east. Tikal is believed to have conquered Rio Azul in

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about AD 385 and to have installed a ruling lineage there (Adams 1999, 139). This action linked Rio Azul to the political fortunes of Tikal throughout the remainder of the Early Classic period.

Rio Azul was Tikal's major ally in the Three Rivers Region during the Early Classic; one Early Classic ruler, Governor X, may have been the grandson of Tikal's Curl Nose, also known as First Crocodile or Yax Ain (Harrison 1999, 82). Rio Azul was probably the dominant site in the Three Rivers Region during the Early Classic—with an estimated Early Classic core area of 243,200 square meters, Rio Azul was the largest center by far—but may have been sacked and largely abandoned by the mid-sixth century AD (Adams 1999, 143, 145). The site's downfall was no doubt part of the larger regional conflict between Tikal and Calakmul, as it preceded the death of Tikal's ruler in AD 562 by only a few decades. Although Rio Azul recovered during the Late Classic, it never again reached its Early Classic size or population, perhaps because it was no longer a necessary ally for Tikal. Adams (1999, 141–42) speculates that Tikal's original interest in Rio Azul lay in its strategic position "on the edge of a 'buffer zone' at least 80 km long and 20 km wide" between the two powerful states of Tikal and Calakmul near the end of the Early Classic. With the conflict ended, and Rio Azul apparently a nonfactor in Jasaw Chan K'awiil I's victory over Calakmul, the site may have been of little strategic or political value to Tikal in the Late Classic.

At La Milpa substantial growth occurred during the Early Classic, and, based on ceramic data, it appears that a strong Petén influence was a factor in that growth. Sagebiel (2005, 732) notes, "after about AD 400 the pottery used at La Milpa, by both elites and non-elites, is quite clearly related to the Petén." Adams et al. (2004, 335) suggest that La Milpa "may well have been a part of the Tikal regional state in Early Classic times. Its suite of carved monuments may, however, imply that it was more a client state than a subordinate unit in the larger Tikal state." Sagebiel (2005, 731) proposes a shift from local rule to "one either by outsiders or by local leaders drawn into the Tikal regional state," around AD 400, roughly the same time that Rio Azul fell under Tikal control.

Rio Azul's political misfortunes at the end of the Early Classic were apparently only one symptom of the larger Tikal-Calakmul conflict. Tikal's waning fortunes had further economic and political repercussions in the region. At La Milpa and other sites in the area, the archaeological record reflects an interruption from AD 550 to 650 in construction and monument erection after Rio Azul declined. As Sagebiel (2005, 738) observes, this hiatus break was preceded by "two possibly significant ritual and/or political events" in the region: a feast or termination ritual at Gran Cacao, dated by radiocarbon to AD 530 (Lohse et al. 2005, 59, 74–75), and the ritual caching of large quantities of jade and other artifacts at Blue Creek in the shaft cache in Structure 4 (see chapter 4, this volume; Guderjan 2004, 241–42; 2007, 30–33). Radiocarbon dates also place that event at the beginning of the sixth century, ca. AD 500–510 (Guderjan 2007, 31).

At Blue Creek "the Petén-style pottery common in all Early Classic contexts at Blue Creek is replaced by Belize Valley and southern Campeche-Rio Bec styles in Late Classic assemblages" (Kosakowsky and Lohse 2003, 10), suggesting a radical shift in trade routes and trading partners. Sagebiel (2005, 740) describes the Late Classic I ceramics at La Milpa as a "mixed assemblage of types common to Southern Belize along with the continued use of Petén types." Taken alongside the significant ritual events and decline in monumental-architectural construction, the ceramic data portray a period of significant disruption and change in the region resulting from the Early Classic defeat of Tikal and the failure of Rio Azul, its primary subordinate center in the region.

During the eighth century, La Milpa may have emerged from this period of transformation as the dominant site in the Three Rivers Region. Adams (1999) has suggested that Rio Azul became subordinate to La Milpa, which may have become Tikal's major ally in the Three Rivers Region in a remade political landscape of the Late Classic period. It is worth noting, however, that even at its height in the late eight century AD, La Milpa supported a core area that was roughly 2.6 times smaller than Rio Azul's during the sixth century AD. Evidence for Rio Azul's demotion in the regional hierarchy comes from Stela 2, which possibly mentions a visit to Rio Azul by a ruler from La Milpa sometime between AD 690 and 721 (Robichaux 2000, 43). It is significant that Stela 2 at Rio Azul makes no mention of Tikal

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but possibly cites La Milpa's double-emblem glyph (this identification is rather tentative as the glyphs in question are damaged [Robichaux 2000, 41]). Adams (1999, 178) suggests that after AD 690, Rio Azul "seems to have lost its role as a direct administrative center," perhaps falling below La Milpa and Kinal in the regional hierarchy. Adams (1999, 105) speculates that Governor Z, as he calls the Rio Azul ruler mentioned on Stela 2, was "possibly attempting to establish himself as an independent ruler, but, alternatively, may have been allied to the ruler of La Milpa."

La Milpa experienced unprecedented growth around AD 700–800, with "virtually every structure visible today" at the site either being built or refurbished, including "all the plazas and most of the buildings surrounding them" (Sagebiel 2005, 747). New research in the southern part of the site suggests that what was once considered to be new construction in the Late Classic was actually a significant rebuilding of older buildings (Zaro and Houk 2012). Portions of the site that were believed to be free of constructions before the late eighth century are now known to have long and complicated building histories dating to the Late Preclassic in some areas (Zaro and Houk 2012). The Late Classic expansion, however, was still impressive and extended beyond the core of the site to include the four minor centers at the four cardinal directions (Tourtellot et al. 2003) and significant expansion and renovation of the important minor center of Say Ka (Houk and Hageman 2007).

A partial text on La Milpa's Stela 7, dated to AD 780, provides information about the identity of one of the site's Late Classic rulers who may have been responsible for the expansion of the ceremonial precinct (Figure 2.4).[4] Grube (1994, 223) has interpreted a fragmentary passage on this stela as identifying a Late Classic ruler named Ukay. This time corresponds with large-scale public-construction programs and rapid population growth, further indicating a florescence at the site and within the region in general. Another figure named on the monument is "18 [?]." This person's identity, unfortunately, remains unknown because of the eroded nature of the inscription, although Robichaux and Houk (2005, 10) propose that "18 [?]," not Ukay, is the name of the ruler. They also speculate that the text on the stela refers to Temple 5, the small temple in front of which the stela is located (Robichaux and Houk 2005, 10). Support for the alternate interpretation comes from the presence of the term *bakab*, which also appears on Stela 7 and identifies the primary individual as a ruler who is situated in a subordinated relationship to another, superior site presumably somewhere in the central or eastern Petén. With Rio Azul no longer a factor at AD 780, we suggest Tikal, or perhaps an intermediate site, is the best candidate as the superior site in question. Additional support for La Milpa's subordinated status to a larger center comes from use of the term *bakab* in the Terminal-to-Postclassic Itzá state, where it referred to rulers of centers that made up the Chichén Itzá hegemony (for a parallel definition of *b'atab'*, see Rice 2004, 229, 268).

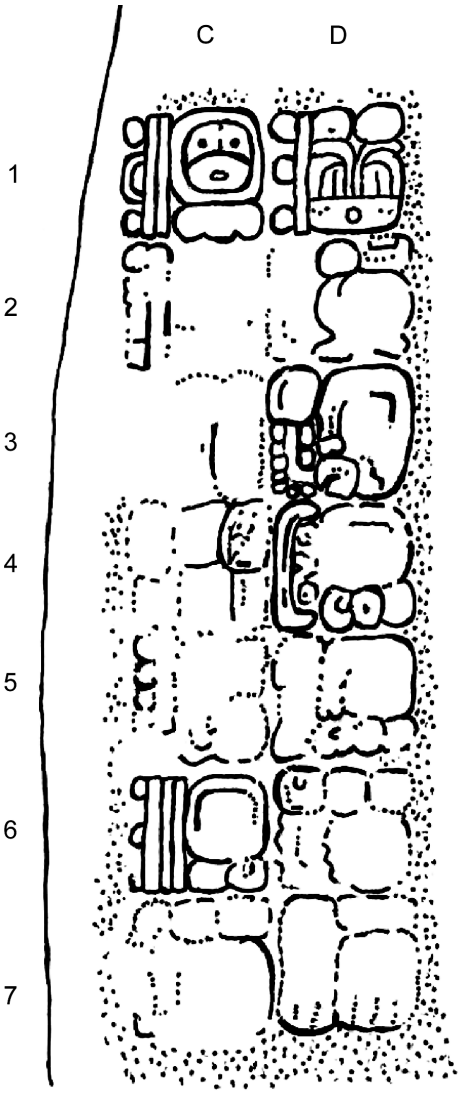

FIGURE 2.4. Drawing of the front (west) side of La Milpa Stela 7. Courtesy Hubert R. Robichaux, after Nikolai Grube (1994, 233, Figure 4).

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In understanding site-to-site interactions within northwestern Belize, the only other potentially relevant text from the region remains the Tepeu 2–3 polychrome plate fragment recovered from the elevated acropolis at the southern end of Dos Hombres (Houk 1996, 204–6; Robichaux and Houk 2005). This vessel fragment dates to the same general time period as Stela 7 from La Milpa but cannot be conclusively demonstrated to be contemporaneous with Stela 7. Nevertheless, Robichaux and Houk (2005, 10) have argued that the two passages may reveal the political relationship between La Milpa and Dos Hombres. The text on this vessel is incomplete, though Robichaux and Houk (2005, 8) read it as including the possessive term *yajaw*, translated as "its/his/her lord" and referring to a ruler who is subordinated to a higher-status ruler elsewhere (Figure 2.5). The subordinate ruler is identified as Ah Muwaan, and the name of his site is written as Nine Partitions Mountain (Robichaux and Houk 2005, 7). The text indicates that Ah Muwaan was sent to rule Nine Partitions Mountain by a figure named "18 [?]" (only the number is present on the plate fragment and the rest of the person's name is missing [Robichaux and Houk 2005, 8]). Although ceramics are portable artifacts and the text could refer to another site in the lowlands (Naranjo is mentioned as a possible candidate because of that site's well-known king Waxaklajuun Ub'aah K'awiil, also known as 18 Jog, who took the throne in AD 814), Robichaux and Houk (2005, 8–9) hypothesize that, based on its archaeological context, Nine Partitions Mountain was likely the ancient name of Dos Hombres. Robichaux and Houk (2005, 10) use converging lines of evidence that include relative site sizes, chronological similarities in site trajectories, the near-identical nature of the Dos Hombres and La Milpa site plans (also Houk 2003, 55–58), and their alternative reading of La Milpa Stela 7 to suggest that Ah Muwaan, ruler of Dos Hombres, was directly subordinate to "18 [?]," the ruler of La Milpa in AD 780 named on Stela 7, who was earlier identified as Ukay. This conclusion, while speculative, is appealing for its integration of multiple lines of evidence and application to the political networks of northwestern Belize. It remains to be verified through future research (Robichaux and Houk 2005, 10).[5]

Despite nearly two decades of research in the region, our understanding of the political organization of northwestern Belize is far from clear. The emerging picture of the Late Classic northwestern Belize political landscape suggests, however, that La Milpa was the dominant center, supported by a network of smaller sites that included Blue Creek, Dos Hombres, Gran Cacao, Ixno'ha, Maax Na, Wari Camp, and others. As Rio Azul faded from the political scene, La Milpa rose to its apogee. Its Late Classic rulers not only remade the central precinct (Hammond and Tourtellot 2004) but also reshaped the political landscape of northwestern Belize.

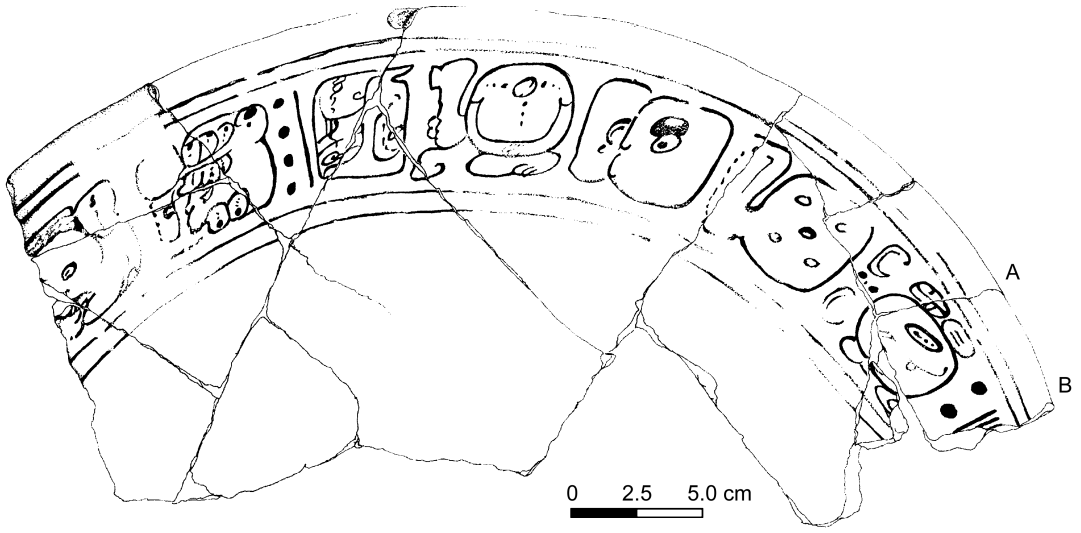

FIGURE 2.5. Dos Hombres hieroglyphic plate fragment. *A*: glyph read as ya-AJAW-ja-w(a), *yajaw*; *B*: damaged 18 prefix. *Drawing by Kerri Mulvania, after Robichaux and Houk (2005, Figure 4).*

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CONCLUSIONS

Against this backdrop of dynamic political change spanning the end of the Early Classic through the remainder of the Late and Terminal Classic in the central lowlands, northwestern Belize centers undoubtedly played a variety of roles, ranging from stakeholder to observer. With virtually no written record in northwestern Belize, the details of their involvement in the political events of the Classic period remain unclear, but trends are apparent. By the early Late Classic the fortunes of local elites had been disrupted by at least two factors. The first was from around AD 550– 650 or so, when overland trade routes seem to have been redirected away from areas of turmoil. For example, the site of Cancuen, arguably a gateway center for trade of exotics (Demarest 2004b) and long in support of Tikal, was converted to the Calakmul hegemony in AD 677 (Guenter 2003, 26), revealing the tenuousness of trade partnerships through the early Late Classic. Kosakowsky et al. (chapter 6, this volume), and Driver and Kosakowsky (chapter 4) provide additional evidence for what these changing trade patterns looked like in northwestern Belize. Second, the institution of overlordship, a system of political patronage that was vital to the legitimacy of rulers in peripheral regions such as northwestern Belize, became a perilous enterprise in which it was sometimes dangerous for lords at secondary sites such as La Milpa (*ajaw* or *sajal*, depending on their relationship with nearby *kalomte'* or appointed by *k'ul ajaw;* see chapter 1) to firmly commit to one primary overlord or another.

In this period of political uncertainty some commoners took productive and ritual administration into their own hands. By the time political relations normalized new realities forced elites to focus on service-oriented strategies for integrating populations (see chapters 4 and 5, this volume). Still, the fine-grained details of the long Classic period have so far been poorly understood. What, specifically, were the concerns of the many on-the-ground producer coalitions? What new resource-management strategies were implemented to respond to environmental change, population growth, and political shifts? In turn, what new strategies can be discerned for integrating these larger and perhaps nonlocal populations? Questions such as these are addressed in the following chapters.

NOTES

1. Most, if not all, researchers working in the region generally accept the ceramic chronologies presented in Figure 2.2. Many researchers, however, prefer slightly different calendar dates for the divisions between major time periods, and, therefore, the dates for periods and ceramic complexes differ slightly from chapter to chapter in this volume.

2. Structure 9 at Blue Creek has a partial series of stucco panels that includes a symbol that has been read as *ahau* and used as evidence for Blue Creek's political autonomy (Guderjan 1998). We find the discussion of Structure 9 by Driver and Kosakowsky (chapter 4, this volume) more comprehensive and plausible and defer to their interpretation of the evidence for Blue Creek's political stature in the region.

3. The ball court at Wari Camp has been badly looted, and no excavations have yet been carried out to record its construction history (Laura Levi, personal communication, 2003).

4. Grube (1994, 223) proposes that the glyph in position D4 is the name of the ruler of La Milpa, Ukay, and that the glyphs in positions D6 and C7 are the double-emblem glyph for La Milpa. Robichaux and Houk (2005, 10) propose that the glyph in position C6 is the name of the ruler of the site. The number "18" is clearly visible in the C6 position, but the main sign is damaged.

5. Though fragmentary, these passages remain the only epigraphic evidence describing possible political relationships between centers in the region. As such, they assume a greater significance than would otherwise be accorded incomplete texts. They are, moreover, supported by all available lines of archaeological data.

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Chapter 3

Landscape Formation and Agriculture in the Wetlands of Northwestern Belize

Timothy P. Beach, Sheryl Luzzadder-Beach, and Jon C. Lohse

The Three Rivers Region in northwestern Belize and adjacent Mexico and Guatemala provides a variety of ecological constraints and possibilities to political sustainability. These include strong rainfall seasonality, recurrent drought, frequent tropical storms, variable access to dry-season groundwater, and some naturally caustic groundwater sources (Luzzadder-Beach and Beach 2008). But the region also has plentiful water resources, productive soils of upland slopes, alluvial fans and foot-slope *bajadas*, *bajo* sinks, river valleys, and coastal-plain wetlands as well as a cornucopia of biodiversity capable of rich yields of numerous food resources from uplands, wetlands, terraces, savannas, and forests. A growing literature has detailed the potential natural hazards in the Maya world and their role in the central lowland Terminal Classic collapse (Diamond 2005; Dunning, Beach, and Luzzadder-Beach 2012; Gill 2000; Haug et al. 2001, 2003; Hodell, Curtis, and Brenner 1995). In the face of these contrasting variables, the Blue Creek Maya left rich and widespread evidence for landscape manipulation to take advantage of resources and adapt to constraints.

Since 1990 we have studied soils, geomorphology, paleoecology, archaeology, and agriculture across the region. We have aimed our questions at understanding the region's rivers and groundwater, soil geomorphology, ecological change, and archaeology. We have sought to integrate all these under the research objectives of understanding ancient subsistence, environmental change and history, and Maya response to changing environments as well as identify any conservation and development applications that may arise from intensive study of a tropical landscape. Hence, we studied the evidence for ancient agriculture and land use in agricultural terraces, paleoecology, water quality, and soils (Beach et al. 2002, 2003, 2006a, 2006b, 2008, 2011; Dunning et al. 2002; Dunning, Beach, and Luzzadder-Beach 2006; Luzzadder-Beach and Beach 2008, 2009; Luzzadder-Beach, Beach, and Dunning 2012). Much of our earlier work had a general focus on upland *bajos* or karst depressions as repositories of key paleoenvironmental data and also as focal points of ancient resource production. These *bajos* surround many Maya interior sites and are sedimentary archives of this uplifted, limestone interior.

Since 2000 our focus on the upland *bajos* expanded into the perennial wetlands of Belize's floodplains and coastal plain (Figure 3.1) to follow the trails of Maya subsistence in and geomorphic impacts on perennial wetlands (Beach et al. 2009, 2011; Luzzadder-Beach and Beach 2006, 2009; Luzzadder-Beach, Beach, and Dunning 2012). Over these years, we have studied polygonal features that appear to be human-made canals and drained fields near the site of Blue Creek, a region and topic that the *National Geographic* brought to broader attention in 1993 (O'Neill 1993). These features occur in many places across the Maya lowlands, and some have interpreted these as the remnants of ancient Maya canals and fields. These are conceptually similar to the *chinampas*

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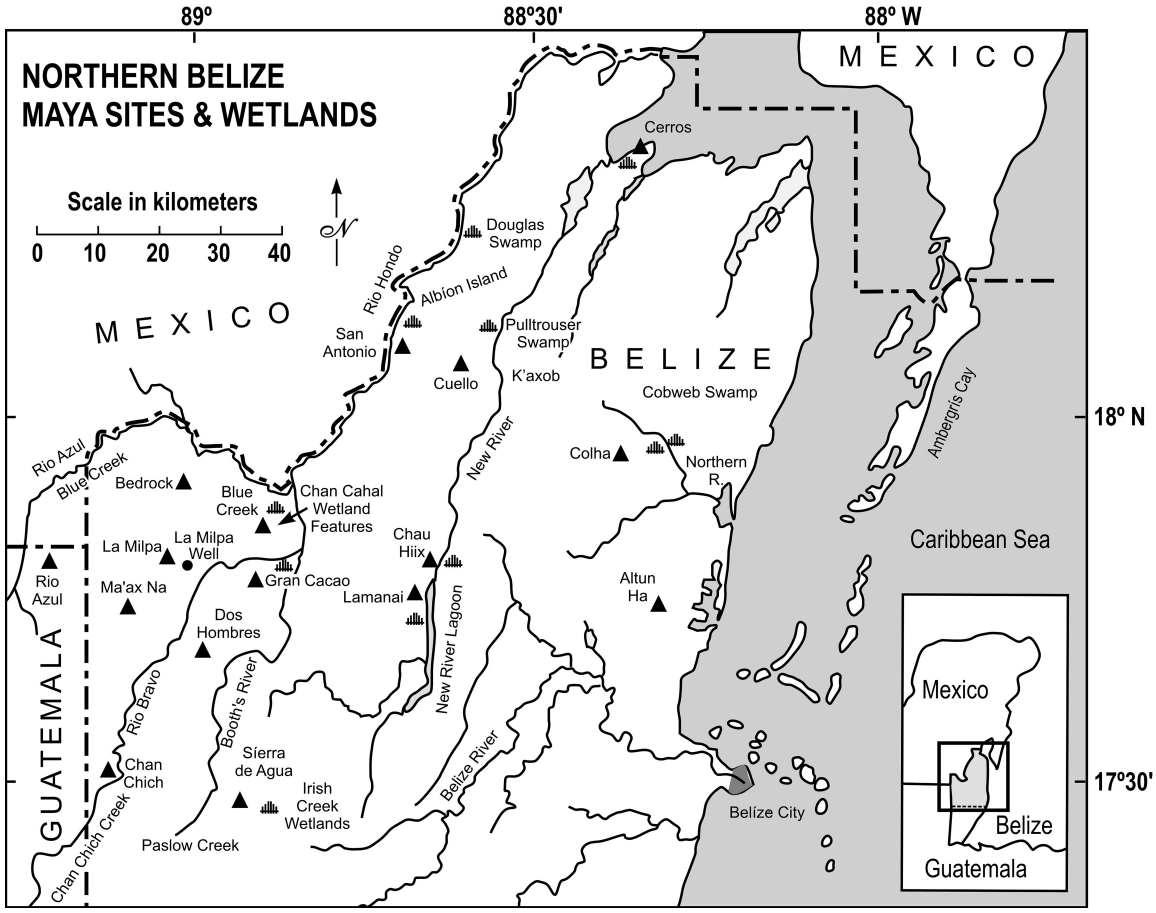

FIGURE 3.1. Maya wetlands of northern Belize.

of the basin of Mexico, and like the Mexican use of *chinampas*, intensive cultivation produced food that could have nourished the high population of the Maya Late Classic (AD 600–850). Indeed, this has become one of the pieces to the puzzle of ancient Maya subsistence (Dunning and Beach 2004; Luzzadder-Beach and Beach 2006; Turner and Harrison 1981). Others have argued that these were at least partly natural features or that they represent landscape manipulation in response to sea-level rise in the Preclassic (1000 BC–AD 250). It seems incongruous that such a central question of Maya subsistence and even modern development (Chapin 1988; Erickson 1998; Gliessman 1991; Gomez-Pompa et al. 1982; Sluyter 1994) has only a handful of field studies, which have fundamental disagreements about the chronology of patterned-field formation and the degree to which they are natural features or relics of ancient Maya land use (Beach et al. 2009; Berry and McAnany 2007; Harrison 1977; Jacob 1995; Lambert, Siemens, and Arnason 1984; Luzzadder-Beach and Beach 2006; Pohl et al. 1996; Pope, Pohl, and Jacob 1996; Siemens and Puleston 1972, 1983; Turner 1983; Turner and Harrison 1983).

Understanding landscapes requires careful study of formation processes and morphology, which are fraught with many potential disturbances. Maya lowland wetlands have formed in a dynamic natural and cultural environment. For example, evidence for widespread environmental alterations started in the Archaic and Preclassic (before 1000 BC–AD 250) with the buildup of sediments in a range of depressions across this region. This aggradation of lakes, karst *bajos*, valleys, and coastal-plain wetlands had at least four main causes but started with the deforestation and accelerated erosion of uplands in the late Archaic. Pollen evidence shows these ecosystems were changing with more and more disturbance species, charcoal, and economic species, but the Archaic, Preclassic, and Late Classic may also have experienced significant, natural environmental change (Haug et al. 2001), contributing to vegetation change

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and accelerated erosion. Other factors of wetland change were floods, gypsum aggradation, and ancient Maya agricultural manipulations (see Anselmetti et al. 2007; Beach 1998; Beach et al. 2002, 2003, 2006a; Dunning et al. 2002; Hansen et al. 2002; Luzzadder-Beach and Beach 2009). From the Late Preclassic through the Terminal Classic, several lines of evidence indicate that the Maya lowlands were also becoming drier and that the sea level was rising (Hodell, Brenner, and Curtis 2000; Hodell, Curtis, and Brenner 1995; Pohl et al. 1996; Dunning, Beach, and Luzzadder-Beach 2012). It was over this time and in response to these conditions that the ancient Maya developed complex and diverse agricultural systems that both conserved upland soil and water and reclaimed lowland fields (Beach et al. 2002, 2009).

With this environmental-change backdrop, we have pursued four interdisciplinary questions about the wetland features in northwestern Belize: (1) how, when, and if the Maya built these fields or patterns; (2) how the environment changed during this time; (3) the role these fields played in Maya society; and (4) the interplay between environmental change and ancient Maya land management. To answer these questions, we studied the major parameters of these fields (shape, size, pattern, chronology, and stratigraphy) by mapping; aerial photography and survey; extensive excavations; radiocarbon dating; and analyzing soils, water, and hundreds of artifacts and ecofacts. The two main field sites for this work are the Chan Cahal complex and the Birds of Paradise fields. Work was also conducted near the Airport fields (Figure 3.2).

ENVIRONMENTAL SETTING

Northwestern Belize and adjacent Mexico and Guatemala comprise well-drained upland karst ridges, karst depressions (*bajos*), river valleys, and the

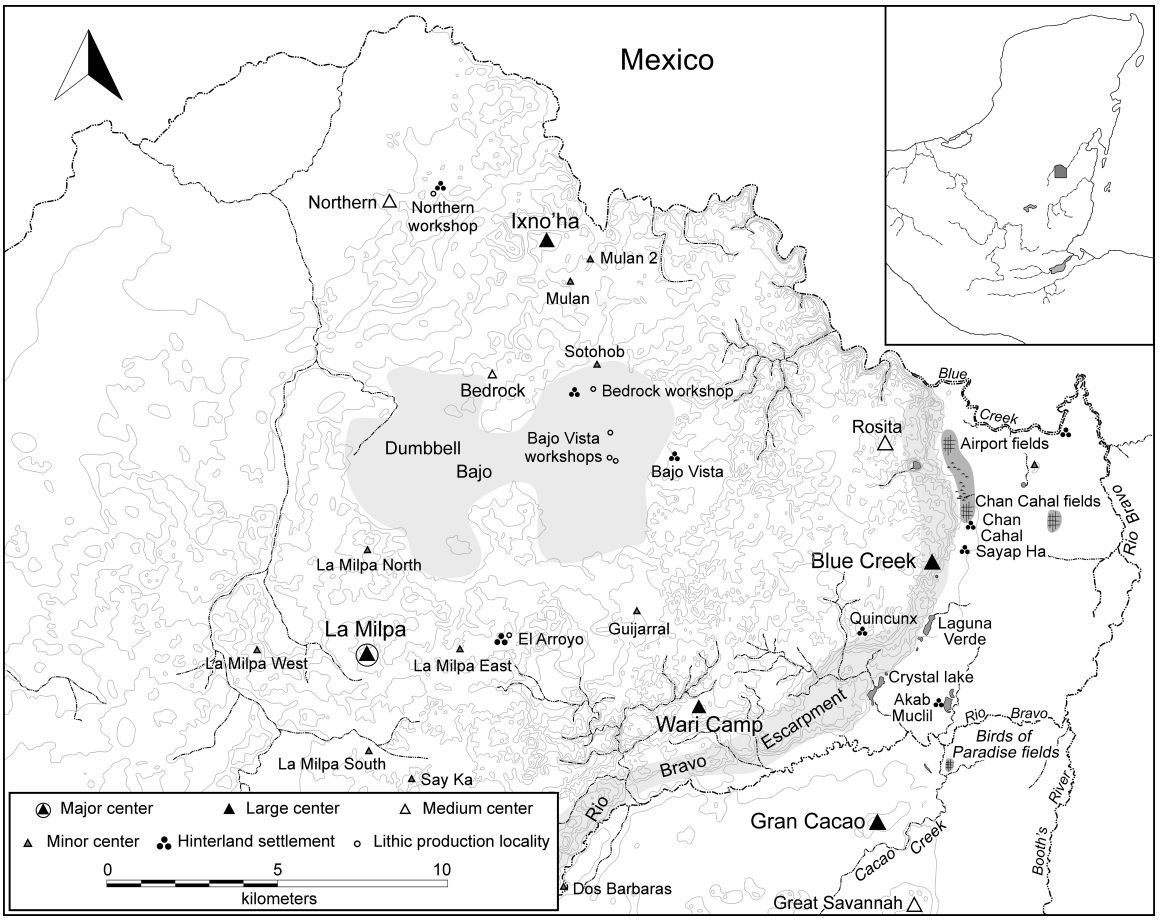

FIGURE 3.2. Topographic map of upper northwestern Belize with locations of patterned-ground field sites investigated from 2002 to 2005 (from Lohse 2006, Figure 1.1).

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coastal plain. These major divisions accommodate many smaller geomorphic environments, such as collapse dolines, back slopes, and hills of the escarpment, foot-slope margins that lie between the escarpment and lowlands, and the wetlands. Drainage occurs through three main watersheds, rising from nearly 300 meters and descending to the coastal-plain wetlands at seven meters above sea level. From west to east, the Rio Azul, Rio Bravo, and Booth's River meet within a few kilometers of the wetland field sites discussed in this chapter, but they contrast greatly in water chemistry. Though these rivers are perennial, their flows vary from a few cubic meters per second in the late dry seasons to orders of magnitude greater in the wet season. Large flood events usually from tropical storms have topped much of the coastal plain near Blue Creek (Luzzadder-Beach and Beach 2008).

Water tables in these floodplain wetlands range from perennially near the present soil surface to seasonally below two meters deep. The controls on water tables are complicated by many factors, including surface elevation, nearness to water sources, confining layers, ancient Maya water-control features, and modern drainage. All the coastal plain near this region had a high water table before drainage projects began in the 1950s (Luzzadder-Beach and Beach 2008). The low-lying areas of Chan Cahal mostly have near-surface water tables because of local springs near the escarpment's base, but large modern canals have lowered water tables in many areas. The drainage ditches and diversions around Maya fields also testify to significant ancient hydraulic management.

Sea Level and Ecosystems

Since this region includes sections of the coastal plain that are approximately seven to ten meters above sea level, the role of sea-level change is an important factor because it influences groundwater, river levels, soil formation, ecosystems, and resource use. Rising sea level through the Holocene governed coastal formation, habitation sites, and rising water tables. Sea-level rise slowed from its long upward climb from the last glacial maxim at about 5,000 BP but has crept upward another two meters since this time. Over the last 3,000 years sea level has risen about a meter, based on evidence from four main areas (Beach et al. 2009): the southern Belize coast (McKillop 2005), northern Belize wetlands (Pohl et al. 1996), northern coastal plain (Dunn and Mazullo 1993), and in the wider Caribbean (Gischler and Hudson 2004; Toscano and Macintyre 2003). Since sea water underlies many parts of the coastal plain of the Yucatán shelf, sea-level rise would have also uplifted the lighter, fresh groundwater tables far inland around this low-lying coastal plain (Luzzadder-Beach 2000). Accordingly, the mouths of rivers and thus stream-base levels would also have been uplifted over the entire Holocene, including the last 3,000 years. This in turn would have uplifted stream surfaces and likely caused valley aggradation because of increased flooding and reduced stream velocities and sediment load-carrying capacities (Luzzadder-Beach and Beach 2007, 2009).

Several contrasting ecosystems span the Blue Creek area of upper northwestern Belize. Tropical broadleaf, semideciduous forests still cover part of the region's steeper slopes and cenotes and areas in and adjacent to the Programme for Belize (PfB) conservation area, though more and more forest converts to pasture each year (Brokaw and Mallory 1993). Upland forests transition into savannas and swamp forests with red mangrove (*Rhizophora mangle*) and other wetlands dominated by sawgrass (*Cladium jamaicense*) and sedges (Bridgewater et al. 2002).

Agroclimate and Climate Change

Blue Creek has a tropical wet and dry climate. At nearly 18 degrees north latitude, solar radiation and temperature are high year-round. The subtropical high-pressure zone spreads in over the region from December until late May, suppressing rainfall during this time. *Nortes*, or cold fronts, still migrate through the region in the dry season, but most rainfall comes from convectional systems, easterly troughs, and tropical storms from May until December.

This tropical wet and dry climate is always warm enough to grow most crops, but the long dry season from December to May limits planting and productivity. Such pronounced seasonality is a particular constraint on uplands and *bajos*, which dry out, but is less so on perennial wetlands. Thus, sites like Blue Creek and Gran Cacao, with nearby stable wetlands, have access to farmland and related resources throughout the year.

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Soil Landscapes

Too few studies of Maya lowland soils exist, and most come from dated and general government or quasi-governmental surveys and specific archaeological appraisals (Beach 1998; Beach et al. 2002, 2003, 2006a; Bloom, Crum, and Pohl 2004; Coultas, Hsieh, and Post 1997; Darch 1983; Fedick 1995; King et al. 1992; Olson 1977; Wright et al. 1959). King et al. (1992, 221) mapped the general soil suites of the Blue Creek area as the Yaxa soil suite and Yalbac subsuite. The soils assessed by this and other government surveys cover a broad region of limestone slopes of Belize and adjoining Guatemala and Mexico. These soils are Lithic and Vertic Rendolls and coincide with the well-drained back slope and variably drained foot slope sites we will discuss. Many soils surrounding these wetlands undergo expansion and contraction from the dry to the wet seasons, forming deep cracks in the surface and inverted horizons. King et al. (1992, 223) did not expressly map these as Vertisols, but many exist in the region (Beach et al. 2003). On the maps the nearby depression soils are reduced clays in the Inceptisol, Entisol, and Histosol USDA Soil Orders and the Pucte, Chucum, and Sibal Subsuites of Belize's Tintal Soil Suite. These range from seasonally to perennially wet, are usually one to two meters deep, commonly have high amounts of gypsum, and have "hog-wallow" topography (mounded topography with mounds 0.5–1 m high and 3 m wide). King et al. (1992, 209) believed fluvial drainage and faunal bioturbation of soils created mounded topography and that trees preferentially colonized and stabilized these mounds. The Sibal soils are the perennially wet Histosols or Entisols that scholars have connected with ancient Maya wetland farming (Darch 1983; King et al. 1992, 212).

METHODS AND INVESTIGATIONS OF UPPER NORTHWESTERN BELIZE WETLANDS

We have pursued five main themes in our research into patterned-wetland-field complexes: (1) mapping the extent of rectilinear patterns in wetlands; (2) studying soil exposures and excavating units along a gradient from the karst uplands, through valleys and back slopes, onto alluvial fans and foot slopes, and up to a couple of kilometers away from the escarpment; (3) testing water quality; (4) using a range of paleoecological and agricultural proxies; and (5) analyzing soil characteristics. The specific methodologies used for each of the analyses are discussed in Beach et al. (2002, 2003, 2006a, 2008, 2009, 2011) for soil methods, Luzzadder-Beach and Beach (2008, 2009) for water chemistry, Bozarth and Guderjan (2004) for phytolith methods, and Jones (1994) for pollen methods. The Cornell Nutrient Analysis Laboratories and the Milwaukee Soil Lab conducted soil-chemistry analyses cited in Table 3.3, including macro- and some micronutrients by inductively coupled plasma (ICP) with Morgan Extractant (0.72 N NaOAc + 0.52 N CH_3CO_2H), pH (Modified Mehlich), soil organic matter and carbonate by LOI (loss on ignition), and gypsum by measuring elemental sulfur and the crystal-water loss method.

Chronology of Landscape Evolution

Upland Erosion and Aggradation

A series of studies on the uplands in the Petén of Guatemala and in northwestern Belize found high rates of erosion in deforested areas. Some localities had lost entire soil profiles in little more than a decade (Beach 1998; Beach and Dunning 1995; Beach et al. 2003, 2006a). Other studies reported similar findings and questioned the sustainability of modern land uses on the often thin soils of these tropical hillslopes (Furley 1987). Given the rapid rates of erosion on recently deforested slopes, prehistoric erosion likely accompanied major episodes of deforestation as pioneer agriculture in the Archaic and Preclassic diffused onto hillslopes away from challenging *bajo* soils. Since the early population of farmers was probably low, widespread deforestation must have been driven by dry-season fires, which today often burn out of control, especially in prolonged droughts. Additionally, two anthropogenic and two natural factors also may have contributed to early erosion. The human factors included deforestation for fuel for lime production (Schreiner 2002) and large-scale urbanization (Beach et al. 2006a). Natural factors included the strong climatic instability of the Late Archaic through the Preclassic (Haug et al. 2001) and natural disturbances like hurricanes (Dunning and Houston 2011; McCloskey and Keller 2009). The convergence of anthropogenic and natural factors between 4,000 and 2,000 BP may have amplified erosion.

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Several studies of the central Maya lowlands have found evidence of ancient erosion episodes, notably based on the widespread incidence of buried paleosols in *bajo* depressions and river valleys and Maya clays in lake cores (Anselmetti et al. 2007; Beach et al. 2003, 2006a, 2008). Radiocarbon and ceramic dates from the tops of these buried soils are usually Preclassic, though the soils can range from the Archaic through the Classic (Beach et al. 2003, 2006a, 2008; Dunning, Beach, and Luzzadder-Beach 2006). One to two meters of eroded sediments deposited by low- to high-energy events often bury the Preclassic paleosols, and some later deposits have faint upper Classic-period paleosols below the modern soil surface. Lake-core studies also show a sequence of organic sediments sandwiching thick mineral clays that date to as early as 3,000 BP (Rosenmeier et al. 2002). Anselmetti et al. (2007) used geophysical evidence to show that the highest rates of deposition accumulation of Maya clays occurred in the Late Preclassic. Thus, soil erosion started early, when scholars think that population densities were far lower than in the Late Classic, though some erosion episodes, especially at sites with relatively late-occupation histories, were indeed Late Classic phenomena (Beach et al. 2006a, 2008).

At Blue Creek we followed erosion and sedimentation in a cascade from deforesting karst hills to upland valleys, to alluvial fans, and into the river valleys and the coastal plain. In one case study from a hillslope deforested for construction, more than five years of gullying removed all the topsoil and incised gullies 25 meters long and 100 centimeters deep. Another karst valley allowed us to study both modern gully erosion and ancient aggradation. Here, one gully (200–300 cm wide, 260 cm deep, 125 m long) had incised into soils and saprolite during the last five decades. This modern erosion exposed evidence for ancient stability and erosion in the form of a thick (45 cm) and black paleosol buried by colluvium and alluvium (122 cm) topped by a less-thick (22 cm) black surface soil (Luzzadder-Beach and Beach 2009). Thick topsoils testify to relative surface stability, whereas the intervening sediments with no sign of pedogenesis testify to instability. Our evidence for dating this sequence is the surface Rendoll soil, which indicates relative stability for centuries, Late Classic ceramics throughout the top 98 centimeters, Late Preclassic ceramics in the next 25 centimeters down to the paleosol's surface, and the paleosol, which is twice as deep as the surface soil and probably formed under relatively stable pedogenesis over a longer period of time (Luzzadder-Beach and Beach 2009).

A major goal and component of understanding landscape formation is following sediment in all possible flows and sinks (Beach 1994), which at Blue Creek includes dissolution by water and fluvial sediment flows and storage in foot slopes, depressions, and the coastal plain. The alluvial fans downslope from this upland valley produced more complicated results, though two fan units that lie above Chan Cahal show essentially the same patterns. Excavations here (Units B, W, and X) produced soil profiles with paleosols (buried at 84–90 cm); mixed alluvial and colluvial aggradation; and thick, well-formed topsoils. Ceramics were only Late Classic in the top 70 centimeters and Late Preclassic from 70 to 90 centimeters, and one radiocarbon date from charcoal near the surface of the paleosol again was Late Preclassic (340–40 BC) (Table 3.1).[1]

Excavations from a collapse doline on the escarpment and an alluvial fan above the Airport fields yielded more complicated soil sequences and chronologies. Each showed five buried topsoil horizons (Ab); the lowest of these at 350 and 306 centimeters in Units M and S, respectively, have charcoal dated to 2475–2195 BC and 2590–2450 BC. The sinkhole (Unit M) at this level also had high amounts of charcoal and chert debitage. The upper-buried A horizon (at 120 cm) dated to 2140–1940 BC in Unit M, and one in Unit S (at 147 cm) dated to 930–810 BC with another Ab (at 125 cm). All ceramics in Unit S from 125 to 50 centimeters below the surface are Preclassic or unknown. Above the buried A horizons in the top 100 centimeters of Units M and S are dominantly Late Classic ceramics, and each again has thick surface A horizons (30–50 cm). In sum, the upland sinks show periods of instability and stability from the Archaic through the Classic and again in recent times (Beach et al. 2006a; Luzzadder-Beach and Beach 2009). The alluvial fan tested by Unit S also shows instability in the Archaic to Early Preclassic, stability in the thick Preclassic paleosol at 147 centimeters deep, brief Preclassic instability that ends in the upper Ab, only to be aggraded by 100 centimeters, which is mantled by a thick, cumulic, surface A horizon. Aggradation in the Archaic period coincides with evidence for humans in this landscape, including lithics and charcoal in the sink itself and charcoal and *Zea* pollen from

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Table 3.1. Radiocarbon dates discussed in the text

Blue Creek Location and Sample Number	Unit	Soil Horizon	Depth below Surface (cm)	^{14}C Date, cal 2 sigma, on Wood or Charcoal
Alluvial Fan Airport Fields				
Beta 195854[1]	66S	Ab2	147	930–810 BC
Beta 195856[1]	66S	Ab4ss	306	2590–2450 BC
Alluvial Fan Chan Cahal				
Beta 207550[2]	66B, W, X	C, above Abss	84	340–40 BC
Above Paleosol	Floodplain Wetlands and Transitional Units			
Beta 169976[2]	66E	Cy	45	AD 1510–1950
Beta 182607[1]	66R	Cy	66	AD 460–650
Beta 183583[2]	66I	Cy	77	Modern
Beta 195857[2]	66I	Cy	130	AD 440–635
Beta 207546[2]	66V	Cy	98	AD 70–250
Eklu'um Paleosol	Floodplain Wetlands			
Beta 158427[1]	56E	Aby1	110	200 BC–AD 70
Beta 169977[2]	66C gravel layer	Aby1	120	80 BC–AD 80
Beta 158428[1]	56A	Ab2	130	400–170 BC
Beta 183584[2]	66I	Ab2	140	380–60 BC
Beta 183585[2]	66I	Ab2	165	1300–820 BC
Chan Cahal Wetlands				
Beta 169976[2]	66E	Cy	45	AD 1510–1950
Beta 207546[2]	66V	Cy2/3	98	AD 70–250
Beta 158427[1]	56E	Aby1	110	200 BC–AD 70
Beta 169977[2]	66C	Aby1	120	80 BC–AD 80
Beta 158428[1]	56A	Aby2	130	400–170 BC
Beta 207548[2]	66V	O/Ab	135	380–160 BC
Airport Fields Wetlands				
Beta 182607[1]	66R	Cy1	64	AD 460–650
Beta 183583[2]	66I	Cy1	77	Modern
Beta 195857[2]	66I	Cy7	130	AD 440–635
Beta 183584[2]	66I	Aby1	140	380–160 BC
Beta 183585[2]	66I	Aby2	165	1300–820 BC

[1] Presented in Beach et al. 2006a, 171.

[2] Presented in Luzzadder-Beach and Beach 2009, 10.

a core taken from nearby Laguna Verde (results from this core are discussed later; for sample location, see Figure 3.2). Aggradation above the upper two Ab horizons also coincides with Late Preclassic and Classic periods. The other two paleosols from the Archaic to Preclassic could reflect periods of stability sandwiching instability driven by human, climatic, or other processes.

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Terracing

Many studies in the Maya lowlands have considered agricultural terracing (Beach, Luzzadder-Beach, and Dunning 2006). For the Three Rivers Region, most terracing dates to the Late Classic period, though some evidence exists for earlier terracing (Beach et al. 2002, 2008). Near Blue Creek we have also observed terracing and excavated one trench across a possible foot-slope terrace (Unit 66A), which shows up on the surface as a bench at the boundary between the base of the Rio Bravo Escarpment and Chan Cahal wetland fields. Excavations showed a destabilized boulder alignment with gravel and cobble fills buried by 60–80 centimeters of soil A and AC horizons, overlying a clay-rich Ab horizon ca. 20 centimeters thick. This stratum and the paleosol surface lie at similar depths to a paleosol in a nearby alluvial fan dating to the Late Preclassic but for which ceramic evidence indicates only unknown time periods or general Classic-period activity. The terrace exposed in Unit 66A is similar in formation, alignment, and situation to other Late Classic terraces in this region. We plan more terrace excavations in the Blue Creek area before we can understand their extent, uses, and connection to wetland fields.

Investigating Wetlands

Archaeologists have investigated rectilinear features near the Blue Creek site since the mid-1990s (Baker 2003; Guderjan 2004; Luzzadder-Beach, Beach, and Dunning 2012) and have reported approximately seven square kilometers of these canal and field patterns in the perennially wet zones between the Rio Bravo Escarpment to the west, Rio Hondo to the north, Rio Bravo to the south, and Booth's River to the east. We call the two main complexes of wetland fields within this area the Airport and the Chan Cahal fields, though other smaller areas of rectilinear features also occur in the nearby lowlands and are hidden under remaining canopy (Figure 3.3). The first two areas have a dense pattern of rectilinear features surrounded by extensive settlements along a higher-elevation pediment at the base of the main escarpment to the west and along the Chan Cahal fault block to the east. The low promontory of Chan

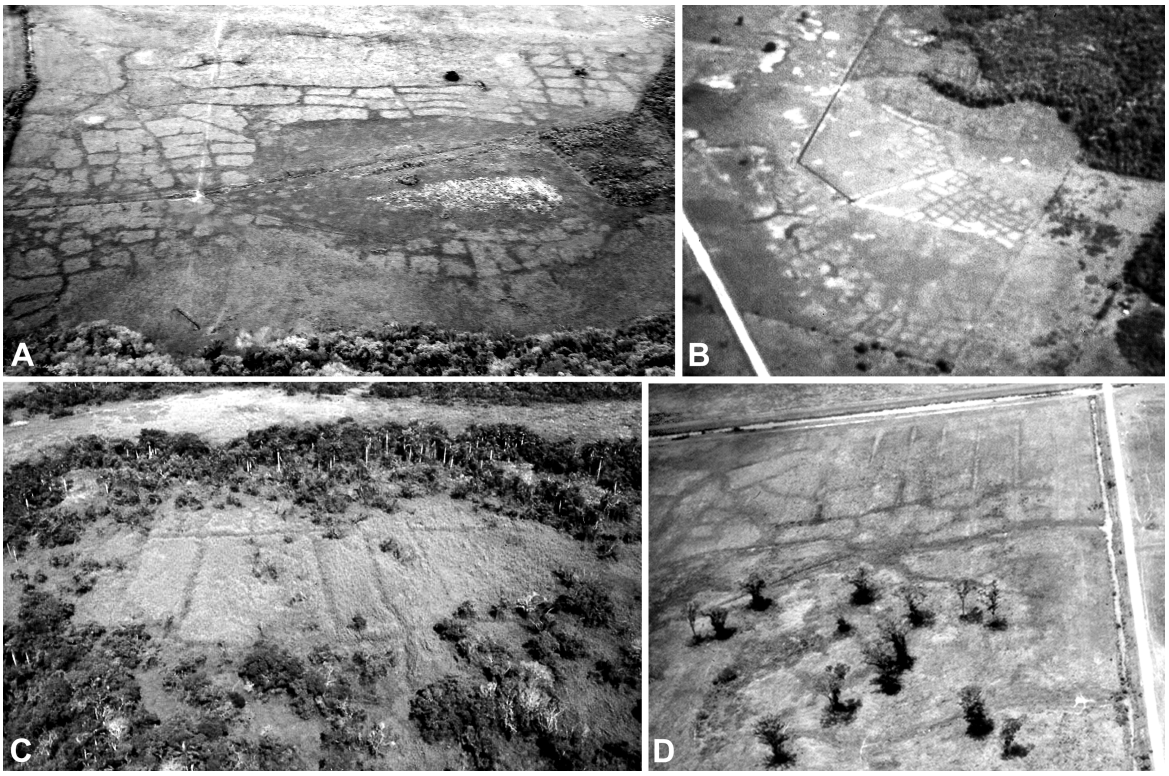

FIGURE 3.3. Aerial photographs of ditched-field complexes: (*A*) Chan Cahal fields looking west (*photograph by Antonio Padilla*), (*B*) Airport fields looking south, (*C*) Birds of Paradise fields looking west, (*D*) field complex on the Belize Coastal Plain approximately two kilometers east of Chan Cahal looking south.

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Cahal is one of a series of miniature fault blocks wedged into the coastal plain. These higher blocks rise up to about 15 meters, providing low ridges of dry land, ranging almost 10 kilometers from Chan Cahal in the north to the multicomponent settlement of Akab Muclil in the south (chapter 9, this volume). We have investigated a third area of canals, the Birds of Paradise fields (Beach et al. 2005; Lohse 2005; Luzzadder-Beach and Beach 2009), located 1.5 kilometers north of Gran Cacao and approximately 2 kilometers south of Akab Muclil (see Figure 3.2). The Chan Cahal fields occupy low-lying zones immediately adjacent to higher ground with ancient Maya habitation; thus the rectilinear field patterns and nearby settlements form an obvious connection. Many other low-lying areas that await discovery are also likely to have hog-wallow topography, potentially representing canal and field patterns, and probably have neighboring ancient mounds. One unanswered questions in this research is the full extent of ancient field patterns vis à vis hog-wallow or other naturally rectilinear topography.

To understand surface topography, relief, and gradient in relation to water-table and field systems, we conducted a series of aerial and terrestrial surveys of the surface profiles eastward from the escarpment to Chan Cahal and the Rio Bravo floodplain. Aerial surveys included both informal reconnaissance as well as systematic coverage. Reconnaissance flyovers, by far the more common, are useful in noting the presence of canal and field complexes and also in documenting the extent of these systems as they become more or less visible throughout the year depending on rainfall, land use, vegetation cover, and other factors. Unfortunately, oblique-angle images taken during such flights cannot be scaled due to focal-plane distortion and so are not useful for measuring field size with precision. In an attempt to overcome these factors in recording these features, we contracted the cultural resource management firm C-Dimension, Inc., of Plano, Texas, to conduct an aerial-platform photogrammetric survey (Lohse et al. 2003). Photogrammetry relies on a pair or series of overlapping images to accurately map the subject of interest. C-Dimensions used their own software program with the images, along with control points (northing and easting coordinates and elevation)[2] and information such as film format, focal length, camera orientation, and camera calibration to develop a three-dimensional model. From the screen, accurate three-dimensional measurements and maps were then collected into a computer-aided drawing (CAD) software package. Taken together, these methods are very powerful, accurate, and effective for both quantitative and qualitative data collection. The resulting map of the Chan Cahal and Airport fields clearly illustrates the extent of visible canal features at the time the survey was conducted in late April 2002 (Figure 3.4).

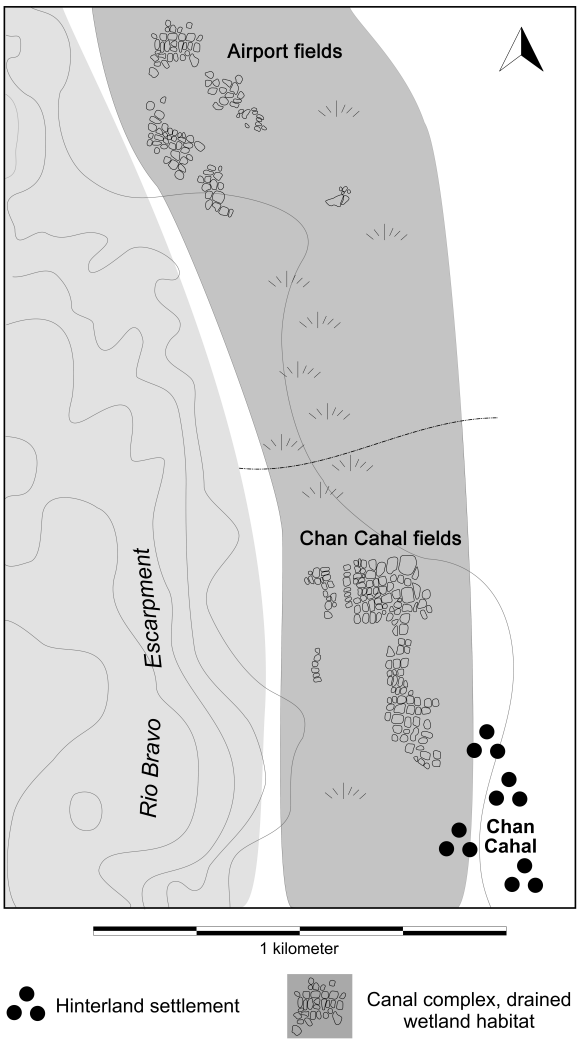

FIGURE 3.4. Scaled map of Airport (to north) and Chan Cahal (to south) ditched-field complexes rendered through results of photogrammetric aerial survey. Original cartography by Eben S. Cooper.

Through experience, it has become clear that the Chan Cahal and Airport field systems are most easily observed after seasonal rains begin, when color

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contrasts are sharpest between canals acting as conduits for subsurface drainage and the intervening planting beds. Thus, while the photogrammetric map includes depictions of many planting beds for both the Chan Cahal and Airport fields (see Figure 3.4), many others were not visible when the survey was carried out (Figure 3.5, top). Nevertheless, systematic aerial-survey data together with informal reconnaissance allows us to measure and depict many wetland features currently known to be present along the base of the Rio Bravo Escarpment.

Terrestrial surveys conducted along the base of the Rio Bravo Escarpment have recorded elevations in the wetland fields of about seven to nine meters above sea level, which is the approximate elevation of the water table in the coastal plain and the small graben at the front of the main escarpment (Figure 3.6). The Rio Bravo Escarpment, where the main site of Blue Creek lies, is approximately 100 meters above this, but local sites like Chan Cahal are at most five to six meters above these wetlands.

Wetland Field Patterns

In our first years of research we focused excavations on the most apparent field patterns at Chan Cahal and the Airport area, but these proved to be highly disturbed by deforestation, plowing, and drainage. We then sought out a range of less-disturbed sites that preserved surface topography. Nevertheless, even the disturbed sites had some topographic variation, with slightly higher (0–30 cm) fields than ditches, mainly because the ditches had been filled with bulldozed and burned vegetation. In unplowed areas, fields ranged from 50 to 110 centimeters above canals, and the canals are often today still filled with water in spite of modern, regional drainage by local farmers. Clearly, the entire coastal plain east of Blue Creek is undergoing rapid transformation from ongoing modifications both to vegetation cover and groundwater encroachment.

Wetland fields, visible from the ground and from aerial photography as darker vegetation occupying the canal or ditch lines, branch out from these settlements in web-like grids from the escarpment into the lowland plains (see Figure 3.5). Many ditches run largely north-south and east-west, though some run diagonally and others arc around topography such as the ridge at Chan Cahal, where ditches wrap around a central low point, possibly a reservoir. Also on the north side of Chan Cahal, ditch and field patterns are more erratic and piecemeal, perhaps due to intensive disturbance by the confluence of two modern canals. Some north-south ditches at Chan Cahal are more than 400 meters long, paralleling the escarpment at an isoline, whereas east-west ditches are at most 100 meters long. The canals or ditches range in width from two to five meters, depending mainly on whether they are single or confluence channels. Canals are generally trapezoidal in cross section, often with irregular shapes. All canals in this complex are one to two meters deep; this measurement varies based on the depth of canal fill as different from field material and the intensity of modern plowing. Individual fields, circumscribed by ditches within these longer ditch lines, range from ca. 10 to 20 square meters wide (100–400 sq m) to 10 to 15 by 200-meter rectangles (2,000–3,000 sq m, approximately one-quarter hectare). Hence, fields range over an order of magnitude, but the large fields tend to be long and narrow.

The Birds of Paradise fields lie along the seasonally inundated edge of Cacao Creek, a tributary of the Rio Bravo. The ground surface is one to two meters above the dry-season water table as exposed in field excavations and recorded in stream measurement. We mapped this field complex as approximately 900 meters north-south and east-west, with nine to eleven main canals and about one meter of local relief between the canals and fields. Thus far we have cleared many east-west and north-south transects through the fields, and these surveys and aerial photographs show individual fields are also about 30 by 100 meters north-south and east-west (at least 3,000 sq m), on par with or larger than the Chan Cahal fields. This complex retains its topography and observable field pattern today because it has not been cleared, plowed, and bulldozed. Because of this, direct comparison of these fields with the Chan Cahal fields is problematical, but the Birds of Paradise fields do provide better preservation for dating and reconstruction of past uses.

Wetland Field Stratigraphy

Elsewhere we have described the stratigraphy and chronology of wetland fields in excavations 56B (Beach, Dunning, et al. 2006), 66C, and 66I (Luzzadder-Beach and Beach 2009) and synthesized models based on many excavations (Beach et al. 2009;

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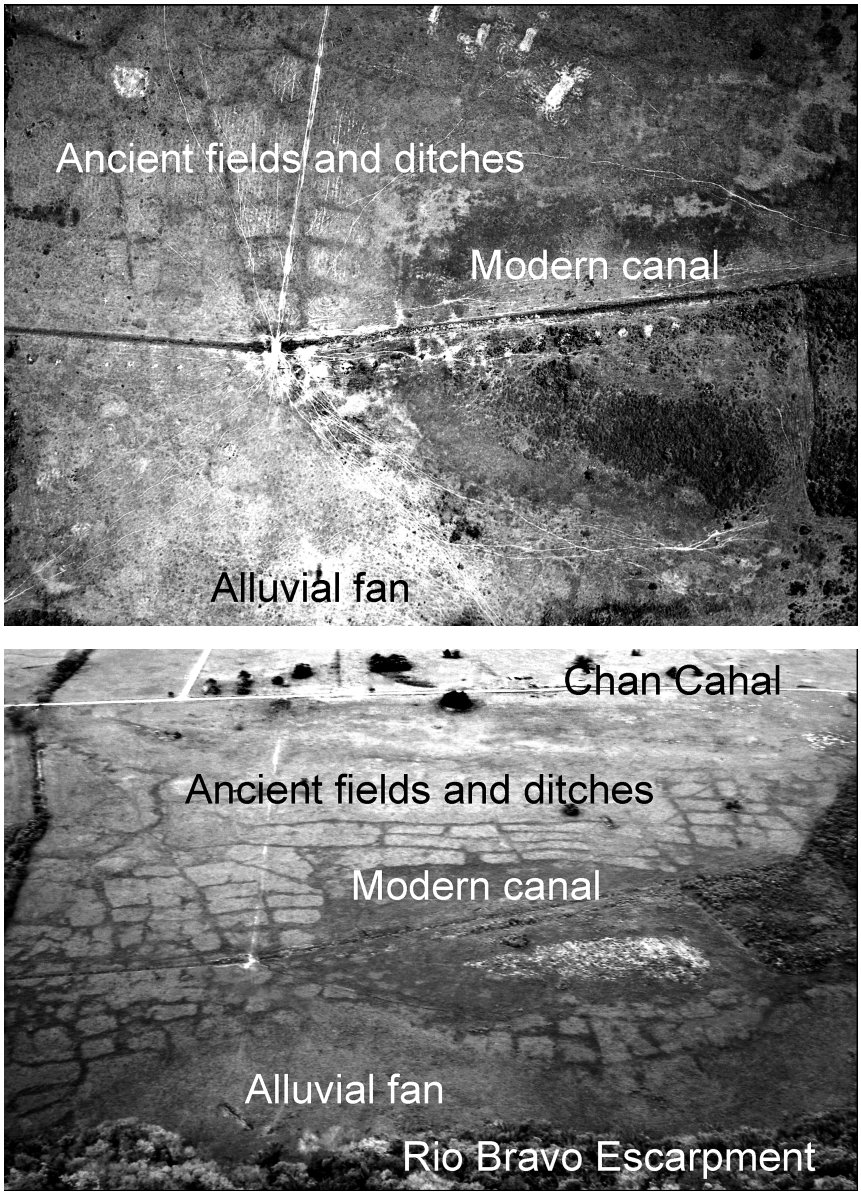

Figure 3.5. Two photographs of the same Chan Cahal field complex, taken at different times of the year illustrating changes in canal visibility. Photograph at top (*courtesy Eben S. and Judy H. Cooper*) was taken in late April 2002, at the end of the dry season, as part of a systematic aerial survey. Photograph at bottom (*courtesy Antonio Padilla*) was taken after the onset of the seasonal rains in late June 2005. North is to the left in both photos.

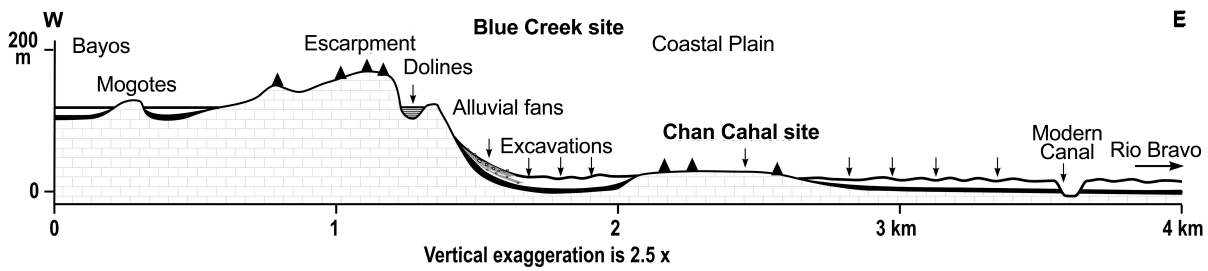

Figure 3.6. Landscape diagram at Blue Creek, showing an idealized transect from the upland *bajos* to the Rio Bravo Escarpment and into the Belize Coastal Plain.

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Luzzadder-Beach, Beach, and Dunning 2012). Luzzadder-Beach and Beach (2009) also describe some of the main stratigraphic ranges of all our excavation units. The Chan Cahal and the Airport fields show similar stratigraphy, which we analyzed through more than 30 excavations and assessments of general soil chemistry, micromorphology, and artifact and radiocarbon dating. The basic sequence shows a well-formed paleosol, buried at a depth of 80 to 170 centimeters (Figure 3.7). This buried soil has a very dark, brown or black A horizon formed over reduced gray clay Cg horizons, in some places with prominent yellow mottles, and weathered limestone bedrock. This buried soil (Ab2) dates from the Archaic to Preclassic, ranging from 1300 to 60 BC (see Table 3.1). The upper-buried A horizon is often covered with a thin O horizon 5 to 10 centimeters thick that dates from 380 BC to AD 70, which in turn is buried by 0 to 20 centimeters of calcareous, layered sand. This sand layer dates to the same time (350 BC–AD 80) but must be in the later portion of the age range since it formed above the O horizon that took decades to form. Above this is about a meter of light gray, predominantly gypsic sediment with some faint buried surfaces that date from AD 70 to 650 near the top of this sequence. The modern topsoil forms the upper 30 centimeters. The ditches are about a meter deep, mostly cutting through sediment that lies above the paleosol, and had to be built in the Classic period after sediment had aggraded because they cut through Classic-period layers and have sediment filling their lower levels dated to the Late and Terminal Classic (Beach et al. 2009; Luzzadder-Beach, Beach, and Dunning 2012).

The sequence of landscape formation occurred in four stages (Figure 3.8). Dating of the lowest paleosol, which we refer to as the Eklu'um paleosol, shows that it was the surface soil in the Archaic through Preclassic period (Stage 1). At some point beginning in the Late Preclassic, the Eklu'um was aggraded by the accumulation of an O Horizon and a flood deposit (Stage 2). We identify Stage 3 as the Classic-period aggradation of more gypsum precipitation and ditching of the fields. This was followed by further landscape evolution in the period of ditch management and abandonment (Stage 4). We did not date the

FIGURE 3.7. North face of excavation 66I showing the darker V-shaped canal in the middle, white gypsum-rich layers sandwiched by the Eklu'um paleosol along the bottom, and the thick topsoil.

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upper-A horizons because of bioturbation and recent disturbance in these densely rooted, granular soils. One date from the base of an A horizon at 30 centimeters was modern, and another date from the Cy horizons below this at 64 centimeters was AD 460–650 (see Table 3.1). We interpret this to mean that topsoils have largely formed since the Late Classic period or after most of the aggradation had occurred.

Canals in recently disturbed sites provide only surface field configurations and some preserved lower depths because the current farmers have leveled this landscape by filling in canals and flattening fields with bulldozing and burning. Thus, some canal fill is modern (string was found at 60 cm in one trench), and we found only unknown or Classic-period ceramics throughout the canals in disturbed and undisturbed sites. In the less-disturbed field sites in Units T, 66I–J, and R, canals were still up to 70 centimeters deeper than the adjoining field sections, though natural factors may have accentuated the differences. In most environments, gravity would tend to minimize the difference between highs and lows, but other factors come into play in these environments. For example, trees tend to grow in copses on the higher former fields, which stabilizes and builds up the fields as their roots draw the gypsum-laden water toward them and the trees transpire the water while accumulating gypsum in the rhizosphere. In sum, the ditching must mainly date to the Classic period since the ditches incise primarily Classic-period sediments, Classic-period artifacts occur to the bottom of canal layers, and the Preclassic landscape had a lower water table. Some earlier ditching is possible, because a few of the canals cut below Preclassic sediments.

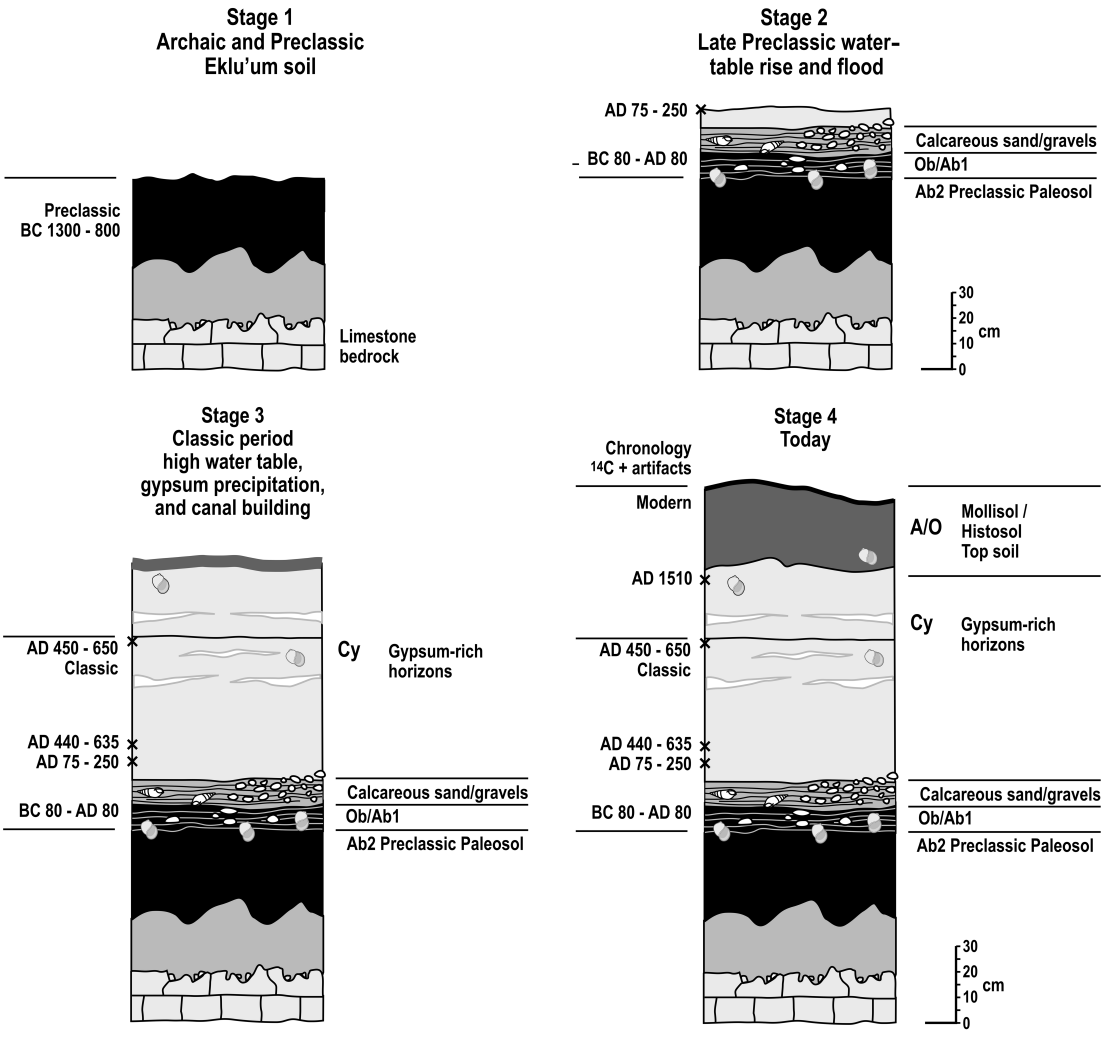

FIGURE 3.8. Soil-profile diagrams showing four-stage sequence of landscape aggradation.

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Water Chemistry

In 1993 we initiated an ongoing program of regional water-quality monitoring. Our goal was to understand any past differences in water quality and in regional and seasonal water quantity that may have imposed limitations on water use (Luzzadder-Beach and Beach 2008, 2009). We discovered that significant differences in water quality indeed exist: upland waters are much more suitable for agricultural and domestic uses than lowland or wetland sources. Upland sources, including Blue Creek, Chan Chich Creek, La Milpa Well, Paslow Creek, and Rio Bravo (see Figure 3.1), exhibited far lower concentrations of minerals than did lowland sources, which include the Chan Cahal and Irish Creek wetlands (Figure 3.9). The study also demonstrates that upland and lowland waters were from different sources, despite their leaky karst origins. Interestingly, the Chan Cahal and Irish Creek wetlands water quality also exhibited saturation in gypsum concentrations (Hounslow 1995), which has turned out to be an important mechanism in aggradation in wetlands of the Belize Coastal Plain (Luzzadder-Beach and Beach 2009). In other words, gypsum will precipitate out of saturated groundwater or surface water and accumulate in or above the soil column, aggrading the landscape upward, a process other studies described for wetland fields elsewhere on the Belize Coastal Plain (Pohl and Bloom 1996; Pope, Pohl, and Jacob 1996; Stein 1990). This gypsum saturation shows up distinctly in the comparison of calcium and sulfate across the region's water sources and has since been borne out in analyses of other water sources nearby Chan Cahal, including streams, cenotes, springs, and Laguna Verde, a spring-fed lake at the base of the Rio Bravo Escarpment.

Ecological and Agricultural Proxies

We used numerous ecological and chemical proxies to understand the use of the region over time, and we will describe these findings by chronology and stratigraphy. Proxies include soil chemistry, diatoms, pollen, and opal phytoliths.[3]

Soil Chemistry

We present the soil chemistry for the first time from Unit 56A, excavated across a planting bed, or field, and canal in the Chan Cahal complex in 2001 (Tables 3.2–3.3; for specific methods, see Beach et al. 2002, 2003, 2006a, 2009). These results are generally representative of field and canal stratigraphy presented elsewhere (Beach et al. 2009; Luzzadder-Beach, Beach, and Dunning 2012). They have approximately 100 centimeters of gypsum-rich aggraded sediments overlying low-gypsum flood sands and silts that in turn overlie an O horizon that tops the clay-rich paleosol, generally at a depth of ca. 130 centimeters. The chemical findings here help us describe these soils and understand their formation. All the soils have pH levels between 7.7 and 8.0, with the exception of the 7.3 pH reading from the highly organic O/Ab layer. The O/Ab is so named for a thin peat that formed above the clay-rich paleosol topsoil, represented by the Ab. The Ab horizon was more than 25 centimeters deep and largely clay textured, indicating long-term pedogenesis. Sediments above this have far less clay and more gypsum above ca. 100 centimeters, though most profiles show a decrease in gypsum in the upper A horizon.

Magnetic susceptibility provided another line of evidence for all soil profiles, and we measured this in soil columns at five-centimeter intervals with a Gf Instruments Magnetic Susceptibility Meter SM-20. All the profiles had similar results: extremely low readings through all the horizons above the Eklu'um paleosol and large increases of more than an order of magnitude at the Ab horizon of the paleosol. This and other soil chemistry provide evidence for a large increase in metal elements through the buried paleosol, which likely accumulated for millennia while this was the regional topsoil (Beach et al. 2008). Moreover, Gunn et al. (2002) used this metal-element increase to indicate buried paleosol horizons not visible in upland karst sinks.

Diatoms and Pollen

We obtained diatom identifications for three different wetland fields in the Chan Cahal and Airport areas. Diatom presence was scant in these gypsum-rich sediments. Indeed, too few are present to provide reliable evidence about past environments. Diatom expert Barbara Winsborough (2003) reports three possible explanations for these results: gypsic environments may have favored cyanobacteria over diatoms, vegetative shading over the planting beds may have limited diatom growth, or leaching by alkaline water may have dissolved siliceous diatoms. The few preserved diatoms occurred in the low-gypsum, high-

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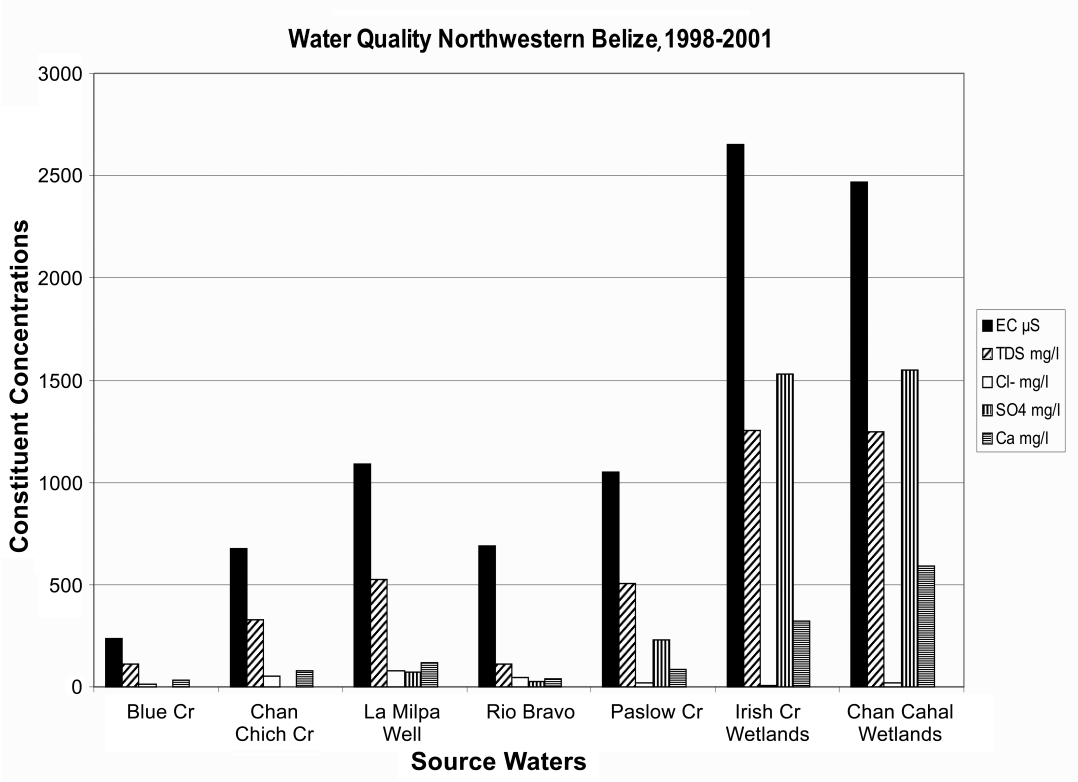

FIGURE 3.9. Water chemistry based on field studies described in Luzzadder-Beach and Beach (2009).

Table 3.2. Soil characteristics of the planting bed, or non-canal part of Unit 56A, excavated in the Chan Cahal complex in 2001 (see Methods section)

Soil Layer	Depth below Surface (cm)	Texture*	% Clay	pH	OM	P	K	Mg	Ca	Gypsum	Carbonate
					% LOI	ICP	ICP	ICP	ICP	% Crystal-Water Loss	% LOI
A	0–24	CL	28	7.8	15.9	69	43	1367	41250	50.4	48.1
A2	24–35	SiCL	29	7.8	10.6	51	41	999	37365	94.3	7.2
A/Oy	35–50	SiL	7	7.9	13.4	34	30	401	34582	46.4	18.3
Cy	50–102	SiL	22	7.9	3.7	79	20	436	47297	78.5	15.1
2C flood	102–110	SiL	2	7.8	8.7	62	27	482	46929	17.2	82.0
O/Ab	110–30	C-peat	--	7.3	36.5	8	84	1427	24801	27.1	70.6
Ab	130+	C	84	7.7	6.5	59	40	563	46523	40.6	51.6

* C = clay; C-peat = clayey peat; CL = clay loam; SiCL = silty clay loam; SiL = silty loam

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Table 3.3. Soil characteristics of the canal part of Unit 56A

Soil Layer	Depth below Surface (cm)	Texture*	% Clay	pH	OM	P	K	Mg	Ca	Gypsum	Carbonate
					% LOI	ICP	ICP	ICP	ICP	% Crystal-Water Loss	% LOI
Oa	0–14	SiCL	34	7.8	43.9	66	102	2587	50834	55.3	60.5
Oa2	21–60	SiL	4	8.0	15.5	24	9	602	34632	58.3	59.2
Oa3	30–55	C	80	8.0	23.7	18	68	1601	28312	11.7	87.3
C	50–74	SiL	9	7.9	3.3	58	11	385	40318	9.2	87.6
O/C	74–95	SiL	3	7.8	6.9	58	26	483	46000	22.2	79.1
2C	95–130	SiL	7	7.9	1.9	51	9	419	44334	30.8	63.0

* C = clay; CL = clay loam; SiCL = silty clay loam; SiL = silty loam

carbonate zones, which may be evidence for the latter explanation.

We sampled for pollen, charcoal, and phytoliths in the Chan Cahal field excavation Unit 66C and recovered a pollen core from Laguna Verde (Beach et al. 2009). Luzzadder-Beach and Beach (2009) report the soil data from Unit 66C, which we summarize here. Evidence for the earliest disturbance in the area comes from the lowest excavation and coring levels that date to the Archaic period, with radiocarbon dates of 2475–2195 BC at 3.5 meters below the surface in sinkhole excavation Unit M and 2850–2470 BC at a depth of 3 meters in the Laguna Verde core.

John Jones analyzed the Laguna Verde core and found *Zea* pollen at the lowest level and large amounts of charcoal at the bottom of the sinkhole excavation (Beach et al. 2009). The pollen core, from a sawgrass wetland with little to no flow or wave action, should reflect regional and local pollen inputs. The core has maize pollen from the top to the lowest Archaic-period samples. Arboreal pollen drops by approximately 50% from the Archaic into the first millennium BC, remaining at this level until the present. Herbs and cultigens as well as *Quercus*, *Metopium*, and *Pinus* increased in what appears to be the Classic period, and herbs, cultigens, and pine dropped thereafter. Interestingly, *Sebastiana* (White Chechem), Rhizophoraceae (Red Mangrove), and *Myrica* (bayberry, wax myrtle) or *Myrica cerifera* (teabox), with 24 ethnobotanical uses, decline in the Preclassic. *Bursera*, Fabaceae, *Bactris*, *and Cecropi*a (trumpet tree) increase slightly during the Classic period, and Combretaceae (white mangrove) after initial decline in the Preclassic remains steady to the present. *Cladium* drops through the Preclassic by 90%, while *Asters* and Poaceae and *Acrostichum* fern rise, and *Cladium* and another fern rise again from the Classic to the present period along with *Typha* and Moraceae (large family of fruit trees like ramón and fig). Generally, aquatics drop by two-thirds through the Preclassic and rise again by two times from the Classic to the present; the opposite of herbs and cultigens, which are steady at five to ten percent before and after the Maya period but rise to 40% during the Maya Preclassic through Late Classic period.

Steven Bozarth analyzed a column sample for pollen, phytoliths, and charcoal from the field (non-canal) area of Unit 66C in the Chan Cahal complex (Table 3.4). The lowest level (Zone 1) occurs in the upper Eklu'um paleosol (O/Ab), dated at 80 BC–AD 80 (see Table 3.1), and has phytoliths of palms and native grasses. About 40% of the phytoliths are birefringent polyhedra and tracheids, which came from one species (identified together on three samples) of dicots but were not in the modern analog samples. The pollen are mainly of ferns and weedy plants, indicating disturbed lands, and large amounts of small charcoal

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(30–100 µm), indicating regional burning. These, together with six *Zea mays* pollen, signal agricultural disturbance either at this location or close by in the Late Preclassic. From the adjacent rural site of Chan Cahal, Bozarth and Guderjan (2004) also reported squash and maize phytoliths in a dedicatory cache vessel that dated to the Late Preclassic.

Zone 2 was a gravel and calcareous sand layer (2C) at about 110 centimeters deep overlying the upper paleosol. This corresponds to the flood layer of calcareous silts to gravel-size clasts across the region, which dates across a broad range from 340 BC to AD 40 (Luzzadder-Beach and Beach 2009) (see Table 3.1). This layer included both more small charcoal, again perhaps indicating regional burning, and the same birefringent polyhedra and tracheids of Zone 1. This dominance by one type of phytolith indicates a low biodiversity. The pollen mainly represent aquatic plants including *Typha* (cattail) and Cyperaceae (sedge family).

Zone 3 (Ab2/Cy), at 90 centimeters deep, included high amounts of charcoal and similar phytoliths with an increase in grass species. The nearby Unit V produced a date of AD 70–250 in a similar context and depth. This zone shows a large increase in pollen mainly of *Fibrisylis* (Cyperaceae), two Piperaceae, and one *Zea mays* pollen. Small charcoal, presumably from regional fires, remains high through this zone.

Zone 4 (Ab1y), at about 77 centimeters, had a similar pattern of phytoliths but with a large increase in numbers, possibly providing evidence of longer surface stability. Units I and R produced two dates that ranged from AD 440 to 650 in a similar context and depth to Zones 4–5. Zone 4 has evidence of drier conditions, with few aquatic plant pollen grains and

Table 3.4. Unit 66C pollen and phytolith assemblages

Unit 66C Zones	Depth below Surface (cm)	Phytoliths and Conditions	Pollens and Conditions	Charcoal and Conditions
5	60–62	Similar assemblages to Zones 3–4, lower concentration. More rapid aggradation.	*Amaranthus;* weedy-type plants. Cultivation.	Decrease in small, increase in large charcoal, from Zone 4. Increasing local, decreasing regional burning.
4 Middle Classic	75–77	Similar to Zone 2 but higher frequencies. Greater surface stability.	Little aquatic pollen; maize and avocado. *Amaranthus*. Possible cultivation.	Increase in large charcoal concentration. Local burning increase.
3	90–92	Similar to Zone 2; increasing grass phytoliths over Zone 2 (not same analog as modern low jungle).	Sedge and one maize. Possible cultivation nearby.	High concentration of small charcoal. Regional forest burned.
2 Late Preclassic	105–10	Same birefringent polyhedra and tracheids as Zone 1 (not same analog as modern low jungle).	Aquatic, sedge, cattail. Open water.	Increase in small charcoal, from Zone 2. Increased burning of regional forest.
1 Late Preclassic	122–30	Palm, native grass, and non-analog ID (not same analog as modern low jungle).	Ferns, weeds, maize, no trees. Wet, disturbed. Cultivated.	Charcoal. Burning of regional forest occurring.

Source: Analyses by Steven Bozarth.

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an increase in large charcoal (>100 µm), perhaps reflecting in-situ fire. High frequency of *Chenopodium/Amaranthus* and two Piperaceae pollen may also represent disturbance or cultivation. Two *Zea mays* and two *Persea* (avocado) pollen grains also indicate nearby cultivation. Near these sites, Guderjan et al. (2009) report pollen or phytoliths from a broad range of fruit trees, cacao, avocado, and sweet potato generally in Classic-period samples.

Zone 5 (C/Ab1y), at about 62 centimeters, is similar to Zones 3–4, except it has fewer phytoliths, perhaps evidence of faster aggradation. Nonetheless, high quantities of *Chenopodium/Amaranthus* (chenoams) pollen, other weedy taxa, and more large charcoal and fewer small charcoal all indicate local or in-situ disturbance or agriculture. The stratigraphy above this zone is too disturbed to reveal past land uses, and a radiocarbon date from charcoal at 45 centimeters in a nearby excavation is modern (see Table 3.1).

John Jones examined a second column from Unit 66C for pollen and charcoal (Table 3.5). Jones's identifications were similar to Bozarth's, with large quantities of charcoal in three samples from the Preclassic paleosol and from the equivalent of Bozarth's Zone 5, *Zea mays*, Asteraceae, *Quercus*, Cyperaceae, and Apocynaceae from a deeply buried canal bottom; *Typha* in Zone 3; and Polygonaceae, *Bactris*, *Zanthoxylum*, Asteraceae, Poaceae, and Cyperaceae from Zones 4–5. All of Bozarth's layers have plentiful charcoal with small charcoal in Zones 1–3, indicating regional burning, and large charcoal in Zones 4–5, indicating local burning. The increase in phytoliths in Zone 4 may indicate greater stability, which also corresponds to increased organic matter (see Table 3.4). *Zea mays* pollen occurs in three zones from the Late Preclassic paleosol up to Zone 4, *Persea* pollen was present in Zone 4, and cheno-ams pollen, whether pioneer or cultigen taxa, indicate disturbance. The paleoecological evidence points to a sequence of a stable, well-drained surface (Zone 1) in the Preclassic that is flooded in the Late Preclassic (Zone 2) and gradually becomes drier by Zones 4–5, which probably date to the Late Classic based on the presence of Late Classic pottery sherds. The canal fill from 120 to 129 centimeters in this excavation has *Zea mays* pollen and was an undisturbed, layered sediment that stratigraphically connects to Bozarth's Late Classic Zones 3–4, which also had *Zea* pollen. These findings parallel the nearby soil, pollen, and charcoal findings from 66T (Beach et al. 2009).

An apt comparison with our own wetland-field complexes is the pollen record from a core adjacent to wetland fields at Sierra de Agua, 35 kilometers south of Blue Creek (Baker 2003). Baker (2003, 126) reported that the short core had one uncalibrated date of "BP 1250+/-50" (at 55 cm), dating to the Late Classic. The Late Classic section (from 35–60 cm) showed dominance by grasses, sedges, herbs, and cultigens, including maize and cassava, but an abrupt change to arboreal species in the profile above 35 centimeters, near another date of "1470–1660 C.E." Excavations in the nearby wetland fields recovered Late and Terminal Classic ceramic sherds (Baker 2003, 196–97), providing support for the lower radiocarbon date. This sequence seems to indicate that the Maya of the region grew traditional crops in deforested conditions, though some tree species show up in the pollen and phytolith records.

Implications for Agroecosystems

What do all these findings imply for subsistence intensification and political sustainability in the study region? It seems clear from the pollen, phytolith, and charcoal records that Archaic and Preclassic farmers in and around Chan Cahal and Akab Muclil, down slope and upstream from Blue Creek, were growing maize and tree crops, greatly altering forests, and burning extensively. As the water table rose through this period, dry lands were becoming wetlands, and Chan Cahal, which had continuous occupation for nearly two millennia, at some point adapted to wetland fields. We have identified these ancient fields among ancient communities over a stretch of about 10 kilometers, and at least 2 kilometers farther if we include the Birds of Paradise fields. The fields demand significant labor to build and maintain them, especially during the Late Classic. At this time, the broader Blue Creek Region had diverse agricultural resources, including upland fields, terraces, lakes, and rivers, as well as its extensive network of wetland fields. This rich environment had a regional population of only about 20,000 over a 150-square-kilometer area in the Late Classic (Guderjan et al. 2009). For comparative purposes, this was far below the agriculturally depauperate site of Chunchucmil in northern Yucatán, with more than 40,000 people in its 21-square-kilometer central area (Dahlin et al.

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Table 3.5. Pollen assessment of wetland field and canal components of Unit 66C in the Chan Cahal complex

Soil Horizon	Depth below Surface (cm)	Pollen Characteristics
Topsoil	0–10	Poaceae, Cyperaceae, *Bactris* palm. Fair preservation.
Cy	50–54	Poaceae, single Asteraceae. Poor preservation.
Aby; probable Maya Classic soil level	50–55	Polygonaceae, *Zanthoxylum*, Asteraceae, Poaceae, and Cyperaceae. Abundant charcoal.
Probable Maya Classic soil level	70–75	*Borreria*, Asteraceae, Poaceae, *Coccoloba*.
Gypsum Cy2	87–90	Single *Typha*. Poor preservation.
O/Ab	114–17	Copious charcoal, obscuring pollen.
Ab paleosol	135–40	Copious charcoal, obscuring pollen.
Ab2 paleosol	142–45	Poaceae, *Typha*, and Asteraceae. Abundant charcoal.
Lower canal fill 1	90–97	*Pinus*, Poaceae, Asteraceae, Polygonaceae, *Quercus*, and many *Acrostichum* fern spores (brackish-loving).
Lower canal fill 2	120–29	*Zea mays*, Asteraceae, *Quercus*, Cyperaceae, Apocynaceae.

Source: Analyses by John G. Jones.

2007). In comparison, there seems to have been plenty of fertile land in the uplands alone for ancient Blue Creek to be self-sufficient, which begs the question of why nearby sites engaged in the labor-intensive wetland farming.

Because the possible reasons for wetland-field proliferation in the Late Classic are so many, we may never be able to know for certain what compelled this adaptation. Likely answers include at least four general possibilities. First, perhaps new appealing crops arose associated with the wetlands that are not prominently noted in our records, such as cacao and/or poly-cropped systems with aquaculture. Second, perhaps internal growth occurred into the wetlands from individual sites like Chan Cahal, pushed by the need for reclamation in the face of water-table rise or pulled by an advancing front of an appealing, new technology. An obvious component of this scenario would include overall population growth across the region (see chapter 2, this volume), which notably spiked in many communities by the beginning of the Late Classic period. Third, perhaps other pull factors such as trade played a role that we have yet to determine. Maya scholarship has often downplayed trade of agricultural goods because these goods decompose readily in the tropics and because transportation was limited to human power. But the wetlands were close to canoe transport along the region's three rivers, and Chan Cahal, one key wetland site, did have an outsized quantity of jade and some obsidian, evidence of long-distant exchange (Guderjan et al. 2009; see also chapters 4 and 8, this volume). Fourth, perhaps environmental change pushed farmers to the wetlands for specific crops or for risk aversion. Such environmental changes could include the Late Classic droughts, which evidence suggests started by AD 770 and lasted through the tenth century (Luzzadder-Beach, Beach, and Dunning 2012); landscape deterioration through soil erosion and sedimentation; or some unknown and difficult to detect change, such as pest infestations. Any or all of these scenarios may have occurred in combination, and this seems the most likely scenario based on available evidence from across the region. What we do know is that after populations

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peaked in the Late Classic, Terminal Classic populations plummeted, and evidence indicates that Maya farmers seem to have stopped maintaining their wetland fields, never to fully use them again for wetland farming despite their productive capacity and ability to protect against the region's recurrent droughts (Luzzadder-Beach, Beach, and Dunning 2012). Whether the Postclassic farmers that remained in the area, like the residents of Akab Muclil (see chapter 9, this volume), continued to grow crops in these relic field systems remains an open question.

CONCLUSIONS

This chapter represents an ongoing assessment of the formation of wetland fields in the northern Belize Coastal Plain and their possible uses and management by the ancient Maya. Landscape formation of this environment is an important part of the story of these fields and provides an environmental backdrop against which local and regional farmers and others necessarily adapted. We suggest a four-stage model for the development of this landscape that has major implications for human use over time, for the organizational and labor requirements of hinterland farmers relying on these resources for their livelihood, and for political growth and sustainability at a regional level.

Stage 1 occurred as the sea level was rising in the Holocene but was not yet high enough to force water tables to inundate the coastal plain in upper northwestern Belize. Thus, soils formed in a landscape that was variably well drained throughout the Archaic and into the Late Preclassic. Evidence of maize cultivation and large-scale burning indicate a culturally managed landscape at that early time. Stage 2 occurred as water tables began to rise in the Late Preclassic, again probably in response to sea-level rise, and organic soils (Histosols or peats) began to form within 10 centimeters over extant Eklu'um clay soils. A large flood occurred after this in the Late Preclassic, depositing another ca. 10 centimeters of calcareous silts, sands, and gravels in layers across much of this landscape. Archaeologists in the region might look for evidence of widespread disruption of economic, political, or ritual behaviors during this broad, though not precisely dated, interval. Pollen evidence from this time shows wetland species, and high quantities of small charcoal reveals continued burning. Stage 3 occurred as the water table laden with calcium and sulfate continued to rise from the Late Preclassic into the Classic period. This calcium- and sulfate-saturated water precipitated gypsum and carbonate over this surface in a wetland environment and thereby aggraded the environment by as much as a meter or more. Stage 4 occurred in the Classic period, as the Maya started to reclaim these lands by ditching large areas (ca. 6–7 sq km) of the landscape. Labor requirements for this ongoing reclamation program may have had impacts on local construction efforts, perhaps siphoning some of the Late Classic civic core growth away from Blue Creek.

Some faint paleosols from these periods show pollen of maize and avocado, and the bottom ditch sediments also show maize pollen. Inevitably, sediment removed in ditch cleaning and maintenance contributed a small amount to landscape formation of the field areas between ditches, though we do not see that process as a significant contributor to the overall aggradation of local ground surfaces or planting beds. The waning of Stage 4 witnessed the abandonment of the fields and their natural evolution by hydrology, ecosystems, geomorphology, and pedogenesis. The available dating evidence indicates that these wetland fields were no longer maintained after the population decline in the Terminal Classic. Hence, whatever drove the Terminal Classic collapse did not spare the wetland fields (Luzzadder-Beach, Beach, and Dunning 2012). A new stage has occurred since the 1950s, as contemporary farmers have once again converted these wetlands but this time to pastures and cereal production. This last stage, which involves significant modification both to stratigraphic sequences and local water tables, underlines the imperative to study these agroecosystems before they have been converted to other uses and their evidence degraded.

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Notes

1. All radiocarbon dates discussed in the text of this chapter are presented as calibrated at two sigma range of confidence.

2. Surveyed controlled points were provided by Marc Wolf and Kristen Gardella. The photogrammetric documentation, recording, and cartography were carried out by Eben S. Cooper and Judy H. Cooper of C-Dimensions, Inc., of Plano, Texas.

3. Analyses of the chemistry of the water and field soil were conducted by Timothy Beach and Sheryl Luzzadder-Beach. The Cornell Nutrient Analysis Laboratories and the Milwaukee Soil Lab conducted most soil analyses. Barbara Winsborough performed all diatom analyses. Pollen analyses were conducted by John Jones and Steven Bozarth; Jones performed analysis of the Laguna Verde core. Bozarth also carried out the analysis of opal phytoliths and charcoal.

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Chapter 4

Transforming Identities and Shifting Goods: Tracking Sociopolitical Change through the Monumental Architecture and Ceramic Assemblages at Blue Creek

W. David Driver and Laura J. Kosakowsky

The recognition of transformations in the material culture of archaeological sites has long provided critical insight into both the external world views and internal social relationships of ancient communities. This chapter examines the interwoven patterns of change evident in the built environment, ritual deposits, and ceramic assemblages at Blue Creek in an attempt to explore how changes in the use and manipulation of the social landscape and material culture reflect both internally and externally driven transformations in the social practices of its inhabitants.

Archaeological analyses of the built environment as systems of settings and behaviors (Rapoport 1990) have grown out of practice-oriented approaches to the study of social process that focus on a dynamic manifestation of agency and structure (Bourdieu 1977; Giddens 1984; Shields 1991). When combined with material-culture analyses of associated ceramics (Rice 1987) such studies can provide a diachronic view of prehistoric behavior beyond that of simple cultural histories. Prior research on how the ancient Maya utilized space (Ashmore 1991; Houston 1996; Schele and Freidel 1990) has suggested that they created sacred landscapes as representations of their world view and expressions of elite power and that changes in the organization and use of the built environment were not random. Site organization and structural design served multiple functions and operated as a means of social communication (Brady and Ashmore 1999; Miller 1998); a functional locus for domestic, administrative, and ritual activities (Harrison 1986; Schele and Freidel 1990); and as a cosmological template for expressing a shared ideology (Ashmore 1991; Chase and Chase 1995). Similarly, ceramics can communicate social identity and group membership through sphere affiliations (Gifford 1976), serve multiple functions in the domestic and ritual behaviors of daily life (Clayton, Driver, and Kosakowsky 2005; Rice 1987), highlight patterns of economic production and exchange (Fry 1979, 1980; Rands and Bishop 1980), and express shared ideological beliefs through stylistic and decorative features (Reents-Budet 1994). Within this framework the site of Blue Creek, by virtue of its long and well-documented occupational history, is ideally suited for studying how changes in architecture and ceramics reflect changes in the sociocultural behaviors of residents of this ancient community as well as with regional and extraregional neighbors throughout its history.

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The Blue Creek Site Core: Description and Spatial Organization

Excavations at Blue Creek (Driver 2008; Guderjan 2004) have documented a long occupation of the site's central area beginning with initial settlement late in the early Middle Preclassic period during the Cool Shade Ceramic Complex, probably by 800 BC. The construction of monumental architecture began during the Terminal Preclassic, Linda Vista Ceramic Complex (AD 100/150–250). A florescence of construction took place in the sixth century AD, during the late Early Classic, Rio Hondo Ceramic Complex (AD 250–600), and continued into the Late Classic (AD 600–850) (see Figure 2.2). Excavations in the settlement zone surrounding the site center have demonstrated an extensive distribution of contemporary rural habitations, ditched fields, and small-scale ritual architecture. The Blue Creek center appears to have been abandoned near the end of the Late Classic period, as marked by the presence of Tepeu 3 materials on terminal floor surfaces and construction fills. Postclassic occupation occurred only sparsely and is limited to rural settings near rich environmental habitats (chapter 9, this volume).

While the Blue Creek site core includes three large public plazas, the majority of monumental architecture is located in two distinct structural concentrations: Plaza A and Plaza B (Figure 4.1). Plaza A is typical of Maya public architecture, consisting of Structures 1–6 arranged around a large open plaza. The site's ball court, Structures 7–8, lies adjacent to Plaza A, directly north of Structure 1. In contrast, Plaza B Complex consists of several buildings and plaza/courtyards arranged in a linear sequence extending north-south over a distance of 330 meters. A major temple occupies each end of the complex: Structure 9 in the south and Structure 24 in the north. Neither building is associated with standard plaza arrangements but is instead fronted by a large basal platform. Plaza B lies at the center of this complex and measures 50 meters north-south by 23 meters east-west. The Structure 19 Courtyard Group defines the northern end of the plaza and drastically limits access between Plaza B and Structure 24. The Structure 13 Courtyard Group forms the southern end of the plaza and creates a similar restriction of movement between the plaza and Structure 9. While the plaza's western side is formed by a long range building, Structure 15, its east side was left open, and would have provided an impressive view off the escarpment.

Ceramic Culture History and Architecture Dynamics at Blue Creek

We have documented four significant periods of change in ceramic-sphere affiliations and monumental constructions at Blue Creek. The first transformation is marked by the appearance of monumental ritual structures during the Terminal Late Preclassic (Floral Park). While these monumental structures received both major and minor renovations over the next 200–300 years, few experienced significant alterations to their basic designs. In contrast, near the end of the Early Classic (Tzakol), the second transformation was marked by extensive modifications to the form, size, and orientation of extant buildings, and several completely new monumental structures were built. In at least two instances an extensive program of associated ritual caching activities accompanied these changes. The third transformation occurred a short time later, around the Early Classic–Late Classic-period interface (Tzakol–Tepeu 1), during which radical design changes again took place at important buildings. By the Late Classic (Tepeu 2), a fourth transformation shifted much of the architectural focus to the construction of elite residences both within the core and in its immediate periphery. This transition was accompanied by significant changes in ceramic inventories in both the civic zone and its hinterland settlements. Limited modifications of various residential groups continued until the site core's abandonment sometime in the Terminal Late Classic (Tepeu 3).

The Late Preclassic

The four major transformations (Table 4.1) are predated by the earliest-known occupation of the site in the Middle Preclassic Cool Shade and San Felipe Ceramic Complexes, beginning sometime around 800 BC and continuing until about 300 BC The ceramics in these early deposits are similar to the Swasey/Bladen and Mamom types found elsewhere in northern Belize and the eastern Petén (Adams

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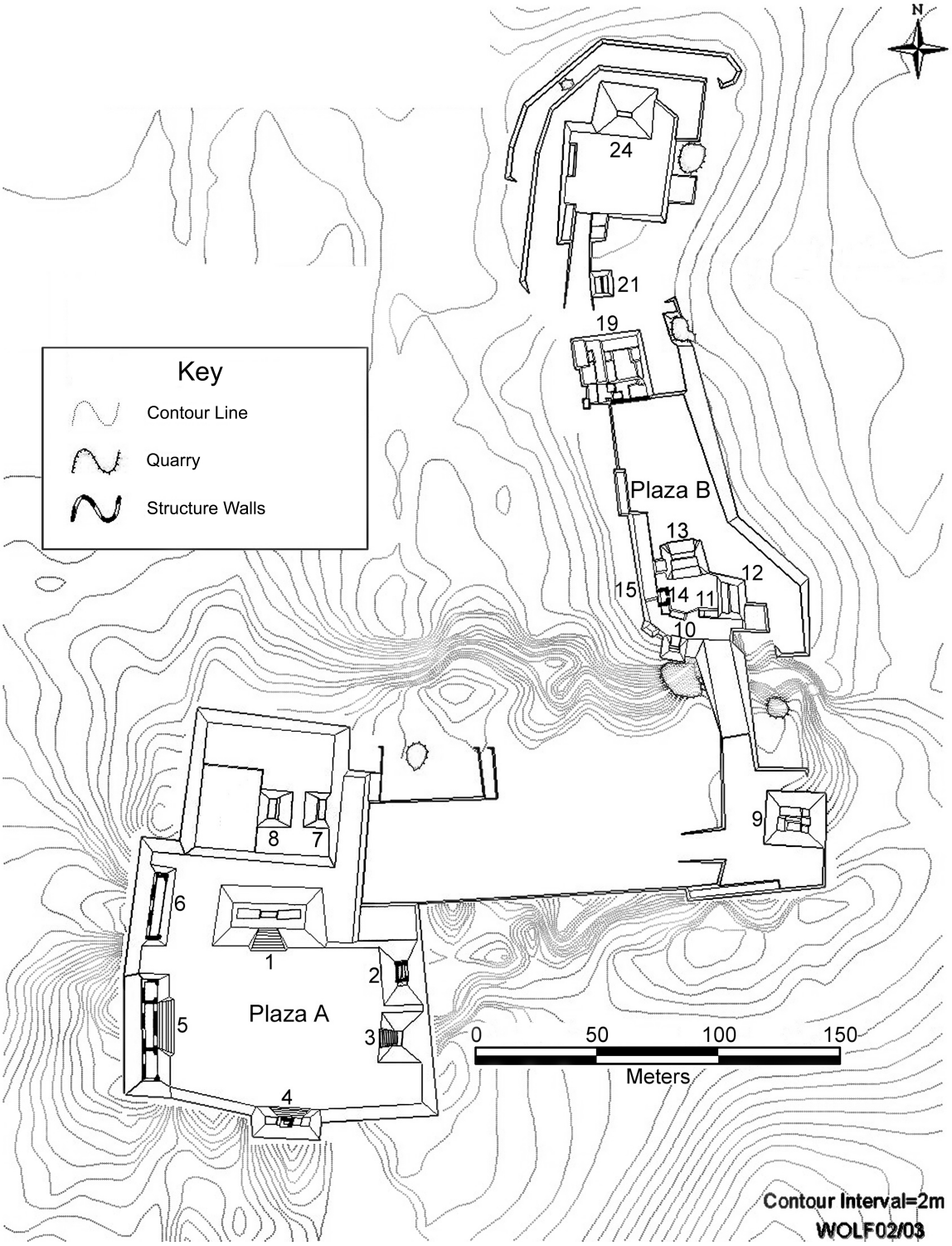

FIGURE 4.1. Blue Creek site core. *Base map surveyed and drafted by Marc Wolf.*

1999; Fry 1989; Kosakowsky 1987; Valdez 1987). While this earliest ceramic material has only been recovered from the Structure 9 area, occupation had expanded into areas beneath Plaza A by the start of the Late Preclassic, Tres Leguas Complex. Architectural evidence of this later occupation is limited to two low, coursed stone platforms beneath the Structure 9 frontal platform (Haines 1999). Additional

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Table 4.1. Construction sequence for Plaza A

Plaza Floor	Str. 1	Str. 2	Str. 3	Str. 4	Str. 5	Str. 6	Ball Court Strs. 7–8	Date	
			termin					Late Classic Tepeu 3	Transition 4
		occup	occup	occup	occup	occup		Late Classic Tepeu 2	
IVe		**III**	**floor**						
		II							
IVd		**floor**	**floor**						
			Ib						
	(Vb)		Ia		(IIb)			Late Classic Tepeu 1	Transition 3
IVc		I							
	Va[1]								
IVb						IIIb, c?		Early Classic Tzakol	
						IIIa			
Iva	**(IVb)**			**(IIIb)**	**IIa**	**II**			
III	**IVa[2]**			**IIIa[3]**	**I**	**I**	I		T 2
				(IIc)					Transition 1
				IIb[4]					
	III							Terminal Late Preclassic Chicanel/ Floral Park	
	(IIb)								
II	IIa			**IIa[5]**	**floor II**				
Id				**Id**					
Ic				**Ic**					
Ib	Ib			**Ib**					
Ia	Ia	**floor**	**floor**	**Ia**	**floor I**				
				occup			occup	Late Preclassic Chicanel	
				occup				Middle Preclassic Mamom	
				occup				Early Middle Preclassic Swasey/ Bladen	

Major plaza-wide flooring episode — Eastern extension of plaza

[1] Initiated by Tomb 4

[2] Columned superstructure

[3] Initiated by shaft cache, ^{14}C date, AD 530–680

[4] Including wall foundation and stela platform

[5] Including two ancillary platforms (Sub.7, Sub.8), ^{14}C date, AD 80–220 (Cache 2

Bold: Constructed with plaza floor occup: Occupation debris termi: Termination debris ( ): Summit renovation only

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residential features dating to this period have been documented from other areas and include burials, caches, middens, and hearths. Evidence for similarly sparse levels of early occupation has also been noted throughout the site's surrounding settlement zone (Kosakowsky and Lohse 2003). Given the lack of evidence for major architecture prior to the Terminal Late Preclassic, the earlier occupations of Blue Creek will not be addressed in this work.

First Transformation: Establishment of Monumentality in the Terminal Late Preclassic

By the second century AD, the first monumental ritual structures appeared, including the earliest phase of Structure 9 and the creation of Plaza A with Structures 1 and 4. Though no structure was especially imposing, at two to five meters high, by the third century AD the tallest platform (Str. 1) rose to more than eight meters. Clearly, by the end of the Late Preclassic, Blue Creek inhabitants had begun to establish a sacred landscape for themselves through the use of monumental public architecture. Equally clear is their participation in the wide-ranging Chicanel Ceramic Sphere (Figure 4.2) and the associated cultural identity and shared ritual patterns across the Maya lowlands at this time. Ceramic caches (found within the site center at Structure 4 (C32, C34, C42) and beneath Structure 9 (C20; Table 4.2) consist of typical Sierra Red small bowls or flaring-sided vessels. These were often placed lip-to-lip, a pattern found at many other northern Belize sites in the Late Preclassic as well (Hammond 1991; Harrison-Buck 2004; Kosakowsky 1987; Pendergast 1998; Robin et al. 1991; Smith 1950).

Also typical of most Maya lowland sites in the Late Preclassic, the majority of early constructions at Blue Creek were relatively simple substructural platforms supporting perishable superstructures. The various additions and renovations of most of these platforms followed the Maya pattern of enlarging the platform while maintaining its general design. Additional evidence of caching activities was identified within the dry-rubble construction fill of the earliest Structure 4 platform (Str. 4-I) (Table 4.1), which contained multiple concentrations of nested vessels composed almost entirely of Sierra Red flaring-sided

Table 4.2. Construction sequence for Structure 9

Platform Floors	Str. 9	Date	
		Late Classic Tepeu 3	T 4
		Late Classic Tepeu 2	
	VIb	Late Classic Tepeu 1	Transition 3
	VIa		
	V	Early Classic Tzakol	
V[1]	IV[2]		
IV[1]	III		T2
III[1]	II		Transition 1
II[1]	I	Terminal Late Preclassic Chicanel/Floral Park	
I	Sub-1, 2	Late Preclassic Chicanel	
	occup	Middle Preclassic Mamom	
	occup	Early Middle Preclassic Swasey/ Bladen	

[1] Frontal platform
[2] Stucco mask panel

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dishes (Kosakowsky 2002) that were extremely consistent in form. Some caches also included other types of artifacts, such as limestone disks, jade, obsidian, chert, and stingray spines. These vessels and other cache materials were so dense in some areas that they made up as much as one-third to one-half of the construction fill.

From the same time period, multiple nested Sierra Red vessels also were recovered from the fill of a house platform (Str. U-49), located 1.7 kilometers northwest of the Blue Creek site core in the Chan Cahal settlement area below the escarpment (Popson and Clagett 1999). Two caches placed beneath the floor of the structure were composed of the typical Late Preclassic lip-to-lip flaring-sided Sierra Red dishes, and included in these caches were jade beads, a ceramic stamp, a bark beater, and an obsidian blade. The presence of a similar pattern of construction caching at locations in both the urban core and the rural settlements is intriguing and may indicate a community-wide commemoration of some significant event or ritual cycle.

At the end of the Late Preclassic, in the Linda Vista Ceramic Complex, an unusual and impressive burial was interred within a chultun located in the Blue Creek settlement zone (Guderjan 2000). The chultun appears to have been part of an elaborate residential group situated on a tall karstic hilltop in the Rio Bravo floodplain, approximately 4.25 kilometers northeast of the site core and which would have been easily visible from the open platforms of the Blue Creek center. The burial was placed within the lowest chamber of a Classic southern lowland Maya-style chultun (Puleston 1971), which had been constructed with an entrance shaft and chamber with a slight sill at the edge and a large, lower main chamber.

Three individuals (or partial skeletons) were placed within the main chamber along with 28 whole ceramic vessels; an impressive quantity of jade (104 pieces); various obsidian, hematite, and cloth fragments; and a wide assortment of faunal and floral remains, including beans, maize, and squash (Bozarth 2001); freshwater fish, armadillo, bird, land and marine shell, and stingray spines (Stanchly 2001). The primary interment, an adult male, estimated to be between 20 to 35 years of age (Glassman 2001) was wearing a necklace of 28 jade beads, with an addi-

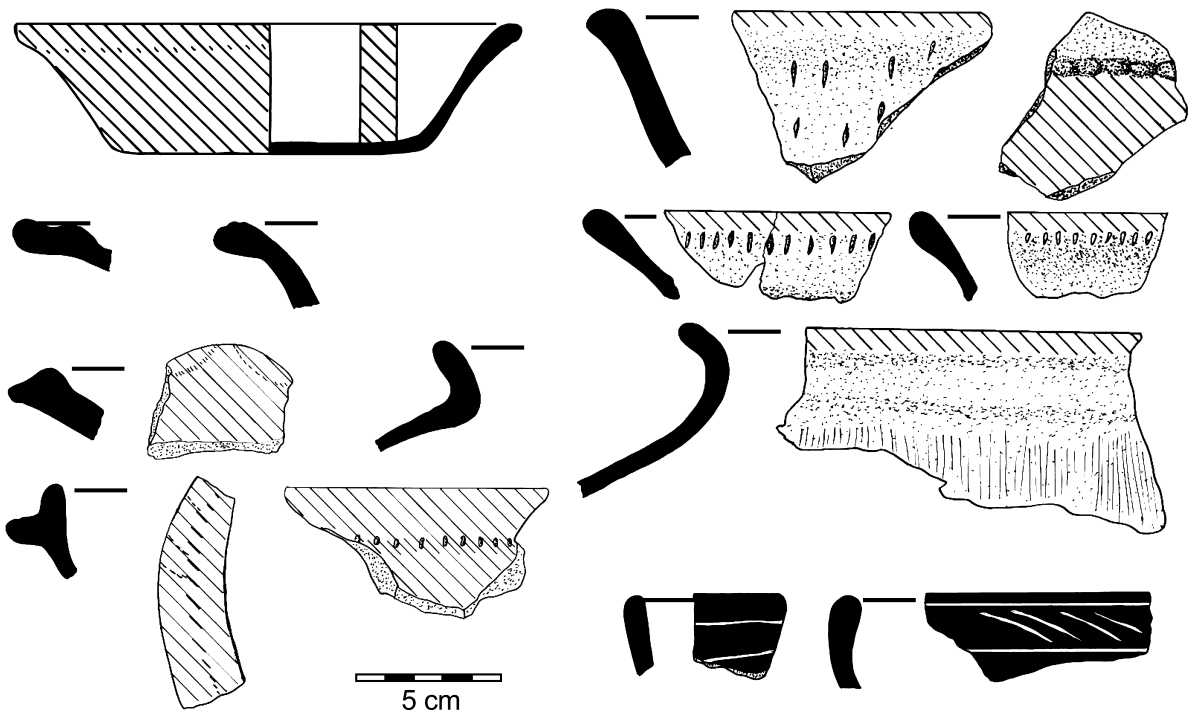

Figure 4.2. Typical Late Preclassic Pottery of the Chicanel Sphere Tres Leguas Ceramic Complex from the Sierra Red and Polvero Black Ceramic Groups. *Illustrated by Laura J. Kosakowsky.*

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tional 27 beads found scattered around the neck area, as well as a bracelet of 12 jade beads on the right wrist. The skeleton was sprinkled with powdered hematite, an obsidian blade was located underneath the pelvis, and the entire skeleton was lying on a bed of what appeared to be fish bones.

A large bowl was inverted over the skull, and at the ends of each arm and at the feet were three groups of grave offerings comprising nine vessels in each group. Among the collection of vessels at the feet was a lip-to-lip cache containing 56 jade beads (48 complete, eight fragmentary) and one bead of carved shell as well as a tightly flexed and possibly bundled burial (Burial 35) comprised of approximately 40% of the skeleton of an adult male between 25 and 40 years of age (Glassman 2001). This individual was found associated with a loose greenstone bead and seven loose jade beads, which may have been part of a bracelet (they are similar in shape to those of the bracelet associated with Burial 34). The third burial, Burial 36, was incomplete and disarticulated and included only postcranial remains and additional fragmentary material (Glassman 2001). No skeleton was complete, suggesting these individuals represent a secondary interment or that multiple reentries into the chultun occurred during prehistoric times, perhaps serving as a family crypt (Krejci and Culbert 1995) that maintained links between the living and their deceased ancestors (McAnany 1995, 1998).

Also, of great interest are the 28 whole vessels from the Chultun Burial 5 (some of which are illustrated in Figure 4.3) that are most similar in form and style of decoration to the Cauac and Cimi Complexes at Tikal (Culbert 1993) as well as to numerous other "Protoclassic" ceramics found throughout the Maya lowlands (Pring 2000). These vessels exhibited considerable amounts of use, indicating a long life before their utilization as burial offerings. The ceramic types and varieties represented by these 28 pots include 21 in the Sierra Red Group, of which nine are decorated with organic trickle, three in the Flor Cream Group, of which two are decorated with organic trickle, two unusual Sacluc Black on Orange bowls with small mammiform feet, a Caramba Red on Red Orange bowl, and an unnamed hematite on red bowl with wipe-off organic decoration.

There is a paucity of Linda Vista material from other contexts within the greater Blue Creek settlement area as well as at other sites in the region. This suggests that these types of ceramics may have been utilized only in specialized contexts in northwestern Belize (Kosakowsky 2005). Their presence in this single context argues for interregional connections during the Terminal Preclassic between northwestern Belize and Petén sites such as Tikal and, with its unique ceramic assemblage and high quantity of jade outside the Blue Creek site core, supports a model of decentralized control and access to prestige goods during the Late Preclassic.

Meanwhile, construction in Plaza A continued throughout the Terminal Preclassic, with several modifications to Structures 1 and 4. Structure 4-I underwent minor renovations before a major construction episode drastically changed its form and, most likely, its function as well. Structure 4-II modifications increased the height of the summit by approximately 50%, widened the substructure, reoriented the building's center line, and created a frontal stairway composed of massive masonry blocks (a construction style not seen anywhere else at the site). Although exposure of the summit area was limited, the presence of both back and medial walls indicates that the building supported a multiroom masonry superstructure. This appears to be the first masonry superstructure constructed at the site. A carbon sample from an associated dedicatory cache (C21) provided a construction date of AD 80–220 (Beta 82949; Table 4.3)

As part of this same construction episode, two low masonry platforms were built a short distance in front of the northwest corner of the Structure 4-II stairway. The two platforms resemble substructural platforms for perishable residential or ancillary buildings, and their placement creates a small courtyard with north-south dimensions of approximately 11 meters. The presence of these platforms, along with the wide stairway and multiroomed design of Structure 4-II, suggests that this construction episode converted a formerly ritual platform into a residential structure and thus transformed the southern half of Plaza A into an elite household compound focused on Structure 4.

The Early Classic

The Early Classic at Blue Creek was a period of dynamic architectural growth and innovation. The addition of several new ritual and residential monumental structures served to formalize Plaza A and

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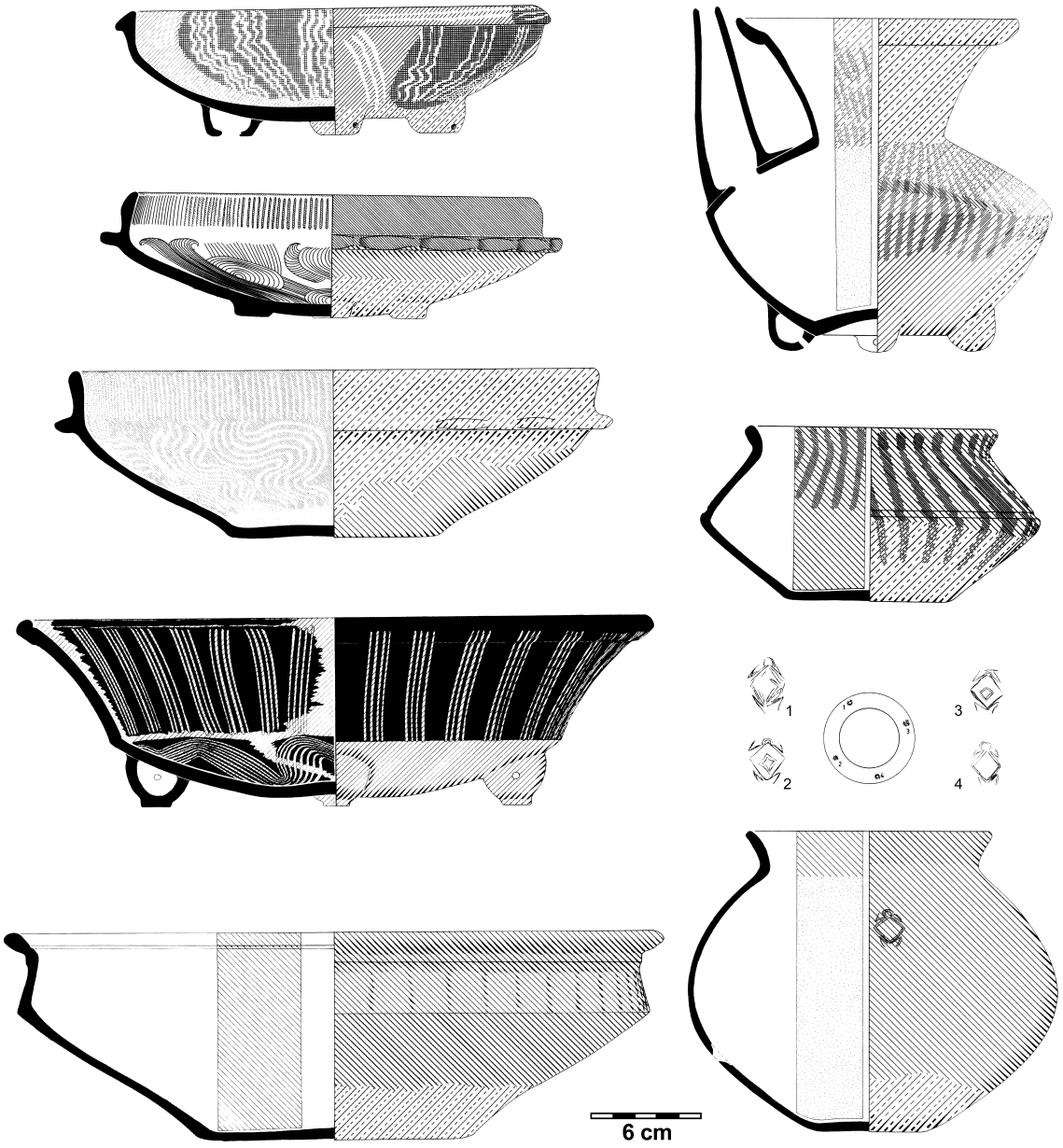

Figure 4.3. Terminal Late Preclassic vessels of the Linda Vista Ceramic Complex from Chultun Burial 5. *Illustrated by Candida Lonsdale.*

create new ritual compounds in the Plaza B complex. Modifications of extant buildings created significantly larger structures; Structures 1, 9, and 24 reached heights of approximately 10 meters, and several buildings were constructed with novel architectural features. The ceramics of the Early Classic Rio Hondo Ceramic Complex continued the trend established in the Late and Terminal Preclassic, with close ties to the Tzakol sphere centered on Petén sites such as Tikal (Culbert 1993) and Uaxactún (Smith 1955) (Figure 4.4). Like other sites in Belize (Kosakowsky 1987; Valdez 1987), there was, however, a sustained use of Late Preclassic ceramic types and forms throughout the first part of the Early Classic, perhaps lasting into the fifth century AD. The Early Classic period at Blue Creek can be divided into two phases of architectural growth: the Early Classic (AD 250–500), equivalent to the ceramic spheres of Tzakol 1–2, and the Terminal Early Classic (AD 500–600), corresponding to Tzakol 3.

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Table 4.3. Carbon-14 dates discussed in the text

Lab #	Str.	^{14}C Date, BP	Corrected	Calibrated		
				1 sigma	2 sigma	Intercept
DRI 18335	Str. 1–Ib, Fill	None	1925 ± 70 BP	AD 12–145 (85%)	54 BC–AD 252 (99%)	
				AD 170–203 (15%)	AD 301–16 (1%)	
DRI 18332	Str. 1–III, Fill	None	1775 ± 60 BP	AD 150–60 (5%)	AD 129–408	
				AD 214–347 (86%)		
				AD 357–77 (9%)		
DRI 18334	Str. 1-Va, Fill	None	2240 ± 65 BP	375–344 BC (21%)	400–152 BC (97%)	
				320–202 BC (79%)	145–117 BC (3%)	
Beta 82948	Str. 4-Ia, Cache 14	1990 ± 50	1950 ± 50 BP	AD 10–100	50 BC–AD 140	AD 60
Beta 82949	Str. 4-IIa, Cache 21	1930 ± 50	1870 ± 50 BP	AD 80–220	AD 40–250	AD 130
Beta 75432	Str. 4-IIIa, Shaft Fill	1480 ± 110	1440 ± 110 BP	AD 530–680	AD 400–790	AD 630
Beta 76278	Str. 4-IIIa, Shaft Fill	1450 ± 110	1450 ± 110 BP	AD 530–670	AD 410–770	AD 620
Beta 75935	Str. 6-II, Fill	2020 ± 90	1990 ± 90 BP	80 BC–AD 100	200 BC–AD 230	AD 20
Tx 8266	Str. 6-II, Fill	1800 ± 53	1783 ± 52 BP	AD 140–60 (12%)*	AD 127–387*	
				AD 170–90 (12%)*		
				AD 210–336 (76%)*		
Beta 61513	Str. 9-I, Fill	?	2280 ± 70 BP	400–210 BC*	521–154 BC*	
DRI 18330	Str. 9-III, Fill	None	1870 ± 65 BP	AD 83–229	AD 9–263 (93%)	
					AD 281–332 (7%)	
DRI 18331	Str. 9-IV, Fill	None	2145 ± 65 BP	351–311 BC (18%)	368–33 BC (99%)	
				205–53 BC (82%)	18–8 BC (1%)	
Beta 82950	Str. 9-V	1560 ± 60	1560 ± 60 BP	AD 420–570	AD 390–630	AD 530
Beta 82951	Str. 9-V	2090 ± 60	2090 ± 60 BP	190–40 BC	350–300 BC	100 BC
					220 BC–AD 40	
DRI 3497	Str. 13, Crtyd Fill	2317 ± 57	2299 ± 59 BP	401–356 BC (43%)	512–438 BC (5%)	
				293–209 BC (57%)	423–189 BC (95%)	
DRI 3405	Str. 19, Floor	1500 ± 68	1512 ± 70 BP	AD 452–80 (16%)	AD 424–656	
				AD 505–13 (5%)		
				AD 532–633 (79%)		
DRI 18329	Str. 19, Burial 10	None	1335 ± 60 BP	AD 655–722 (68%)	AD 613–824 (97%)	
				AD 736–71 (32%)	AD 837–66 (3%)	

All submitted material was charcoal.

*Recalculated using Calib 4.4 program (M. Stuiver and P. J. Reimer 1986–2002)

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During the initial phase several new buildings were constructed, including the first versions of the formal courtyards made up of Structures 12–13, 15, and 19 and two major rebuilding episodes at Structure 9. These constructions occurred as slow incremental growth, similar to those that took place during the Terminal Preclassic. In Plaza A, construction activity was limited to two renovations at Structure 4. Modifications in mass and volume were minor but appear to have been significant in how they altered the meaning of the Plaza A landscape. In addition to limited summit modifications, an L-shaped masonry wall and round stela platform were constructed in the courtyard. This wall was heavily damaged by

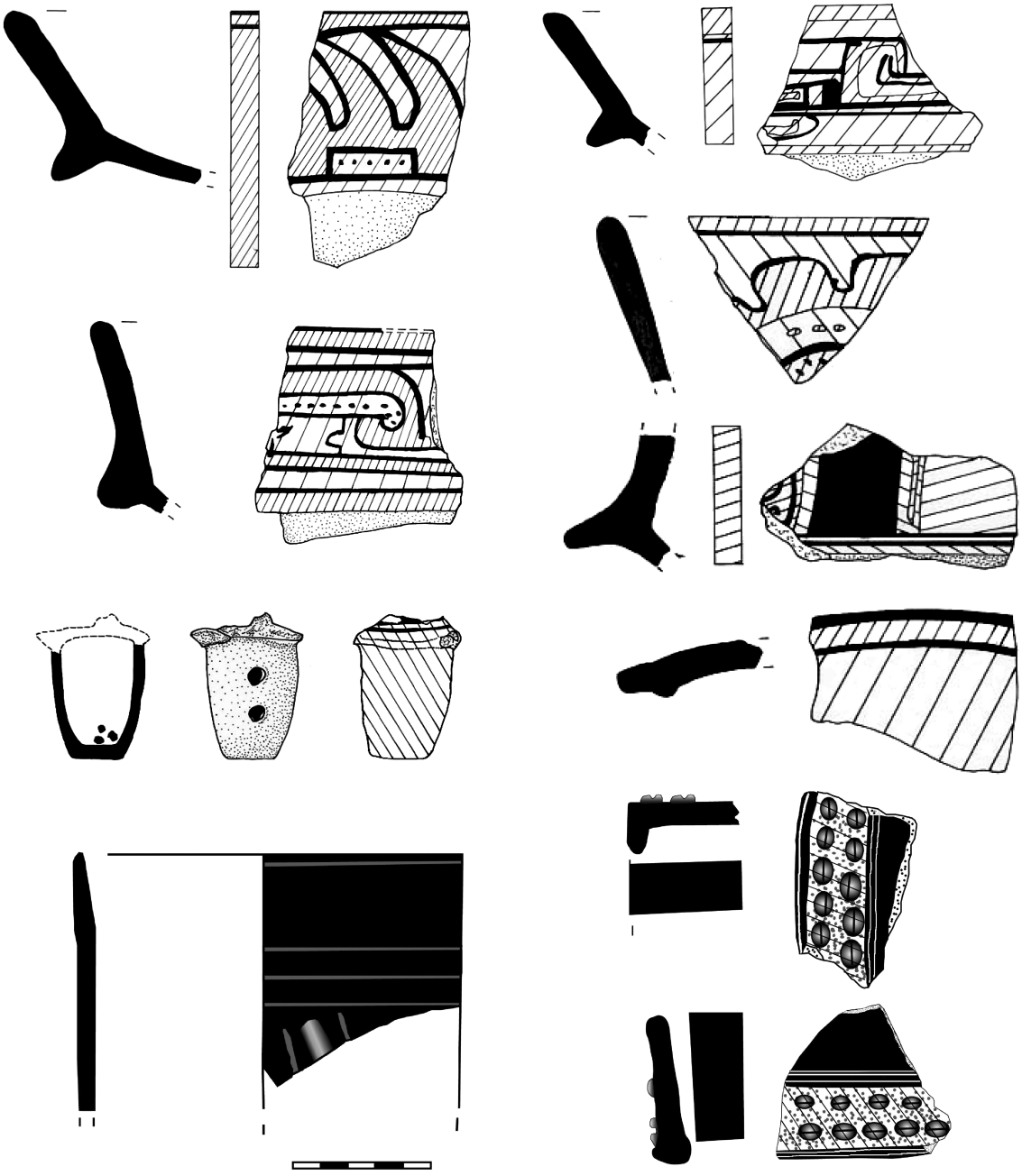

Figure 4.4. Typical Early Classic Pottery of the Rio Hondo Ceramic Complex from the Dos Arroyos Orange Polychrome and Balanza Black Groups. *Illustrated by Jo Mincher.*

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later plaza construction, but the presence of several postholes suggests it was likely a low masonry foundation for a perishable wall. The stela platform was 1.15 meters wide and 34 centimeters tall and was constructed of coursed stone. An area of missing stones in its center was almost identical in size to the base of a plain stela recovered atop Structure 4-III, suggesting that the platform probably functioned as a support pedestal for that monument. The presence of the site's only known stela and a wall that restricted visual and physical access into the group both indicate an increase in status of the residents. When combined with the group's centralized location at the southern end of the site's only formal plaza, we suggest that the occupants represent the site's ruler and/or principal lineage at that time.

Second Transformation: Masonry Superstructures and Major Caching Rituals in the Terminal Early Classic

Toward the end of the Early Classic, during the sixth century AD, significant changes in architectural design occurred at many structures located throughout the site core, marked by a massive rebuilding episode, in which almost all the buildings were constructed with masonry superstructures: Structures 1, 4–5, 9, 12–13, 15, 21, and 24. Prior to this time, the only evidence for masonry superstructures had been identified at Structures 4 and 15.

At Plaza A, Structures 1 and 4 were extensively modified, and the west side of the plaza was closed off by two large range buildings, Structures 5 and 6. It was also at this time that the site's ball court was constructed on the large platform behind Structure 1. Based on the Plaza A floor sequence (see Table 4.1), the six structures appear to have been built as a single massive building event. In the Plaza B area Structure 9 was rebuilt with a masonry superstructure. An almost identical building located at the opposite end of the complex, Structure 24, was probably built at this time as well. Other buildings that were constructed or modified at this time include Structures 10, 12–13, 15, and 21.

At the north end of Plaza A the master builders of Blue Creek created Structure 1-IV (Figure 4.5), a massive building on which was placed a long colonnaded temple composed of two rows of eight free-standing coursed-stone masonry columns that most

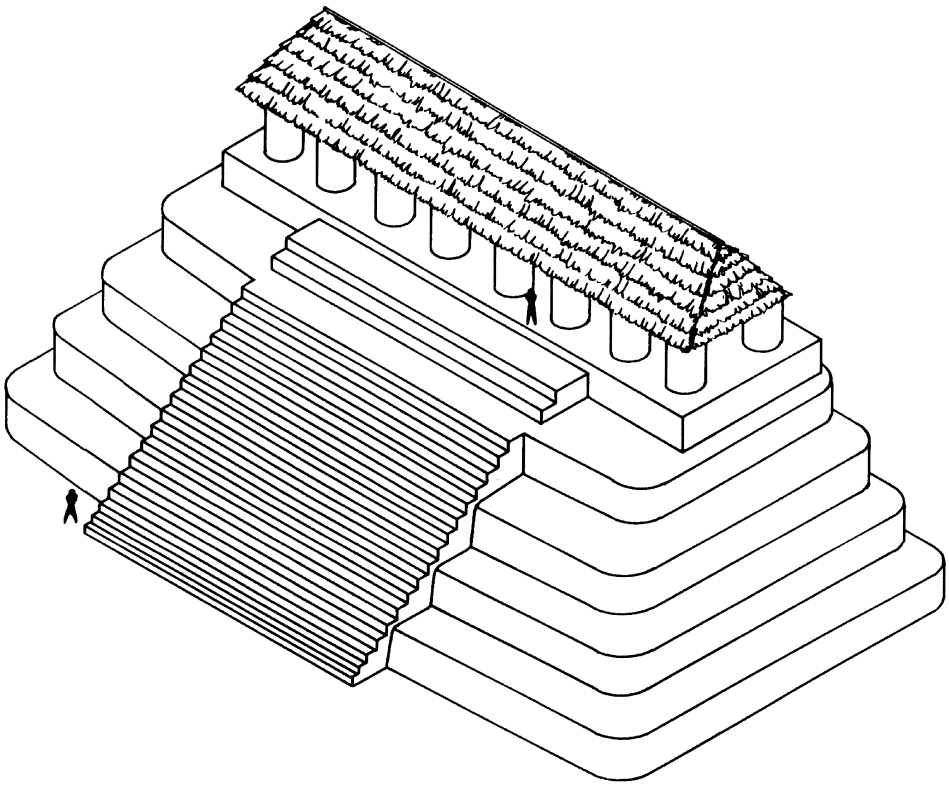

FIGURE 4.5. Colonnaded temple at Structure 1 during the Early Classic. *Drawing by W. David Driver.*

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likely supported a roof of perishable materials. Access to the building was provided by a wide frontal staircase. The uppermost section of the stairs contained two deeper steps, which created small landings that would have provided additional space for ritual performances. In a previous study (Driver 2002) the Structure 1-IV colonnaded building was identified as a variant of the portico gallery-type palace (Andrews 1975), a structural form that would have provided a high degree of visibility, both for public events conducted within them and for observing ritual activities in adjacent plazas.

By the time of their appearance at Blue Creek, columns were in limited use as architectural elements at sites throughout the northern and southern Yucatán, the Petén, and the southeastern zone. Both freestanding and engaged columns were used at numerous sites in the Yucatán, appearing in the Puuc region by AD 550, and moving southward into the Rio Bec zone by AD 650 (Gendrop 1987). In the southern lowlands square masonry piers and pillars were more commonly used as structural supports, but the presence of round columns has been reported from the sites of Copán (Fash et al. 1992; Sharer et al. 1999) and Tikal (Jones 1996) during the Early Classic and at Yaxha (Hellmuth 1972) and Xunantunich (Robin 1994) in the Late Classic. Interestingly, the columns at the "Chorcha" building at Copán, and the East Plaza Ball Court at Tikal are roughly contemporaneous with Structure 1 at Blue Creek and appear to be identical in size and construction. While this similarity of construction can at most suggest potential architectural design associations with the Petén and the southeastern zone, the probability of such connections is strengthened by Blue Creek's Early Classic ceramic assemblages, which demonstrate stronger links to Petén spheres rather than to those of the Yucatán (Kosakowsky and Lohse 2003).

Across the plaza an extensive rebuilding episode created Structure 4-III. The previous structure and its residential compound were replaced by a single building, a wide masonry temple with three doorways. Two dedicatory caching events were associated with the building's construction: an initial "shaft cache," which penetrated deep into the previous substructural platforms; and a "cruciform cache," which was placed in the fill above the shaft just before the summit floor was completed.

The initial event represents an extensive caching ritual (Driver 2008; Guderjan 1998, 2004) that consisted of a deep shaft excavated 2.5 meters down into the earlier buildings. The shaft was then refilled with a combination of artifacts, marl, and small rubble. The instability of the surrounding fills and the disposition of the materials indicate that the feature represents a single event that took place over a short period of time. Nonceramic artifacts deposited in the shaft cache included 905 pieces of worked jade (including five helmet-bib pendants); 36 beads of bone, ceramic, coral, limestone, or shell; seven chipped stone artifacts of chert and obsidian (including an eccentric of Colha chert); a shell labret; and miscellaneous marine and freshwater shells (Pastrana 1999). Many of these artifacts were contained within three intact sets of lip-to-lip Aguila Orange flaring-sided bowls. In addition, the shaft fill contained a high density of Aguila Orange partial vessels and sherds, broken Candelorio Appliqué incensario fragments and rings, a few Dos Arroyos Orange Polychrome sherds, and Balanza Black sherds with Teotihuacan-style cacao-bean appliqué, an uncommon style of pottery for northern Belize (Kosakowsky and Lohse 2003; Sagebiel 2005) that dates this event to no earlier than Tzakol 3 in the sixth century AD. This date is corroborated by the two radiocarbon samples recovered from the shaft that provided dates of AD 530–670 (Beta 76278) and 530–680 (Beta 75432) (Table 4.3). The distribution of these materials within the shaft suggests an intentional tripartite vertical layering designed to replicate Maya cosmology and is similar to that reported from other sites (Chase 1988; Chase and Chase 1998; Freidel and Schele 1988; Garber et al. 1998).

Once the pit was refilled, it was covered by two stone monuments, a bannerstone and a plain stela. The bannerstone is a large limestone disk (74 cm wide and 18 cm thick). It had a heavily polished hole centered over the opening of the coursed-stone shaft. The stela (1.66 m high and 54 cm wide) had been laid horizontally across the front (northern) edge of the bannerstone. As noted in the discussion of Structure 4-II, it appears that this stela originally stood in the coursed-stone platform at the base of that structure. Once the monuments were in place, the feature was completely sealed by the construction fill of Structure 4-III.

Most discussions of "abnormal" treatment of monuments by the Maya have focused mainly on in-

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tentional movement and resetting, breakage, or mutilation (Coe 1962; Hammond and Bobo 1994; Satterthwaite 1958). While breakage and mutilation are often assumed to represent acts of hostility and violence (that is, defacement by the victors of warfare [Schele and Freidel 1990]), the caching of monuments is attributed to rites associated with veneration and rejuvenation (Coe 1962). The strongest case for this interpretation occurs in seventh-century Tikal with the caching of the damaged Stela 31 in Structure 5D-33 2nd, and the placement of portions of the shattered Stela 26 in the bench of Structure 5D-34-1st (Schele and Freidel 1990). The cachings took place in association with a massive rebuilding effort aimed at returning Tikal to ascendancy after a series of military defeats (Schele and Freidel 1990; Schele and Mathews 1998). Other examples of deposited monument fragments are, however, reported from more typical cache deposits at Tikal and Piedras Negras (Coe 1962; Satterthwaite 1958). At Blue Creek the caching is most likely related to the changing nature of sacred space at Plaza A and may have functioned to cement ties between the new temple (Str. 4-III) and the resident lineage of the earlier domestic compound (Str. 4-II).

After the shaft cache had been sealed, a series of vessel caches (C8, C15, C24–25) were placed within the construction fill of the summit landing of Structure 4-III, just off the building's center line and slightly above and west of the bannerstone and stela. According to the excavator, they were arranged in a cruciform pattern roughly corresponding to the cardinal directions and thus represent a dedicatory cache with cosmological symbolism (Weiss 1996, 39–40). The cache vessels consisted of typical Tzakol vessels, including Aguila Orange lip-to-lip bowls and two elaborate Dos Arroyos Orange Polychrome bowls with scutate lids (Kosakowsky 2002). Each Dos Arroyos bowl contained the skeletal remains of a child.

Contemporary with construction of the colonnaded temple of Structure 1-IV and the masonry temple of Structure 4-III, Structure 9-IV was rebuilt as an 11-meter-tall temple with a masonry superstructure and a large summit stair block (Figure 4.6). The superstructure had a single central doorway and may have been vaulted. At the top of the structure was a small interior room with a bench. The large stair block was located directly in front of the doorway and had a front facade decorated with a large stucco mask panel that had been severely damaged by looters. An initial analysis of the panel suggested the identification of Structure 9-IV as a building associated with accession and council rites (*nikteil na/popol nah*) and as a spiritual center of the site (Grube, Guderjan, and Haines 1995; Guderjan 2004). The structure is, however, clearly dissimilar to *popol nah* buildings identified at the sites of Copán (Str. 22.A; Fash et al. 1992; Stomper 2001), Uaxactún (Structure H–X; Freidel, Schele, and Parker 1993), or Uxmal (North Building, Nunnery Quadrangle; Schele and Mathews 1998); it is also dissimilar in form to the modern *popol nah* of Tixkakal Guardia, Mexico (Freidel, Schele, and Parker 1993). Still, the symbolic meanings embedded in the building's architectural design elements and the images presented on the facade's stucco mask panel appear to be related to concepts of death, ancestors, and rituals of accession (Driver 2008).

Various studies have recognized that pyramid temples like Structure 9-IV represent crucial loci for direct communication and interaction with the sacred, including deities and important ancestors (Houston and Stuart 1996; Schele and Mathews 1998; Taube 1998). Such ancestors are represented in several types of architectural media, including stelae, murals, and friezes, and are commonly portrayed as floating, disembodied human heads surrounded by scrolls of smoke, clouds, or blood (Andrews and Fash 1992; Coggins 1975; Freidel, Schele, and Parker 1993; Houston and Stuart 1996; McAnany 1998). The ancestors usually occupy upper zones of the scene and are often shown in association with various forms of sky bands. A cornice frieze reported from Uaxactún contains two disembodied heads in its flanking panels which have been interpreted as ancestor images (Valdés 1990; McAnany 1998, 284); an illustration of the frieze shows the images to be strikingly similar to those of Structure 9-IV (McAnany 1998, Figure 8).

Further, the form and placement of the interior bench provides additional insight into the structure's possible functions. Located in the center of the summit room, the unusually shaped bench was 2.2 meters wide and 86 centimeters high and had recessed ends that formed lower shelves measuring 52 centimeters high and 58 centimeters wide. Thus, when viewed from the front, the bench resembles an inverted *ik* sign (Lounsbury 1974; Peterson 1985; Thompson

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1971). The inverted *ik* symbol has been associated with Maya concepts of death, the underworld, and ancestral lineage cults (Andrews and Fash 1992; Peterson 1985; Proskouriakoff 1963). In terms of its location, small, rectangular masonry benches set against the center of a room's back wall have been described as "thrones" for "audience chambers" which served as locations for formal administrative activities (Coggins 1967; Harrison 1970). Reents-Budet (2001) has also noted the association of benches with public court ritual, such as gifting and tribute, and while her discussion stresses the suitability of multichambered palaces for such activities, she does acknowledge that some scenes on pictoral ceramics appear to portray events occurring within the superstructures of tall pyramids. Indeed, many pictorial ceramics (Kerr 1994, 558 [4577], 567 [4628, 4629], 631 [4968]) portray tall temples with benches in the role of viewing stands, with seated individuals observing processionals or other ritual activities taking place in adjacent public space. Structure 9-IV at Blue Creek, with its central bench, iconographic imagery, frontal platform, and adjoining open space would have been well suited for such a function.

Finally, the presence of the large frontal platform at the base of Structure 9-IV emphasizes the impor-

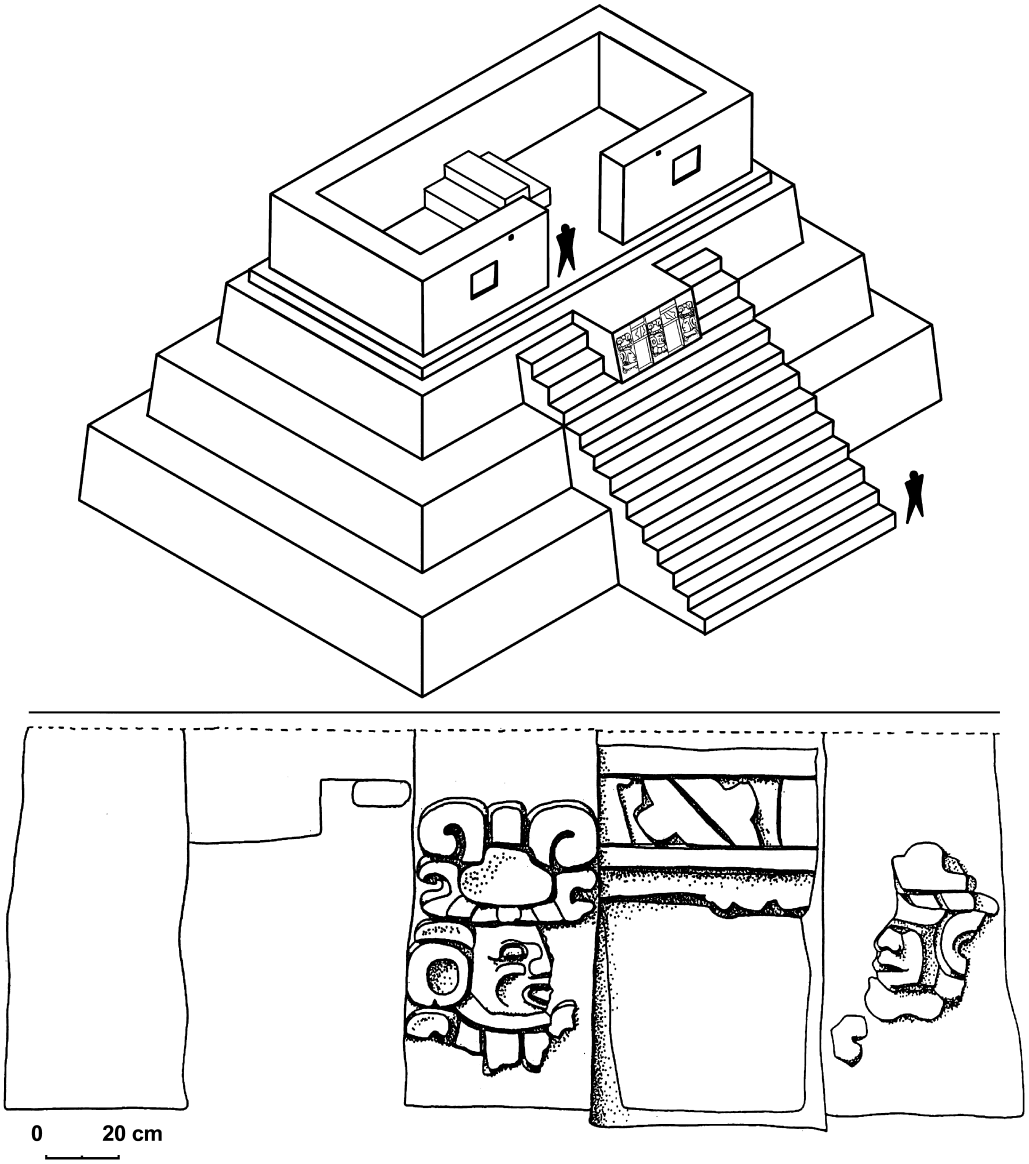

Figure 4.6. Structure 9 during the Early Classic with detail of stucco mask panel.
Isometric reconstruction by W. David Driver; mask panel by Helen Haines.

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tance of performance in Maya civic ritual activities. Processionals, political dramas, and dance were vital strategies by which rulers and their courts visibly constructed and reproduced society (Freidel, Schele, and Parker 1993; Grube 1992; Looper 2001; Reese 1996). Dance was central to most ritual, and scenes involving dance are counted as one of the most common images present in Maya figural art (Freidel, Schele, and Parker 1993). Grube (1992) and Looper (2001) have proposed that plazas, terraces, and platforms served as highly visible dance floors during public Maya ritual. A similar performance-space function may be postulated for the large frontal platforms present at Structures 9 and 24 at Blue Creek. This is especially true for Structure 9, where the extensive open spaces to the west would have provided room for large audiences, and the ramps and causeways connecting the platform with the rest of the Plaza B complex created formal routes for ritual processions and pageants. Thus, when viewed in total, it appears that the architectural features of Structure 9-IV created a highly visible symbolic landscape designed expressly for emphasizing ritual interactions with powerful forces of death and ancestral legitimization.

While the presence of the stucco mask imagery has been cited as evidence for Blue Creek's political autonomy (Grube, Guderjan, and Haines 1995; Guderjan 1998), evidence for a truly independent polity has yet to be demonstrated archaeologically. The nearby location of La Milpa, a site with some 20 stela and significant Early Classic occupation might indicate that while Blue Creek was governed by local elites, they most likely did so under the authority of established royalty from a more powerful site (chapter 2, this volume). The iconographic message of the mask panel may have been designed to identify or affirm just such vertical ties and allegiances. Instrumental neutron activation analyses (INAA) of ceramics (see chapter 6, this volume) indicate that the Blue Creek community participated in regional socioeconomic spheres of ceramic production and exchange utilizing localized clay resources that tied them economically as well to their neighbors. Furthermore, stylistic comparisons of pottery demonstrate a full repertoire of typical Early Classic unslipped, monochrome, and polychrome types and varieties in all contexts by Tzakol 3. While the extent of Blue Creek's postulated autonomy remains open for debate, the presence of the mask panel indicates that ruling bodies at the site were also participating in "royal" activities and encoded this into the ritual architecture.

The Late Classic

During the Late Classic period Blue Creek saw two significant shifts in the focus of monumental construction in the site core. During the Early Classic–Late Classic transition into the Tepeu 1 Aguas Turbias period, emphasis continued on the construction of the largest of the civic ritual structures. This period of construction represents an extensive investment in these structures and is responsible for much of their total mass, as measured by the height of their substructural platforms: 20% of the total height at Structure 1, 40–60% at Structure 9, and 60% at Structure 24. While these structures were drastically increased in mass and/or height, it appears that the site's builders abandoned the use of masonry superstructures and returned to the construction of perishable superstructures or open, flat-topped pyramids. Similar contemporary architecture occurs to the east at the sites of Lamanai (e.g., Str. N10-9: Pendergast 1981, Figure 4) and Altun Ha (e.g., Str. B-4: Pendergast 1982) and to the west at La Milpa (Tourtellot et al. 2003). In contrast, by the Tepeu 2 Dos Bocas period, construction efforts were drastically reduced at public buildings, and instead builders shifted their focus to the construction and modification of private, elite residential compounds. No significant construction occurred in the architecture of the site core during the Tepeu 3 Booth's River period or thereafter.

Third Transformation: Continuation of Monumentality and Sanctification of the Site Core in Tepeu 1

During the transition from the Early to Late Classic, the majority of construction energy was devoted to extensive rebuilding episodes at Blue Creek's three tallest buildings: Structures 1, 9, and 24. In addition, the layout of Plaza A was again reconfigured when the plaza platform was extended several meters to the east to accommodate two new pyramidal shrines: Structures 2 and 3.

This transition began at Structure 9-IV with the replacement of the Petén-style masonry superstructure and stucco mask panel by a flat-topped platform, Structure 9-V (late Rio Hondo, Tzakol 3), and eventually another flat-topped platform, Structure 9-VI

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(Aguas Turbias, Tepeu 1). Although Structure 9-V was built with a large stair block at the top of the stairway, there was no evidence of any imagery similar to that found on the previous structure. The principal focus of the building's modification appears, however, to have been devoted to a drastic change in the form and slope of the front facade and stairway. The base of the staircase was shifted west by as much as 9 to 10 meters, creating a much lower frontal slope than on the previous structure. The building's large frontal platform was retained but would have provided a significantly smaller area for ritual, due to the westward extension of the stairway. A large landing at least two meters deep was built approximately midway up the stairs. The relaxed slope and large landing suggest the building's performance space would have been partially refocused onto the front of the structure. The final major construction at Structure 9 took place in Aguas Turbias and consisted of a massive extension (8 m) of the front summit of the building that returned the front facade to a steeply sloped stairway. At the same, time Structure 24 (Str. 9's counterpart at the northern end of the Plaza B complex) was rebuilt, burying the previous version's masonry temple in a 10- to 11-meter tall flat-topped platform.

The beginning of the seventh century AD was also a dynamic time for construction activity at Plaza A. The colonnaded summit of Structure 1-IV was buried by a large flat-topped platform, Structure 1-V. The renovation appears to have been carried out for mortuary purposes, since a vaulted burial chamber, Tomb 4, was constructed at the summit between the four central columns. The tomb contained the remains of a single adult male (Glassman et al. 1995). Grave goods included three ceramic vessels (Figure 4.7), two jade earspools, a stingray spine, and a possible toolkit for bloodletting (obsidian blades, bone skewers, cut shell; Driver 2002). One vessel, an early transitional Saxche Orange Polychrome plate, had been pierced by a "kill hole" and placed upside down over the individual's face. Imagery on the interior of the vessel consists of a quadrupedal mammal with large ears and a bushy tail, possibly representing a bushdog (*Speothos venaticus*) or a tayra (*Eire barbara*). Two decorative bands surrounded this central figure: a dotted braid design with 13 loops, commonly associated with the primordial sea (Phil Wanyerka, personal communication, 1998) or possibly with bloodletting, and a series of eight leaves. The two additional vessels are examples of early Molino Black. One is a basal ridged bowl with ring base, a form more typically associated with the Early Classic and marking the true transitional nature of this deposit. The other is a thin-walled straight-sided bowl, whose slip tends to a reddish brown reminiscent of examples of Sotero Red-Brown from the Belize Valley (Gifford 1976). If so, it marks the beginning of a shift from a ceramic sphere centered on the Petén to the west and perhaps the disruption of earlier east-west sociopolitical ties that were replaced by stronger connections to the north and south.

Elsewhere in Plaza A the previously open eastern side of the plaza was extended several meters, and Structures 2 and 3 were constructed. Contrary to previous assertions (Guderjan 2004, 2006), these structures possess no formal or morphological characteristics that would suggest they represent an E-Group complex (Aimers and Rice 2006; Chase and Chase 1995; Ricketson and Ricketson 1937; Ruppert 1940). Representative E-Groups (both functional and symbolic) consist of "a pyramidal western mound facing an eastern platform which supported three linearly arranged buildings" (Chase and Chase 1995, 90). This layout contrasts sharply with that of Plaza A, with its western range structure and its two eastern structures constructed directly atop the plaza. Instead, the location and design of Structures 2 and 3 (for Str. 3, see Figure 4.8) clearly resemble eastern shrine structures similar to those identified at Tikal and elsewhere (Becker 1971, 1972; Coggins 1975; Haviland 1981; Leventhal 1983; McAnany 1995). Based on their architectural form and the presence of burning, caches, and distinctive burials located on their primary axis, eastern shrines appear to have functioned as the foci of ancestral veneration and corporate group ritual (Becker 1971; Leventhal 1983; McAnany 1995, 1998). Although most commonly recognized in site-settlement zones, the eastern shrine pattern has also been noted in monumental public plazas where it most likely represents ancestor enshrinement for the site's ruling lineage. Multiple eastern shrines are rare but have been identified (PP2A: Becker 2004; Haviland 1981) and suggest an increased level of social status for the residents of the group in relation to other compounds. Unfortunately, due to massive looters' trenches placed along the center lines of Structures 2 and 3, no evidence of axial burials or ritual caching activities could be identified.

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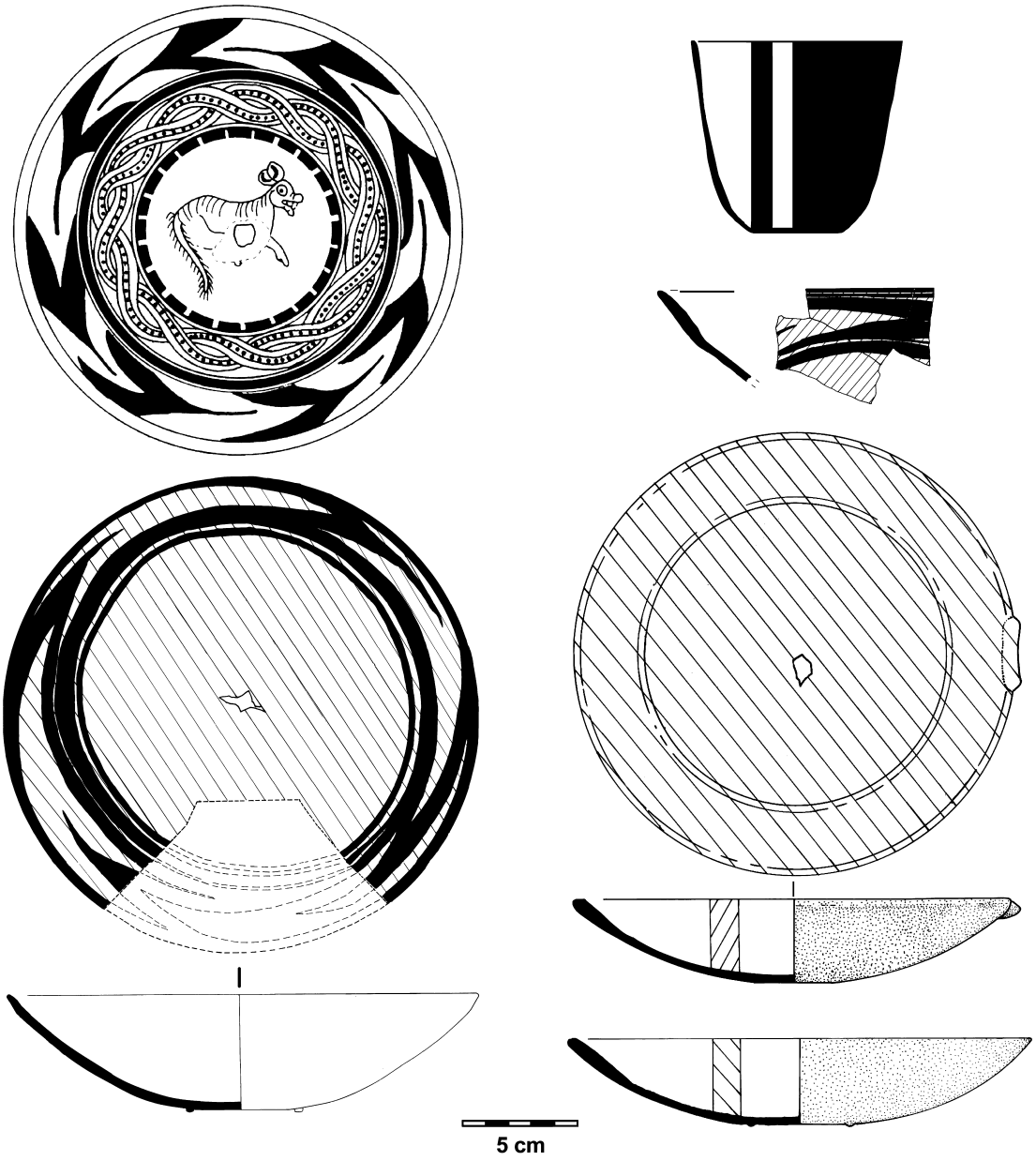

FIGURE 4.7. Transitional Early Classic Tzakol 3–Late Classic Tepeu 1 pottery of the Aguas Turbias Ceramic Complex from Tomb 4, Structure 1 (*top:* Saxche Orange Polychrome plate and Molino Black bowl) and Quincunx (*bottom:* Saxche Orange Polychrome plate and sherd and Mountain Pine Red plates). *Illustrated by Jo Mincher, Laura J. Kosakowsky, and W. David Driver.*

Important ritual structures dating to this period have also been documented outside the civic center. The U Xulil Beh settlement area is located in the hill and *bajo* uplands atop the escarpment, approximately two kilometers southwest of the Blue Creek core. Investigations in the U Xulil Beh settlement area identified a group of structures that most likely served as a hinterland solar observatory (Zaro and Lohse 2005). Named the Quincunx Group, it consisted of a central, multiroom masonry structure surrounded by four low rubble mounds located along one of the intercardinal directions in relation to the central building. Based on their field observations, Zaro and Lohse (2005) have proposed that this arrangement would have allowed the occupants to track and supervise important rituals associated with solstice,

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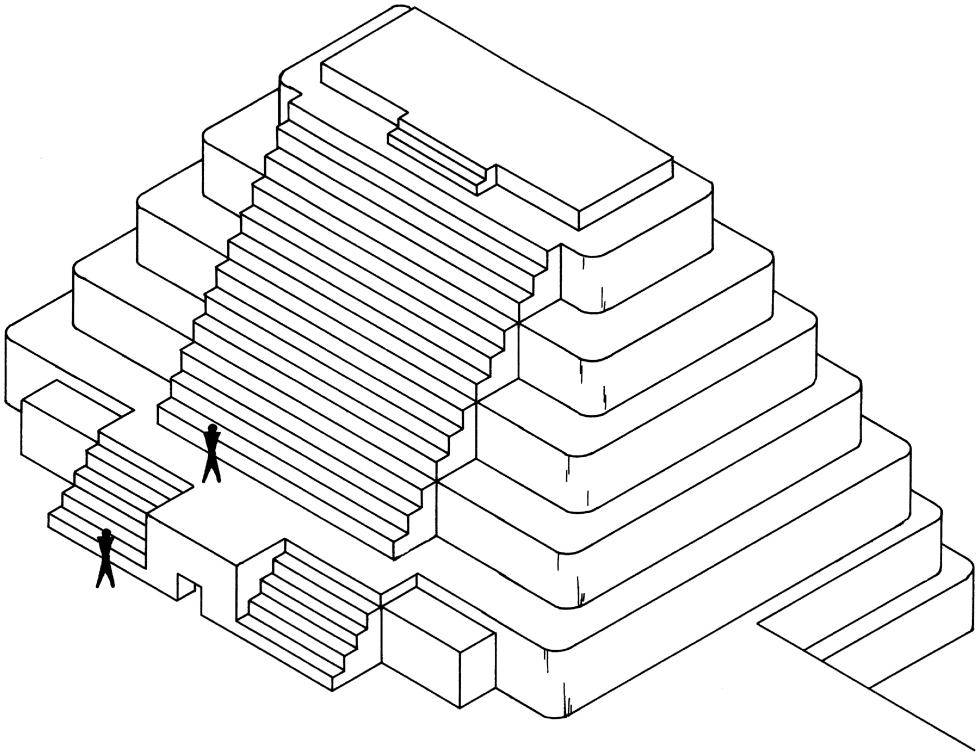

Figure 4.8. Structure 3 during the Late Classic. *Illustrated by W. David Driver.*

equinox, and zenith events as part of the 260-day ceremonial calendar. The presence of the complex suggests that rural populations understood and to some degree controlled the esoteric knowledge associated with agricultural cycle ritual (Zaro and Lohse 2005). A Saxche Orange Polychrome sherd, with an unusual decapitation scene (and one of three figural polychromes recovered from the region), was excavated from the southwestern cardinal mound and may hint at some sociopolitical disruption experienced by the inhabitants of Blue Creek and its environs at the inception of the Late Classic (Figure 4.9, A).

Excavations in the eastern shrine of a nearby elaborate residential courtyard group (Driver 2004) produced a burial with a unique Saxche Orange Polychrome vessel with figural representations (see Figure 4.9, C). This bowl portrays a highly stylized hallucinogenic enema scene utilizing pictorial conventions characteristic of northern Belize (Dorie Reents-Budet, personal communication, 2003), with a seated female facing right (left profile showing) presenting a bowl. Similarly dressed females can be found on a polychrome vessel depicting an enema scene in the Kerr Maya Vase Data Base (see K.530). In the bowl recovered from the shrine, three bent, crouching figures are facing left (right profiles showing), heads down, holding large, spouted balloon-like objects, and self-administering hallucinogenic enemas (see Figure 4.9, C). The three figures wear loincloths and elaborate headdresses, and their faces do not appear to be human but may be representations of God N. The central figure appears to have claw-like hands that also are a pictorial convention characteristic of northern Belize imagery (Dorie Reents-Budet, personal communication, 2003). In the spaces behind the figures are images of cloth and large bladders presumably containing the hallucinogen, and around the bladders are spots that may refer to the enema liquid, as they are similar to lines of dots found on images of water.

Vessels with enema rituals depicted on them rarely possess a known provenance (since many are from looted contexts), though when they do, they are most often found in association with royal or elite tombs. This vessel is the only one of its kind found so far in northwestern Belize, and instrumental neutron activation analysis argues for local production somewhere in the study area (Kosakowsky et al., chapter 6, this volume), corroborating its stylistic components. The enema and decapitation ritual scenes are unusual

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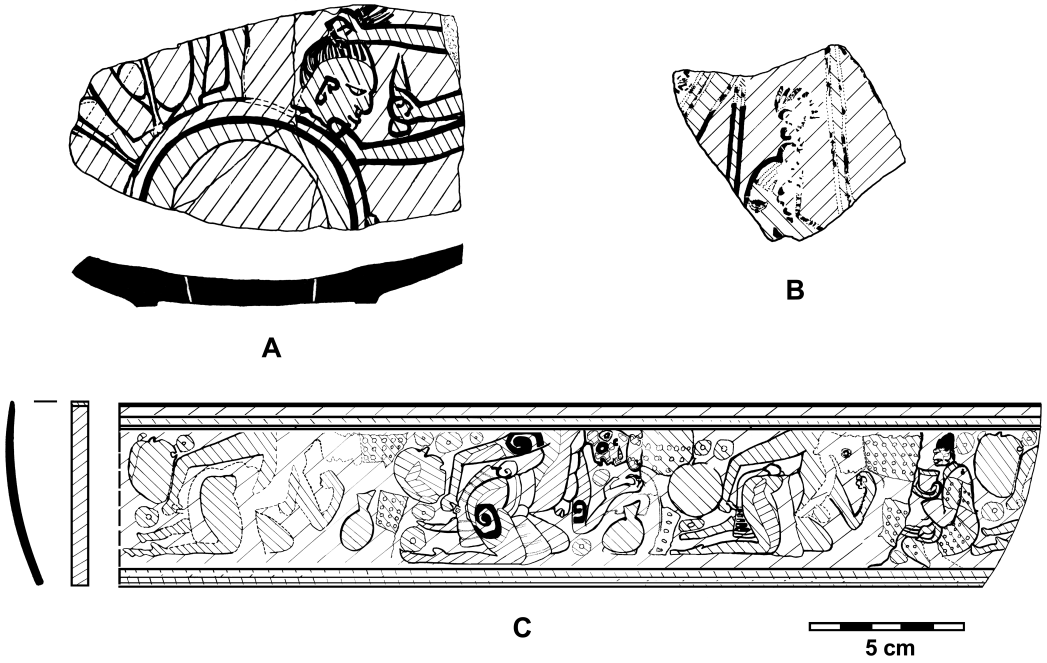

FIGURE 4.9. Early–Late Classic Saxche Orange Polychromes of the Dos Bocas Ceramic Complex (*illustrated by Jo Mincher*). Sample *A* is from the central structure of the solar observatory at Quincunx, *B* is from Blue Creek, and *C* is from the eastern shrine at Quincunx.

for a non-urban setting and, in conjunction with the presence of the hinterland solar observatory, suggest the outward movement of ritual paraphernalia and knowledge away from the site center in the Late Classic (Zaro and Lohse 2005). Shortly after AD 750, however, the solar observatory was abandoned, as evidenced by massive infilling of the central rooms with large quantities of virtually intact or partially intact vessels that date to the Dos Bocas Tepeu 2 sphere (Kosakowsky 2002).

Fourth Transformation: From Temple to House—Shifts in Architectural Priorities in Tepeu 2

The major construction program that took place into and throughout the Aguas Turbias period represents the final significant investment of resources at the major civic buildings of Blue Creek. Although minor renovations occurred during Dos Bocas Tepeu 2 period at Structures 2–3 and 24, construction efforts were primarily focused on expanding and refining elite domestic structures and compounds both within the site core and in the immediate periphery areas. Significant architectural modifications were conducted on all sides of Plaza B, at Structures 11–15 and 21 and the Structure 19 palace complex.

Ceramics of the Aguas Turbias (Tepeu 1) Complex and particularly the subsequent Dos Bocas (Tepeu 2) and Booth's River (Tepeu 3) Complexes, beginning in the eighth century AD, demonstrate a marked divergence from Petén sites. This pattern of greater regionalization is found throughout northwestern Belize (Kosakowsky and Sagebiel 1998; Sullivan 2002; Sullivan and Sagebiel 2003; see also chapter 6, this volume). Stronger connections in both ceramic decoration and vessel form developed with sites in the north (Ball 1977; Domínguez Carrasco 1994) and to the south (Gifford 1976). For example, although polychrome pottery is ubiquitous throughout Late Classic contexts at Petén sites such as Tikal (Culbert 1993), it appears to have been relatively unimportant at Blue Creek and other sites in the region (Kosakowsky and Sagebiel 1998; Sagebiel 2005). Instead, the mid–late Late Classic (Tepeu 2–3) inhabitants of Blue Creek and its settlement-area sites placed an emphasis on monochrome black (Achote Group) ceramics decorated with incising and fluting (Figure 4.10). There is also a strong presence of bolstered bowls, similar to vessel forms and types, including Belize Red, utilized by the Maya of the Belize River Valley (Gifford 1976).

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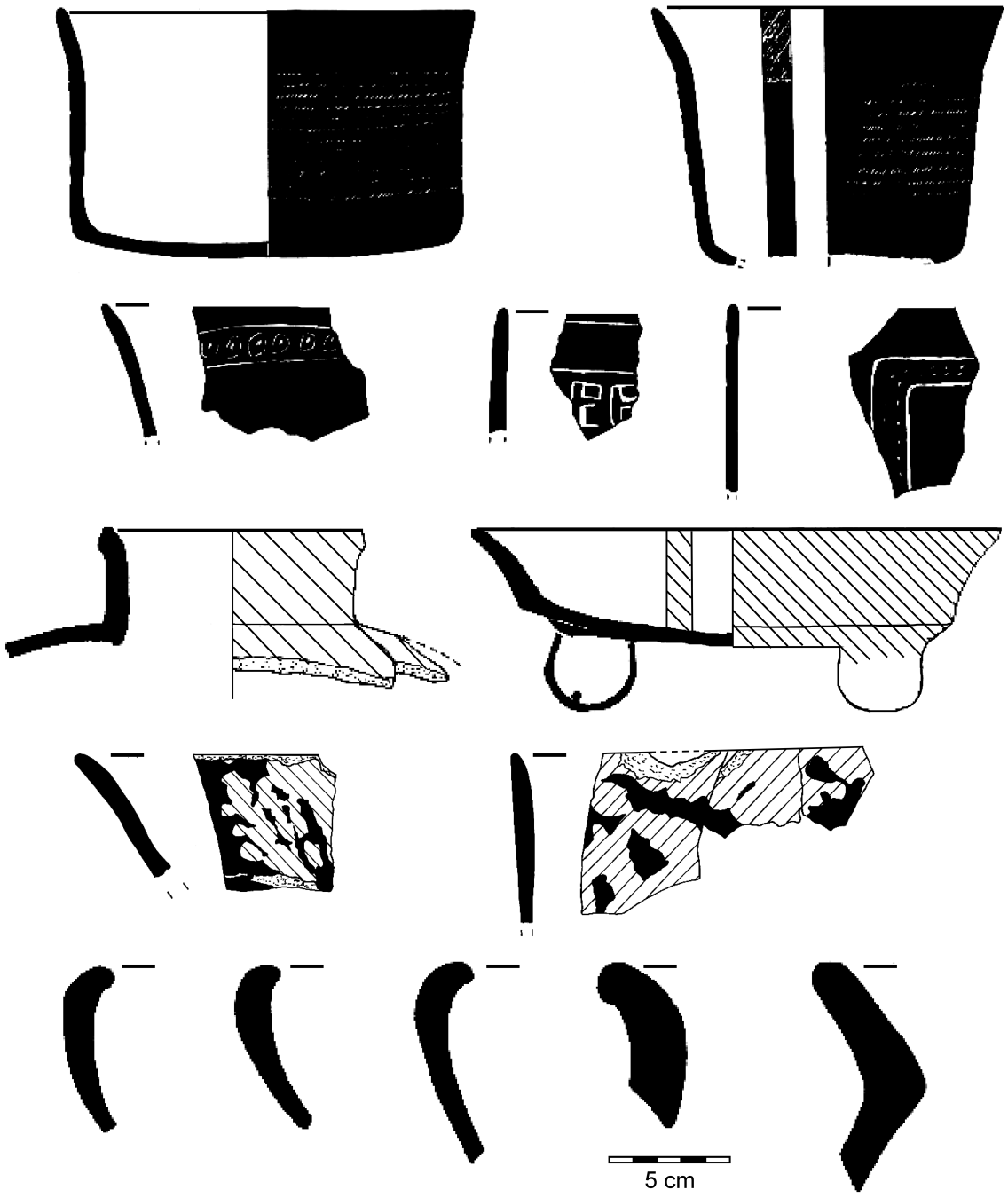

Figure 4.10. Typical Late Classic Pottery of the Dos Bocas Ceramic Complex from the Achote Black, Tinaja Red, Daylight Orange, Garbutt Creek, and Cambio Unslipped Ceramic Groups. *Illustrated by Jo Mincher.*

During the preceding Early Classic period a courtyard group had been constructed atop a large platform located between Structure 9 and the south end of Plaza B. The group initially consisted of two probable residential buildings, Structure 13 on the north and Structure 12 on the east. Later, a small shrine, Structure 10, was built at the group's southwest corner. Both Structures 12 and 13 were renovated and rebuilt several times during the Early Classic. During the Dos Bocas period of the Late Classic, however, the two buildings were drastically enlarged, expanding into multiroomed structures with large

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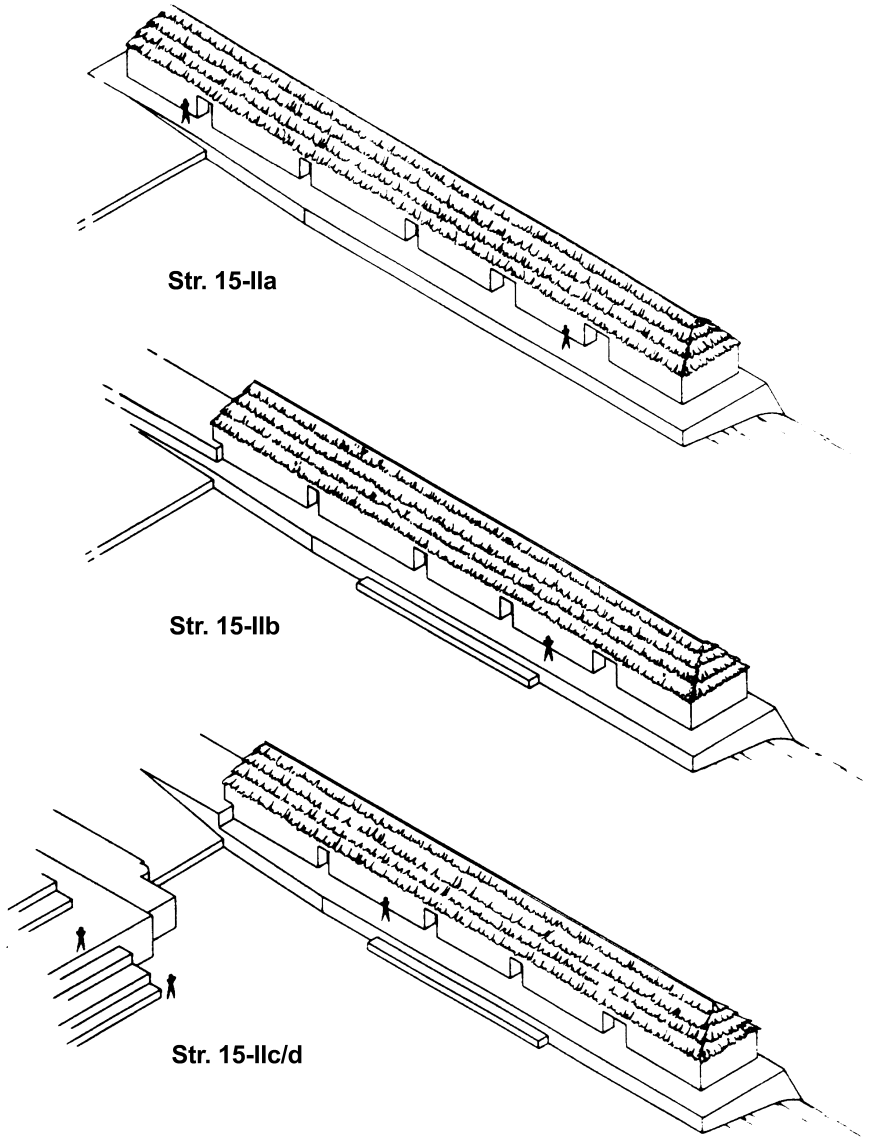

FIGURE 4.11. Architectural changes in Structure 15 during the Late Classic. *Illustrated by W. David Driver.*

frontal terraces. In addition, two new buildings, Structures 11 and 14, were constructed in the middle of the courtyard space. This created a smaller, highly private elite courtyard identified as the Structure 13 Courtyard Group (Guderjan 2004). The design not only greatly restricted access into the courtyard but also functioned to channel movement between the public spaces at Structure 9 and Plaza B. Structure 15 (Figure 4.11), which abuts the group and extends north to form the west side of Plaza B, was affected by the shift of design at the Structure 13 Courtyard Group and received several renovations that changed the building's routes of access, number of doorways, and size and location of interior benches (Table 4.4).

To the north of Plaza B is a small but elaborate palace complex, the Structure 19 Courtyard Group (Lichtenstein 1997). Although it was first established during the Early Classic, excavations have documented a dynamic series of architectural renovations and additions that occurred during the Late Classic. These include the sealing of doorways and access routes and the construction of niches and benches. Sequences of burials suggest that many of these modifications may be associated with rites related to

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Table 4.4. Construction sequence for Structure 13 Courtyard Group and Structures 15 and 19

Courtyard 13 Floors	Str. 10	Str. 11	Str. 12	Str. 13	Str. 14	Str. 15	Str. 19	Date	
		Ic	Occup?	Occup?			Occup	Late Classic Tepeu III	
			Occup	Occup				Late Classic Tepeu II	Transition 4
	Occup	Ib							
		Ia		III	I	IId	IIId		
						IIc			
						IIb			
							IIIc	Late Classic Tepeu I	Transition 3
							IIIb	Early Classic Tzakol	
						IIa	IIIa		
			IIIb	IIc					
			IIIa	IIb			IIb		Transition 2
IIIb	**I**		II	IIa			IIa		
			Ib						
			Ia				Ib		
IIIa			?	**I**		Ia–c	Ia		
II									Transition 1
Ib									
Ia	**Sub-3**	**Sub-4**			Sub-5?				
	Occup	Occup						Terminal Late Preclassic Chicanel/ Floral Park	
	Occup	Occup						Late Preclassic Chicanel	

Bold: Constructed with courtyard floor Occup: Occupation debris

ancestor veneration (Lichtenstein 1997). Of the minute quantity of polychrome pottery found in the Blue Creek site core in the Late Classic (only 70 sherds of the Saxche Orange and Palmar Orange Ceramic Groups), 50% were recovered from the Structure 19 Compound. Among them is one of only three figural polychromes found at the site (see Figure 4.9, sample B), a Saxche Orange Polychrome sherd depicting a figure in profile with a topknot, which was likely of local manufacture (see chapter 6, this volume).

In the site's immediate periphery a ring of residential courtyard groups is located on the ridgelines to the northwest and southwest of the site core (Guderjan 1998; Guderjan, Lichtenstein, and Hanratty 2003). First constructed in the Early Classic, most of these groups appear to have been heavily modified in the Dos Bocas period. Massive quantities of broken Booth's River vessels that litter the patio and structure floors of these groups indicate they were abandoned during the Terminal Classic.

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Though these deposits have been interpreted by some as termination rituals (Guderjan, Lichtenstein, and Hanratty 2003), a more likely explanation is that the material was discarded in these residential structures as part of the gradual abandonment process (Clayton, Driver, and Kosakowsky 2005)

Below the escarpment and the site core, the focus of settlement and public ritual was located adjacent to extensive ditched-field complexes that underwent massive intensification during the Late Classic (see chapter 3, this volume). Excavations have shown that though there was construction in the area as early as the Preclassic, major building episodes date to the Late Classic, Dos Bocas, and Booth's River periods (chapter 8, this volume). Their association with nearby ditched-field complexes is supported by the presence of locally produced double-mouth water jars, unique to this settlement area, which may have been utilized for irrigation or water ritual. Major construction ceased at the end of the Terminal Classic, though Early Postclassic pottery has been found in the topsoil and other Postclassic rural settlement has been documented for the area (chapters 2 and 9, this volume). No Postclassic material has yet been found in the Blue Creek site core.

Transforming Identities and Shifting Goods: Transformations in Architecture, Ritual, and Ceramics

These architectural transitions, ritual caching activities, and the shifting of associated ceramic-sphere affiliations produce a narrative that describes a multilayered history of the creation, maintenance, and transformation of the Blue Creek community. Over approximately 1,200 years, the site experienced major changes in building construction, site planning, and structural focus. Corresponding to these architectural transformations were shifts in ceramic-sphere affiliations that indicate broad changes in regional and long-distance political and economic relationships. The manipulation of social and structural space by the site's elite provided a visual narrative through which changing power relations and cultural ideology could be communicated to the cosmos and negotiated with the general population. From a political ecology perspective, this dynamic historic record of change and stability provides a contextualizing framework within which the more fine-grained aspects of environmental and social relations can be explored.

When initial settlement of the area occurred in the Early Middle Preclassic period, the occupation appears to have been limited to the escarpment edge, directly beneath what would become Structure 9. Later, the growing populations of the Late Preclassic established a more dispersed settlement pattern, with occupations occurring across all the major environmental resource zones both above and below the escarpment. The ceramic assemblages associated with these occupations indicate that the early residents of Blue Creek had become fully integrated into the Chicanel Ceramic Sphere and were clearly participating within regional lowland Maya culture. The Chicanel Sphere is marked by widespread homogeneity in the ceramic inventory in which even minor ceramic types are shared across vast distances and is viewed as a sign of increasing social and economic interdependence between emerging Late Preclassic sites.

Toward the end of the Late Preclassic the site's first architectural transformation again focused on the escarpment edge, with the construction of several ritual structures and the establishment of the first public space. The sociopolitical investments represented by the monumental constructions at Structures 1, 4, and 9 indicate a qualitative increase in social and ritual complexity for the community, and their appearance in the area of greatest settlement in antiquity suggests a close relationship between the cultural landscape and social power.

This relationship appears to have been underscored at approximately AD 130, when major modifications of Structure 4 altered the plan of Plaza A by creating an elite residential area at its southern end. The monumental size and elaborate nature of the building's masonry superstructure and massive stairway, obsidian dedication ritual cache (C21), and later, a plain stela and enclosure wall document the presence of high-status individuals who were fully participating in activities commonly associated with Maya elite. More importantly, the location of a single residential compound within the newly created sacred zone of Plaza A may imply an increasing solidification of political control by a single group or lineage.

The presence of the elaborate Chultun Burial 5 suggests, however, that such political relationships may have remained contested outside the core zone. The 28 whole vessels from that burial are unique at

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Blue Creek; ceramics of these types are not found in any other contexts (Kosakowsky 2005), though they are extremely similar to Terminal Preclassic ceramics from Tikal (Culbert 1993). Similar ceramics are found in restricted contexts such as chultuns, burials, and tombs at other northern Belize sites, such as Chan Chich (Valdez and Houk 2000), Lamanai (Powis 2002), Nohmul, and elsewhere (Pring 2000), though generally in small quantities and with limited distribution. Like these other sites, Blue Creek retained close ties to the large centers of the Petén during the Terminal Preclassic, and the presence of these pots and large quantities of jade in a hinterland context would argue for decentralized control over access to the finished goods that moved into the region at this time.

The latter part of the Early Classic witnessed the second major architectural transformation for Blue Creek. Site expansion, political expression, and architectural creativity all indicate this to have been a dynamic and probably prosperous period for the site. It was at this time that both the colonnaded building (Str. 1-IV) and the lineage rite temple (Str. 9-IV) were built. While the implications of the innovative design of Structure 1-IV remain unclear, the formal attributes and iconographic display at Structure 9-IV suggest this building played a crucial role in establishing and maintaining the political identity of the site's inhabitants. Also occurring at the same time, a radical redesign of Structure 4-II replaced the elite residential compound with a three-doored temple. This renovation was initiated by an extensive ritual involving a vast quantity of wealth and prestige items, all buried within a vertical deposit that may have been constructed to replicate the sacred world tree of creation and rejuvenate ancestral linkages.

Efforts aimed at increasing the monumentality and sanctification of buildings in the site core were continued and reinforced a few years later, when the death of the high-ranking individual in Tomb 4 may have sparked the site's third major architectural transformation. At that time, the three tallest structures at the site were greatly enlarged, and their masonry superstructures were replaced with flat, structureless summits. At Plaza A, the plaza platform was expanded and two eastern shrine structures were built.

It was at this same time, during the transition from the Early Classic to the Late Classic, that cities such as Tikal and Calakmul were involved in significant power struggles. This period after the defeat of Tikal in AD 562 is referred to as the "Middle Classic Hiatus" (Willey 1974), and its effects have been documented across the central lowlands and into northern Belize, resulting in population shifts and changes in sociopolitical ties between sites (see chapters 2 and 7, this volume). Ceramic evidence from Blue Creek suggests that trade routes may have been disrupted or altered by events of this period (chapter 6, this volume). For example, the Petén-style pottery common in all Early Classic contexts at Blue Creek is replaced by Belize Valley and southern Campeche-Rio Bec styles in Late Classic assemblages (Kosakowsky and Lohse 2003); this pattern is seen at other northwestern Belize sites as well (Kosakowsky and Sagebiel 1998; Sagebiel 2005; Sullivan 2002; Sullivan and Sagebiel 2003). Fine-quality chert from the chert-bearing zone of eastern Belize is common in all contexts in Early Classic assemblages at Blue Creek and its hinterland sites though all but disappears during and after the hiatus (Barrett 2004). While admittedly only a very small sample, two of the three Late Classic figural polychromes found in the region express unusual scenes of decapitation and enema ritual, suggesting that this was a period of sociopolitical disruption experienced throughout the lowlands.

The final major architectural transformation at Blue Creek occurred during the Late Classic as well and represents a significant shift in the site's use of sacred space. While some modifications of ritual structures occurred during this period, most construction focused on the maintenance and expansion of elite residences both in the site core and in the immediate periphery. The extensive renovations of the Structure 13 Courtyard, along with the palace-like Structure 19 Courtyard, greatly modified patterns of movement within the Plaza B Complex. The reduction of access into and out of these areas most likely served to increase the sanctity of the compounds and possibly that of Structures 9 and 24 as well, at the same time distancing the elite inhabitants from the general population. The importance of these economic connections abroad and changes in these networks are discussed in detail by Kosakowsky et al. (chapter 6, this volume), and the presence of Chablekal Fine Gray Pottery at Blue Creek, which is manufactured in the Palenque region, confirms the interaction of Blue Creek with western lowland polities during the Late Classic, after the hiatus.

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Mirroring the vitality of residential developments within the core area, settlement investigations indicate that the rural population was increasing, especially in areas on the top of the escarpment. The intensification of extensive ditched-field complexes in the Late Classic below the Blue Creek site core could have allowed the area's populations to thrive despite possible disruptions in access to other finished goods and resources. Only minor renovations of courtyards in the site core appear to have continued until the site's abandonment in the Terminal Late Classic, although small public ritual structures were maintained and enlarged in the surrounding settlement zone (see chapters 8–9, this volume).

Investigations at Blue Creek have revealed that the site's sacred landscape was effectively manipulated through a series of architectural transformations and associated ritual activities. Further, the identification of four temporally discrete periods during which these changes occurred has provided valuable insight into the sociopolitical development of the site and its relationships to the greater Maya world. These shifts in the architectural program are interpreted as evidence of both locally and regionally based restructuring of Blue Creek society and appear to reflect changes in the social logic governing concepts of status and sanctity. The architectural and ceramic narratives provide a dynamic tale of changing attitudes, beliefs, and politics through time that is just one aspect of the site's highly varied socioeconomic, political, and cultural history and serve to paint a truly systemic picture of the ancient Maya of Blue Creek.

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Chapter 5

The Ball Game, Community Ceremony, and Political Development in Northwestern Belize

Jon C. Lohse, Kerry L. Sagebiel, and Joanne P. Baron

This chapter examines political developments in northwestern Belize, and at the site of Gran Cacao in particular, by comparing chronological, contextual, and design data from ball courts. Ball courts are most common during the Late Classic, coinciding with the regional florescence under the authority of La Milpa or perhaps Tikal (see chapter 2, this volume). Figuring precisely how the ball game and its attendant ideological and political meanings contributed to this political florescence requires multiple scales and lines of evidence representing numerous, sometimes competing, social perspectives. For example, the appearance of ball courts can be partly understood in the context of regional transformations, as neighboring rulers increasingly engaged with one another through ball-game-related ceremonies, resulting in a degree of political integration previously unknown. Practices and rituals involving the ball game also contributed to the integration of local communities; these rituals invoked broadly shared beliefs about the cosmos and the role of key personages, embodied by rulers or their agents, in maintaining order and balance while ensuring renewal. Ball courts are also occasionally found in domestic and outlying contexts, suggesting that the negotiation of political identities was a complex and dynamic process that may have included rulers, subroyal elites, and even commoner hinterlanders.

Using data associated with ball courts and ball-game-related ideologies, this chapter discusses site-specific and regional shifts in political integration and inclusion, while underscoring (in some cases) elite authority. Based on findings from Gran Cacao, we show how ball-game ceremonies were well suited for integrating local and regional populations by drawing from preexisting expectations for the inclusive nature of public ceremonies. Once politicized, ideological messages relayed through ball-game rituals would have been easily assimilated, since they made direct reference to widely held views concerning order, fertility, and cyclical completion. With respect to the central themes of this volume (agrarian-related concerns of productivity, resource management, and negotiated political outcomes), the emergence of ball-game ceremonies from earlier traditions reiterates the importance of ideation to political processes largely grounded in the environment. We conclude that the ball game was a complex part of social and political life and is perhaps best understood as part of service-oriented political strategies for accommodating burgeoning regional populations.

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THE MESOAMERICAN BALL GAME AND POLITICAL SYMBOLISM

It is unclear when or where the Mesoamerican ball game was first conceived, though evidence suggests that it predates sedentary life. At Gheo-Shih, Oaxaca, Mexico, archaeologists recorded two parallel stone alignments defining an area for ritual performance and dating back 8,600 years (Marcus and Flannery 2004). A nearly identical site has recently been discovered nearby (Winter 2009), suggesting that Gheo-Shih may have been part of a larger complex of open-air Archaic sites dedicated to ritual gatherings. The plan at these sites, with parallel stone alignments possibly representing the earliest known ball courts, foreshadows later ritual constructions. When it did appear, the ball game played a significant role in the religious practices of nearly all Mesoamericans. According to the Maya origin myths recorded in the Popol Vuh (Tedlock 1985), the ancestral Hero Twins Hunahpu and Xbalanque endured many trials at the hands of the underworld Lords of Xibalba, including playing the ball game in which losers underwent additional tribulations. Through skill and cunning, the Twins repeatedly defeated the Lords, eventually taking their place in the heavens as the Sun and Venus and completing the cycle of death and rebirth that underlies nearly all aspects of the ancient Maya world view (Schele and Miller 1986). Steeped in this symbolism, the ball game was prominent in the life of Maya elites, who periodically recreated this ritual as a way of reaffirming their relationship to the heavens and the supernatural (Miller and Houston 1987; Schele and Freidel 1991). Across much of Mesoamerica, at least as early as Formative times, ball courts are frequently associated with images of the watery underworld and are closely tied to origin myths (see Schele and Mathews 1998, 36–40).

The ball game's role in resolving conflict between the Xibalba Lords and the Hero Twins was paralleled in pre-Columbian times, as political actors used ball-game competition and ritual to accomplish objectives related to achieving and maintaining office. Some of the earliest Mesoamerican public architecture is identified as a ball court in the Mazatán region of Chiapas, southern Mexico, and is approximately 3,600 years old (Hill and Clark 2001). Researchers here link the Early Formative court with gambling and competition as an impetus to early government. In later times and as a proxy for overt warfare, rulers of communities in conflict frequently played the ball game as a way of resolving their disputes (Stern 1950) or of naturalizing differences in status between high-ranking lords (see Baron 2006). Some researchers (Santley, Berman, and Alexander 1991) have argued that a greater regional inventory of ball courts indicates political decentralization, perhaps as evidence of a large number of peer-level factions and the absence of overriding centralization. Whatever its other significances, factional competition is implicit in the ball game. While these factions are often unidentified (Marcus 1996), they are thought to have been site rulers or other high-ranking members of society pursuing political agendas.

Some scholars also note the game's importance to intracommunity relationships. Fox (1996) has identified middens located near ball-court alleys or behind range structures that he interprets to be remains of public feasts. While this aspect of ball-game ceremony is not necessarily exclusive of site politics involving community leaders, it is possible that attendants of such celebrations were common-status community members. In addition to public feasting, patterned dedicatory deposits lend support to what Fox (1996, 486) calls the sacralization of ball courts, the caching of materials within them in public ceremonies that provide "clear supernatural associations." By drawing on common themes, including allusions to creation myth, elite performers could easily have used ball-game ceremony to integrate large audiences.

Ashmore (1991) has argued that ball courts themselves were key elements of many site plans, serving as transitional points between symbolically laden north and south architectural elements. These constructions are frequently located at or near site centers characterized by open and relatively unrestricted access. This location places them, literally and figuratively, in the heart of urban zones, where they were open to through traffic. Houk (1996, 2003) notes the prevalence of this pattern in northwestern Belize in particular. As such, it is probable that, even while some aspects of ball-game rituals included contested ideological meanings, ball courts also provided a source of "civic pride," serving an integrative purpose in bringing people together regardless of differences in social status or role. In combination with the pageantry that accompanied

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ball games, symbolic caching served to communicate an individual's or faction's paramount status to subordinated community members, though Urban and Schortman (1996, 502) contend that the meaning of such messages was neither universally received nor permanent in duration. Within communities, ballgame ritual appears to have served complementary roles of naturalizing social differences between leaders and supporters while also integrating and cohering diverse local populations around shared beliefs, including world creation and renewal.

NORTHWESTERN BELIZE BALL COURTS

No fewer than 11 ball courts are reported from seven sites in upper northwestern Belize (Figure 5.1). Blue Creek (Guderjan 2004), Ixno'ha (LaLonde 2003), Gran Cacao (Lohse 1994; Lohse, Barrera, and Padilla 2005), Maax Na (Shaw and King 2002), and Wari Camp (Laura Levi, personal communication, 2003) all have one; while Dos Hombres (Houk 1996; McDougal 1997) and La Milpa (Schultz, González, and Hammond 1994) are the largest sites in the region and each has two courts. An important court lies in the settlement area of Chawak But'o'ob, approximately two to three kilometers outside Dos Hombres (Scarborough and Valdez 2009; Walling et al. 2006). At least nine additional courts, beyond the scope of this comparison, are present in the Three Rivers Region, including two at La Honradez (Von Euw and Graham 1984, Figure 21) and one each at Chan Chich (Ford 1998), Chochkitam (Morley 1938, Plate 193b), Kinal (Graham 1967, Figure 21), Punta de Cacao (Robichaux et al. 2002), Quam Hill (Guderjan et al 1991, Figure 50), Rio Azul (Adams 1999), and San Jose (Thompson 1939). All major and many medium centers possess at least one ball court, suggesting that these architectural features represented something of a minimal standard for communities of a certain stature.

The ball courts at Blue Creek, Chawak But'o'ob (lying in the Dos Hombres hinterlands), Dos Hombres, Ixno'ha, La Milpa, and Maax Na, are briefly summarized (Figure 5.2). In layout and design all but two courts are oriented north-south. Some variation is present, with alleyways ranging from 4.5 degrees west of north (Blue Creek) to 17 degrees east of north (Gran Cacao). Only La Milpa's North Court, the one at Ixno'ha, and Punta de Cacao are aligned east-west. All ball courts are open ended, conforming with either Type I or II described by Taladoire and Colsenet (1991). Regionally, ball courts have been excavated to varying degrees, leaving an uneven understanding of construction dates or sequences (Table 5.1). Detailed excavations at Gran Cacao illustrate how, in some cases, ball courts are an outgrowth of preexisting community traditions involving integrative public rituals.

Blue Creek

Few excavation data are available from the court at Blue Creek, though its architectural context is well understood. The large platform supporting Range Structures 7–8 was built at the end of the Early Classic on the north side of the site's main plaza, Plaza A (see chapter 4). This construction corresponds with the modification of Structure 1 into a viewing gallery for witnessing events in the adjoining plazas. This remodeling may have been motivated in part by the need to create an elevated covered space for high-ranking people to witness ceremonies in the newly built ball court to the north.

The ball court was badly damaged by looters, and its construction sequences are unknown. Researchers simply recorded the buildings and refilled the looters' trenches to stabilize the remaining architecture (David Driver, personal communication, 2004). Excavators recorded a deposit of lithic debris in the alley and suggest that this deposit effectively closed the court to ball-game events, though the date of this deposit is unknown (Guderjan 2004, 243). Given the dynamic architectural history of the site's Plaza A (chapter 4), the ball court provides evidence for rulers' growing authority as they associated themselves with heavenly deities through ritual commemoration, the increasing use of monumental architecture for ceremonial purposes, and caching events. The court's central location in an open, accessible plaza indicates that it also integrated the Blue Creek community through public rituals.

Ixno'ha

The region's only other known Early Classic ball court is at Ixno'ha (LaLonde 2003). This court is on a small platform abutting a larger, elevated plaza immediately to the west. The complex lies on an east-

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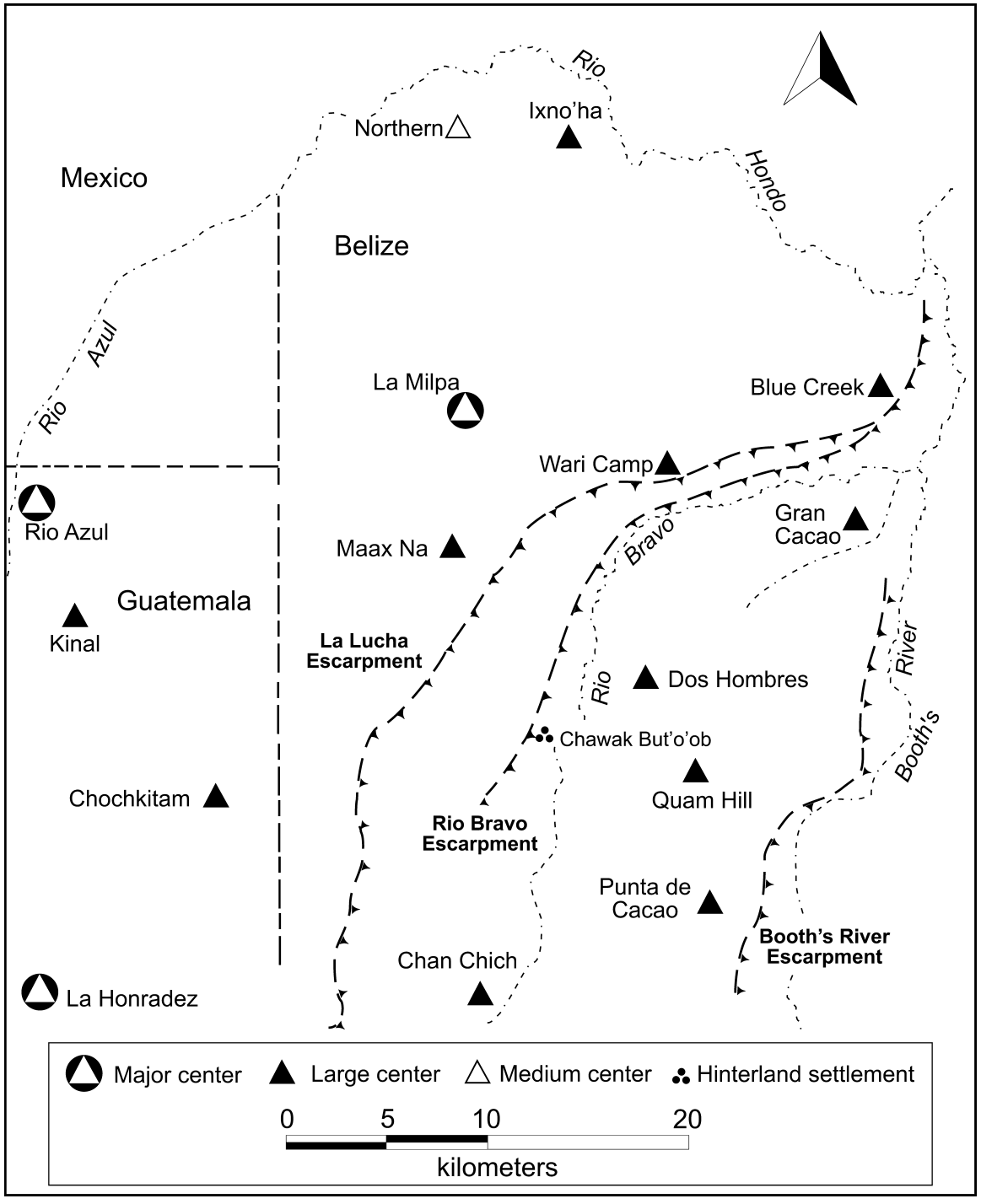

FIGURE 5.1. Three Rivers Region map showing sites with ball courts.

west axis that defines the northern part of the site center. Preliminary testing elsewhere in the site center has revealed strong Preclassic and Early Classic components. Curiously, Late Classic architecture comparable to other sites in the region has not yet been identified, even while much of the settlement surrounding the site dates to Tepeu 2–3 (chapter 7, this volume).

Preliminary testing and examination of looters' trenches in the plaza west of the ball court (LaLonde

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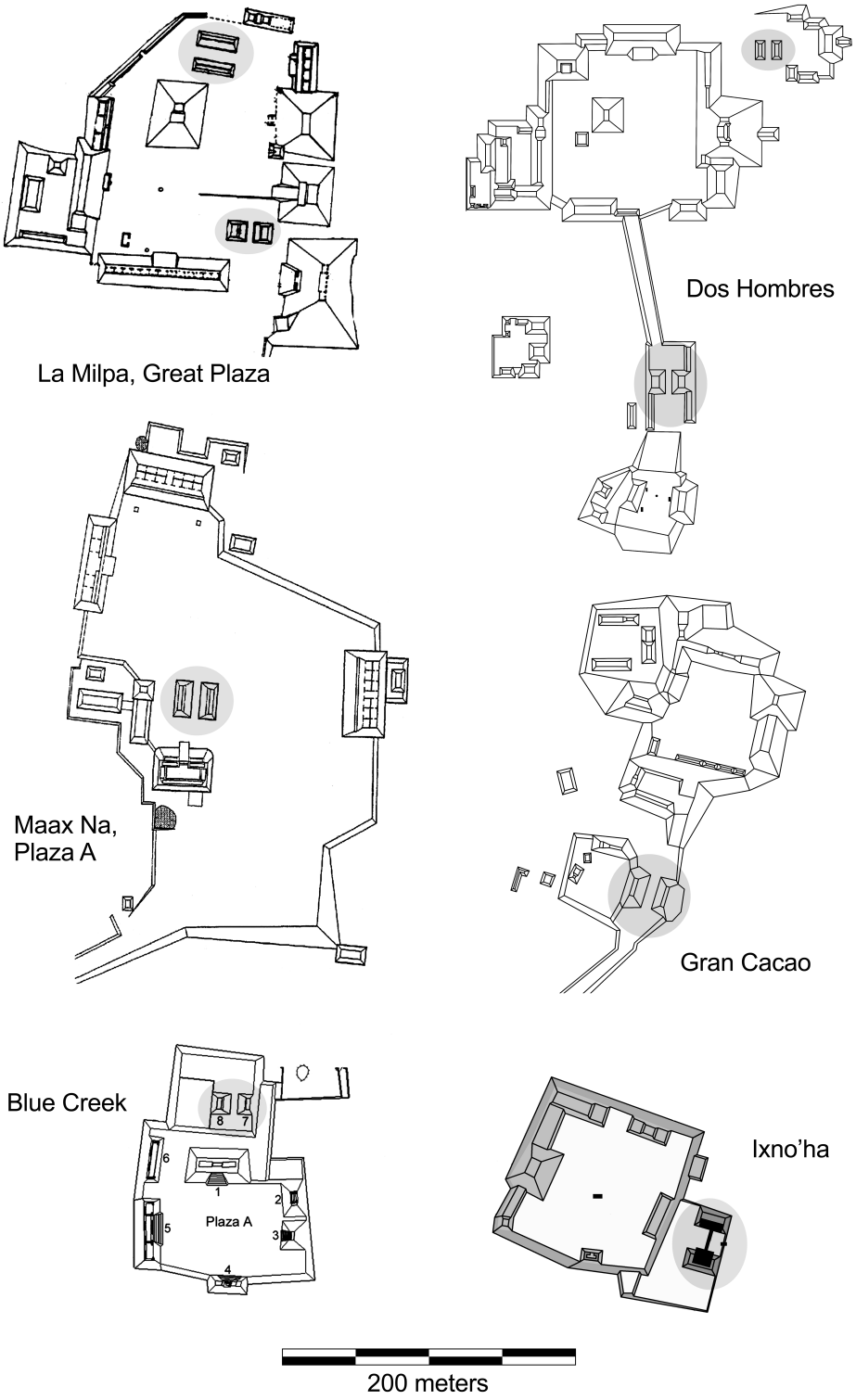

Figure 5.2. Ball courts discussed in chapter 5, reproduced at the same size, except Ixno'ha, which is shown at twice the scale. No map of Chawak But'o'ob ball court is available for reproduction.

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Table 5.1. Ball court construction histories, dates, and dimensions

Ball Court	Construction History	Date	Alley Dimensions (length × width)	Citation
Blue Creek	Single phase, on top of Early Classic platform	AD 300–600	19 × 6 m	Guderjan 2004
Ixno'ha	Partially overlying an earlier building	AD 300–600	ca. 14 × 5 m	Lalonde 2002
Chawak But'o'ob	Single phase	Tepeu 2, AD 680–810*	16.5 × 7 m	Walling et al. 2006
Dos Hombres (1)	Single phase	Tepeu 2, AD 680–810*	18 × 4 m	Houk 1996
La Milpa North Court	Single phase, possible repaving in Tepeu 3	Tepeu 2, AD 650–780*	26 × 7 m	Sagebiel 2005b; Hammond and Tourtellot 1993
La Milpa South Court	Partially overlying an earlier building, ball court built in one phase	Tepeu 2, AD 650–780*	19 × 5 m	Hammond et al. 1996; Sagebiel 2005b
Maax Na	Earlier buildings, possible earlier ball court	Tepeu 2–3, AD 680–900*	17.5 × 5 m	Shaw and King 2002, 2008
Dos Hombres (2)	Single phase	Tepeu 2–3, AD 680–900*	11 × 3 m	McDougal 1997
Gran Cacao	Overlying earlier platform, single phase	Tepeu 2–3, AD 680–900*	16.5 × 3.5 m	Lohse et al. 2005

* Tepeu 2 dates are attributed to ceramic chronologies proposed for each site.

2003) indicate construction as early as the early Middle Preclassic and spanning until the Early Classic. The two buildings comprising the ball court, Structures 9 and 30, are intact, and their construction histories have been documented. During the Early Classic, early phases of two small buildings, as well as the low platform on which the ball court was located, were built. At some point coinciding with the remodeling of the plaza to the west, these earlier buildings were razed and refashioned as a ball court. The elevated platform to the west provides an ideal vantage point for viewing ceremonies in the court. Considering the earlier construction phases of Structures 9 and 30, the ball court may have appeared toward the end rather than beginning of the Early Classic. As at Blue Creek, this was an active period for remodeling as community rulers asserted their local identities through monumental constructions and sacralization of civic plans.

Chawak But'o'ob

Chawak But'o'ob is located two to three kilometers southwest of the Dos Hombres site core, along the sloping face of the Rio Bravo Escarpment. This dense residential cluster has been actively investigated since the mid-1990s (Walling et al. 2005). In 2004 surveyors encountered two large, parallel range structures forming a ball court on the outskirts of the previously mapped area (Walling et al. 2006). This

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represents the region's only hinterland ball court and one of the very few reported outside site-center contexts in the Maya area (also Joyce and Hendon 2001). As such, it provides valuable information for better understanding the role of hinterland settlements in regional political networks and also for illustrating the capacities of rural agrarianists to self-organize complex ritual ceremonies without elite supervision.

Surveys of the ball court area have documented sloping terrain, bedrock outcrops, and thin soils. The ball court is surrounded by low ridges, berms, and terraces that manage and direct soil and water runoff. Shallow basins and even possible (small) cave openings are also present in the immediate vicinity (Walling 2011). The court is wide compared with others in the region; the alleyway measures 16.5 by 7 meters (Walling et al. 2006, 65). Excavations in the alley center revealed only two strata, humus and construction fill, before reaching bedrock at 57 centimeters (Walling et al. 2006, 61). The ball court's two buildings appear to have been built in a single event, dated by ceramic evidence to Tepeu 2, ca. AD 680–810. Whether Chawak But'o'ob was fully autonomous or was tethered to nearby Dos Hombres remains to be determined. Nevertheless, the site's ball court is contemporary with most others in the region and signifies this hinterland settlement as a distinct community in the Three Rivers Region.

Maax Na

The ball court at Maax Na, five to six kilometers south of La Milpa (Shaw and King 2002, 2008), is located close to the center of Plaza A, one of the largest plazas in the region, at the north end of that site (King and Shaw 2006, Figure 1). To the west and south of the ball court are temples sitting atop large supporting platforms that together create vantage points from which community members could witness events in the ball court below. To the north and east is open plaza space.

Excavations in the alleyway recorded a series of three "major resurfacings" (Shaw and King 2002, 3), though a limited ceramic sample makes dating these events difficult. Excavations at the south end of the alleyway also recorded three floors and recovered Tepeu 2–3 sherds beneath the upper two; the lowermost floor was not penetrated. Investigations were carried out behind the western range structure in an effort to identify evidence of feasting similar to that reported by Fox (1996) but only recorded building collapse intermixed with Tepeu 2–3 sherds. The unit (1 × 1 m), located to the north in the plaza, extended 120 centimeters below the surface and exposed no fewer than seven floors without reaching bedrock (Shaw and King 2002, 3). All materials above a floor 97 centimeters deep date to the Late Classic, while Early Classic sherds were recovered below this depth. Excavations into Structure 1A-2 exposed not only the well-preserved final ball-court phase, dated securely to Tepeu 2–3, but also an inner construction that is interpreted as an earlier ball court. Beneath this possible earlier ball court is Early Classic architecture suggestive of elite residences (Shaw and King 2008, 15).

Final construction of the Maax Na ball court is confidently dated to Tepeu 2–3, ca. AD 680–900, and an earlier phase may be present. Importantly, during its last phase the ball court was surrounded by monumental buildings, making it clear that during the Late Classic period the ball game played a key role in whatever public ceremonies were being conducted in the northern plaza. Moreover, the enormous size of this plaza suggests that site planners intended that large numbers of people be able to witness or perhaps even participate in these events.

Dos Hombres

Two ball courts are present at Dos Hombres. Ball court 1 lies at the southern end of a causeway linking it with the large Plaza A-1 to the north and immediately at the base of the smaller, elevated plaza, B-1, to the south. A medium-sized platform and open-court area provided room for observers at either end of the alley, while others could have viewed events from the ramp to the south. Excavations in 1994 (Houk 1996) revealed no interior constructions in either ball-court building, showing instead that it was built in a single event. Ceramics from these excavations belonged to the Tepeu 2 ceramic sphere, dating the construction to AD 680–810. This date corresponds with the beginning of the apparent florescence of Dos Hombres as a major center in the region (chapter 2, this volume).

The second ball court at Dos Hombres is unusual in that is it located in a high-ranking residential compound at the northeast corner of Plaza A-1. In

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this sense, it is somewhat comparable with the court at Chawak But'o'ob, although it appears to have been for the private use of the associated residential group. Excavations (McDougal 1997) exposed the sloping batters and extended benches that define ball-court architecture. Its small size (the alley measures 11 × 3 m) makes it unlikely that the court ever held large events. Rather, it is perhaps best understood in the context of the residential group of which it is a part. Ball court 2 is dated by ceramics to Tepeu 2–3 times, AD 680–900 (McDougal 1997).

While Ball court 1 is easily understood in relation to other ball courts found in the region, Ball court 2 proves somewhat enigmatic. Were these residents ritual specialists within the community? Were they linked somehow with the larger ball court in the center of the site? Or, does this small ball court merely represent a family-scale investment in ritual architecture, signifying the concurrent participation in public ceremonies as well as private, domestic ones? These questions are unanswered. The residential group associated with the smaller ball court has yet to be tested, though it has an eastern shrine that elsewhere in the region (Hageman and Lohse 2003; Lohse 2004) indicates the high ranking as head of a multigeneration corporate group. Based on these data, researchers begin to understand the interplay of public dimensions of the ball game, probably sponsored by elites and site rulers but from which general populations also benefited, with domestic practices restricted to a limited few.

La Milpa

Both of La Milpa's ball courts are located in the northern Great Plaza and contribute to the impressiveness of that part of the site. The locations of each, together with their differing alignments and sizes, suggest they may have served different purposes in the community (Schultz, González, and Hammond 1994). The east-west aligned North Ball Court lies in the open northern part of the plaza and would have been visible to large crowds. The South Ball Court is situated in the plaza's southeast corner. With its north-south alignment and location near the egress to the southern part of the site, this ball court could have had a more transitional, liminal role in the site's north-south axial plan.

The North Ball Court is oriented at approximately 100 degrees, and with the court at Ixno'ha is one of two east-west ball courts in the region. This is the largest ball court in the study area, with an alley that measures 26 by 7 meters and structures approaching 2.5 meters high (Schultz, González, and Hammond 1994, 48). The alley of the smaller South Ball Court measures 19 by 5 meters, with structures measuring 5.5 meters high. The South Ball Court was very badly looted, and only excavations in the presumed alleyway were possible. Excavations into the North Ball Court included an axial trench into the two buildings as well as test pits to define structure corners.

Ceramic data indicate that each court was constructed in a single phase during Tepeu 2 times, ca. AD 650–780 (Sagebiel 2005b). There appears to have been an Early Classic building in the place that was eventually covered by the South Court's western structure, Structure 7 (Sagebiel 2005b, 615). These additions correspond with the period of La Milpa's rise to regional prominence. The South Ball Court lies at a lower elevation than the North Ball Court, and excavators suggest that it might have been built after a raising event in the northern portion of the Great Plaza (Schultz, González, and Hammond 1994, 46) which also involved construction of the North Court.

Additional evidence for the ball game's political significance at La Milpa comes from Stela 4. This monument was rediscovered buried beneath looters' rubble in front of Structure 1, on the east side of the Great Plaza (Grube and Hammond 1998, 129). The stela's carved faces are poorly preserved, but a central figure with a "dancing dwarf" wearing the protective belt and knee pads of a ball player can be identified (Figure 5.3). The dwarf carries a round object in his right hand. Grube and Hammond (1998, 130–31) interpret this scene as a dancing dwarf assisting the maize god in the process of emerging from the underworld. The central figure could be a site ruler, perhaps also dressed as a ball player, though the absence of glyphs leaves this unclear. Nevertheless, Stela 4 illustrates the degree to which Late Classic political rituals were associated with ball-game imagery and also with themes of renewal and rebirth. Stela 4 compares stylistically with nearby Stela 7, dated by Long Count to 9.17.10.0.0 (Grube 1994),

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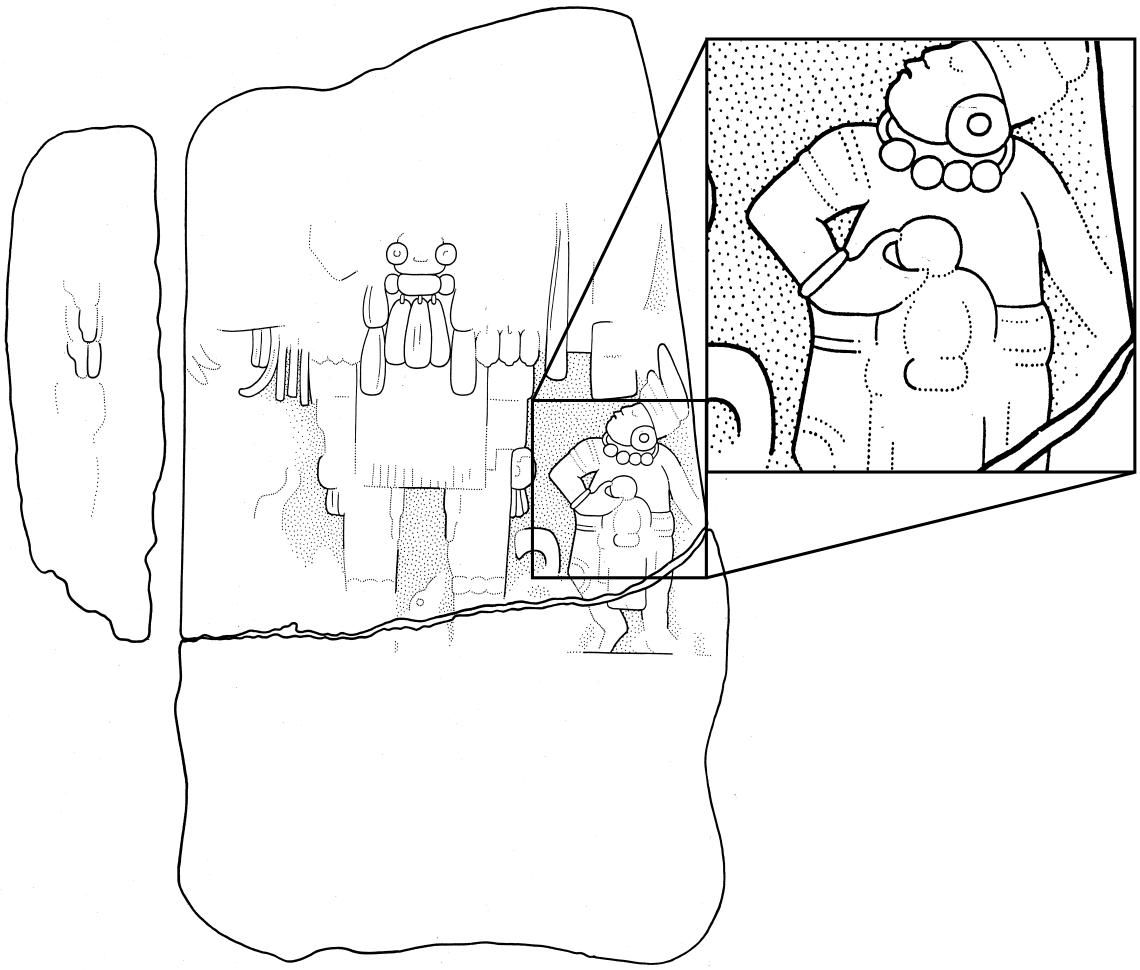

FIGURE 5.3. La Milpa Stela 4 showing a "dancing dwarf" dressed as a ball player.
After Grube and Hammon 1998, Figure 2. Courtesy Nikolai Grube and Norman Hammond.

and is placed after AD 750, making it contemporary with the two ball courts at La Milpa.

PUBLIC RITUAL, FEASTING, COMMUNITY TRADITION, AND THE BALL GAME AT GRAN CACAO

The appearance of ball courts across northwestern Belize was a significant development for regional political relations and also for internal community dynamics. Rulers here, as elsewhere in the lowlands, used ball-game pageantry as a way to negotiate and confirm their status. Ball courts became parts of civic plans in ways that highlighted and emphasized the meaning of these events for local communities. In 2004 the Blue Creek Regional Political Ecology Project (BCRPEP) addressed these issues at Gran Cacao (Figure 5.4).

Gran Cacao was recorded in 1993 (Adams 1994; Levi 1994). In 1994 a central plaza and two residential groups were tested (Durst 1996), several looters' trenches in the site center were documented (Stallings 1994), and the central precinct was mapped (Lohse 1994). Testing revealed occupations spanning the early Middle Preclassic until the Early Postclassic. In 2004 excavations were conducted in and around the ball court, documenting construction stratigraphy and seeking evidence for public ceremonies in that part of the site (Lohse et al. 2004; Lohse, Barrera, and Padilla 2005; Lohse and Sagebiel 2006). This area of the site was selected for investigation in order to understand aspects of Gran

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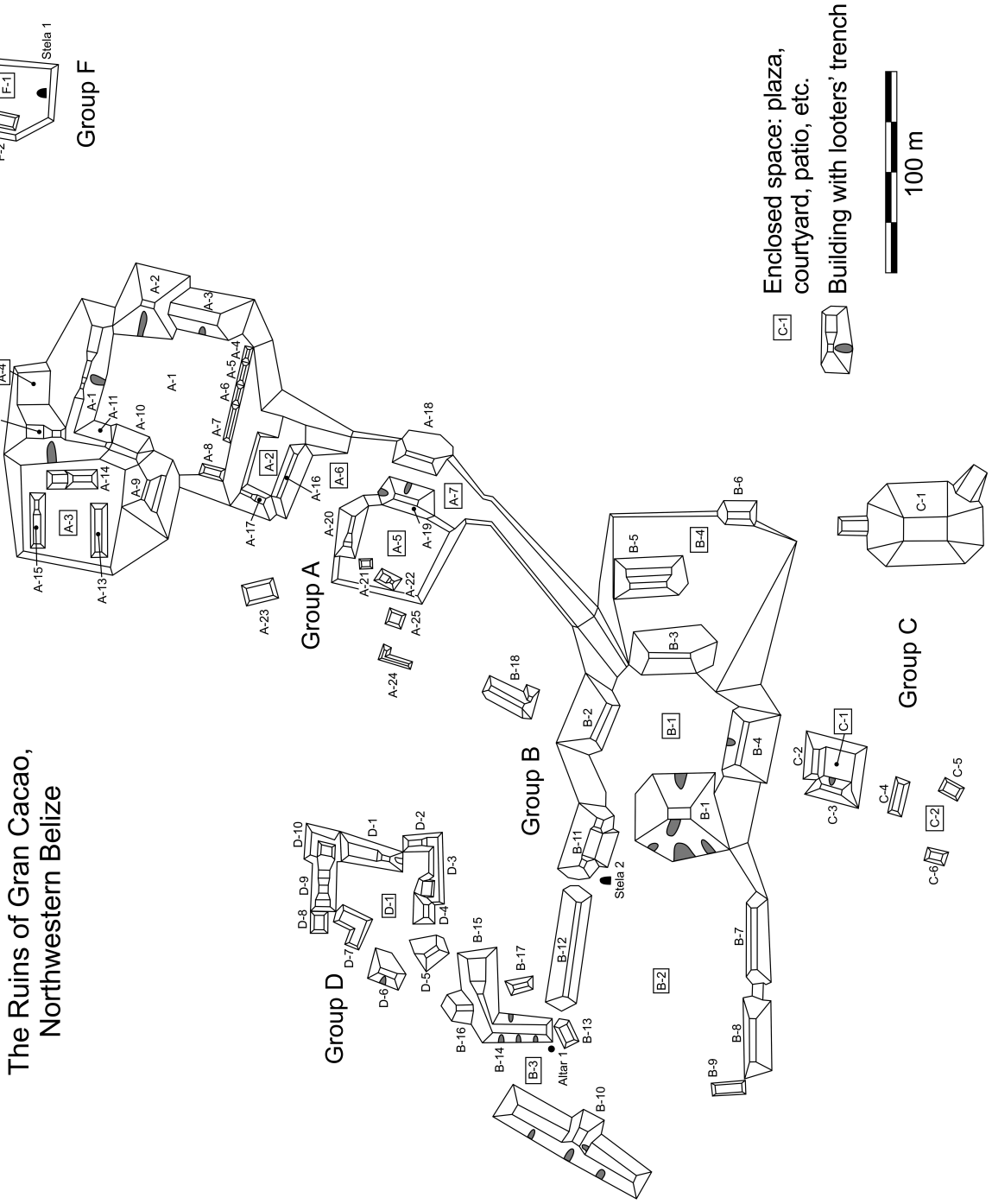

FIGURE 5.4.
Gran Cacao site center, as mapped in 1994.

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Cacao's development as a community and also so that the center could be better understood in a regional context.

In political rituals that accompanied ball-game events, analyses have shown how feasting was at times an important element of these ceremonies. Fox (1996) argued that different kinds of feasts were often hosted in connection with ball games to signify renewal of agricultural resources, redistribute foodstuffs, and integrate communities in light of the divisive effects of factional competition. Elsewhere, LeCount (2001), Brown (2001), and Hageman (2004) have examined forms of public feasting as political events (also Hayden 1995; see papers in Deitler and Hayden 2001, especially Deitler [2001] and Hayden [2001]). Two kinds of feasts, in particular, can inform on the nature of politically inspired ritual consumption. Following the terminology of Deitler (1996, cited in LeCount 2001), diacritical feasting reinforces social distance between participants, involves "high cuisine" and specialized serving vessels, and occurs in ritualized locations. As LeCount (2001) shows, diacritical feasts are often held in or near private areas, away from the general community. These feasts are exclusionary in nature, as opposed to inclusionary feasts that encourage wider solidarity and equality, even if only temporarily, among consumers. Inclusionary feasts, in contrast, are recognized by the abundance of commonly consumed foods, themes emphasizing broadly shared belief systems, settings that are public and open, and patterns and styles of presentation and consumption that are similar to daily meals (LeCount 2001, 935).

Aside from food remains, feasts may also be recognized from ceramic indicators. Hageman (2004, 68) argues that a ratio of at least 2:1 serving (plates and bowls) to storage or preparation vessels (jars) provides evidence for feasting events. While this simple formula may be useful in certain contexts, defining feasting assemblages exclusively in this fashion minimizes the potential complexity of these events as elements of negotiated social relationships. Contextual and other considerations should also be employed to understand feasts and their role in public and/or private ceremonies. For example, exterior-surface treatments distinguish "common" serving vessels from those used in exclusionary events involving high cuisine (LeCount 2001). Additionally, the architectural setting and degree of accessibility of feast locations can further indicate the open or restricted nature of these events. By combining Hageman's (2004) ratio with assessments of surface treatments and architectural context, archaeologists can not only identify specialized serving wares used in diacritic feasts but also evaluate the role of communal food consumption in sociopolitical discourse. Assemblages from key Late Preclassic, Early Classic, and Late to Terminal Classic contexts at Gran Cacao reveal important developments for each time period.

Evidence for Public Ritual at Gran Cacao

Gran Cacao's ball court is located in the approximate center of the site. Medium-sized, open plazas capable of accommodating large groups witnessing ball-game events are found immediately to the north and west. A ramp leads from the elevated Plaza A-1 south into the ball-court area, and an elevated causeway leads south from the alley to Plaza B-1. Excavations show that the ramp linking lower and upper portions of the site was built in a single event sometime between the Late Preclassic and Early Classic.

In 2004 both ball-court range structures and the central alleyway were excavated. Additional units were excavated in Plaza A-5 west of the ball court and on the ball-court platform itself south of the alleyway. Excavations to bedrock recorded full construction sequences in each location. Units exposed an east-west cross-section of the entire ball-court complex and adjacent Plaza A-5 (Figure 5.5). Ceramic cross-dating provides the basis for reconstructing the construction history of the ball court and its associated architecture (Sagebiel 2005a). These data are supplemented by three radiocarbon dates (Table 5.2). A fourth sample (Beta 195336) yielded a modern date and is most likely the result of recent tree burning.

Excavations exposed stratigraphy representing building episodes and associated activities in the Chicanel (Late Preclassic), Tzakol (Early Classic), and Tepeu 2–3 (Late to Terminal Classic) periods (Lohse, Barrera, and Padilla 2005). The following discussion focuses on contexts that contained ceramic, faunal, architectural, and radiocarbon data helpful in assessing the nature and timing of public activities in this part of the site (Table 5.3). These data reflect events that preceded ball court construction and demonstrate how earlier traditions shaped

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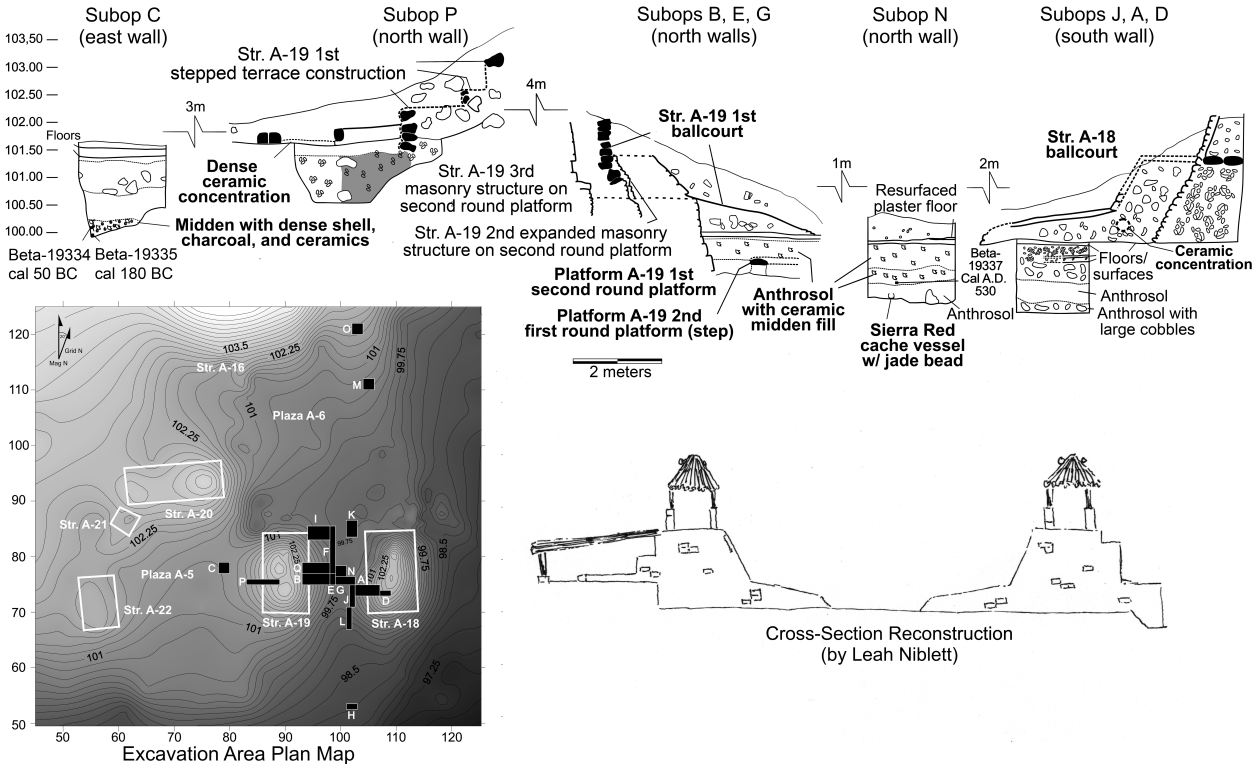

FIGURE 5.5. Cross-section of excavations in the Gran Cacao ball court and immediate vicinity.

the role that ball-game ceremonies came to have in the Gran Cacao community.

The Late Preclassic

Late Preclassic remains were encountered in the fill of the ramp leading to Plaza A-1, at the base of the platform beneath the alleyway, and immediately above bedrock in Plaza A-5. Units H and N were excavated on the platform underneath the ball court (Unit H) and in the middle of the alleyway (Unit N). Together, they provide information about when and how this part of the central precinct was built. The ball-court platform first appeared in the Late Preclassic, though Middle Preclassic sherds in construction fill indicate earlier occupation nearby. Construction fill in Unit H dates primarily to the Late and Terminal Preclassic, showing that this platform predates the ball court.

Evidence for Late Preclassic public rituals comes from two contexts, a Sierra Red cache vessel with a jade bead in Suboperation N and a fauna- and ceramic-rich midden in a bedrock pit in Plaza A-5. The cached vessel was a badly eroded *tecomate* containing a single jade bead measuring 1.92 centimeters wide and with a bidirectionally drilled hole in the center. The significance of this cached vessel, deposited directly on bedrock, is unclear and it could be part of a larger pattern of offerings. Jade is commonly found in burials, where individual pieces are placed in the mouth of the deceased. Taube (2005) describes the symbolic importance of greenstone and notes that meanings ascribed to it include maize, centrality, and rulership. Jade is a significant component of Preclassic caches found near the centers of site plans. For example, an elaborate cruciform cache was recorded at Cival, Petén, dating to ca. 500 BC (Estrada Belli et al. 2003). The Cival deposit is cardinally oriented and, according to excavators, is rich with water symbolism and cosmologic representation. Another cruciform cache found at Seibal predates the one at Cival by around 400 years and provides indications of auto-sacrifice associated with the same universal themes represented at Cival (Smith 1982). Although the cached jar and jade bead from Gran Cacao are by no means comparable with either of these deposits, they are consistent with dedicatory behaviors that frequently accompanied early public constructions and are seen as remnants of communal events associ-

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Table 5.2. Radiocarbon results from Gran Cacao ball-court excavations

Sample Number	Subop. Lot	Conventional ^{14}C Age BP	2 Sigma Calibration	Calibrated Intercept Date
Beta 195335	C-15	2140 ± 40	360–290 BC, 230–50 BC	180 BC
Beta 195334	C-13	2060 ± 40	180 BC–AD 30	50 BC
Beta 195337	N-7	1550 ± 40	AD 420–610	AD 530
Beta 195336	E-3	110 ± 0	AD 1680–1770, 1800–1940, 1950	Modern

Table 5.3. Contexts identified during excavations of the Gran Cacao ball court area that provide data for the architectural history and public rituals in this part of the site

Architectural Context	Excavation Units	Chronology	Contexts Indicating Public Ritual
Ramp from upper plaza	M, O	Late Preclassic, Early Classic	None
Plaza A-5	C, P	Late Preclassic, Early Classic, Late Classic	Late Preclassic midden in bedrock pit, Late to Terminal Classic ceramic deposit in exterior chamber on west side of Structure A-19
Ball-court platform (Plaza A-7)	H, N	Middle to Late Preclassic, Early Classic, Late to Terminal Classic	Late Preclassic cache on bedrock, Early Classic ceramic-rich midden/fill, Late to Terminal Classic ball-court construction
Structure A-18	A, D, J–L	Late to Terminal Classic, earlier floors underneath	Late to Terminal Classic ball-court construction, possible cache in ball court bench
Structure A-19	B, E–G, I	Early Classic, Late to Terminal Classic	Early Classic round platform(s), Late to Terminal Classic ball-court construction

ated with the sacralization of this part of the site during the Late Preclassic.

The 50-centimeter-thick midden in Plaza A-5 was deposited into a bedrock pit and contained broken ceramics, terrestrial faunal, freshwater *Pomacea flagellata*, in densities of more than 500 per cubic meter, and aquatic fauna including turtle and fish. No nearby architecture was exposed, making it difficult to understand all the social behaviors associated with the midden's deposition. Plaza A-5 in the Late Classic was, however, open and accessible, and it is likely that the Preclassic version was similarly arranged. The faunal inventory, with its strong aquatic content, appears to represent special food consumption. *P. flagellata* is interpreted as a dietary supplement rather than a staple in the Maya lowlands. The nearest source for these mollusks is almost a kilometer away, and their densities in this deposit exceed

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that of supplements in commensal meals consisting primarily of other foodstuffs. The use of freshwater mollusks in special offerings has been documented elsewhere in the Maya area. At Tikal, Moholy-Nagy (1978) identified *Pomacea* in Early Classic votive deposits, and Halperin et al. (2003) argue for a similar use for *Jute Pachychilus* shells found in caves in western Belize. In both instances shells are recovered in significant quantities far from their freshwater habitats.

Ceramics from this context provide further evidence for feasting during this time period. Based on cross-mending rims (after Clayton, Driver, and Kosakowsky 2005), at least 61 vessels are represented in this deposit. This ceramic subassemblage contains a high percentage (82%) of serving vessels, including shallow plates, bowls, and buckets in relation to the site's overall ceramic assemblage for this period (Table 5.4). Jars make up a mere 18% of the midden subassemblage, producing a ratio of serving to storage vessels of more than 4.5:1. The total frequency of serving wares (82% in midden vs. 41% in the rest of the Late Preclassic assemblage) and the ratio of serving-to-storage vessels (4.5:1 for the midden vs. 2:3 for the overall assemblage) highlights the nonstorage function of ceramics from this deposit. Like forms, surface treatments also suggest the use of these wares in feasts. The frequency of undecorated (monochrome and unslipped) sherds between the midden and overall assemblage are 70% and 77%, respectively. The remaining sherds all show signs of surface decorations that include use of dichrome or trichrome finishing (25% from the midden vs. 13% from the general assemblage) or are monochrome but incised (5% from the midden vs. 10% from the general assemblage). These differences are only moderate and do not indicate highly elaborated displays or exclusionary serving behaviors. Still, the consistent differences in form and surface treatment between the midden assemblage and all other Late Preclassic ceramics seem to support the conclusion that this context reflects some out-of-the-ordinary activity.

Table 5.4. Percentage of rim forms in Late Preclassic (LPC) midden (MNI = 61) compared with the rest of the LPC assemblage

Vessel Form	% of Rim Forms in LPC Midden	% of Rim Forms in Overall LPC Assemblage
Slipped Jars	8%	59%
Unslipped Jars	10%	
Bowls and Buckets	48%	41%
Shallow Plates	34%	

Although significant functional differences are indicated by the Late Preclassic ceramics from this part of the site, with the midden subassemblage suggestive of feasting behavior, there is only a small amount of the kind of surface variation expected of specialized serving assemblages used for diacritical feasts. Given the nature of the pottery assemblage, the open space associated with this deposit, and the ties to water—a universal theme relating to fertility and abundance—in the midden fauna, any feasts that occurred here were most likely to have been inclusionary in nature.

The Early Classic

Evidence for Early Classic ritual behavior includes a pair of round platforms and an associated ceramic-rich midden beneath the ball-court alley. Two round platforms, A-19 1st and A-19 2nd, were exposed within the western ball-court structure, with the earlier Platform A-19 2nd incorporated into the later construction (Figure 5.6). A partial stone alignment, probably a step for Platform A-19 2nd, was removed in antiquity. A plaster floor abutting the later platform extends over the earlier platform, indicating that the two platforms were discrete buildings. Round platforms vary in plan and are called "keyhole" structures when they include a squared outset on one side (Willey et al. 1965, Figures 20–22). At Altun Ha, Baking Pot, and Cahal Pech they include elaborate, circular stepped outsets (Aimers, Powis, and Awe 2000; Colas et al. 2002; Pendergast 1982). The second platform at Gran Cacao, Platform A-19 1st, was topped by a well-built masonry superstructure. These platforms were only partially exposed, and their full dimensions are not estimated. Nevertheless, based on the low degree of curvature (Figure 5.6), at least the second, later construction was clearly not an apsidal platform.

Round Platform A-19 1st was an important architectural component of Early Classic Gran Cacao.

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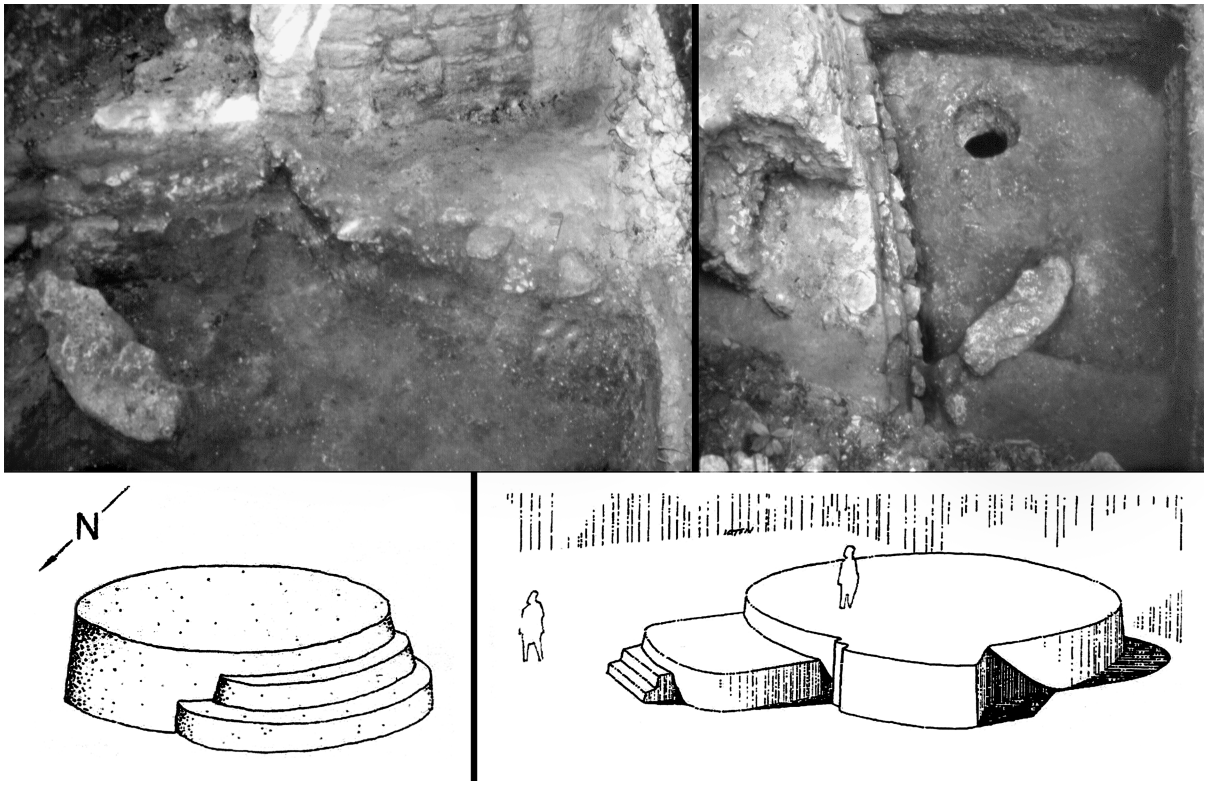

FIGURE 5.6. Round Platforms A-19 1st (*upper right*) and 2nd (*upper left*) exposed within the western ball-court range building. Examples of complex stepped round platforms from the Zotz Group, Cahal Pech (*lower left; after Aimers, Powis, and Awe 2000, Figure 5*) and Altun Ha (*lower right; after Pendergast 1982*).

Elsewhere, round platforms were important in fomenting group identity at both household and public scales by providing loci for ritual performances and special offerings such as burials and caches (Hendon 1999, 2000). No such deposits were found in the limited exposures at Gran Cacao, though Platform A-19 1st supported an important rectangular masonry superstructure (A-19 3rd) that shows evidence of having been expanded at some point (A-19 2nd, Figure 5.7).

Superstructures A-19 2nd–3rd were not penetrated. Based on their stratigraphic relationship to the underlying round platform, similarities in construction style, and design elements, it is believed that the two superstructures are contemporary with at least the second round platform. The design element of note, visible on the innermost masonry structure, is a banded apron molding consisting of an inset course of stones (visible in Figure 5.7 immediately below the Structure A-19 3rd label). This inset joins a vertical inset immediately south (left) of where a looter's trench penetrated A-19 3rd. Two corresponding vertical outsets were exposed on Platform A-19 1st (visible to left and right of the Platform A-19 1st label in Figure 5.7). These elements were modestly expressed yet would have effectively blended both the round platform and rectangular superstructure in style and design despite their diametrically opposing geometric forms. Moreover, the repeated use of vertical outsets around the circumference of the round platform is suggestive of concentric spiral forms, such as can be seen in cross-sectioned shells that are often associated with aquatic environs and themes in Maya iconography (Figure 5.8).

The conjunction of round and square architectural components is rare, though significant in symbolic meaning. Perhaps the best-known case is El Caracol at Chichén Itzá, where the round observatory sits on a square basal platform, presenting a visually arresting image of sharp contrasts. Another instance is Santa Rita's Early Classic Structure 135 2nd, a squared observatory with a round interior chamber (Chase and Chase 2005). For the Maya, this geometric configuration seems to have conveyed abstract

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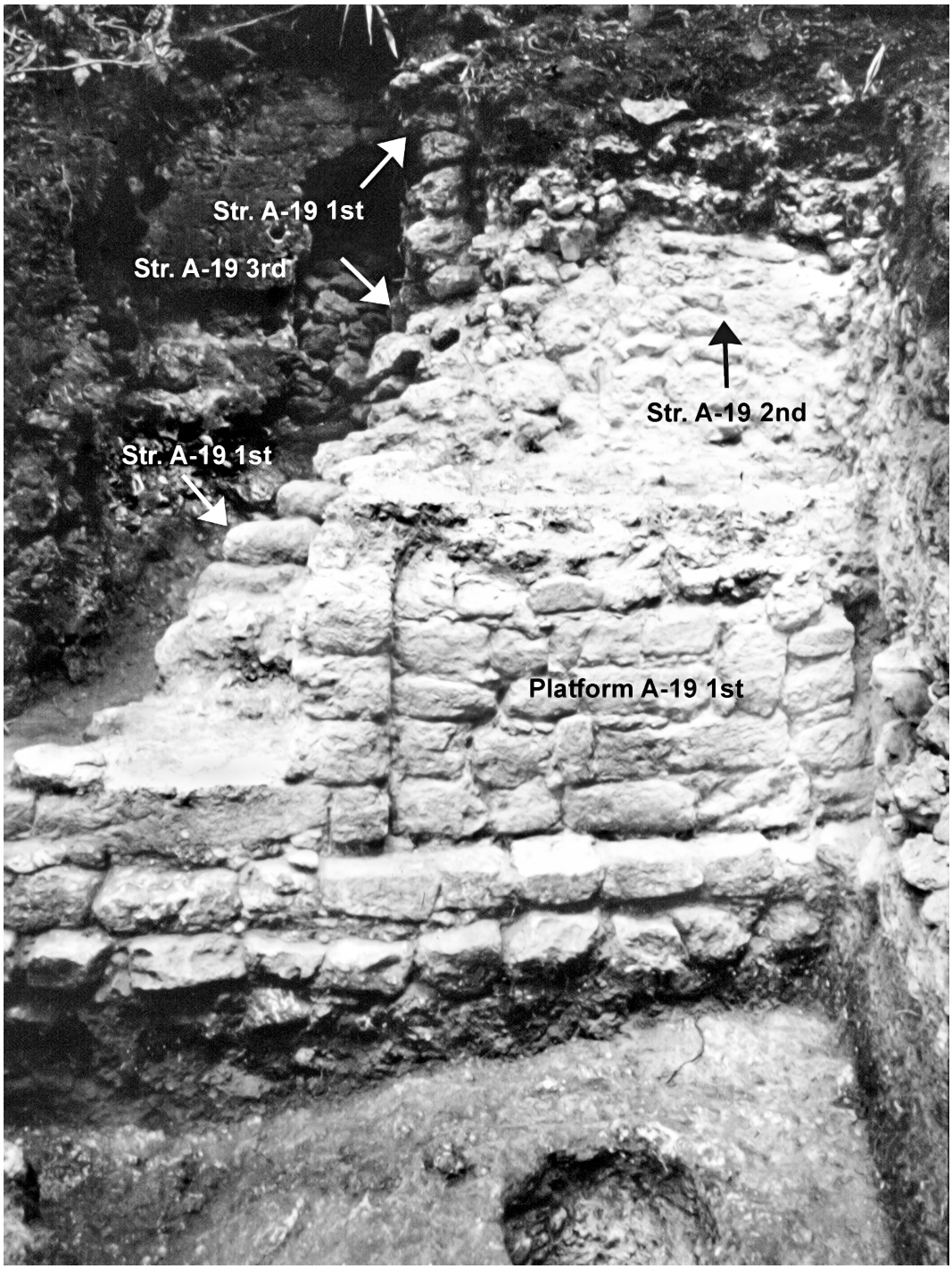

FIGURE 5.7. Masonry superstructures atop Round Platform A-19 1st. Structure A-19 1st corresponds with the Late Classic ball court. Structure A-19 2nd is interpreted as an expanded version of the innermost A-19 3rd that was partially removed when the entire construction was transformed into the ball court's western range building. Looking west.

information about cosmological order and its foundation. In historically documented rituals, community heads often conducted ceremonies that defined territorial boundaries mirroring the time-space order of the cosmos (García-Zambrano 1994). In these ceremonies, four cardinally positioned landmarks were

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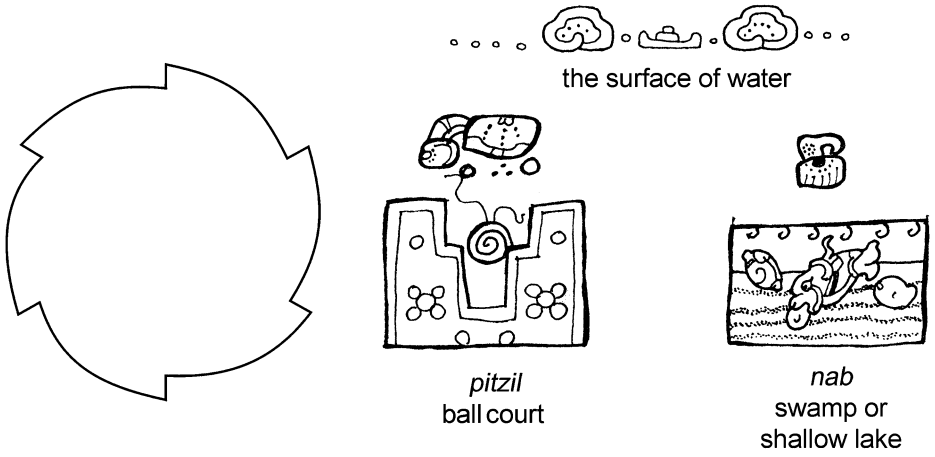

FIGURE 5.8. *Left:* Idealized plan of Platform A-19 1st, compared with iconographic depictions of the surface of water, *pitzil* ball court with spiral-shell motif, and *nab* swamp or shallow lake with shell elements. *From Schele and Freidel 1990, Figure 2.2.*

identified on the landscape with a fifth element marking the center; landmarks were often mountains that sometimes had accompanying waterholes. Community ritualists embarked on a procession from one cardinal point to the next, carefully following a strictly circular path to signify the movement of the sun across the sky. Quadrants of this territory were delineated and marked in reference to the center and according to cardinal directions, resulting in a square-and-circle encompassing both quincuncial and circular patterns (for the religious significance of quincunx rituals in Mesoamerican belief systems, see Zaro and Lohse 2005). Using geographic information software (GIS) to map statistically significant artifact clusters, pathways, and boundary markers, Moyes (2005) also identified comparable square-and-circle ritual circuits in the Actun Tunichil Muknal cave in western Belize.

Evidence showing the longevity of this concept in Mesoamerica and its strong connection with ball-game ideology comes from plate 35 of the Postclassic Codex Borgia, which depicts an anthropomorphic figure splayed across a ball court (Figure 5.9). Each limb of this deity marks a quadrant of space, and an exaggerated circle marks the deity's torso. The figure is superimposed over the center of a ball court with two smaller individuals facing each other across the central figure. Gillespie (1991, 338) observes that this combination of elements—splayed human forms defining ball-court quadrants and having circular components at their center—is commonly depicted in ball-game iconographic programs from Late and Postclassic contexts throughout Mexico.

Although the A-19 Complex may not have included a ritual pedestrian circuit as described by García-Zambrano (1994) and is more abstract than codex depictions from later times, the conjunction of these two round and square forms joined by design elements that softened their geometric contrasts is suggestive of the same time-space beliefs about the path of the sun across the horizon and planes of existence documented by Moyes (2005) and encoded in Mesoamerican ball-game imagery for more than a millennium. The reference to water-related themes likely foreshadows Terminal Classic and later associations between circular shrines and the wind god Ehecatl and, specifically, his associated attributes of wind, water, and creation. Harrison-Buck (2012) reports three Terminal Classic circular shrines adorned with marine shell and speleothems from the Sibun Valley in south-central Belize which, she argues, strongly reiterate this theme through the use of local architectural styles and materials that, while available within the region (including nearby caves and the Caribbean coast), clearly serve nonutilitarian, ideological purposes.

Evidence for Early Classic public feasting was recovered from the anthrosol abutting Platform A-19 1st, which contained large quantities of pottery with well-preserved slips. A carbon date of AD 530 confirms the age of this context (see Table 5.2). The at least 222 vessels represented in this fill provide

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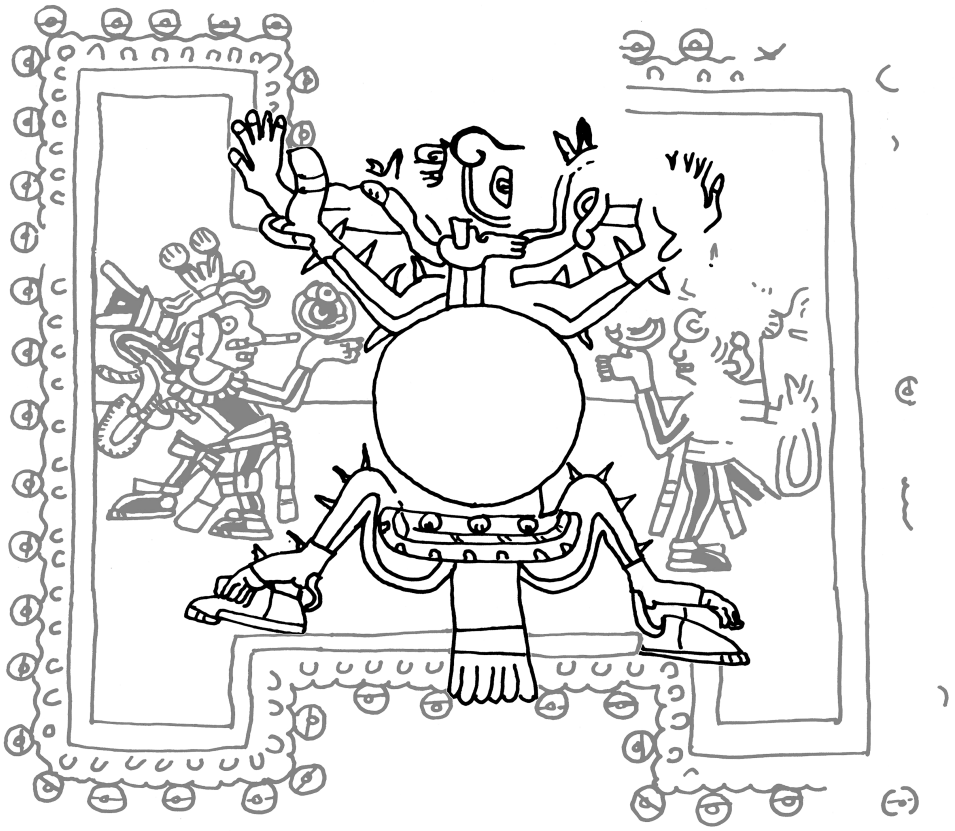

FIGURE 5.9. Plate 35 of the Codex Borgia showing an anthropomorphic figure with splayed limbs and exaggerated circular torso, marking square-and-circle spaces associated with cosmological foundation and renewal. This figure is superimposed over a ball court. *After Gillespie 1991, Figure 6.17.*

information regarding ritual feasting in or near this location. An extraordinarily high percentage of this assemblage (71%) comprises serving forms, including bowls, plates, and vases and their lids (Table 5.5). Just as in the Late Preclassic, there is a dramatic difference in forms, with jars making up a relatively small percentage of the midden (29%) when compared with their frequency among all Early Classic rim sherds from other deposits (56%). These figures yield a ratio of serving-to-storage vessels of 2.5:1 for the midden versus nearly 1:1 in all other Early Classic contexts combined.

More important, however, are trends in surface decorations. Undecorated sherds were counted as those that are either unslipped or monochrome. The midden deposit abutting the round platform includes 64% undecorated sherds (58% monochrome, 6% unslipped), while 79% (74% monochrome, 4% unslipped) of the Early Classic sherds from all other contexts were undecorated. These figures provide a ratio of decorated-to-undecorated sherds in the midden of about 2:3 versus about 1:4 in other Early Classic contexts. Not only are sherds from the midden subassemblage more commonly decorated, but individual decorative modes found here occur about twice as often in the midden as they do elsewhere (Table 5.6).

Although faunal evidence for feasting is absent here, ceramics and architecture together indicate the complex nature of social relations in this period. The diversity of ceramic forms and the high percentage of decorated vessels in the midden suggest that these may have been used in festival-type presentations. The relatively low occurrence of storage or preparation vessels suggests that foodstuffs may have been prepared elsewhere and brought to this part of the site, a conclusion that accords well with the architectural data. This area of the site was open during the Early Classic; the ramp linking the ball court to the elevated Plaza A-1 was in place at this time, and

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Table 5.5. Percentage of rim forms in Early Classic (EC) midden (MNI = 222) compared with overall EC assemblage

Vessel Form	% of Rim Forms in EC Midden	% of Rim Forms in Overall EC Assemblage
Unslipped Jars	4%	56%
Slipped Jars	25%	
Unslipped Bowls	2%	45%
Slipped Bowls	45%	
Slipped Plates	21%	
Slipped Lids	2%	
Slipped Vases	1%	

Table 5.6. Percentage of decorative modes in the Early Classic (EC) midden compared with overall EC assemblage

Decorative Modes	% of Decorative Modes in EC Midden Subassemblage	% of Decorative Modes from Overall EC Assemblage
Simple decoration:		
Monochrome Incised	3.6%	1.8%
Dichromes	1.8%	0.8%
Complex decoration:		
Polychromes	15.3%	10.3%
Composite	15.8%	8.4%

round platforms were, by their very nature, accessible rather than restricted to passersby. The architectural forms, with their symbolic information, along with elaborated food presentation, reflect increasingly ritualized and perhaps hierarchical relations among community members. These hierarchic relations, however, were defined in part by shared beliefs regarding universal origins and the nature of time-space through the square-and-circle design. Based on this information, ceremonies that occurred here were probably inclusionary and incorporated members of Gran Cacao's general community even while underscoring social inequalities between rulers and the general community.

The Late and Terminal Classic

The best evidence for public ritual at Gran Cacao during Tepeu 2–3 times comes from the ball court itself, which excavations show was built in a single episode. The large round Platform A-19 1st and its masonry superstructure were incorporated into the western range structure, and the eastern range building was built in a single event (see Figure 5.5). The political nature of ball-game ceremonies has been discussed, and the appearance of this ritual venue would have marked a dramatic transition for intracommunity relationships. Earlier ceremonies would have been framed by the round platform with its masonry superstructure and contextualized by abstract reference to origins and creation. Except for generalized ties between elites and coordinated labor projects for public architecture, however, no evidence exists that helps to identify the practitioners who conducted rituals here. In contrast, scenes of royal performers in states of accession, sacrifice, and political conquest are common from ball courts across the lowlands. This shift in ritual therefore represents a transformation in rulership at the site toward a strong political identity embodied in the individual ruler.

Understanding how intracommunity relationships changed at this time also requires examining other materials associated with the ball court. No markers or monuments of any kind were found, and the only possible cache was a cluster of badly eroded polychrome platter fragments from the front terrace of Structure A-18, painted in the style of a "Holmul dancer." Recovered from near a looter's trench in the center of the building, this sherd cluster likely represents a cache that was interred as part of the dedication for these new buildings. Otherwise, no evidence indicates that elaborate public ceremonies or rituals occasioned the actual construction of the ball court.

The context best suited for considering whether feasting occurred in conjunction with ball-game ceremonies was recorded in Suboperation P, located on the west side of Structure A-19 and facing into

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Plaza A-5 (see Figure 5.5). This plaza is large enough to hold more than 100 people and is hypothesized to have been a gathering place for attendees of ballgame ceremonies, feasts, or other public events. Excavations on the west side of Structure A-19, which faces onto the east side of Plaza A-5, revealed a narrow room defined by a low wall set out less than two meters into the plaza. This low alignment probably supported a pole and thatch ramada-type covering. Inside the room a dense accumulation of broken pottery was recorded lying two to three sherds deep across the floor (Figure 5.10). The excavated part of this context measured only 0.8 by 1.2 meters in size, yet at least 25 vessels were recovered based on mended rims. The estimated size of this chamber exceeds 20 square meters, and it would contain more than 520 vessels. Clearly, this context holds a dense accumulation of debris associated with activities conducted in or near this part of the site.

This assemblage is somewhat more equivocal with respect to feasting than the two previously discussed (Table 5.7). Jars, nearly evenly divided between slipped and unslipped, make up 44% of the collection compared with 64% for other Gran Cacao Tepeu 2–3 contexts. Fifty-six percent of the assemblage includes plates, bowls, and vases, slightly higher than the frequencies of these serving forms (36%) in other contexts from this period. There are fewer jars

FIGURE 5.10. Suboperation P, Structure A-19, showing the narrow room facing west from the east side of Plaza A-5, with inset close-up of sherd concentration on the floor. Arrows indicate the chamber in question.

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Table 5.7. Percentage of rim forms from Tepeu 2–3 midden (MNI = 25) compared with the rest of the Tepeu 2–3 assemblage

Vessel Form	% of Rim Forms in Tepeu 2-3 Midden	% of Rim Forms in Overall Tepeu 2–3 Assemblage
Unslipped Jars	24%	64%
Slipped Jars	20%	
Slipped Plates	8%	36%
Slipped Bowls	44%	
Slipped Vases	4%	

in this deposit than in all other Late to Terminal Classic deposits and also more serving vessels. Differences between these forms, however, are less pronounced than in earlier deposits, and the ratio of serving-to-storage vessels is less than 3:2. When ratios of serving-to-storage vessels for the three time periods that are evaluated in this study are compared with those from the overall assemblages for each time period, the Late to Terminal Classic numbers become even less notable (Figure 5.11).

On the basis of these counts, this subassemblage does not provide good evidence for feasting. Alternative explanations for this deposit include the kinds of midden debris that accumulated at other lowland centers as various parts of sites fell into disuse and daily refuse was allowed to build up (Harrison 1999). Indeed, excavations on the northwest corner of Structure A-18, inside the alleyway, recovered a small collection of stone tools and debris, indicating that this part of the site was occupied after the ball court was no longer being maintained and kept clear of refuse. Based on these investigations, the question of whether feasting took place in conjunction with ballgame ceremonies remains open. Available evidence, though, suggests that it did not.

CONCLUSIONS

Evidence from Gran Cacao supports at least two interrelated conclusions about the nature of intracommunity relationships. First, this part of the site witnessed a long tradition of public integration through ritual that began with Late Preclassic caching and feasting events celebrating shared themes of fertility and renewal. Specifically, these included consumption of nonlocal foodstuffs from aquatic habitats, along with dedicatory offerings. In the Early Classic these themes, persisted while the architectural

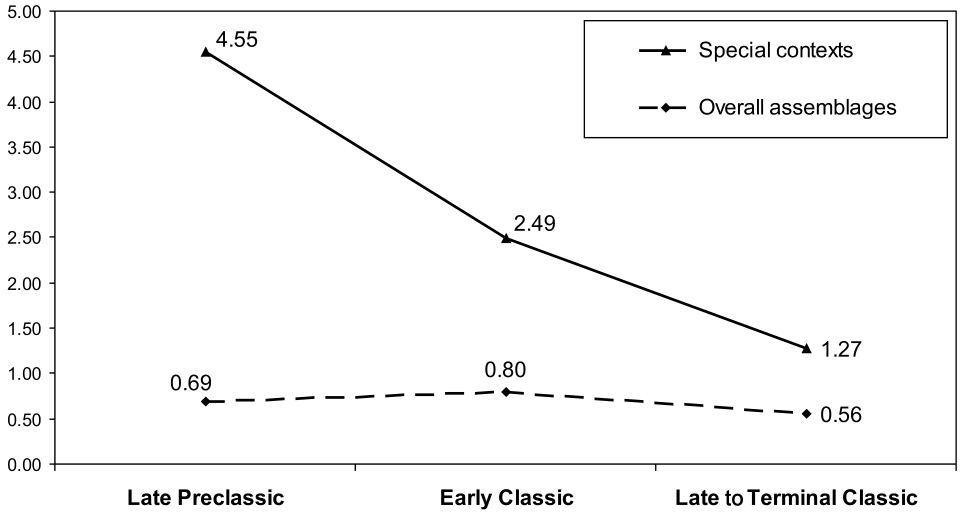

FIGURE 5.11. Changing ratios of serving-to-storage vessels for both special contexts and overall assemblages by time period. Ratios were calculated by dividing serving-vessel frequencies by storage-vessel frequencies for each context and time period. Here, "special" refers to the three contexts identified for analysis and does not describe the character of those contexts.

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context evolved to include symbolically meaningful round platforms and abstract square-and-circle geometric compositions. Others have argued that round platforms were important for rituals forging shared identities at both household and larger scales. Our findings support this conclusion. We also argue that feasting was carried out nearby this abstract, symbolically charged architectural setting. The fact that serving wares in the associated midden were more common and better decorated than those from the preceding period also reveals the increasingly hierarchical nature of relationships at the site. Based on ceramic and architectural data, Early Classic elites at Gran Cacao seem to have put forth great effort to formalize their role as community-ritual specialists by coordinating symbolic architectural programs while drawing on widely shared beliefs: the square-and-circle symbolism of Platform A-19 would have posed a familiar expression of time-space and the physical ordering of the cosmos. These trends were reinforced and further elaborated when Platform A-19 and its superstructure were modified into the ball court. Ball courts are commonly associated with water, transition, and the underworld, a symbolic program clearly derived from earlier imagery and architectural forms and even from Preclassic ritual cuisine from the bedrock pit in Plaza A-5. One important difference at this time, however, was the emphasis on individual performance through ball-game ceremony. Through their role in coordinating ball-court construction and also by considering elite identity associated with performance and ideology, the rulers at Gran Cacao were firmly established during this late period.

Second, no clear evidence indicates that elites used diacritical feasting during any time period as a way of achieving community integration while also reifying their status. Indeed, the steadily declining ratio of serving-to-storage vessels seems to show that the importance of feasting in general may have decreased through time. Late Preclassic ritual food consumption is suggested by both the faunal and ceramic contents of the bedrock midden in Plaza A-5. Aquatic foodstuffs, not available within nearly a kilometer, were served in large quantities on relatively plain bowls and plates. Given the undecorated nature of the vessels found in this deposit, these ceremonies may have deemphasized social differences that existed within the community at this time. The best ceramic evidence for diacritical feasting is from the Early Classic, though the decorated nature of this subassemblage is somewhat contradicted by the architectural symbolism where these ceremonies took place. Even while fancy serving vessels dominate the subassemblage, suggesting new hierarchical roles for feasters in relation to the preceding period, the setting was open, accessible, and inscribed with widely understood symbolism. By the Late Classic, ball-game ceremonies dominated public events in this part of the village. Based on the unrestricted design of the ball court, these events remained available to many, representing a continuation of intracommunity traditions of accessible ritual occasions. No evidence for feasting during this time period was recovered, and it is not clear that communal food consumption ever took place in conjunction with the ball game. Clearly, excavated data from other site areas would add considerably to the picture of politics and ritual at Gran Cacao. Still, these data go far in establishing the communal nature of sociopolitical practice that characterized this community for more than a thousand years.

Work elsewhere provides a regional context for the Gran Cacao findings. The appearance of ball courts reveals a growing concern about community size and also perceived status in the region. Occasionally, however, hinterlanders also shared in this system of ritual integration. As ball-game ceremonies provided a way for political actors to engage one another for various reasons, the chronologies presented in this chapter indicate increased communication among northwestern Belize centers. By Tepeu 2–3 times a formalized architectural setting existed, for perhaps the first time in the region's history, that allowed neighboring rulers to interact with one another through public ritual and performance.

Importantly, the nature of the ball game itself, with its emphasis on performance, indicates a focus on individual rulers as ritual specialists. From a regional perspective, this transition occurred in different times at different sites (see chapter 4, this volume). Yet from Tepeu 2 times onward, elite individuality expressed through ball-game pageantry remains one important factor shared in common by the region's many centers. The ball court at Chawak But'o'ob, where recognizable elites are absent and the ball court may instead signify communal identity, seems to pose an exception. When viewed together with the

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tradition of communal ritual at Gran Cacao, however, this apparent contradiction can be resolved as simply two aspects of the same dichotomous reality, one in which both communal and individual elite identities were simultaneously reiterated. Broad themes involving creation, fertility, and renewal, all of which were widely shared and deeply embedded in ecological concerns and productive practice, provided the basis of this evolving sociopolitical discourse. Indeed, based on our findings it can be argued that the underlying structure of beliefs—beliefs strongly linked to the environment—remained fairly constant throughout the Maya Preclassic and Classic, and what changed was the increasing hierarchization of social roles and statuses.

We see the spread of ball-game ideology from the end of the Early Classic into the Late Classic as a response to two factors. One the one hand, increasing regional populations (see chapter 2, this volume) forced rulers to integrate their diverse and growing communities through shared, universal themes that also underscored the rulers' paramount status. In this sense, the spread of ecologically focused ball-game rituals are seen as a way to provide ceremonial and other ideological services to burgeoning populations. At the same time, community elites themselves appear to have been increasingly integrated at a regional level as parts of the central lowlands were reorganized into statelets from the late sixth century onward. The pattern identified at Gran Cacao—with a focus on increasingly exalted individual status and ritual while also maintaining a strong emphasis on agrarian communal relations—illuminates how this transformative process was resolved in some communities.

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Chapter 6

Pots and Politics: Classic Maya Ceramic Production, Exchange, and Political Ecology in Northwestern Belize

Laura J. Kosakowsky, Jon C. Lohse, Nicole C. Little, and Robert J. Speakman

Research conducted in northwestern Belize has sought to understand ancient Maya social and political organization as reflected in settlement systems, patterns of environmental exploitation, and material culture. Given that only two sites, Dos Hombres (Robichaux and Houk 2005) and La Milpa (Grube 1994; Grube and Hammond 1998), have yielded glyphic evidence revealing the identities of rulers and other important political events (see chapter 2, this volume) such as those commonly recorded elsewhere in the Maya world (Culbert 1991; Martin and Grube 2000), archaeologists must turn to other kinds of data to examine changes in political, economic, and social structures through time. In this chapter, we evaluate shifts in exchange networks and political organization as revealed in ceramic assemblages from a number of sites, using chemical characterization by instrumental neutron activation analysis (INAA) of both ceramic types and raw-clay samples collected from across the region. Our temporal focus is on the end of the Early Classic through the Late Classic, a period characterized in part by disrupted trade networks as a result of increasing turmoil and political competition between primary sites in the central Petén and southern Mexico.

Elsewhere, ceramics have proven to be among the most useful components of material inventories for addressing questions relating to patterns of economic production and exchange and how these were linked with large-scale political processes and events (Foias 1996; Foias and Bishop 1997; Fry 1979, 1980; Rands and Bishop 1980; Rice 1987). Guiding this investigation is the understanding that the manufacture of ceramic vessels involved localized resources including clay and certain tempering materials. Tracing the distribution of finished vessels in relation to the raw materials used in their manufacture provides one way of reconstructing the complex political and economic relationships represented by those vessels.

Research into how economic production was organized and surpluses were mobilized often has been approached through one of many political economy perspectives. Within this framework, archaeologists focus on aspects of control and inequality and sociopolitical systems in which rulers and elites supervised or directed the production and availability of material wealth. The relative strengths and weaknesses of this methodology have been discussed in detail in chapter 1. Rather than foregrounding the mechanisms of control and appropriation by elites, found in many political-economic analyses, we have chosen a political-ecological framework to provide a better understanding of the more heterogeneous integration of all participants in regional economic and political systems. Within this context, and key to our

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discussion, is determining whether, or how, control over intensified utilitarian production was maintained by dispersed non-elites. A central objective of this study is to carefully examine how localized, domestic-scale economic activities articulated with long-distance exchange in sustaining regional administrative networks (for detailed discussions of these issues, see Schortman et al. 2001; Schortman and Urban 2004). In our view, how these levels or scales of analyses were linked in the past has chronically lacked the critical attention given by scholars to household production, on the one hand, or political economies, on the other.

The political ecology perspective described in chapter 1 holds two important implications for modeling ancient Maya ceramic economies in northwestern Belize. First, we argue that how control dialectics were resolved is all too often taken for granted in other theoretical approaches, even though this resolution holds important implications for how surpluses of material goods moved "upward" through social and political hierarchies to support and sustain local, community-level administrative bureaucracies. This approach stands in contrast even with nuanced political-economic ones that focus on the structure and organization of economic systems but that deprioritize (without altogether omitting) questions of control (Dahlin 2009). How these control dialectics were resolved through time lies at the very heart of hierarchical, complex societies and is better informed through a political ecology approach.

Second, we postulate that fundamental social units of production were likely to have been multiscalar in nature and to have included individuals, households, corporate groups, and even small localized settlements and to have changed and shifted through time. Sheets's (2000) model of the organization of economic production at Cerén, El Salvador, is an excellent example of these kinds of multiscaled and interrelated systems of production. Sarah Clayton, in chapter 8, presents clear data from our study region that helps further illustrate these simultaneous processes. Similarly, ties between producers and local and regional elites also were dynamic as were the mechanisms by which utilitarian production was integrated into regional economic systems. Our political ecology view examines the tension between centralized control over production and exchange on the one hand and management strategies for different suites of dispersed environmental resources, on the other. Focusing on this dynamic allows us to better understand the relationships between a variety of different forms of localized producer coalitions and surplus-consuming social elites.

The Classic-period geopolitical turbulence described in chapter 2 is likely to have affected how different hinterland communities and urban non-elites participated in ceramic production and exchange systems across the lowlands. Local-level responses to the turbulence at Tikal during the sixth century AD are not well known but may have included significant population shifts (Tourtellot et al. 2003) as well as changes in local economic networks as far to the east as northwestern Belize. Abundant evidence suggests that overland trade routes were disrupted at this time. Petén-style pottery was not uncommon in northwestern Belize in the Preclassic and Early Classic, whereas Belize Valley and southern Campeche-Rio Bec styles are abundant among Late Classic assemblages while Petén-style polychromes are virtually absent (Kosakowsky and Lohse 2003; Kosakowsky and Sagebiel 1999; Sullivan 2002; Sullivan and Sagebiel 2003; see chapter 4, this volume). Additionally, fine-quality chert from Colha's chert-bearing zone of eastern Belize is relatively plentiful in Late Preclassic and Early Classic assemblages from around Blue Creek and Gran Cacao but disappears after the Early Classic (Barrett 2004). Attributing the reorganization of these overland networks solely to the decline of Tikal as an organizer of trade remains conjectural at this point. It is clear, however, that some important exotic resources decreased in abundance at this time. We believe that this situation had a negative impact on local elites' ability to engender support among followers, as long-distance trade items that served as a sort of political currency were no longer available.

We will consider the extent of trade-route disruption and its effects on northwestern Belize polities, including sites like Blue Creek, Ixno'ha, and their nearby settlements. Using instrumental neutron activation analysis (INAA) as one line of evidence, we examine changes in pottery production and distribution to address the following questions: Is it possible to discern changes in regional patterns of ceramic production and exchange among hinterland settlements from the end of the Early Classic into the Late Classic? If so, do such changes mirror developments seen in nearby centers, or were they

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independent developments? Finally, what can ceramic exchange networks tell us about shifting political affiliations across northwestern Belize during this time period? If sites in our study region were part of a regional Early Classic trade network focused in part or whole on the central Petén, we would expect to see a reorganization in the parts of their political economies that involved long-distance ceramic exchange dating to just after AD 562 and perhaps again in the early Late Classic as Tikal reasserted itself and reclaimed trading partners.

POTTERY, POLITICS, AND INAA

Instrumental neutron activation analysis has proven to be a valuable tool for determining the production and distribution of ceramics in the Maya region (Beaudry 1984; Bishop 2003; Foias and Bishop 1997; Kosakowsky, Estrada Belli, Neff 1999; Neff, Bishop, and Arnold 1988; Neff et al., 1999; Reents-Budet et al. 1994; Reents-Budet and Bishop 2003), whether applied by itself or in conjunction with other analytical techniques (see Neff 2000; Neff et al. 2006a, 2006b; Sharer et al. 2006; Stoltman et al. 2005). By using this approach to examine ceramics from both Early and Late Classic contexts, significant changes through time were detected in ceramic production and distribution at archaeological sites in northwestern Belize. In our study we compared ceramics and clays collected from around Blue Creek, Ixno'ha, and the surrounding smaller sites and settlements of Bedrock, Chan Cahal, Quincunx, Rio Hondo, Sayap Ha, and Soto Hob (see Figure 2.1) with published data from earlier INAA studies of pottery and clays from northwestern Belize (Lyle 2000; Manning 1997). Comparative INAA ceramic databases developed at the University of Missouri Research Reactor Center (MURR) and Smithsonian Museum Conservation Institute (MCI) also were utilized. Ceramic samples were first analyzed and described using standard type-variety designations to establish chronological placement (Gifford 1976; Kosakowsky and Lohse 2003) prior to being sampled for INAA.

Site Locations and Sampling

To examine how the organization of ceramic production and trade may have changed from the Early to Late Classic in northwestern Belize, a total of 198 ceramic and 34 clay samples were selected by the Blue Creek Regional Political Ecology Project (BCRPEP) over two field seasons and analyzed by INAA at MURR. The ceramic samples were obtained from the site centers of Blue Creek and Ixno'ha (González 2004, 2005) as well as several hinterland settlements including Chan Cahal and Sayap Ha (Giacometti 2002), and Rio Hondo (Clayton 2003) in Belize's low-lying coastal plain; and Bedrock (Mongelluzzo 2002), Quincunx (Driver 2004; Zaro and Lohse 2005), and Soto Hob (Barrett 2004) in the upland Petén Plateau (see chapter 2, this volume).

Analyzed ceramics were either monochrome or polychrome in surface finish, with easily identifiable typological features to assure both type-variety and chronological identification and were selected as the best representative sample of the major ceramic types; no unslipped sherds were utilized in this study. Whenever possible, rim sherds were selected, using vessel-form information as an additional identifier for chronological placement. Early Classic samples were selected from the Aguila Orange, Balanza Black, and Dos Arroyos Orange Polychrome Groups (Figure 6.1). Sampled Late Classic sherds were chosen from the Achote Black, Saxche Orange Polychrome, and Tinaja Red Groups as well as the unspecified group, Daylight Orange (Figure 6.2); ceramic groups that are confidently dated to after AD 650. A small number of both Early–Late Classic sherds were selected on the basis of paste, surface finish, or vessel form that were thought to have been imports to the region, including sandy paste examples of possible Belize Red from the Belize River Valley (Gifford 1976) and others with unusually fine paste. Our samples were then compared with INAA data generated by Andrew Manning (1997) and Anthony Lyle (2000) from the nearby sites of Dos Hombres (Houk 1996), Gateway (Muñoz 1997), Gran Cacao (Lohse 1994), Guijarral (Hughbanks 2006), El Arroyo (Tovar 1996), Las Abejas (Sullivan 1997), and My Lady (Lyle 2000) and from excavations (Operations 9, 22, and 24) by Hugh Robichaux (1995) in hinterland settlements around La Milpa and Dos Hombres (see Appendix, this chapter).

Finally, we attempted to link the fired ceramics to geologically derived localized clay deposits. Sourcing pottery in this fashion has posed something of a challenge to researchers in the Maya area (Angelini 1998; Bartlett, Neff, and McAnany 2000). Many areas of the

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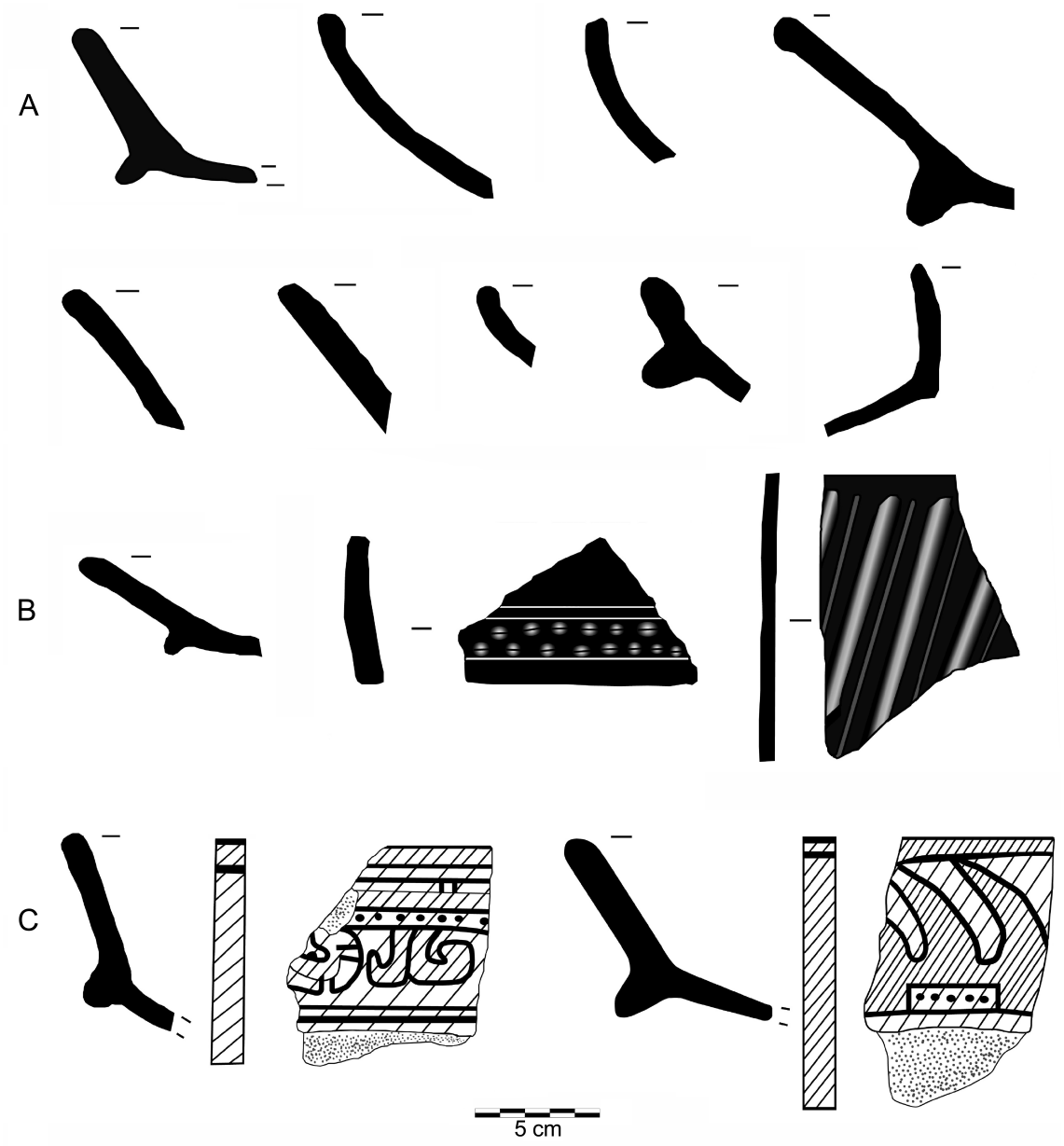

Figure 6.1. Typical Early Classic sherds sampled for INAA study: (*A*) Aguila Orange, (*B*) Balanza Black (and varieties), and (*C*) Dos Arroyos Orange Polychrome. *Illustrated by Jo Mincher.*

Maya lowlands are situated on largely undifferentiated Eocene limestone bedrock; important exceptions occur along the interface between the alluvial lowlands and volcanic highlands and also around the igneous Maya Mountains. The relatively homogeneous nature of much of the parent bedrock material from which alluvial sediments originate also means that many lowland clay deposits are likely to be compositionally homogeneous, leading to potential problems in differentiating the chemical characterization of ceramic groups. This situation has perhaps deterred researchers from testing local sediments in conjunction with fired ceramics when conducting INAA sourcing projects (Bartlett, Neff, and McAnany 2000). In our study region, however, the dramatic north-south-running escarpment results in potentially significant differences in local sedimentation processes and sources. Most of the clay-rich sediments in the upland *bajo*-dominated plateau develop either in situ as primary clays or are deposited by

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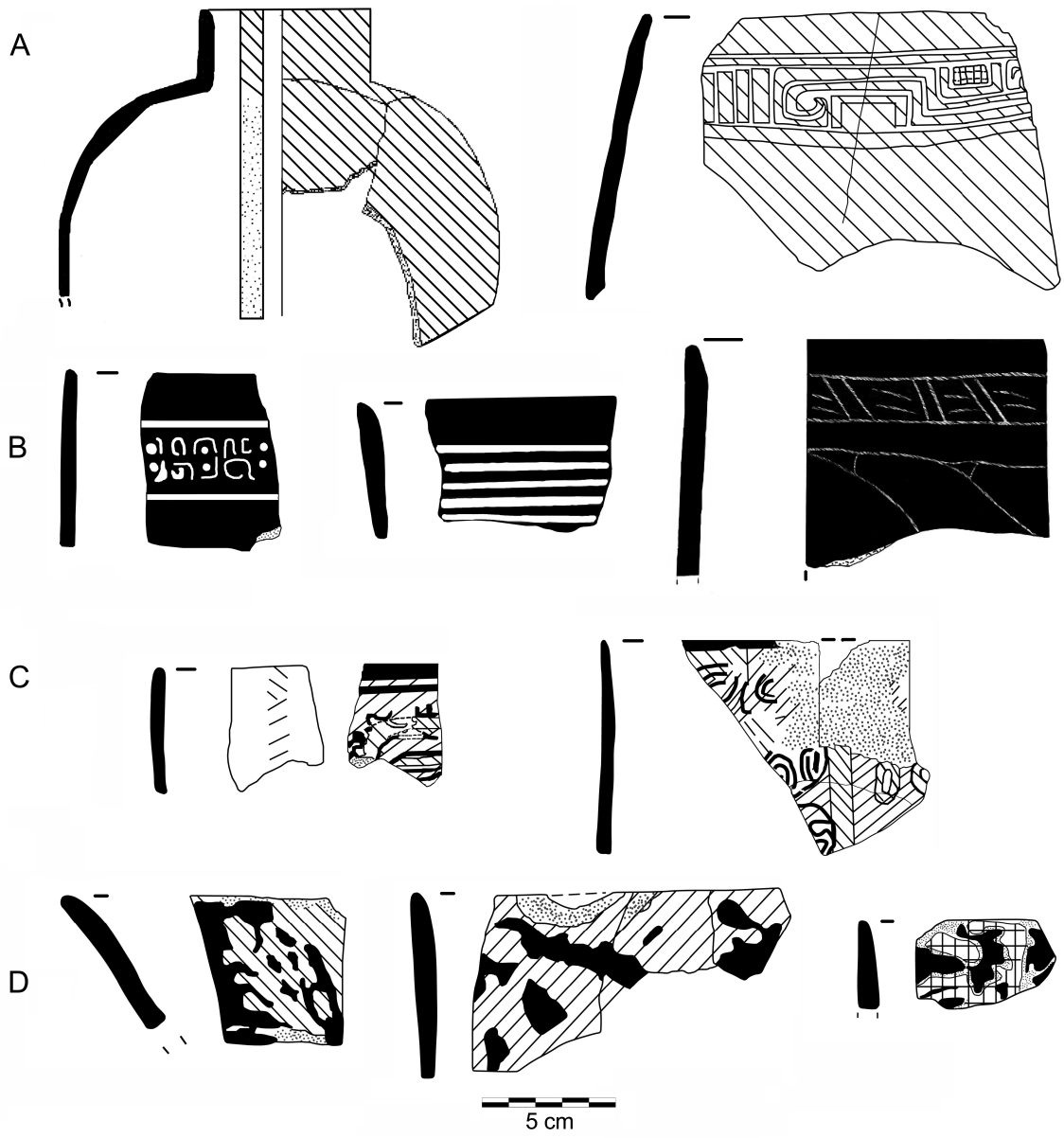

FIGURE 6.2. Typical Late Classic sherds sampled for INAA: (*A*) Tinaja Red (and varieties), (*B*) Achote Black (and varieties), (*C*) Saxche Orange Polychrome, and (*D*) Daylight Orange. *Illustrated by Jo Mincher.*

slow-moving streams from nearby weathering outcrops. Low-lying settings are influenced by many of the same streams as they drain from the uplands, and also by near-surface gypsum-rich aquifers (Beach et al. 2004; also chapter 3). In the hopes that these geologic variations might produce some compositional differentiation in regional sediments that would help distinguish among locally made ceramics, clay samples were included in our study. Clay samples were collected using a soil probe along 400-meter transects adjacent to many settlements from which ceramics also were sampled. These areas include Blue Creek, Chan Cahal, Quincunx, Rio Hondo, Sayap Ha, from a *bajo* within a kilometer of the Ixno'ha site center, and from a second, larger *bajo*, two to three kilometers to the south.

The compiled regional database (see Appendix) compares data we generated (198 ceramic and 34 clay samples) to the previously published data from Manning (1997) and Lyle (2000), which includes 255 Late Classic pottery and 15 clay analyses. Albeit still small in size, nevertheless the total sample of 453

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sherds (1 from the Terminal Preclassic, 110 from the Early Classic, and 342 from the Late Classic) and 49 clay samples, comprising 502 total data points, is among the largest regional databases of ceramic and raw-clay samples to be found anywhere in the Maya lowlands.

Analytical Methods

INAA is one of several analytical techniques available for determining the chemical composition of archaeological materials. Though it is often utilized in conjunction with petrographic analyses, recent work has suggested that it is misguided to assert the "absolute superiority" of one technique over the other (Neff et al. 2006b). Other analytical techniques include inductively coupled plasma-mass spectrometry (ICP-MS) and X-ray fluorescence (XRF). Although both ICP-MS and INAA provide increased sensitivities relative to XRF and most other methods of chemical analysis, only INAA provides such sensitivity without a cumbersome sample-preparation process (Glascock and Neff 2003). The lower labor costs, decreased sample-preparation time, and widespread use of INAA as a means of analyzing the chemical composition of archaeological samples, in conjunction with the availability of a prior regional INAA database (Lyle 2000; Manning 1997), prompted our selection of this analytical technique (Little et al. 2004). Our INAA analysis used standard MURR sample preparation and experimental parameters (Glascock 1992). The resulting data were then examined using an array of multivariate statistical procedures. These statistical routines have been described extensively elsewhere (Glascock 1992; Glascock, Neff, and Vaughn 2004; Neff 1994, 2000, 2002).

After an initial examination, all samples were found to have significantly high levels of calcium (sometimes in excess of 25%) due to both the contribution of limestone bedrock to the formation of clays used for pottery production and the use of calcium carbonate for temper (crushed rock). High calcium levels can be problematic, given that as calcium increases, most other elements are correspondingly diluted (see Neff et al. 1999); the high calcium concentrations were corrected using a statistical calculation often employed for this purpose (Cogswell, Neff, and Glascock 1998; Steponaitis, Blackman, and Neff 1996). Compositional groups were identified and statistically validated using Mahalanobis distance (Neff 2002).

RESULTS

We identified six compositional groups (Groups 1–6) that are best differentiated in a bivariate plot of chromium and zirconium (Figure 6.3). Groups 4 and 5 are not as well differentiated based on chromium and zirconium but are distinct in a plot of cesium and barium (Figure 6.4). Of the total 453 pottery samples, we were able to assign 363 samples to these six groups. Two additional pottery samples are compositionally similar to Fine Gray pottery produced in or near Palenque (Bishop, Sears and Blackman 2005). The remaining 88 samples (including the one Terminal Preclassic sherd) indicated low probabilities of membership in any group and therefore remain unassigned.

Group 1

Group 1 is the largest compositional group (see Figure 6.3), comprising Early–Late Classic samples. This group contains 206 samples representing every site included in the regional data set. Group 1 is also the only compositional group that demonstrated any likelihood of a match for a raw-material source; three clay samples collected from the hinterland site of Sayap Ha yielded a probability of group membership between 10% and 30%, and one clay sample collected from a *bajo* near Ixno'ha yielded greater than 50% probability for membership in Group 1. The statistical similarity among multiple clay sources and the 206 samples in Group 1 suggest that those ceramics were manufactured from clay deposits indigenous to northwestern Belize.

Group 1 is representative of typical Early–Late Classic ceramics from all sites, with 71 samples from the Early Classic and 135 samples from the Late Classic. Ceramic assemblages represented within this compositional group include 29% Tinaja Red, 22% Aguila Orange, 21% Achote Black, 8% assorted Early–Late Classic polychromes, 7% Balanza Black, and 7% Daylight Orange (unspecified). The remaining 6% comprise various ceramic types found throughout all locales in the study area. Among the Balanza Black sherds are finely made examples found at large sites (Blue Creek and Ixno'ha) and hinterland

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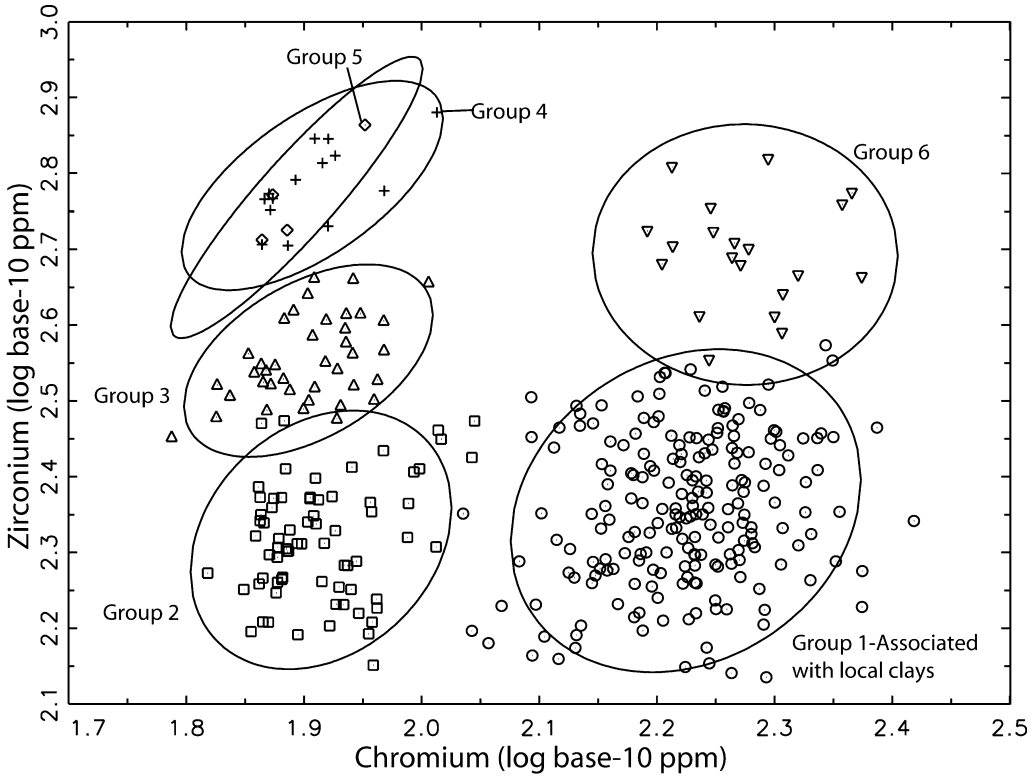

FIGURE 6.3. Bivariate plot of chromium and zirconium concentrations showing separation of the six compositional groups. Ellipses represent 90% confidence level for membership in the six groups.

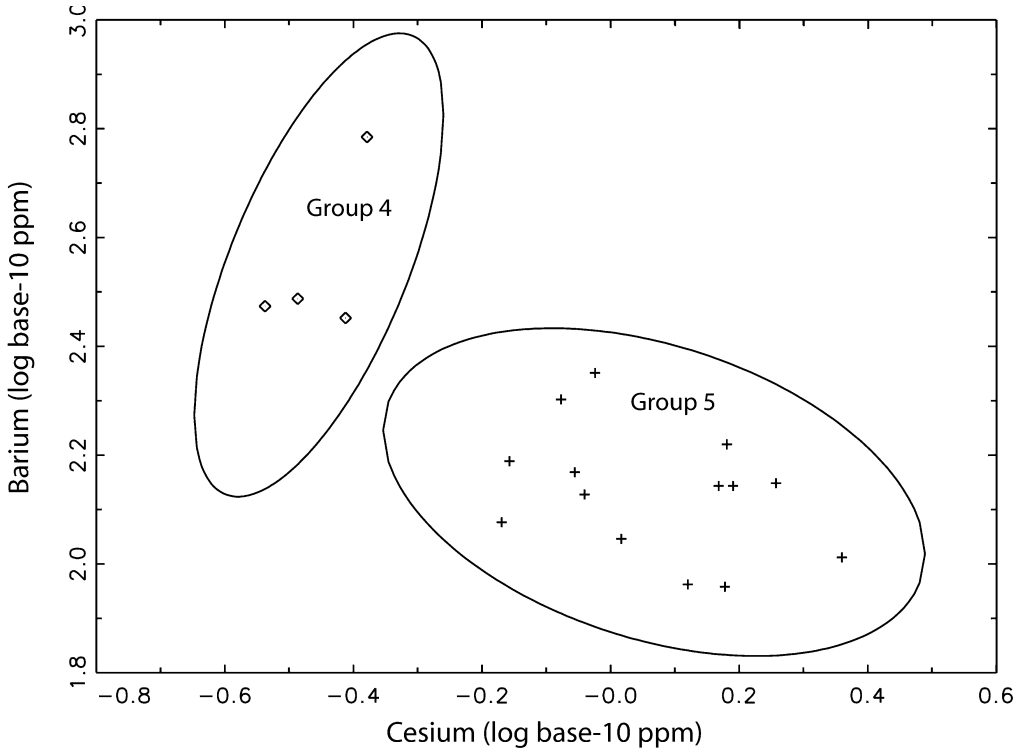

FIGURE 6.4. Bivariate plot of cesium and barium concentrations showing further separation of Groups 4 and 5. Ellipses represent 90% confidence level for membership in the two groups.

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settlements (Sayap Ha) that are decorated with typical Teotihuacan-style cacao-bean appliqué (see Figure 6.1, B samples) or fine-line incising with hematite. These types are relatively uncommon in northwestern Belize (Hammond et al. 1988; Sagebiel 2005) but do occur in small numbers at Tikal (Culbert 1993) and Uaxactún (Smith 1955) in the central Petén. The inclusion of these examples in Group 1 indicates locally regional manufacture though stylistically links our region with Early Classic pan-Mesoamerican networks focused heavily in the Petén. Additionally, the Group 1 data indicate that sites throughout northwestern Belize appeared to have utilized the same raw-material source for pottery manufacture consistently throughout the Classic period and that all sampled communities had access to these sources.

Group 2

Group 2, with 71 samples, is comprised primarily of Late Classic ceramics from the southern portion of our study area. Four of the seven Early Classic samples in Group 2 are from Ixno'ha, with the remaining three samples coming from Blue Creek and Sayap Ha. The Late Classic ceramics include one sample each from Bedrock and Ixno'ha, with nine ceramics coming from Chan Cahal and 17 from Blue Creek. The remaining 36 samples originated from southern sites in the study area. Those samples include 11 from Dos Hombres, seven from Gran Cacao, and four each from Las Abejas (Manning 1997) and Guijarral. The remaining nine assigned samples from Lyle's (2000) research belong in Group 2, as does one sample from Operation 22 near La Milpa. The small Gateway site and nearby El Arroyo lithic production site yielded no ceramics with membership in Group 2.

Typologically, this compositional group includes 69% Achote Black, 10% Tinaja Red, 7% Balanza Black, 6% Daylight Orange (unspecified), 4% various polychromes, and the remaining 4% are assorted types. Two samples were originally identified (by Kosakowsky) as possible Belize Red imports from the Belize River Valley to the south on the basis of their slightly sandier paste. Given their membership with other apparent locally manufactured ceramics from northwestern Belize in this compositional group, it seems more likely that they are Late Classic monochrome red pots from the Tinaja Group.

Group 3

Group 3, with 38 samples, comprises six Early Classic samples from Sayap Ha, with an additional three Early Classic samples from Blue Creek. Two Late Classic samples from this group are Saxche Orange Polychrome samples from Quincunx. One sample is from a whole vessel found in a burial (see Figure 4.9, sample A) and is one of only three examples from the BCR-PEP study area of Saxche Orange polychromes with figural representations. This vessel, with its hallucinogenic enema scene, is so far unique in northwestern Belize. Though a large component of Group 3 consists of other Early–Late Classic polychromes (41%), this compositional group also includes seemingly locally manufactured ceramics such as Tinaja (31%), Achote (13%), Daylight Orange (8%), and Aguila Orange (5%). Thus the enema vessel's membership in Group 3 as well as its stylistic components would argue for production somewhere in northern Belize, if not within the study area itself. The other vessels associated with the figural polychrome were assigned to Group 1 and therefore are likely to have been locally produced. The remaining 27 samples assigned to Group 3 are Late Classic ceramics from Gran Cacao (13 samples), Dos Hombres (10 samples), the Gateway site (3 samples), and Las Abejas (1 sample).

Group 4

Group 4 contains 14 samples, including 12 Late Classic ceramics from Gran Cacao (see Figures 6.3, 6.4) and one sample each (both Late Classic polychromes) from the sites of Blue Creek and Quincunx. The Saxche Orange polychrome sherd from Blue Creek (see Figure 4.9, sample C) is one of three figural polychromes found in the study area, and the Quincunx sample is a black-on-orange dichrome also in the Saxche Group. Of the 12 samples from Gran Cacao, eight are from the Palmar Orange polychrome group. Therefore, the majority (71%) of this compositional group is polychrome in decoration, similar to Group 3. Yet the occurrence of two samples of Tinaja Red and one each of Dolphin Head Red and Daylight Orange supports the conclusion that sites containing Group 4 sherds were engaged in the local production of myriad ceramic types or, alternatively, that local exchange among sites in northwestern Belize included both monochrome as well as poly-

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chrome pots. Because such a large proportion of this compositional group was recovered from Gran Cacao, Late Classic residents of this site were likely involved in, or perhaps controlling, some production and/or exchange of certain ceramics types.

Group 5

Group 5 comprises three Early Classic specimens from Quincunx and one Late Classic orange-and-black dichrome from Ixno'ha (see Figures 6.3, 6.4). These four samples are chronologically similar, with the Quincunx sherds appearing to be late in the Early Classic based on typological characteristics and the Ixno'ha sample appearing to be early in the Late Classic based on stylistic comparisons.

Group 6

Group 6 contains 20 Late Classic ceramics representing sites in the southern part of our study area. Of the 20 samples, 12 are from the hinterland Gateway site, three are from Guijarral, and five are from residential sites near La Milpa (one from Operation 22 and three from Operation 24) and Dos Hombres (one from Operation 9) (Manning 1997). Seventy-five percent of this group is comprised of Tinaja Red sherds, and the remaining examples are Achote Black.

Fine Gray Samples

Two samples (NCL026 and NCL142), one each from Blue Creek and Ixno'ha, were originally described as Tepeu 2–3 period Fine Gray pottery and were noted as possible replicas of the Fine Grays found in central Petén. Based on results of INAA analyses, these two specimens are compositionally dissimilar to all other samples from this study. A comparison with the MURR ceramic database, which contains data for more than 45,000 pottery and clay samples from all over the world, revealed that the closest match, based on Euclidean distance, was with samples from Dos Pilas, Guatemala (Figure 6.5). The Dos Pilas samples are characteristic of the Chablekal Ceramic Group from the greater Palenque region of the western lowlands (Bishop forthcoming). The occurrence of these samples in northwestern Belize represents the farthest-eastern distribution of Chablekal

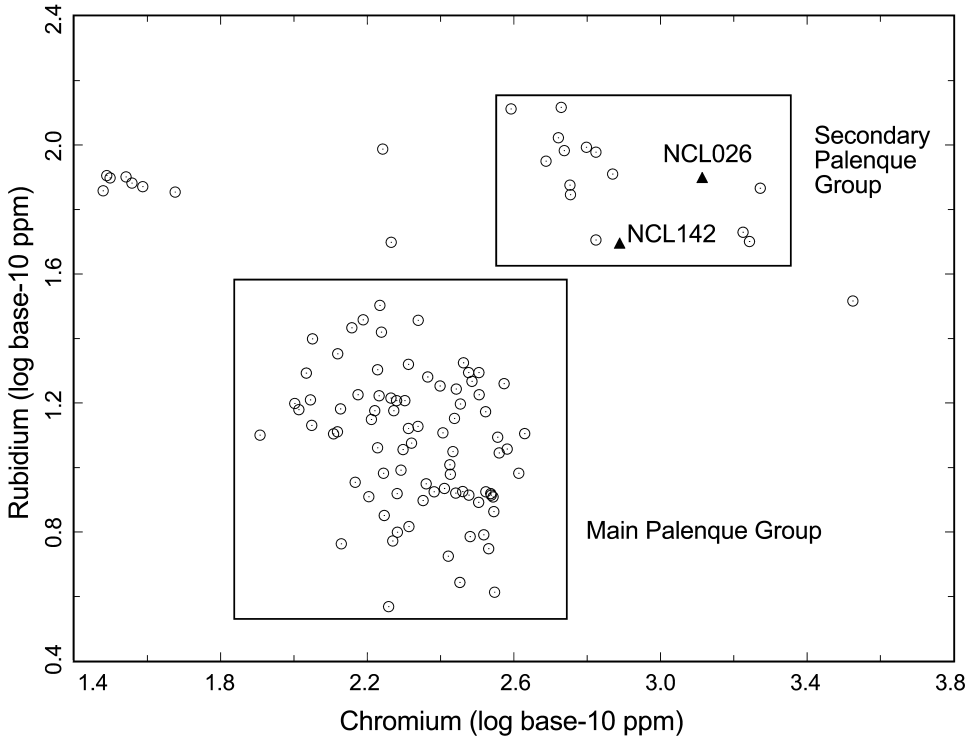

FIGURE 6.5. Bivariate plot of chromium and rubidium concentrations showing the compositional similarity between Fine Gray pottery from the BCRPEP area (NCL026 and NCL142) and Chablekal Fine Gray samples produced near Palenque.

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pottery yet known in the Maya area (Ronald Bishop, personal communication, 2004).

Unassigned Samples

Among the unassigned samples are sherds originally selected because they appeared to be "exotics" based on macroscopic examination of paste or decorative features. One of these is a late Early Classic example of San Clemente Gouged Incised in the Aguila Group from the hinterland settlement of Sayap Ha. Uncommon in northwestern Belize, this type has only been found at Sayap Ha and La Milpa (Sagebiel 2005). Sherds of this type have been found elsewhere in the Petén at Rio Azul (Adams 1999), Tikal (Culbert 1993), and Uaxactún (Smith 1955), in the Pasión River drainage at Altar de Sacrificios (Adams 1971), and in the Rio Bec region of Becan (Ball 1977). Its occurrence at these sites confirms the links among communities in northwestern Belize and the major centers of the Petén during the Early Classic period.

Five of the unassigned samples (two from Blue Creek and three from Ixno'ha) are thought to be examples of Belize Red (Gifford 1976) based on their sandy paste. These would have originated in the Belize Valley and been traded northward beginning in the Late Classic. One of the more unique unassigned sherds is a Late Classic gouged incised, barrel-shaped bowl with a compact sandy paste of nonlocal origin and figural design that includes a partial headdress and pseudo-glyphs. Although the figural design may be similar to Big Falls Gouged-Incised from the Belize River Valley (Gifford 1976), stylistically, gouge incising is a more common feature on Late Classic ceramics from the Petén (see Smith 1955) and the Pasión River area (Adams 1971; Sabloff 1975) than in Belize. The presence of Belize Valley pastes and exotic design elements on ceramics in northwestern Belize during the Late Classic may be additional evidence of a shift in trade routes and access to finished goods after Tikal's hiatus.

Implications and Findings

The data presented here allow us to address regional ceramic production and exchange during the Early and Late Classic periods from several perspectives and to make preliminary inferences about the control of resources at different levels of regional society. Concerning the distribution of clay resources as evidenced in fired pottery, no compositional group is restricted to the largest sites in the region. Furthermore, there does not seem to be a correlation among stylistic differences, ceramic type or form, and compositional group membership in our research, in contrast with Fry's (2003a, 2003b) study of the distribution of vessel-shape classes in the periphery of Tikal during the Late Classic which suggested quantitative differences in the frequency of fine-paste serving vessels correlated with site-household group size and status. In fact, with the exception of Group 6, all groups contain both monochrome and polychrome pottery, and the lack of polychromes in Group 6 is likely to be a result of sampling. On this basis, we conclude that compositional group membership does not reflect the production of particular ceramic types at specific production sites but rather implies a preference for specific raw-material sources (from which multiple pottery types were made) and may reflect diachronic shifts in the control over clay resources among sites in the study area. This conclusion begins to reveal a complex and highly dynamic relationship of local producers to their nearby natural resources.

Through the compositional analysis, however, we determine that significant differences existed in raw-material utilization for pottery manufacture between the Early and Late Classic time periods (Table 6.1). Compositional data indicate that sites studied by the BCRPEP (Blue Creek, Chan Cahal, Ixno'ha, Quincunx, Rio Hondo, Sayap Ha, and Soto Hob) attained access to a greater variety of raw materials in the form of fired pottery in the Late Classic, either through exploitation of different clay beds or through expanded trade networks. Because only Late Classic sherds were sampled by Manning (1997: Dos Hombres, El Arroyo, the Gateway site, Gran Cacao, Guijarral, La Milpa, Las Abejas, and residences outside Dos Hombres and La Milpa) and Lyle (2000: My Lady), it is not currently possible to know if similar Early-to-Late Classic changes occurred at those sites as well, though there is no reason to presume they did not. The compositional variability of pottery sampled from all sites allows us, however, to make inferences regarding access to raw materials and trade routes.

At the Gateway site, almost directly west of Blue Creek, sampled ceramics fell into Group 6. The only other sites that contained multiple samples of Group

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Table 6.1. Discussion of results by compositional group

	Time Period	Site Locations	Regional Overview	Possible Implications for This Study
Group 1	Dominates in Early–Late Classic at most sites	All sampled sites	Most abundant group at all sites in northwestern Belize	This clay source probably extends across entire region with unrestricted access
Group 2	Dominates in Late Classic; forms smaller percentage in Early Classic	All sampled sites, excluding El Arroyo and Gateway	More common in sites in the southern area of study region	Many more compositional groups present in Late Classic with sources beyond Blue Creek's sphere of influence
Group 3	Forms a small percentage in Early Classic	Blue Creek, Dos Hombres, Gateway, Gran Cacao, Las Abejas, Quincunx, Sayap Ha	Restricted to sites in the eastern part of the study region	Vessels manufactured locally by small-scale producers
Group 4	Relatively restricted in Late Classic	Blue Creek, Gran Cacao, Quincunx	Mostly polychromes limited to sites in the eastern part of the study region	Local producers, possibly at Gran Cacao, may have provided pots to a relatively restricted area in the Late Classic
Group 5	Relatively restricted in Early Classic to Late Classic transition	Ixno'ha and Quincunx	Restricted geographically and temporally	Vessels manufactured locally by small-scale producers
Group 6	Late Classic only	Dos Hombres Gateway, Guijarral, La Milpa	Restricted to sites in the southern part of study region	Small-scale producers, possibly within La Milpa's sphere of influence
Fine Gray	Late Classic only	Blue Creek and Ixno'ha	Two sherds	Chablekal Ceramic Group from the Greater Palenque Region of the western Maya lowlands

6 pottery were the nearby minor center of Guijarral, Operation 9 outside Dos Hombres, and Operations 22 and 24, located slightly to the northwest of La Milpa. Because Group 6 ceramics are found only in minor sites around La Milpa and outside Dos Hombres and occur in relatively low frequencies, we suggest that small-scale producers probably manufactured those vessels locally. Given the location of these sites and their proximity to La Milpa, it is likewise possible that production of Group 6 pottery occurred within La Milpa's political sphere of influence.

Group 1 is by far the most abundant compositional group that occurs throughout northwestern Belize; every sampled site contains multiple ceramics from this group. Because the majority (if not all) of the pottery from several sites such as Bedrock, El Arroyo, and Soto Hob compositionally belong to Group 1, it is likely that the clay source for Group 1

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pottery extends across the entire region and was quite unrestricted in terms of access to local producers (the change from Group 1 to Group 2 pottery at Bedrock from the Early to Late Classic is probably a matter of small sample size; only four sherds were sampled from the site).

At sites such as Dos Hombres, Gran Cacao, and My Lady, there appears to be equal access to raw materials involved in Group 1 and Group 2 production. The large centers of Dos Hombres and Gran Cacao, both located east of the Rio Bravo Escarpment, had, however, an even distribution of pottery samples across group barriers. Gran Cacao's pottery was included in Groups 1 to 4, whereas Dos Hombres's pottery was nearly equally divided among Groups 1 to 3, with the small inclusion of Group 6 from nearby Operation 9. It appears that these centers maintained greater access to multiple raw-material sources, either through trade networks or as a reflection of local production, than did nearby smaller settlements and other sites farther north. It is particularly noteworthy that Group 4 is restricted only to eastern sites in our study area, like Blue Creek, Gran Cacao, and Quincunx, and that it only appears in the Late Classic. Did those sites, particularly Gran Cacao, participate differently from others in trade networks involving pottery manufactured from this clay source? Or were they somehow located in a unique environmental setting that influenced highly localized ceramic production? Given the widespread homogeneity in the composition of clay deposits across both northwestern Belize and the larger Maya lowlands, we believe the former possibility is more likely.

At sites in the BCRPEP area, access by each site to a variety of raw-material sources in the Early Classic was more restricted than in the Late Classic (see Table 6.1). Group 1 dominates the Early Classic pottery samples from most sites in this area, with much smaller percentages of ceramic samples belonging to Groups 2–3 and 5 at Blue Creek and Ixno'ha. Almost 80% of the sampled ceramics from all Early Classic sites in the region belong to Group 1, demonstrating little variability in access to raw-material sources during this time period (see Appendix). After AD 650, however, there is greater variability from site to site in the relative percentages of different ceramic groups. Using Quincunx as an example to illustrate this trend, almost 80% of the sampled Early Classic ceramics from this site belong to Group 1, whereas Late Classic ceramics are divided more evenly between Groups 1 to 3. While the Early Classic assemblage at Blue Creek mirrors that at Quincunx, there seems to be a shift in raw-material consumption in the Late Classic, where samples are primarily from Group 2. At Ixno'ha as well, Group 2 increases significantly as a percentage of sampled pottery. Even sites for which no Early Classic data are available reflect a more even distribution of groups in the Late Classic than can be found among Early Classic data sets. At Gran Cacao, for instance, no compositional group comprises more than 33% of the sampled ceramics; this kind of even distribution is not seen at any Early Classic sampled sites. When viewed together, these data reveal significant transformations in Late Classic ceramic production and exchange, including an increased reliance on pottery manufactured beyond Blue Creek's immediate sustaining area. The widespread distribution of Late Classic Group 2 pottery at Dos Hombres, Gran Cacao, Guijarral, Las Abejas, My Lady, and Operation 22 near La Milpa suggests that, like Group 6, clay resources used for Group 2 might have been widely available in northwestern Belize. Importantly, the sharp increase in Group 2 pottery at Blue Creek may indicate the increased influence of production loci centered west of that site in regional exchange networks, perhaps around La Milpa, which experienced an enormous construction boom at this time.

Finally, our research also shows the participation by medium-sized regional centers in far-reaching exchange networks involving Chablekal Fine Gray pottery. Though only two samples were identified, this pottery likely had its origins in the Palenque region to the west. In Maya political history the development of these distant networks coincides with the reemergence of Tikal in the seventh century AD and could well signal its increased participation in long-distance exchange of finished goods, including ceramics. Precisely how these networks were organized remains unknown, though two possibilities are presented. Previously identified samples of Chablekal are known from Dos Pilas and other sites in the Petexbatun. It is possible that this region, located in the upper reaches of the Usumacinta Drainage, returned to the control of Tikal after AD 695, the year of Tikal's victory over Calakmul's ruler Yich'aak K'ahk' (see chapter 2, this volume), and served as a gateway

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for western goods entering the Petén. Alternatively, more direct overland routes may have connected sites like Piedras Negras with Tikal and regions farther east (Figure 6.6). In either case, the possible role of sites such as La Milpa in administering these interregional networks and the role of regions such as northwestern Belize in Tikal's ascendance in the Late Classic should not be overlooked.

Figure 6.6. Map showing hypothesized routes for the movement of Tepeu 2–3 Chablekal Fine Gray pottery into northwestern Belize.

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CONCLUSIONS

Many factors may have affected the various spheres of control and exchange that comprised prehistoric regional politics. We have chosen to examine changes in ceramic distribution in northwestern Belize during the transition from the Early to Late Classic using compositional analysis of ceramic samples as one line of evidence, with special attention paid to how this variability is discernible through time and at different levels of settlement. This variability might arise through different paste recipes having been utilized by local producers and/or differential access to various resources through trade. Observable patterns may be further complicated and obfuscated by organizational variability in ceramic production from site to site as well as by the participation of occasional potters in otherwise intensive manufacturing systems. Nevertheless, our INAA study provides preliminary evidence that significant changes occurred in raw-material utilization and ceramic exchange from the Early to Late Classic. We hypothesize that these changes can be attributed in part to changing political dynamics as tensions developed among major Maya cities such as Tikal and Calakmul and their dependencies. We assume for the purposes of our argument here that Tikal was a major organizer of the overland trade routes that reached into northwestern Belize and ultimately affected even hinterland communities in our study region.

Dynamic political developments involving these capital centers are known to have considerable effects on local and regional trade systems (Adams 1999; Coe 1999; Harrison 1999; Haviland 1992). The organization of exchange systems involving prestige and utilitarian goods also can, however, be affected by other factors, including political relationships between large neighboring sites, the presence of smaller supporting settlements in regional networks, and the role of local producers. Abundant excavation data from northwestern Belize reveal uneven occupational histories for many hinterland groups that would have constituted much of the supporting populations for medium and large centers (see chapters 7–9, this volume). These findings suggest that dynamic internal processes were ongoing within site-sustaining areas that both mirrored and helped shape the political fortunes of nearby centers.

External factors, too, were significant in determining northwestern Belize politics. The presence of Fine Gray pottery at both Ixno'ha and Blue Creek reveals interaction between northwestern Belize and western lowland polities; we suggest that such participation was related to the reestablishment of east-west overland trade routes following Tikal's early Late Classic reemergence. Similar Fine Gray pottery also has been recovered from Altar de Sacrificios, Cancuen, Dos Pilas, and throughout the Petexbatun region (Bishop, Sears, and Blackman forthcoming), though not observed at Calakmul (Domínguez Carrasco 1994). Given the distribution and political histories of the regions in question, Tikal may be the best candidate for administering and controlling these networks.

Throughout the Early and Late Classic periods, stylistic homogeneity existed among ceramic inventories, including those of the central Petén and its neighboring regions. Our research shows, however, that material goods and not stylistic traits alone moved between communities. Abundant trade relations existed across the Maya lowlands, and these systems underwent dramatic transformations during the Late Classic. The presence of Late Classic Chablekal Fine Gray pottery at two centers in northwestern Belize and an understanding of the political histories of other significant sites elsewhere are helpful in reconstructing trade relations that joined the region with the central Petén and even the more distant western lowlands. At the same time, the dynamic nature of social relationships that existed between local producers and nearby centers is evident. These findings make clear that political fortunes were experienced by all members of society, though in widely differing ways. For the Maya of northwestern Belize from the Early to Late Classic, our findings show that their fate throughout the Classic period seems not to have been entirely of their own making.

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APPENDIX

Listed are samples by site included in this study for Early and Late Classic time periods. Group presence is expressed as a percentage of the total sample from the site.

Appendix: Comparison of INAA Data from Other Sites

Site	Early Classic	Late Classic
Blue Creek	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 4	5 Samples Group 1: 20% Group 2: 72% Group 3: 0% Group 4: 4% Group 5: 0% Group 6: 0% Fine Gray: 4% Unassigned: 6
Ixno'ha	24 Samples Group 1: 79% Group 2; 8% Group 3; 13% Group 4; 0% Group 5; 0% Group 6; 0% Unassigned: 4	4 Samples Group 1: 50% Group 2: 25% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 0% Fine Gray: 25% Unassigned: 3
Quincunx	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 3	7 Samples Group 1: 57% Group 2: 29% Group 3: 14% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 2

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Site	Early Classic	Late Classic
Bedrock	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 1	1 Sample Group 1: 0% Group 2: 100% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 0%
Soto Hob	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0%	17 Samples Group 1: 100% Group 2: 0% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 0%
Rio Hondo	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0%	2 Samples Group 1: 100% Group 2: 0% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 0%
Chan Cahal	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0%	18 Samples Group 1: 50% Group 2: 50% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 0%
Sayap Ha	24 Samples Group 1: 79% Group 2: 8% Group 3: 13% Group 4: 0% Group 5: 0% Group 6: 0%	0 Samples
Dos Hombres	0 Samples	36 Samples Group 1: 39% Group 2: 31% Group 3: 28% Group 4: 0% Group 5: 0% Group 6: 1% Unassigned: 23

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Site	Early Classic	Late Classic
El Arroyo	0 Samples	21 Samples Group 1: 76% Group 2: 19% Group 3: 5% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 5
Gateway	0 Samples	18 Samples Group 1: 11% Group 2: 0% Group 3: 22% Group 4: 0% Group 5: 0% Group 6: 67% Unassigned: 6
Gran Cacao	0 Samples	40 Samples Group 1: 20% Group 2: 17% Group 3: 33% Group 4: 30% Group 5: 0% Group 6: 0% Unassigned: 8
Guijarral	0 Samples	26 Samples Group 1: 73% Group 2: 15% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 12% Unassigned: 8
Las Abejas	0 Samples	21 Samples Group 1: 76% Group 2: 19% Group 3: 5% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 4
My Lady	0 Samples	35 Samples Group 1: 74% Group 2: 26% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 0% Unassigned: 5

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Site	Early Classic	Late Classic
Operation 9 (In the vicinity of La Milpa and Dos Hombres)	0 Samples	1 Sample Group 1: 0% Group 2: 0% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 100% Unassigned: 1
Operations 22 and 24 (In the vicinity of La Milpa and Dos Hombres)	0 Samples	10 Samples Group 1: 50% Group 2: 10% Group 3: 0% Group 4: 0% Group 5: 0% Group 6: 40% Unassigned: 1

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Chapter 7

Rural Settlement, Landscape Roles, and Political Change during the Classic Era in Northwestern Belize

Jason J. González

The history of archaeological research in northwestern Belize starts with the early explorations of John Eric Thompson, who, in 1938, spent a short time at the large site of La Milpa (Hammond 1991a; Thompson 1938; Tourtellot, Clarke, and Hammond 1993, 97). He was able to map the main plaza, locate several stelae, and record many large mounds and pyramids (Thompson 1938, 1939). Unfortunately, Thompson became ill while at La Milpa and never returned for more archaeological research. Thompson's early work highlighted La Milpa because of the large pyramids and the sculptured stelae, but later projects began to highlight the region as an arrangement of various communities (see chapter 2, this volume). La Milpa was the largest city and was surrounded by many smaller communities, such as Ixno'ha (see Figure 2.1).

Previous research indicates that during the Late Classic the power structure in what is now northwestern Belize had a dominant La Milpa political center indicating a centralized political system (Adams 1995, 1999; Dunning et al. 1998; Dunning et al. 1999; Hammond and Tourtellot 1999; Houk 1996, 320; Kosakowsky and Sagebiel 1999, 135; Rose 2000, 104–5; Thompson 1939; Tourtellot, Everson, and Hammond 1993; Tourtellot, González, and Estrada Belli 1999). Our understanding of what this centralization meant in terms of La Milpa's elites' influence over other communities remains somewhat murky. What is unclear is the extent to which La Milpa's elites inserted themselves, influenced, or even controlled the daily activities of the populace, whether their own or of other communities (Houk 2003, 62). The issue is whether La Milpa was a strongly centralized capital or a weakly centralized center of a loosely related region. Some see La Milpa as reasonably dominant, influencing and managing much of the economic and domestic behavior within the Three Rivers Region (Adams et al. 2004, 327; Manning 1997; Scarborough and Valdez 2003, 10). Others describe a Late Classic La Milpa that was a political and economic center but was far less dominant or even influential in much of the general population's lives (chapter 2, this volume; Houk 2003, 62; Sullivan and Sagebiel 2003, 35).

In discussing the sociocultural relations of northwestern Belize, I use "power" in the organizational sense of the term, where elite actors potentially influenced the environment and settings of others, making some behaviors possible and others impossible (Wolf 1990, 586–87). Specifically, my research addresses issues of power connections between the regional elites at La Milpa and the subsidiary community of Ixno'ha. These power relationships are not simply the personal power of dominance and subservience between two communities but rather are

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the more nuanced power relationships of daily interactions. In this organizational power. people constantly negotiate their daily activities within an array of available choices of action, shaped by the regional elites' organizational power capability (Wolf 1999). Power relations between these communities, I argue, involved both the regional political system and local domestic activities. Thus, these power relations focus on the negotiation of daily choices given the specific physical and social context in which the Three Rivers Region people lived. In particular, this research is about looking at the extent to which the La Milpa elite social component was able to shape those environmental settings that influenced the domestic choices made by their populations.

The nature of La Milpa's regional dominance, beginning at least in the Late Classic and extending until the end of the Terminal Classic (AD 600–900), is still somewhat unclear. In particular, we do not always know how the center's political role impacted daily domestic behavior elsewhere in the region. Here, I describe research that examined the domestic behaviors at outlying communities by focusing on their domestic landscapes. Domestic landscapes are not just the distribution of habitation or located only in a single household but rather are the integration of habitation into the physical environment through dwellings, subsistence strategies, and topographic modifications. Questions that guide my inquiry include: Did La Milpa's elite influence during the Late and Terminal Classic periods result in regionally similar domestic choices? Were its influences only weakly expressed through diverse interactions resulting in various domestic styles? Or, do domestic landscapes suggest a more complex history of varying degrees of dominance and influence? Comparing domestic landscapes will allow for more complete interpretations of intraregional community interactions.

In addition to its accessibility, Ixno'ha is ideal as the comparison site to La Milpa for two reasons. First, the site is located in a very similar physical environment to La Milpa along the eastern margin of the Petén Karst Plateau and defined by a natural landscape of irregular hills, ridges, and low areas (Dunning et al. 1998, 93). Both sites are situated on top of large upland ridges, with series of upland depressions surrounding both sites (Dunning et al. 1998, 93). Second, the close geographical relationship between La Milpa and Ixno'ha (~13 km apart) suggested that Ixno'ha was well within a La Milpa-centered region but was outside the defined boundaries of the La Milpa community (Everson 2003, 101; Hammond 1991b, 277; Hammond and Tourtellot 1999; Houston 1993, 137; Nelson 2003, 4, 6). The archaeologists working at La Milpa defined it as a bounded community because a large distinct group of public/ritual structures served as a focus for surrounding residential settlement, which ceased about five kilometers from the site center (Everson 2003; Hammond and Tourtellot 1999; Tourtellot, Emerson, and Hammond 2003, 95).

This assessment of the levels of political integration within a regional power structure works within the context of political ecology as described in chapter 1. This research addresses what Lohse (chapter 1) calls the dialectical relationship between elites and non-elites. Hutson (chapter 10) describes these relations in the context of relationality. Looking at the integrating nature of power structures between the large center of La Milpa and smaller site of Ixno'ha directly addresses this dialectical relationship. At the same time, this research concentrates on the oppositional or exclusionary nature of power relationships between elites and non-elites and examines how this relationship is exposed in domestic landscapes.

The Value of Historical Context

A primary goal of this research is to understand the nature of regional political power from the perspective of domestic landscapes but also in relation to region-wide demographic, cultural, and historical changes that took place in the Late–Terminal Classic. Up to this point, archaeologists have based reconstructions of northwestern Belize's power structure primarily on ceramic and "elite" public/ritual architectural evidence (Adams 1995; Houk 1996; Kosakowsky and Sagebiel 1999, 134; Tourtellot, Clarke, and Hammond 1993, 98; see also chapter 2, this volume). When looking at questions of political change, scholars sometimes underrepresent more general classes of data, such as domestic landscapes that are more broadly shared across communities. As a result, we do not always fully understand intraregional community interactions and how (or if) La Milpa's dominance affected different communities' domestic be-

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havior, community ties, and subsistence strategies (see chapter 1, this volume).

It is important to understand these community interactions when archaeologists interpret the geopolitical changes of the Late–Terminal Classic Maya. For example, Demarest, Rice, and Rice (2004, 568–69) suggest that movements of Petén peoples from the west and south affected the demography of northern Petén and Belize, including the Three Rivers Region. They argue that radical population shifts, such as the large population increases and cultural shift documented by researchers in the Three Rivers Region (Adams 1994; Adams et al. 2004; Everson 2003; Hammond and Tourtellot 2004; Houk 1996, 119; Rose 2000, 91), were potentially caused by the Late–Terminal Classic exodus of peoples from the south and west. We do not, however, know how the timing of this local population rise correlates with the movements of people from the Petén. Moreover, Demarest, Price, and Price (2004, 569) note that the nature of this demographic change depended on a variety of local variables, not simply the immigration of new peoples.

DOMESTIC LANDSCAPES AND POWER STRUCTURES

The theoretical basis of this study rests on a series of arguments about how domestic behavior informs and derives from regional power (i.e., organizational) structures. First, I argue that the household is the fundamental unit of a community, the domestic center where culture is produced and reproduced (Stanish 1989, 8; Wilk and Rathje 1982, 618). Second, I argue that habitus, shared habitual social behavior among the households within a community, creates a stamp on the environment: the community's domestic landscape (Halperin 1994, 164; Hart 1995, 57–66; Ingold 2000, 5; Sahlins 1972, 41, 76, 79–81; Wilk 1989, 39). The domestic landscape comprises the total material remains resulting from domestic behavior altering the physical landscape (Chapman 1997, 33; Jackson 1984, 12). Third, I argue that within power structures Maya elites influenced, managed, and even controlled the social settings for an entire community's shared daily interaction and social behavior through, partly, the management of the physical environment (Ashmore 2004; Brady and Ashmore 1999; Mathews and Garber 2004, 56). Fourth, I argue that domestic landscape, as the stamp of habitus on the environment and the material reflection of elite influences (Ingold 2000, 5), is forged in the context of negotiated power relations between those who manage or influence environmental and social settings and those who do not. Given these arguments, comparing domestic landscapes of different communities should say something about how domestic lives were conducted within the context of elite influence over daily social interactions.

Domestic life is located at the dwelling, representing the household, the smallest division of a community organized to meet the productive, distributive, and reproductive needs of its members (Stanish 1989, 8; Wilk and Rathje 1982, 618). Domestic life includes the set of cultural behaviors that revolve around where a household lives, interacts, sleeps, produces food, distributes resources among members, consumes resources, and reproduces itself through the rearing and socializing of children (Wilk and Rathje 1982, 621–31). For this study, community is a coresidential group of households characterized by daily interactions, common experiences, and a shared culture (Bourdieu 1977, 89; 1990, 277; Murdock 1949; Rathje 1983, 24; Wilk and Netting 1984, 2; Yaeger and Canuto 2000, 2). Community, as defined here, is the primary social unit with which a person connects as a source of cultural learning and social behavior.

How people create domestic landscapes varies depending on what Ingold (2000, 5, 153–54) calls "dwelling perspectives" of different groups. Dwelling perspectives include cultural awareness and activities that come from individuals engaging with their environments (Ingold 2000, 5, 153–54); habitus incorporates the routine social practices through which people experience the world around them (Knapp and Ashmore 1999, 20). Thus, Ingold's (2000, 5) "dwelling perspectives" are the cultural ties and awareness that make up habitus. The material result of this habitus-structured human-environment interaction is the domestic landscape (Knapp and Ashmore 1999, 2). Domestic landscapes, as the outcome of held-in-common community experiences, often comprise similar dwellings styles, shared patterns of associated artifacts, and modifications to the environment because of like subsistence behaviors. As an outcome of shared experiences, domestic landscapes are not viewable from the single household but instead

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are the pattern created out of the unity of a single community. Communities create these patterns through the dynamic relationship between people and their environments.

The social settings of this human-environment interaction involve day-to-day behaviors such as subsisting, surviving, and reproducing. Through these relationships and encounters, elites are able to organize and influence interpersonal and intercommunity interactions (Bourdieu 1977; Foucault 1982; Wolf 1990, 586–87; 1999, 5). This form of power is not simply the ability to control an individual's will. Here, power refers to organizational power or the ability to control, influence, and manage the social environments of others (Adams 1975, 12; Wolf 1990, 586). Organizational power fosters an ability to circumscribe the actions of others within particular physical and social settings. Organizational power permeates all society and relations in everyday practice (Adams 1975, 28; Dirks, Eley, and Ortner 1994, 4–5; Foucault 1982).

Organizational power is, however, not so basic that social elites simply control and manage the social settings of all. Rather, these social settings and the resulting domestic landscape are created within the context of negotiated relations of dominance, compliance, resistance, and even indifference over time. Many scholars have suggested the idea that power is in all local interactions occurring in normal everyday practice (Bourdieu 1977; Dirks, Eley, and Ortner 1994, 4; Foucault 1982; Gramsci 1971; Ortner 1994, 403; Williams 1994, 596). In this sense, everyday practices are about negotiating choices of action or inaction depending on desires to conform, endure, or resist. Thus, a spectrum of possible scenarios exist that depend on this negotiation.

Following these arguments, the large variation between Ixno'ha's and La Milpa's domestic landscapes would indicate little cultural cohesion, that La Milpa elites had little influence (i.e., organizational power) over the regional social settings, allowing for a variety of daily domestic choices. This could result in varied house styles, widely distributed populations, and decentralized agricultural production (chapter 8, this volume). Alternatively, strong similarities between the communities would suggest that La Milpa elites possibly maintained a strongly centralized power structure with high levels of influence and management of the social settings. In this circumstance one would see more similarities, rather than differences, between the communities in terms of domestic choices. Another likely scenario is something in between, with some patterns shared and others not, suggesting a weakly centralized power structure with varied power relations between the communities.

Methods and Results

This research compared the large center of La Milpa to the subsidiary community of Ixno'ha by examining individual houses, their immediate surroundings, and associated built landforms (Chapman 1997; Jackson 1984; Kealhofer 1999). I gathered data through surveying, mapping, and excavation. Comparing La Milpa to Ixno'ha in terms of domestic stylistic ties and subsistence strategies required two steps of analysis, the first involving delineating and describing each community's shared domestic landscape. This analysis included considering the arrangement of dwellings relative to each other, to natural features, and to community's property holdings and subsistence infrastructure, such as agricultural terraces and earthen berms (Dunning and Beach 2000; Jackson 1984; Joseph 1997; Kealhofer 1999; Robin 2004, 164). In addition, we looked for community patterns in domestic ceramics by using a type-variety system and vessel-form classification (Kosakowsky and Sagebiel 1999). These analyses contribute to the description of these ancient communities' domestic landscapes.

The second step of analysis involved comparing each community's domestic landscape. This project focused on both commonalities and differences in the shape and use of houses, the array of ceramic forms and types they used, and the distribution of settlement and use of environment. House and settlement data from La Milpa come from several sources. These include Tourtellot's mapping and surveying program to delineate the extent of La Milpa's population and define any settlement boundaries (Tourtellot, Clarke, and Hammond 1993; Tourtellot, González, and Estrada Belli 1999). Settlement data generated by Rose (2000) of Late–Terminal Classic population growth at the site were also employed. A third source was the dissertation research of Everson (2003), in which she studied Terminal Classic settlement patterns based on four different settlement models. Lastly, I conducted a project that investigated the relationship of prehistoric Maya domestic activities and behavior to the environment and natural habitat

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(González 1998a; González and Garibay 2002). The archaeological maps of La Milpa that have resulted from these efforts depict settlement across the landscape and permit estimates of population densities. Various test excavations of house units (ranging in size from 1 × 2 m to 1 × 10 m) revealed construction technique, shape, and function of the presumed domestic structures associated with different social groups.

Unlike La Milpa, Ixno'ha has been the target of research for only a short period of time. The site was first identified in 1991 (Guderjan et al. 1991) but not examined until 2001 (Jon C. Lohse, personal communication, 2001). All data collected from the site have been conducted under the auspices of the Blue Creek Regional Political Ecology Project (BCRPEP). In 2002 the site's public center was mapped by Marc Wolf (González 2004, Figure 4.1), and Dane LaLonde excavated small sections of Ixno'ha's Plaza C (LaLonde 2003) (Figure 7.1). In 2002–2004 I mapped the peripheral settlement (Figure 7.2) using similar methods to Tourtellot's La Milpa work (González 2004, 2005). In 2003–2004 I randomly selected 10 presumed domestic groups and four landform structures, such as linear mounds and terraces, for test excavations that ranged in size from 1 by 2 meters to 1 by 10 meters (González 2004, 2005). Maps of Ixno'ha show settlement distribution across the physical landscape and allow for population-density estimates, similar to those of La Milpa. In addition, because I used excavation techniques similar to those at La Milpa, the Ixno'ha house excavations also revealed construction technique, shape, and function of the presumed domestic structures associated with different social groups.

At both La Milpa and Ixno'ha the structures chosen for excavation came from a statistically stratified random selection process (Read 1975, 58), in which structures chosen came from different areas of the community. Because structures from La Milpa were restricted to the eastern section of the community, however, the selection process was less random. In the first step of the analysis, domestic landscapes at La Milpa and Ixno'ha were defined by three features: (1) shared assemblage of ceramic types and forms, (2) similarities in house shape as measured by basal width and length, and (3) similarities in settlement distribution and use of the physical environment. In the second step of analysis, comparing each community's domestic landscape, I first compared each community's ceramic assemblages through chi-squared analyses that looked at frequencies of vessel forms and ceramic types (Drennan 1996, 187). Second, I used descriptive statistics of the means and standard deviations to look at similarities or differences in house shape between the two communities (see González 1998b; Tourtellot and González 2004). I also used t-tests to determine the statistical probability of the house shapes as potential samples from the same population. Third, I compared the settlement patterns by looking at microenvironments, human-induced changes to the topography and landscape, exploitation of the environment, and population densities and distribution. Presumably, given the vast settlement and population-size differences of La Milpa and Ixno'ha, one would expect different overall settlement patterns. This settlement comparison focuses on the similarities or differences of house distribution in relation to each community's center, other houses, and agricultural infrastructure.

These commonalities and differences allow me to make inferences concerning the nature of the regional power structure. Many factors could explain both variability and similarity between the community's domestic landscapes that are independent of the power structure. Thus, I also considered differences in local environments, unique adaptive strategies, and different cultural histories. Moreover, to clarify my conclusions these comparisons also depend on other related factors, such as community specialization, multiple cultural groups, social-class differentiation, and shifting populations, whether migrations or in-situ changes.

Ceramics

The analysis of ceramic data from La Milpa and Ixno'ha is based on work by Kerry Sagebiel (2005a, 2005b).[1] I looked at two variables in these assemblages—vessel form and ceramic type—and assumed that differences and similarities in ceramic forms and types would be related to daily domestic choices. In addition, I presumed that form and type data related, at least partly, to sources of production and patterns of local exchange and consumption (see chapter 6, this volume). For each variable I compared the two ceramic assemblages within two general time periods: Early Classic and Late Classic.

Unfortunately, the ceramic analysis is a problematic category to use by itself. As is often the case

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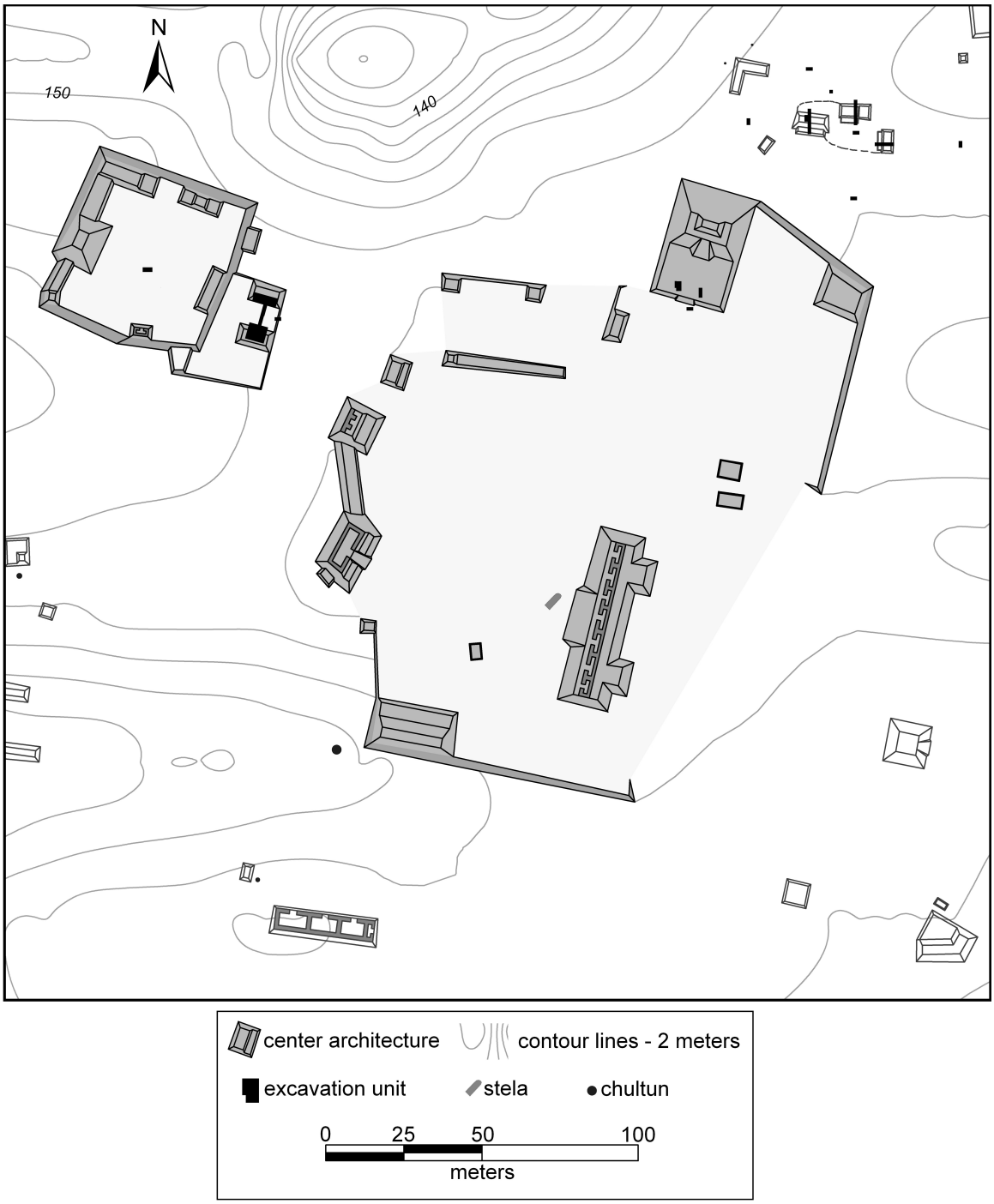

FIGURE 7.1. Site center of the Ixno'ha ruins.

in archaeological projects, I had to account for sampling errors on several different levels. First, the counts are Estimated Vessel Equivalents (EVE) using rim sherds (Orton, Tyers, and Vince 1993, 172–73). Thus, groups of fitted rims and individual unfitted rims each represent a single vessel (La Milpa EVE 472; Ixno'ha EVE 805). This means that the EVE values represent the maximum number of estimated vessels rather than the real vessel number. Second, as in many past Maya houses, very little trash remained behind in primary deposit locations. Thus, the vast majority of the ceramics come from secondary deposits such as architectural fill and features. Third, identifying vessel form from individual rim sherds is

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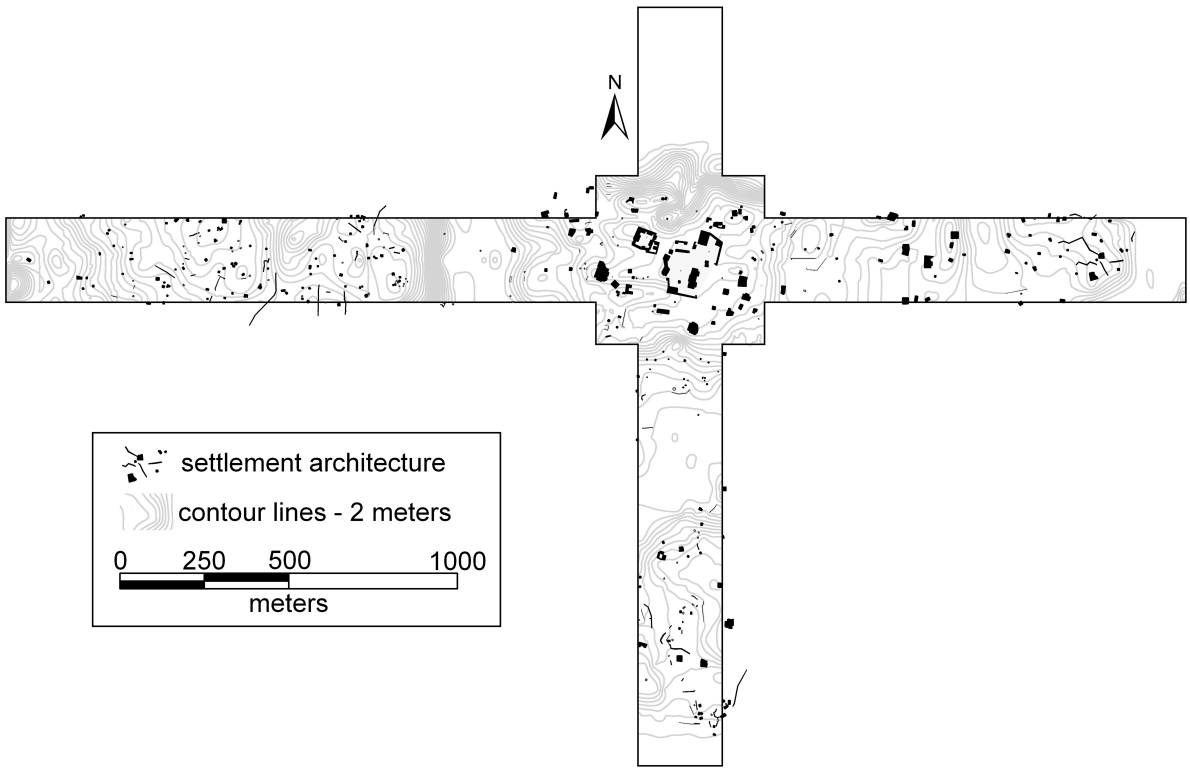

FIGURE 7.2. Mapped peripheral areas of Ixno'ha.

a very subjective process (Gifford 1976, 28–29). The ceramicist Kerry Sagebiel extrapolated the shape of a vessel from the angle rim and estimated diameter.

I compensated for these sampling-error problems in four ways. First, I ran chi-squared analyses on both the total EVE counts and the average number of EVEs per cubic meter of excavated volume. Comparing both ways of analysis compensates for potential errors from using maximum estimated vessels and the differences in excavated volume between La Milpa and Ixno'ha. Second, I also separated the chi-squared analyses in terms of primary and secondary contexts. We know that primary deposits reflect better the past behavior, but the rare occurrences do little to represent the community as a whole. The secondary deposits may better portray the community as a whole but do not allow for direct connections between the domestic areas of use and deposition. Despite this drawback, secondary contexts are useful because they contain greater quantities of material evidence. Third, to compensate for the subjective nature of identifying vessel form I relied on the fact that the ceramic analyst was consistent and rigorous in her techniques. Fourth, ceramic comparisons are only used in conjunction with evidence from domestic architecture and settlement patterns.

The bar graphs and tables present the results of the comparison of vessel forms (Figures 7.3–7.4; Tables 7.1–7.2). From the bar graphs, one concludes that the two communities used somewhat similar types and proportions of vessel forms, particularly bowls, jars, and plates. The differences that do appear seem to be in the proportion of plates and jars; La Milpa had a larger proportional use of jars, and Ixno'ha had a larger proportional use of plates in the Late Classic. To confirm any differences in these proportions, the chi-square did suggest that some differences existed in vessel form. The null hypothesis was that no differences in vessel-form proportions existed between Ixno'ha and La Milpa. For the Early Classic period, I rejected the null hypothesis of no differences, with significance probabilities falling above the 0.05 probability threshold.

I also ran Cramer's V to measure the strength of the relationship (see Drennan 1996). Cramer's V is an index of the degree of correlation where it measures the strength of association between the variables (Drennan 1996, 193). For Late Classic ceramics,

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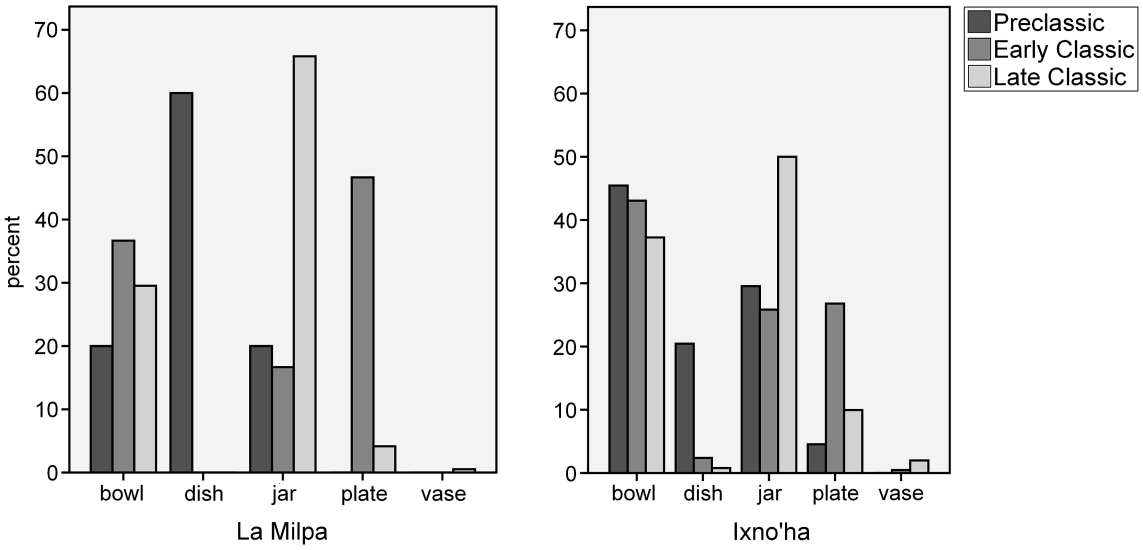

FIGURE 7.3. Bar graphs of proportions of ceramic vessel forms, based on EVE counts for La Milpa and Ixno'ha.

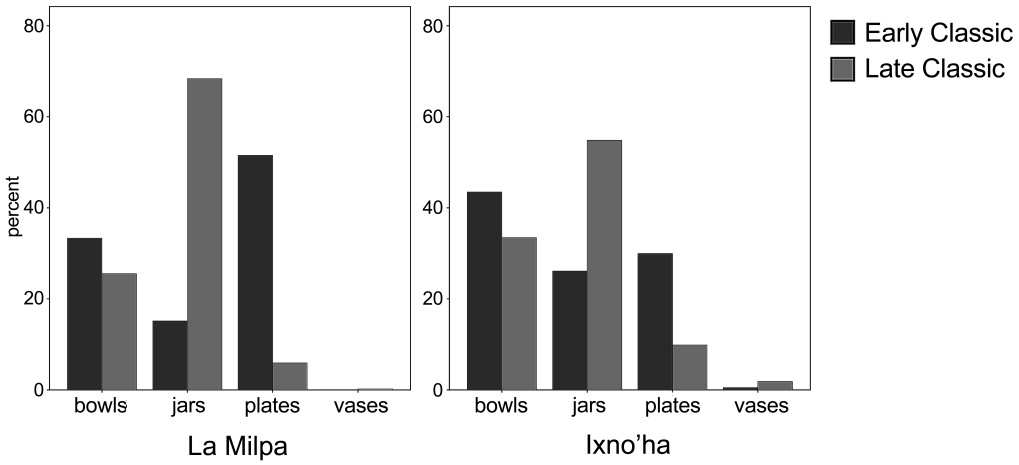

FIGURE 7.4. Bar graphs of proportions of ceramic vessel forms, based on average EVE counts per cubic meter of excavated volume for La Milpa and Ixno'ha.

however, I did not reject the null hypothesis, suggesting that similarities existed in the proportions of vessel forms between the two communities for these periods (falling below the 0.05 probability threshold). For the Late Classic, where I did not reject the null hypothesis, the low Cramer's *V* score, 0.144, suggests that these similarities were not very strong. The comparison of Early Classic vessel forms between La Milpa and Ixno'ha suggested some differences but significant similarities in Late Classic ceramics. The Late Classic vessel-form similarities are not surprising, given evidence of intraregional ceramic exchange in northwestern Belize as well as in places like the central Petén (see Fry 2003; chapter 6, this volume).

I also ran a chi-squared test to determine whether La Milpa and Ixno'ha shared similar patterns of ceramic types (Tables 7.3–7.4). The null hypothesis was that no differences existed in the proportions of ceramic types at La Milpa and Ixno'ha. For Early Classic and Late Classic, based on the total count of estimated vessels, I did not reject the null hypothesis (both falling below the 0.05 probability threshold). Thus, these sites were significantly similar in the proportions of ceramic types for these time periods. In addition, when one looks at the Cramer's

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Table 7.1. Chi-squared test comparing the proportion of ceramic vessel forms, based on total EVE counts at La Milpa and Ixno'ha

Era	No. of cases	2	df	Significance	Cramer's *V* Score
Early Classic	230	4.485	2	0.106	0.140
Late Classic	680	15.027	2	0.001	0.144

Table 7.2. Chi-squared test comparing the proportion of ceramic vessel forms, based on average EVE counts per cubic meter of excavated-volume counts at La Milpa and Ixno'ha

Era	No. of cases	2	df	Significance	Cramer's *V* Score
Early Classic	32	0.282[a]	2	0.869	0.094
Late Classic	138	11.687	2	0.003	0.291

[a] Two cells (33.3%) in the cross-tabulation have expected counts less than five.

Table 7.3. Chi-squared test comparing the proportion of ceramic types, based on total EVE counts at La Milpa and Ixno'ha

Era	No. of Cases	2	df	Significance	Cramer's *V* Score
Early Classic	276	20.451[a]	7	0.005	
Late Classic	803	582.243[b]	17	0.000	0.852

[a] Seven cells (43.8%) in the cross-tabulation have expected counts less than five.

[b] Six cells (16.7%) in the cross-tabulation have expected counts less than five.

Table 7.4. Chi-squared test comparing the proportion of ceramic types, based on average EVE counts per cubic meter excavated of volume counts at La Milpa and Ixno'ha

Era	No. of Cases	2	df	Significance	Cramer's *V* Score
Early Classic	172[a]				
Late Classic	393[b]	221.879	8	0.000	0.751

[a] Because the sample count in most Early Classic ceramic types was below five, I did not compute a ^{2} statistic.

[b] Six cells (33.3%) in the cross-tabulation have expected counts less than five.

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V, one notices that the strength of similarity may have increased over time, with a relatively large Cramer's *V* of 0.698 for the Late Classic. Using the average EVE counts, the Early Classic sample was too small to allow for a chi-squared comparison. Thus, in the end, these chi-squares tell us that we still do not know how the proportions of ceramic types compared in the Preclassic; they may have had similar proportions in the Early Classic, and those similarities probably increased in the Late Classic.

In summary, in the Early Classic some differences may have occurred in vessel forms, but the two communities seemed to have shared similar proportions of ceramic types. By the Late Classic both communities seem to have significantly similar proportions of both vessel forms and ceramic types. Because of the sampling errors noted earlier, however, these ceramic comparisons have little meaning without house-architecture and settlement-pattern evidence, here presented.

House Shapes

Previous research using house measurements from Seibal, Copán, and Tikal suggested that a ratio of architectural length and width has some meaning within each community (González 1998b; Tourtellot and González 2004). In a 1998 study I suggested that house shapes tend to have little variation within communities but are significantly different between communities (González 1998b, 424). In addition, the selection of mapped structures included houses of various sizes, in an attempt to diminish preferences toward houses on either end of the socioeconomic-status spectrum. This research used measurements of base length, base width, height, area, and volume. The results suggested that within a community there was a limited amount of variation (standard deviations) around a mean, but that these means and the variation were significantly different between communities (González 1998b, 355). Of all the measurements, only length and width showed significant variation (González 1998b, 195). Because basal height was more a function of architectural collapse and decomposition, the smaller variation had little significant meaning. Given these results, it was found that the length and width ratios, and thus the shapes of the domestic houses of these three communities, were significantly different (González 1998b, 342–44).

Table 7.5. Means and standard deviations of each site's domestic structures' width-to-length ratios

Site	Count	Mean Width-to-Length Ratio	Standard Deviation
La Milpa	166	2.43	1.48
Ixno'ha	174	2.69	1.40
Copán	12	1.45	0.44
Seibal	104	1.80	0.46
Tikal	23	2.31	1.63

The limited variation in house length and width ratios suggested a shared understanding of house shape within a community. For example, at Seibal and Copán, the standard deviations were small, but each community had significantly different means (Table 7.5). Seibal had a standard deviation of 0.46 with a mean of 1.80. Copán had a standard deviation of 0.44 and a mean of 1.45. T-tests suggested that these means were significantly different (González 1998b, 339). Both of the sites' means were also significantly different than Tikal's, which had a mean of 2.31. Tikal's standard deviation, however, showed much greater variation at 1.63.

Unfortunately it is unclear how much variation between household data sets is needed to suggest significant cultural/social differences within communities. This is an issue that one could solve through much more comparative work between multiple sites. As a rule of thumb, I would estimate that a community where the standard deviation is greater than the mean might suggest that significant cultural/social differences exist within that community. Furthermore, the variation might reflect a scale of differences where larger variation may suggest different cultural and/or social groups within a community or may suggest a lack of community cultural cohesion.

Nevertheless, the same analysis for these two northwestern Belize communities suggests that La Milpa and Ixno'ha have very similar means and standard deviations for width-to-length ratios, indicating very similar types of houses between the sites (see Table 7.6). Ixno'ha's (2.69) and La Milpa's (2.43)

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Table 7.6. T-test results for comparing width-to-length ratios of the domestic structures from La Milpa and Ixno'ha

Levene's Test for Equal Variances*		T-test for Equality of Means						
							95% Confidence Interval of the Difference	
F	Significance	t	df	Significance	Mean Difference	Standard Error Difference	Lower	Upper
0.025	0.825	1.625	338	0.105	0.254	0.156	-0.535	0.562

*Levene's is a statistic testing for the equality of group variances (IBM SPSS software; Lehman 1991, 323–24). This test is not dependent on the assumption of normality. This test is required to decide whether the t-score for equal variances or the t-score for unequal variances is a more accurate measure of the mean differences.

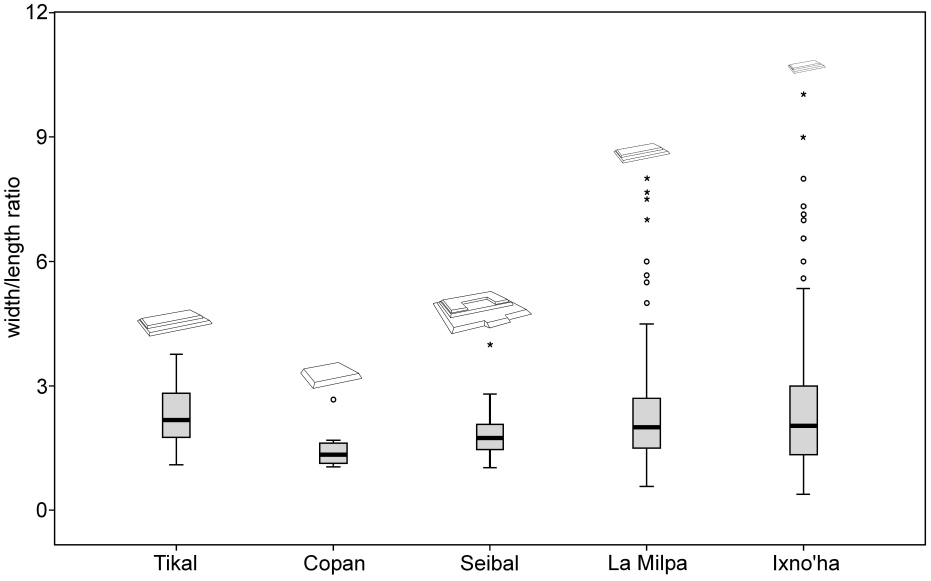

FIGURE 7.5. Box plots of the width-to-length ratios of Tikal, Copán, Seibal, La Milpa, and Ixno'ha, showing the central tendencies and variations for each community.

means of the width-to-length ratios are similar, as is the amount of variation within each community: 1.40 at Ixno'ha compared to 1.48 for La Milpa. This result is supported by an independent t-test of the two sites (see Table 7.5). The t-score of 1.625 and a significance of 0.105 at 95% confidence interval suggest that the Ixno'ha and La Milpa houses are not significantly different from each other in their width-to-length ratio.

To determine whether these similarities between La Milpa and Ixno'ha are meaningful for northwestern Belize or reflect similarities with more distant communities, I compared these houses to the earlier study of Seibal, Copán, and Tikal (Figure 7.5). The descriptive statistics suggest that both La Milpa's and Ixno'ha's width-to-length ratio means and variation are much larger than that of Seibal or Copán, suggesting some potential differences. Table 7.7 is an abbreviated table of the independent t-tests that support this suggestion. Ixno'ha and Seibal had a t-score of 5.09 and significance of 0.00. La Milpa and Seibal had a t-score of 7.62 and a significance of 0.00. La Milpa and Copán had a t-score of 7.41 and a significance of 0.00. Lastly, Ixno'ha and Copán had a t-score of 5.70 and a significance of 0.00.

These results show large differences between the northwestern Belize sites with Copán and Seibal and

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Table 7.7. Abbreviated t-test results for comparing width-to-length ratios of domestic structures from La Milpa and Ixno'ha with Seibal, Tikal, and Copán

Sites	Variances	t-score	Significance
La Milpa and Seibal	Equal	7.62	0.00
La Milpa and Tikal	Unequal	2.04	0.05
La Milpa and Copán	Unequal	7.41	0.00
Ixno'ha and Seibal	Unequal	5.09	0.00
Ixno'ha and Tikal	Unequal	0.64	0.52
Ixno'ha and Copán	Unequal	5.70	0.00

suggest little similarity in the domestic populations of these communities. Alternatively, the width-to-length ratios and the variation of the northwestern Belize houses are much closer to that of the site of Tikal (see Table 7.1). This is supported by an independent t-test where La Milpa and Tikal have a t-score of 2.04 and a significance of 0.05 and Ixno'ha and Tikal have a t-score of 0.64 and a significance of 0.52 (see Table 7.7).

In summary, what these descriptive statistics and t-tests reveal is that Ixno'ha and La Milpa have very similar collections of domestic houses as measured by their width-to-length ratios. Furthermore, this similarity has some regional meaning, because their domestic houses are significantly different from those of inhabitants in Copán on the southeastern edge and Seibal on the western edge of the Maya world. They are not, however, significantly different from the domestic houses of Tikal of the central Petén.

Community Patterns

Finally, I compared each site's community pattern. Both houses and ceramics are strongly implicated in the daily practices of individuals in their domestic environments. Settlement patterns, how people distribute themselves and interact across the landscape, help researchers link these domestic environments together into larger communities. One should certainly assume some differences in the settlement patterns because of La Milpa's Late Classic role as a regional center. This role did not necessarily determine settlement features like population density, environmental-resource use, or subsistence strategies defined by infrastructure. The environments these communities inhabited were very similar. They are both located among the upland hills of northwestern Belize (Figure 7.6). Each site's center is located on the top of large, flat ridges, surrounded by small upland *bajos* and hilly topography (Figure 7.7). Lastly, settlement of each community was distributed to have similar access to several natural resources, including *bajo* margins, limestone quarrying, and chert sources.

Inhabitants in both communities altered the topography in very similar ways by creating large systems of landform structures of berms and terraces. These constructions were long and linear, flattening out the topography in some areas, circumscribing the hills in others, and crossing the topography in yet others (Figure 7.8). Construction techniques of these structures at both sites were very similar, made largely of stone and earth rubble with rough retaining walls (Figure 7.9). At La Milpa, berms and terraces were not present within the central core of the site. These structures were restricted to outside a one-kilometer-diameter circle around the site center. Similarly, at Ixno'ha most landforms are also restricted to 500 meters outside the central precinct.

One of the biggest settlement-pattern differences between La Milpa and Ixno'ha is that of population density. Given that La Milpa was the regional center, it is not surprising to find that it had a larger population, but it also had a much denser population, both in the center and periphery (Table 7.8). Much of the dense La Milpa population spilled into mar-

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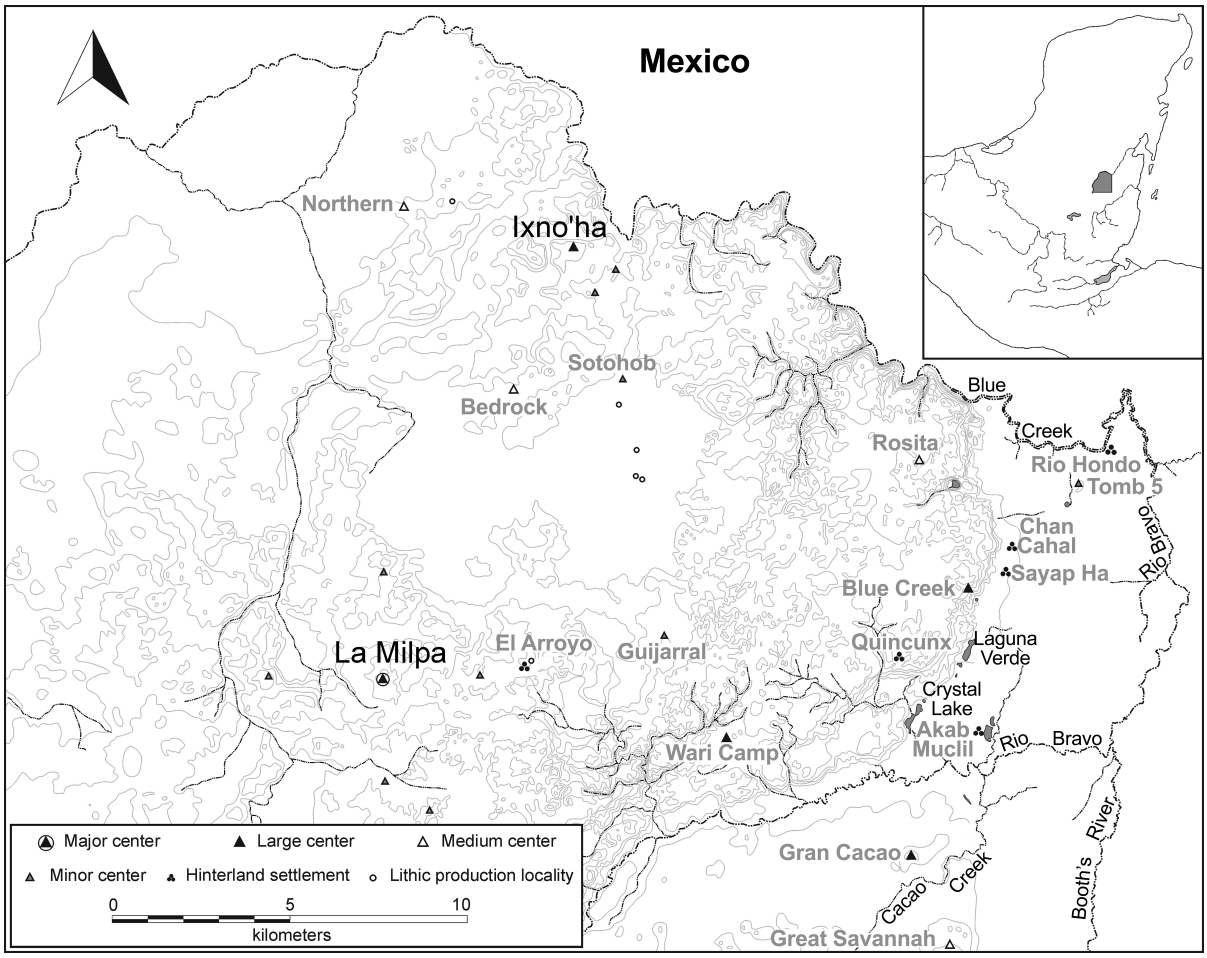

FIGURE 7.6. Topographic map of northwestern Belize.

ginal zones like *bajo* edges and sloping hillsides, unlike the far thinner population of Ixno'ha. One estimation by Everson (2003, 100–104) gave La Milpa a Late Classic population of 783.9 persons per square kilometer, which, within the estimated community area of 78.5 per square kilometers, meant a total population of 61,536. By using Everson's methods, it was determined that Ixno'ha population density was much lower, with 373.7 persons per square kilometer, which equates to a total population of 2,642 within the estimated community area of 7.1 per square kilometers. The differences in population size and density were quite extreme.

The next biggest settlement difference between the two communities was their central core site plans. Brett Houk (1996, 2003) has discussed the similarity of the site plans of La Milpa and other northwestern Belize sites. Houk (2003, 54, 60) suggested that in the beginning of the Late Classic, sites such as Dos Hombres, Kinal, and possibly Gran Cacao or Blue Creek were copying the site of La Milpa or that La Milpa may even have directed the construction of these subsidiary site plans. Very few similarities exist, however, between the central core plans of La Milpa and Ixno'ha. Given Houk's (2003) finding that similar site-center plans indicate direct social and political connections between communities, this suggests that these same connections did not exist between La Milpa and Ixno'ha. Differences between La Milpa and Ixno'ha site center plans might be explained by the fact that there is currently little to no evidence at Ixno'ha of construction in the center during the Late Classic period, despite a proportionally large Late Classic domestic occupation (González 2005; LaLonde 2003; see Figure 7.2). The amount of archaeological excavation in the Ixno'ha site center has been limited to a few small test excavations.

To summarize, both communities used and modified the physical landscape in very similar ways.

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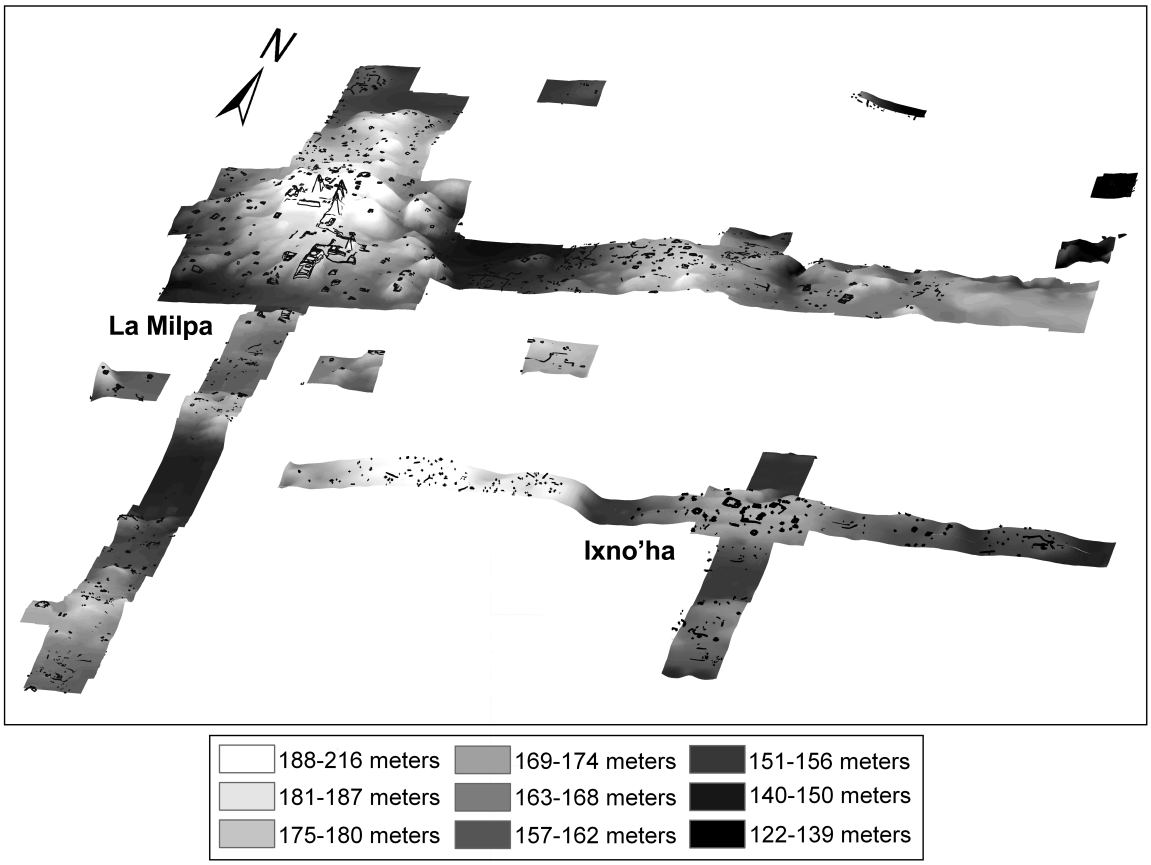

FIGURE 7.7. Three-dimensional topographic maps of La Milpa and Ixno'ha's settlement areas.

They shared patterns in how they placed domestic structures, how they exploited natural resources such as limestone quarrying, and how they managed agricultural soils by altering the topography through terracing and berm construction. The biggest differences are evident in population size and density and in designs and planning of each site's central cores. The differences seem to be in scale and magnitude, but the style, technique, and methods of construction are all strongly alike.

Domestic Landscapes

La Milpa's Late Classic overall domestic landscape was characterized by a community organization that reflected a large and dense population, with people distributed throughout the upland hills that surround the large public center. La Milpa had far less empty space between houses than did Ixno'ha and probably much less than other sites in northwestern Belize. By the peak of La Milpa's occupation, in Late Classic II, much of the population had spilled into marginal zones in and around *bajos* and nearby hillside slopes (Kunen 2004). The shapes of these houses maintained a fairly consistent width-to-length ratio of 2.51 meters and a standard deviation of 1.77 meters. Within these houses by the Late–Terminal Classic, ceramics chosen on a daily basis were significantly similar to those of its subsidiary, Ixno'ha. More often than not, La Milpa residents built their houses in groups and manipulated the soils within and around these structures. Lastly, topographic relief across the community was consistently modified by constructing large systems of terraces and berms. This is the domestic landscape of La Milpa inhabitants.

Ixno'ha was characterized by a low density of people and small population. Like the people of La Milpa, residents of Ixno'ha distributed their houses in the upland hills, on the tops of ridges and small hills. The density of structures is slightly higher near the site center of Ixno'ha than it is in distant hinterlands. Unlike at La Milpa, household farmers at Ixno'ha did not locate many structures near or in the upland *bajos* or other low depressions. As in La Milpa, the shapes

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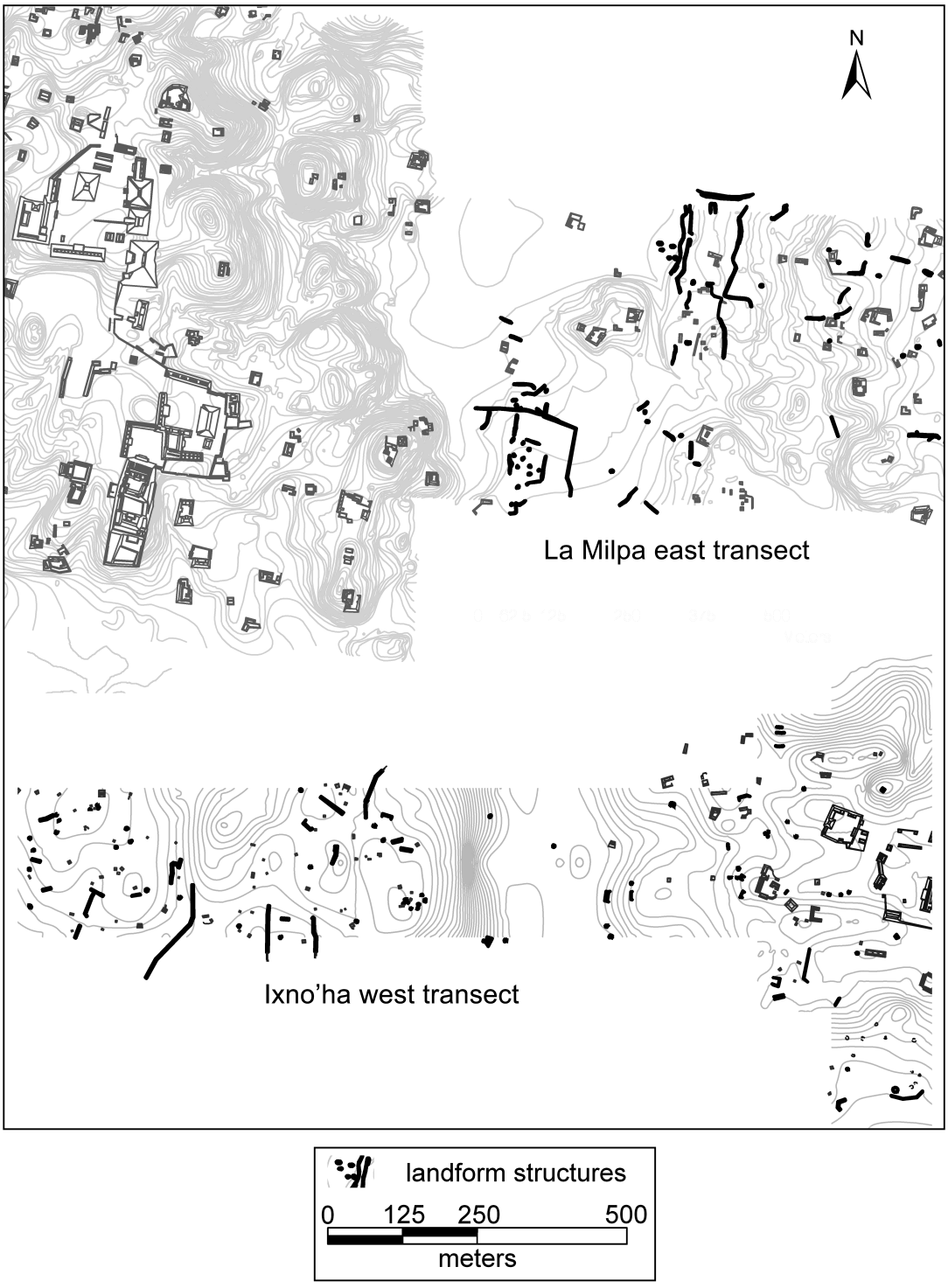

Figure 7.8. Landform structures of La Milpa and Ixno'ha.

of houses in Ixno'ha were largely consistent with a similar width-to-length ratio of 2.44 meters and a standard deviation of 1.46 meters. By the Late and Terminal Classic periods Ixno'ha's domestic ceramic assemblage was largely similar to La Milpa's, suggesting similar domestic activities. Finally, how Ixno'ha and La Milpa inhabitants lived in the physical environment and created domestic spaces was very similar. Ixno'ha people constructed their houses in groups and manipulated their soils around these

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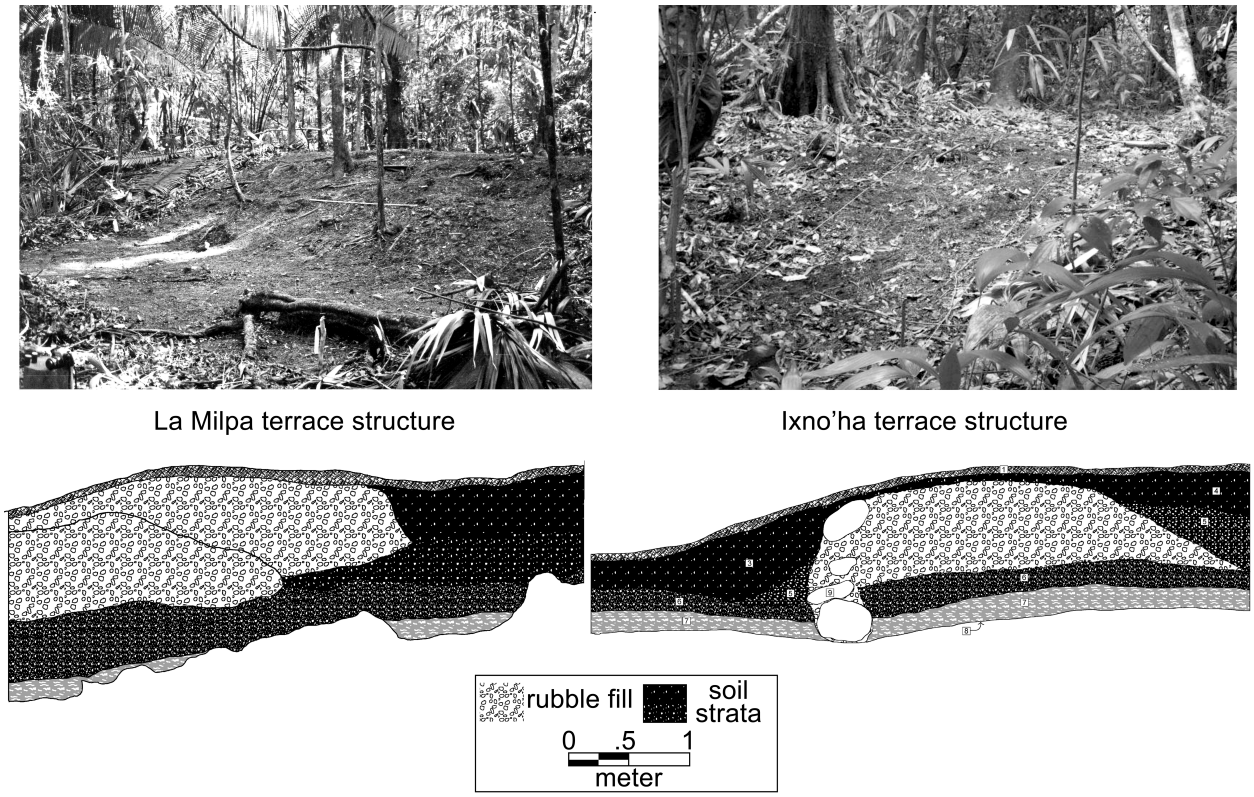

FIGURE 7.9. Profiles of terrace structures at La Milpa and Ixno'ha.

Table 7.8. Late Classic population estimates for La Milpa and Ixno'ha

Site	Total Area (km^2)	Population Density (persons per km^2)	Total Estimated Population
La Milpa	78.5	783.9	61,536
Ixno'ha	7.1	373.7	2,642

domestic areas. Ixno'ha inhabitants also created similar long berm and terracing systems throughout their communities, altering the topography and the physical landscape. This is the Ixno'ha Late Classic domestic landscape.

CONCLUSIONS

In considering the nature of structural power linking these two communities, several factors might account for the variations and similarities observed in their domestic landscapes. Factors that explain similarities between the communities might include similar microenvironments or shared cultural identities and histories. Factors that might explain the variation include different specializations or adaptations, social-class differentiation, or the existence of multiple cultural groups. After acknowledging the possibility of these factors, one can begin to filter out the structural power relationships between La Milpa and Ixno'ha.

The similarities between the communities may have different origins or may be complicated by factors other than a power relationship. Both sites have access to similar natural resources, meaning that the nearly identical forms of landscape engineering and

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modification discussed here may simply reflect common adaptation strategies. Environmental similarities only partially explain the similarity in how they interacted with their physical landscapes. Terrace agriculture is common in many areas of the Maya world, but the use and construction of these particular berms and terraces systems were not extensively created across the Maya region (see Tourtellot, González, and Estrada Belli 1999; Turner 1983, 89–91). In addition, shared culture history and identity would certainly explain a lot of the similarity, but we cannot tease apart that shared cultural understanding from the power relationships. Instead, the shared history would define the context in which these power relationships took place.

One might explain the variation by factors that are not related to a shared structural power connection. One possibility is whether one or both communities had unique adaptations or specialized in some manner. Neither La Milpa nor Ixno'ha has any obvious evidence for economic specialization, and, with the possible exception of some trade items (see chapter 6, this volume), these communities were probably equal producers and consumers of most utilitarian goods. This does not mean that neither community was economically specialized, only that more research is necessary to address this point. La Milpa does potentially have evidence of specialization as a primary ritual/cosmological center. Archaeologists working at La Milpa base this conclusion on the site planning of the site center and the location of cardinally important minor centers (see Tourtellot, Clarke, and Hammond 2003).

Another possibility is whether differences in social class between La Milpa and Ixno'ha might account for variation, particularly the population differences. Presumably, La Milpa, as the larger community and regional center, would exhibit class differences not apparent at Ixno'ha. Lastly, variation between the two communities in house shapes and ceramic assemblages may suggest the presence of multiple cultural groups. This would certainly help account for the dramatic increase in population across the region in the Late Classic, as discussed by others (see chapter 2, this volume).

Even after considering these factors, one might still expect that La Milpa's regional dominance would have had some dampening or influential effect on domestic choices in subsidiary communities. This may very well be true given the overall similarities between the communities in their house shapes, ceramic assemblages, and subsistence strategies in environmental usage. Much of the difference between the communities is probably best explained by La Milpa's role as the regional center. But, precisely what kind of center was La Milpa? It is not obvious that La Milpa was a strongly centralized center that through its organizational power managed the choices and actions of all domestic choices throughout the region. This mix of similarities and differences would suggest that La Milpa was a weakly centralized center that had some, but not an overwhelming, role in organizing and influencing the actions and choices of many people throughout the region. But, in addition to these possible outcomes, organizational power involves a complex set of relationships that occur on multiple scales and develop over long periods of time.

If La Milpa elites truly lacked the ability to influence the domestic lives within other sites in the region, then should one also expect differences between domestic landscapes in the two sites? This analysis indeed shows that the two communities possibly had different proportions of ceramic vessel *forms* in the Early Classic leading toward greater similarities in the Late Classic, although this was not true for ceramic *types*. In fact, overall the ceramic assemblages are similar. Sagebiel (2005a, 756; 2005b, 25–26) believes that Ixno'ha had a heavier component of Yucatán ceramics, which reveals a heavier northern influence at that site than at La Milpa. Yucatán ceramics do not dominate the Ixno'ha assemblage, and the similarities between the two ceramic assemblages are greater than the differences. This small ceramic difference might suggest that different groups of peoples were occupying these communities. Also, the sites' settlement patterns differed greatly in site planning and population densities. Although the population densities can be attributed to differences in community scales, Ixno'ha clearly stands out from La Milpa and other centers in the region in the layout of its central zone (see Figure 2.3).

The primary conclusion of this study, then, is that the array of similarities and differences in the domestic landscapes is suggestive of complex and dynamic relationships between La Milpa and Ixno'ha rather than one based on simple dominance or subservience.

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Clearly, La Milpa was the regional social, ritual, political, and economic center. Ixno'ha certainly had a secondary role in this hierarchical relationship. Despite the similarities and based on the demonstrated differences between the communities, Ixno'ha residents appear to have been leading their daily lives relatively free from the wants and demands of La Milpa elites. This was particularly true in the Late Classic and is seen in larger variation in house shapes within La Milpa and Ixno'ha. The increased cultural variation of the Late Classic period of northwestern Belize may very well indicate populations in-migrating from the central Petén or elsewhere. Of course, this factor does not preclude other forms of La Milpa political or economic domination across the region.

As mentioned earlier, organizational power is exercised through daily social settings and encounters, even as those social settings change. Although these kinds of power-laden relationships are about managing and influencing people's choices in certain ways, they are not always about coercion or the ability to control others. Organizational power is embedded in the way all people do things, regardless of their station in a social hierarchy. One guiding assumption of this research has been that social elites existed within these communities. Archaeologists understand enough about the structure of Maya regional hierarchies to know that the political pecking order between rulers of sites of different stature, like La Milpa and Ixno'ha, follows rank-order relationships indicated by size, monumentality, and other variables discussed by Houk and Lohse (chapter 2). The question remains whether La Milpa elites held sway over both the elites and populations of subordinate communities like Ixno'ha and if so, through what mechanisms was this accomplished.

I have presumed that organizational power wielded by La Milpa elites would result in fairly similar domestic landscapes throughout northwestern Belize. Indeed, when the domestic landscapes of La Milpa and Ixno'ha are compared, they are similar in many ways. The inhabitants of each community displayed a strong tendency to build houses with similar width-to-length ratios. Their ceramic assemblages display commonalties in vessel forms and types. Finally, the two communities interacted with their local environments in very similar ways. But, many important differences exist within each site's domestic landscape. For example, variation of house-shape measurements within each site was great compared to sites such as Seibal and Copán. One possible explanation for this pattern is that greater variation resulted from Late-to-Terminal Classic in-migrations into the region, as noted earlier. In this case, within-site variability may reflect the blending of multiple cultural identities in these communities.

Whatever form they took, these power relationships existed within the greater context of historical events affecting the central Petén and much of the Maya world and need to be understood as such. Historical reconstructions suggest strong central Petén influence during the Early Classic that emanated from Tikal through its growing network of regional satellites. The ceramic component in the domestic landscapes of northwestern Belize certainly suggests greater conformity in the Early Classic and perhaps links the region with Tikal during that time period. By the Late Classic, though, evidence exists of increased community differences as well as increased variation of ceramic styles between La Milpa and Ixno'ha (chapter 6, this volume). This increasing variation between and within sites in northwestern Belize may indicate a Late Classic in-migration of peoples escaping the political collapses that were occurring at that time in southern and western Petén as well as others coming from northern Yucatán in the Terminal Classic. At the same time the data show clear similarity between the house shapes of La Milpa, Ixno'ha, and Tikal. This similarity could mean that northwestern Belize maintained close cultural and social ties to the central Petén into the Late Classic despite the political turmoil that wracked the central lowlands; these ties would have made the region an ideal destination for people fleeing the conflicts and political insecurity of the central Petén.

Based on data presented here, it is clear that La Milpa did not directly dominate the rural inhabitants of Ixno'ha. Rather, political ties are more likely to have existed directly between elites at the two communities. Given the relative autonomy of Ixno'ha inhabitants, one would presume that La Milpa was a weakly centralized regional center, but clearly future work at these two sites should consider this proposition. Even though these links appear to have had only some bearing on the organization of domestic life at Ixno'ha, La Milpa was by far the largest political center of Late Classic northwestern Belize and almost certainly played a central role in the region's Late and Terminal

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Classic florescence. As shown in this analysis, however, the ways in which that role was realized at the ground level were strongly shaped by a wide array of factors that were frequently outside the ability of site rulers to control.

NOTE

1. Kerry Sagebiel (2005a, 2005b) analyzed the majority of ceramics from both La Milpa and Ixno'ha. Laura Kosakowsky added some analysis to La Milpa's ceramic database, as did Lauren Sullivan for the Ixno'ha ceramics.

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Chapter 8

Hinterland Diversity and Ancient Maya Political Economy in Northwestern Belize

Sarah C. Clayton

Complex societies are characterized by institutionalized social inequality among the individuals and social groups that they comprise. Archaeologists seek to understand how the political institutions integral to complex societies are supported as well as how social disparities develop and persist. These questions necessitate research on the political and economic interactions that forge links across social and spatial landscapes. An abundance of research has centered on the development and maintenance of vertical relationships between powerful minorities (elites) and the majority (commoners) (Brumfiel 2000; Chase and Chase 1992; Earle 1991; Joyce, Bustamante, and Levine 2001; Lohse 2007). Unfortunately, there has been a tendency in the discipline to emphasize the roles of elite agents in structuring political-economic systems while overlooking the actions of commoners (Brumfiel 1992; Joyce, Bustamante, and Levine 2001; Lohse and Valdez 2004). Political-economic systems in complex societies cannot be understood holistically without balanced attention to the activities and contributions of all social strata.

In this chapter I discuss and compare two small settlements, Chan Cahal and Rio Hondo, situated four kilometers apart and within six kilometers of the monumental center of Blue Creek, located in the Three Rivers Region of Belize (Figure 8.1). As settlements located beyond the political center but within its sphere of economic and political influence, these are considered here to constitute hinterland settlements. Hinterland settlements and populations are often crucial for sustaining central political institutions and their personnel through contributions (willing or coerced) of labor, agricultural surpluses, and material resources. Investigating variation among small settlements is, therefore, imperative for understanding how larger-scale sociopolitical institutions developed and changed (Robin 2012; Schwartz and Falconer 1994; Yaeger 2003). Households and communities belonging to larger polities exercise a variety of strategies in negotiating their environmental, socioeconomic, and political circumstances. This variation may be traced in the material record associated with distinct settlements, which reflects the cumulative decisions and behaviors of their inhabitants. In this chapter I consider how Chan Cahal and Rio Hondo differed in their internal social dynamics, participation in regional exchange networks, and integration with central elite institutions.

I begin by examining architectural variation to understand the ways in which settlements may have been differently organized into social and economic groups and the activities that are likely to have structured and symbolized these groups. I then turn to a comparison of artifact assemblages at each settlement

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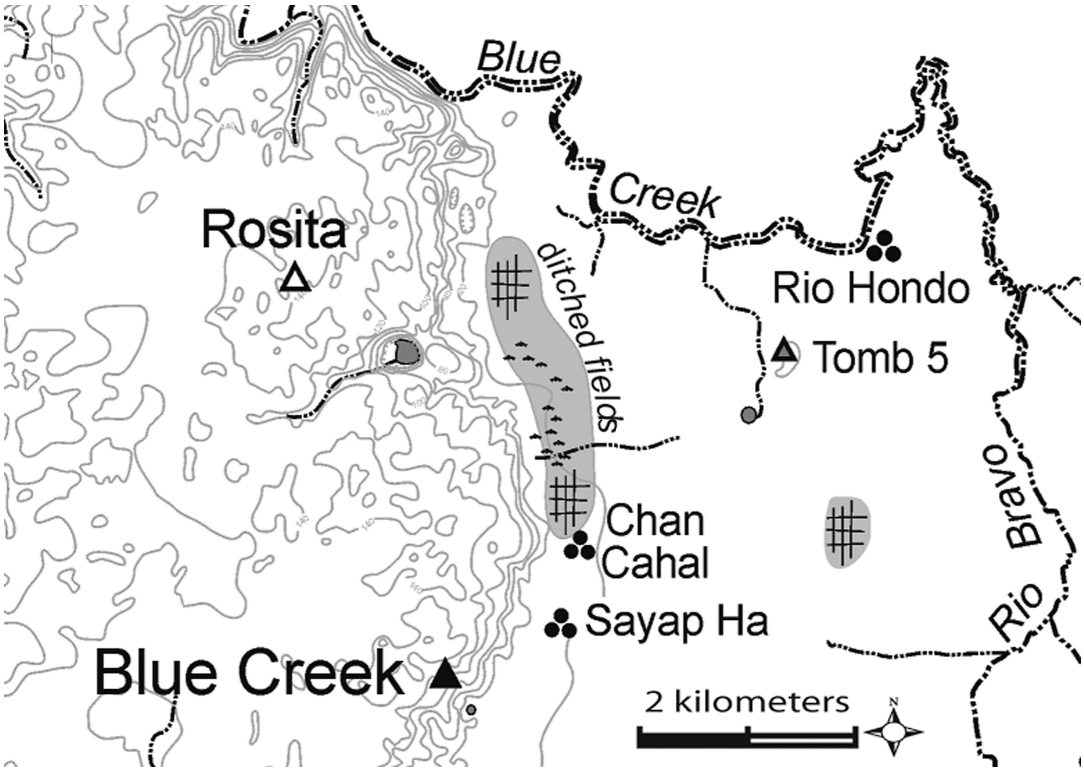

FIGURE 8.1. Region map showing Chan Cahal, Sayap Ha, and Rio Hondo.

to determine whether, and to what degree, they exhibit differing patterns of consumption and household provisioning. I focus on specific categories of lithic and ceramic artifacts that were produced in the Blue Creek area (e.g., chert tools from local workshops, plain and polychrome pottery) and imported from great distances away (e.g., obsidian and fine chert tools). This investigation is neither intended nor equipped to comprehensively reconstruct the regional economy. A comparison of the range of products that hinterland households had access to, however, sheds light on regional economic integration as well as the degree of socioeconomic heterogeneity present among hinterland communities.

Despite having much in common as agrarian settlements within the sphere of influence of the Blue Creek polity, Chan Cahal and Rio Hondo differ in architectural investment, longevity, internal status disparities, and the consumption of imported goods. Variation along these dimensions reflects community-specific adjustments to several ecological and social factors, including relative quality of agricultural land, distance to the Blue Creek center, and political processes affecting the region.

POLITICAL POWER AND ECONOMY IN MAYA SOCIETY

The relationship between political power and control over economic systems in Classic (AD 250–850) Maya states has long been of interest to archaeologists. The degree to which they were centralized and the extent to which elites controlled the production and distribution of goods remain debated issues. Some (e.g., Adams and Jones 1981; Henderson 1997; Marcus 1993) have argued that ruling elites had significant control over most, if not all, aspects of the economy. Others (Demarest 1996, 2004; Freidel 1986) maintain that elite power was based on ritual action and genealogical legitimacy, with little effect on economies. Although there are data to support elite control of the circulation of sumptuary goods through mechanisms such as gift exchange (Foias 2002; Inomata 2001), elite management of subsistence economies is less likely. Archaeological research reveals a complex and dynamic picture in which the relationships between politics and economy varied regionally and through time (Chase and Chase 1996; Demarest 1996, 2004).

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Political-economic relationships are often assumed to have existed between hinterland sites and monumental centers based on spatial proximity. The presence of monumental architecture at centers is evidence for the existence of elite institutions that were able to solicit or coerce labor and resources from large numbers of people (Trigger 1990). It is important, however, to recognize that neither the mechanisms through which occupants of hinterland areas were subject to political authority associated with centers such as Blue Creek, nor the strength of political ties, are readily apparent. The presence and intensity of these relationships varied through space and time and must be investigated from settlement to settlement.

That Maya political organization remains so enigmatic largely results from archaeology's historical tendency to focus on site centers without adequately studying the surrounding regions in which they were situated. To be sure, several archaeologists working in the Maya lowlands have pursued valuable research that is regional and macroregional in scale (Gonlin 1994; Graham 1987; Iannone and Connell 2003; Robin 2012; Willey et al. 1994; Willey, Bullard, and Glass 1965; Yaeger and Robin 2004). In general, however, archaeologists have been slow to integrate data from monumental centers and elite residences with comparably detailed data from hinterland settlements. Until recently, regional archaeology was conducted via settlement survey and test pitting (Webster and Gonlin 1988, 170) rather than by extensive excavation. A growing body of data from domestic structures and other contexts of activity in the hinterlands is now permitting us to trace processes of production and exchange on larger sociospatial scales and to comprehend in fuller measure the sociopolitical structure of Maya states.

THE ENVIRONMENTAL AND SOCIAL LANDSCAPE

The settlements compared in this chapter, Chan Cahal and Rio Hondo, are respectively located 1.2 kilometers and 5.2 kilometers northeast of Blue Creek, which is by far the nearest large, monumental center to these settlements (see also chapter 2, this volume). Chan Cahal (Figure 8.2) was originally thought of as two distinct settlements (Lichtenstein 2000) called Chan Cahal, to the north, and Sayap Ha, to the south (Figure 8.2). Subsequent excavations (Giacometti 2002), however, revealed continuous settlement between these two areas; throughout this chapter, any reference to Chan Cahal is, therefore, intended to encompass both of these archaeological areas. Rio Hondo (Figure 8.3) is named for its location along the river that forms the border between Belize and Quintana Roo, Mexico.

Blue Creek is situated atop the Rio Bravo Escarpment, a dramatic feature running north-south that separates the landscape into two broad environmental zones, with the upland Petén Plateau to the west and the low-lying Belize Coastal Plain to the east. Blue Creek was positioned to utilize resources from two different environmental zones. The processes and routes of commodity circulation among settlements in these zones, however, remain obscure. The hinterland sites examined here are both located in the coastal plain, but their immediate environmental settings subtly differed. These differences are sure to have shaped their respective subsistence and resource procurement practices in unique ways.

Chan Cahal comprises a one-square-kilometer area located directly at the base of the Rio Bravo Escarpment, situated on a shelf of land elevated slightly above the swampy, low-lying zone to the east. Springs at the base of this escarpment would have provided water for agriculture throughout the year, and the occupants of the area employed both terraced slopes and ditched wetland fields for subsistence (see chapter 3, this volume). The setting of Chan Cahal seems strategic in that gradual differences in elevation across the settlement would have allowed for both dry- and wet-farming practices. A combination of practices may have mitigated risks of production failure. An approximately six-square-kilometer ancient ditched-field system has been observed between the escarpment and the Rio Bravo, especially around the northern part of the settlement (Beach and Luzzadder-Beach 2005). Ditched-field systems were used intensively, at least during the Late Classic period (Beach et al. 2004). Agricultural goods that may potentially have been used by Chan Cahal inhabitants or exported to other settlements include food products, textile resources, palm, and cacao (Giacometti 2002).

In all, 83 structures have been recorded as part of the Chan Cahal settlement, and various researchers have excavated approximately 40 of these (Giacometti 2002; Lichtenstein 2000; Popson and

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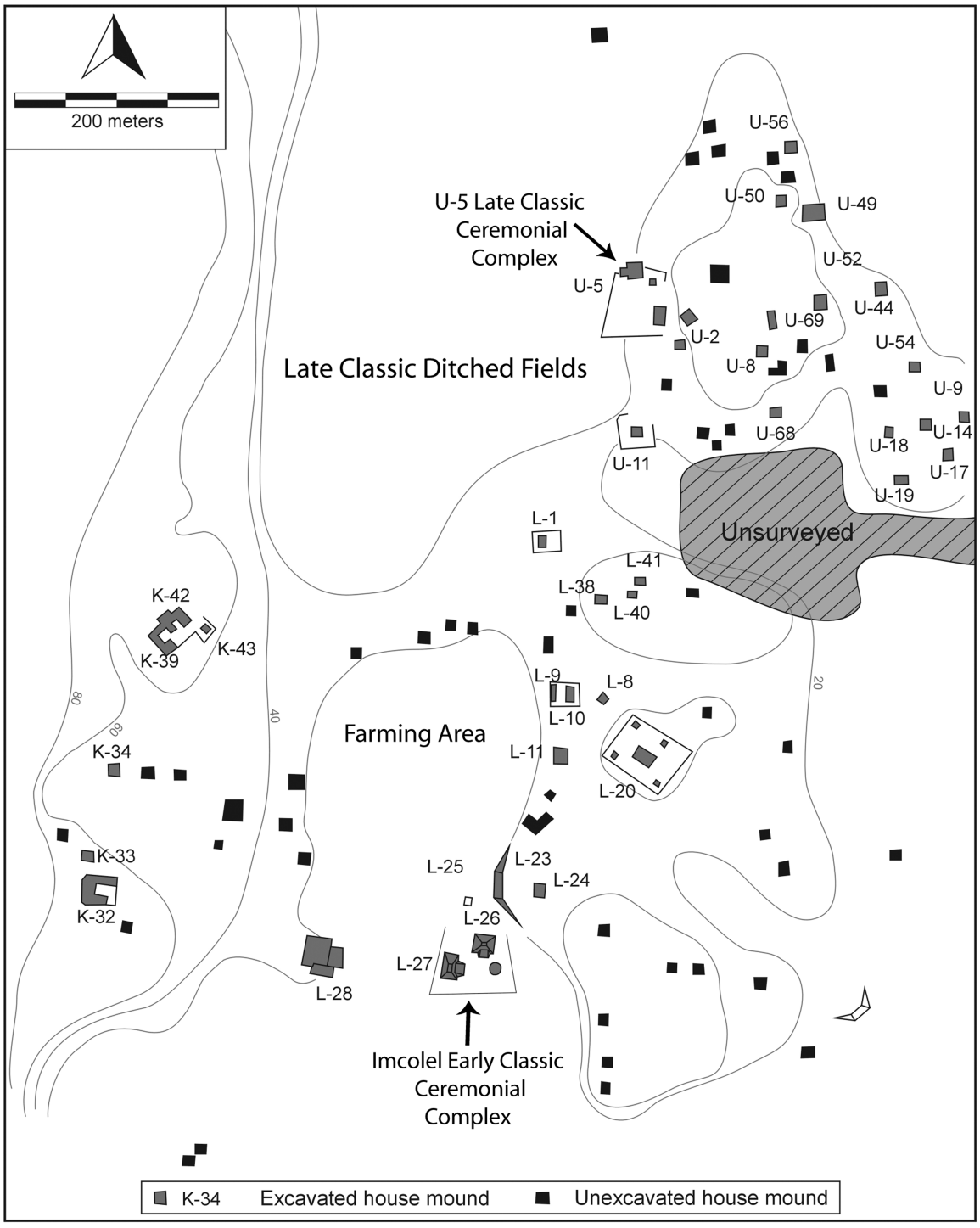

Map by Antoine Giacometti based on field data compiled by Blue Creek Archaeology Project, 2002 Season.
Courtesy of Blue Creek Regional Political Ecology Project.

FIGURE 8.3. Chan Cahal settlement area.

Clagett 1999). Most of these excavations have been geared toward developing chronology, with very few extensive investigations of any of the structures (Giacometti 2002). Chan Cahal was occupied throughout the entire history of the Blue Creek polity, from the early Middle Preclassic to the Terminal Classic.

In contrast to Chan Cahal, Rio Hondo has undergone much less extensive survey, and the precise

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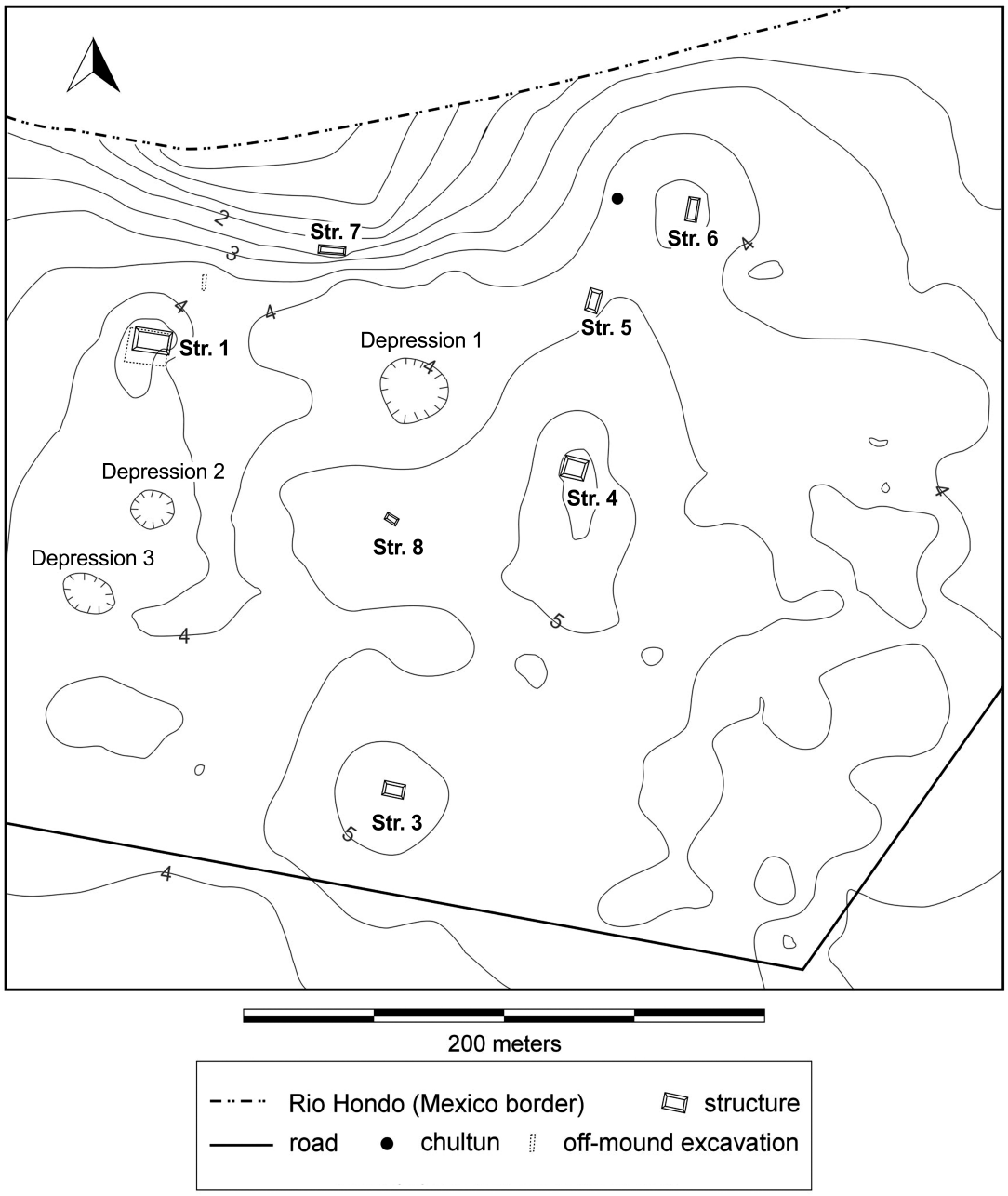

FIGURE 8.3. Rio Hondo settlement area, northwestern Belize.

size of the settlement remains uncertain due to its location on the banks of the Rio Hondo. The area across the river could not be explored due to permit limitations, but survey on the Belize side revealed that Rio Hondo mounds are generally smaller than those at Chan Cahal and more loosely dispersed. Six mounds were excavated in 2002, corresponding to at least three households (Clayton 2003).

Rio Hondo is situated 4.5 meters above sea level in a low-lying river floodplain, where a range of resources were accessible, from fish and freshwater snails (*Pachychilus* spp., commonly known as *jute*) as food sources to cobbles for construction. Although river water was immediately available for wetland farming, the shallow depth and clayey character of the soil would have presented significant challenges to agricultural productivity. Deep trenching to bedrock in 2002 demonstrated that this low-lying settlement rested on layers of clay and degraded limestone, which inhibit drainage. In this setting

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rainwater and river overflow tend to stagnate in low pockets for weeks.

Despite agricultural and architectural vulnerability to frequent flooding during the rainy season, there were certainly some benefits to living on the banks of the river, which would have provided transportation and access to goods circulated by canoe. These may have included a variety of products from the Three Rivers Region as well as goods imported from great distances away via water routes that likely included the Rio Hondo.

In contrast to Chan Cahal, excavations at Rio Hondo reveal a short-lived occupation lasting a few generations over the transition from the late Early Classic through Late Classic I, ca. AD 500–650. The entire occupation of Rio Hondo occurred during a time of considerable change in the elite realm of the Blue Creek center and across the Three Rivers Region (chapter 2, this volume).

In chapter 4 of this volume, Driver and Kosakowsky outline several noteworthy transformations in Blue Creek's internal sociopolitical structure as well as its interregional political and economic relationships through time. These transitions were marked by changes to the built environment and ceramic assemblages, which I do not review in detail here. It is important, though, to consider how and whether daily life at hinterland settlements such as Chan Cahal and Rio Hondo changed in step with salient sociopolitical processes and shifting elite strategies occurring at the Blue Creek center. During the transition from the Early to Late Classic, Blue Creek elites were establishing new sacred spaces and restricting public access to the civic ceremonial core. During the Late Classic most architectural energy was focused on the maintenance and expansion of private, elite residences, but the first ball court in the area may also have been erected at this time. Previously important trade relationships with the central Petén were interrupted, marked by a sharp decrease in Petén pottery in the beginning of the Late Classic (Sullivan 2002; Sullivan and Sagebiel 2003). The elite of Blue Creek may have become more regionally focused during this period, positioning themselves vis-à-vis larger centers located nearby, such as La Milpa. Some have argued that the impacts of social and political transition are generally more deeply felt by elite institutions than by commoners, whose lifeways may be more resilient (e.g., Joyce, Bustamante, and Levine 2001). Material evidence from Rio Hondo and Chan Cahal indicate, however, that significant transformations also occurred in the Blue Creek hinterlands during the transition from the Early to Late Classic. These changes, together with data pertaining to internal social organization and participation in regional exchange networks, are here discussed.

Architecture, Ritual, and Social Organization at Chan Cahal and Rio Hondo

The social units associated with settlements, such as local communities (Yaeger 2000, 125) or corporate groups (Hayden and Cannon 1982), are difficult to define; they may coalesce in specific contexts of behavior and their boundaries may change. Several lines of material evidence may be used by archaeologists to understand how residential groups in spatial proximity may have been socially organized. Architectural data are particularly relevant for estimating the sizes of households and determining their distances from each other as well as for comprehending the activities through which suprahousehold social units were organized. Monumental architecture has traditionally been used by archaeologists to reconstruct hierarchical relationships between centers and subordinate settlements. The implications of smaller-scale ceremonial architecture for intrasettlement social organization and notions of community among hinterland settlements must not be overlooked (Zaro and Lohse 2005).

Structures that accommodate the gathering of suprahousehold groups are an important means of group-level identification. The activities associated with such spaces structure relationships among individuals and households and often define and express their roles and obligations with respect to one another. They provide opportunities for shared participation in activities with integrative qualities (e.g., life-crisis and cyclical rituals, storytelling, feasting, dancing) and serve as visual reminders of these activities. In this respect, architecture may symbolize and reinforce economic or ritual cooperation (Hegmon 1989). These integrative functions do not preclude the promotion of social inequalities, however. Structures may perpetuate hierarchies via the exclusion of individuals from the space or from particular activities occurring therein (Clayton 2006; Joyce 2004;

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Love 1999). For the Classic Maya, architectural structures, including residences, materially document the rights of lineages to land and other resources (McAnany 1995, 99) and legitimate the transmission of these rights through generations.

Chan Cahal

The longevity of occupation at Chan Cahal was likely associated with long-term ties to the land and its resources for at least some of the many households that occupied the area. Throughout the Classic period two to three architectural complexes served as loci for the kinds of suprahousehold ritual and social activities that reinforced ties and obligations among households and perhaps undergirded notions of community identity.

During the Early Classic a plaza group referred to as Imcolel (see Figure 8.2) was constructed, comprising two pyramids, L-26 and L-27, each of which was less than four meters high. These two structures and the platform they rest on were identified by the excavator as a "hinterland plaza complex" (Giacometti 2002, 15). This concept is meant to encompass varied hinterland architectural groups that operated as social, ceremonial, or administrative hubs of suprahousehold activity. Imcolel was built amid domestic structures on the edge of a low-lying area that was optimal for farming. Its location and monumental nature suggest that it may have been associated with rituals related to agricultural cycles. One of Imcolel's most interesting features is a circular platform (Figure 8.4), an architectural form often associated with public architecture at hinterland sites, though it more frequently occurs in Preclassic contexts (Aimers, Powis, and Awe 2000). Circular platforms have been identified at other hinterland sites in upper northwestern Belize, including Quincunx (Zaro and Lohse 2005) and Rosita (Clayton 2004). Aimers, Powis, and Awe (2000) suggest that this architectural form was used for ritual dancing, a reasonable interpretation, given the ubiquity of dancing scenes in Maya figural art (Freidel, Schele, and Parker 1993, 259). The Imcolel complex, as a minor monumental construction containing labor-intensive architectural components, was a material manifestation of actions that structured local leadership and social organization.

The burial of a spectacularly adorned male, aged 20–30 years, in an otherwise nondescript domestic structure provides additional evidence of internal social complexity at Chan Cahal. This burial, SH.2, was located in Structure L.11, near Imcolel (Giacometti 2002, 58). Among the objects associated with the body were two marine shell disks, placed on either side of the head, each inlaid with jade, hematite, shell, and bone and incised with the image of a person making an offering and (Figure 8.5). Bone beads located down the length of the spine suggest a headdress or ornamented braid. Jade and hematite beads and an intricately carved bone pendant (Figure 8.6) were also included as well as 31 obsidian artifacts. Most of the obsidian tools show signs of heavy use, suggesting that the man may have been an artisan who worked with obsidian; in any case, the quality of his burial goods suggests that he held a prominent social position. His burial treatment is strikingly lavish compared with other burials in the hinterlands of the Three Rivers Region and even those discovered in the elite residences of Blue Creek.

The Imcolel complex fell into disuse by the end of the Early Classic, when the hub of agricultural and ritual activity evidently shifted northward to a complex called U5, which is similar in size and form to Imcolel and is also located among house mounds. Structure U5 sits at the edge of an extensive system of ditched fields, the construction of which began by the end of the Early Classic and continued into the Late Classic (Beach and Luzzadder-Beach 2005; chapter 3, this volume). These fields were labor intensive, and the rise of U5 as a new locus of suprahousehold activity at Chan Cahal suggests that it played a key role in the effective organization of this labor.

The agricultural shift and accompanying reorganization of ceremonial space within Chan Cahal may be related to the changes that were occurring simultaneously at Blue Creek and other regional centers. Driver and Kosakowsky (chapter 4) explain that long-distance trade with the central Petén declined dramatically beginning in the Late Classic, concomitant with a realignment of trade connections to the north and south. Significant repositioning of the Three Rivers Region in interregional networks, coupled with likely shifts in local structures of network-based power, may have prompted an increased focus on local agricultural production. The design and construction of the ditched fields at Chan Cahal may signal a reorganization of local ties and relationships between hinterland farming communities and central

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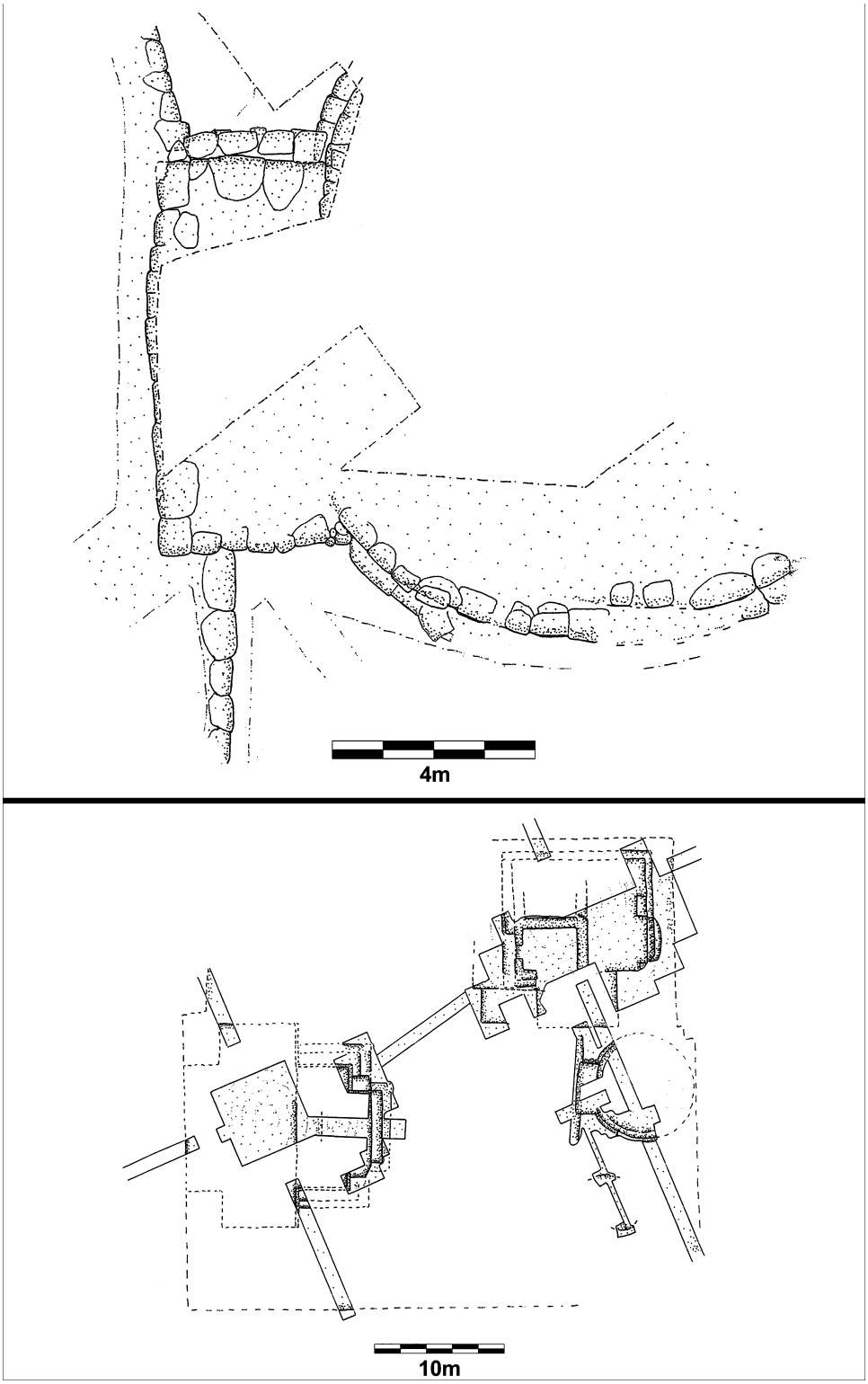

FIGURE 8.4. Plans of keyhole-shaped platform (*top*) and Imcolel (*bottom*). *After Giacometti 2002.*

elites. Whether or not the products of Chan Cahal farms directly provisioned central elites (e.g., through tribute), the ditched-field system would have been productive enough to generate surplus for exchange, and the ability to successfully capitalize on this increased productivity likely afforded opportunities for

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Figure 8.5. Chan Cahal burial disks from SH.2. *Original drawings by Jo Mincher, modified by Jon C. Lohse. Photographs by Bill Collins.*

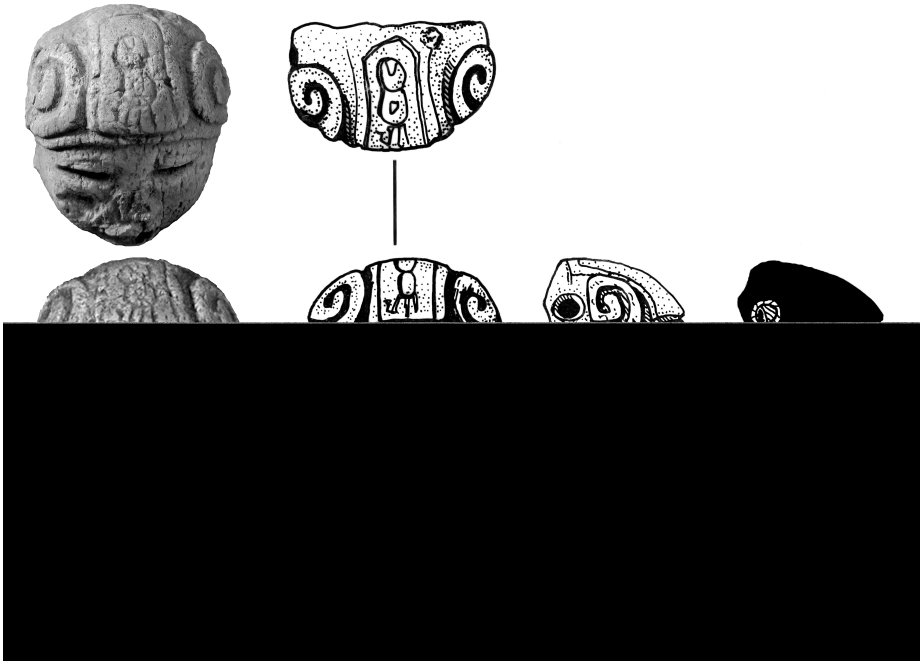

Figure 8.6. Chan Cahal burial pendant from SH.2. *Original drawings by Jo Mincher, modified by Jon C. Lohse. Photographs by Bill Collins.*

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some Chan Cahal households to improve their social positions vis-à-vis the elites of the Blue Creek polity.

Rio Hondo

Structures at Rio Hondo were generally smaller than those at Chan Cahal, with one important exception. At least one monumental structure was located on top of a prominent karst feature, "Tomb 5 Hill," located directly to the southwest of the Rio Hondo settlement cluster (see Figure 8.1). Unfortunately, this structure has been almost completely bulldozed. Its hilltop location, large, faced masonry blocks, and a richly furnished Terminal Late Preclassic Tomb 5 (Guderjan 2000) indicate, however, that this was an important place. Sherds collected from the site suggest that it was occupied during the Early Classic and may have been contemporaneous with the Rio Hondo settlement. Although the structures associated with Tomb 5 appear to have been abandoned prior to the end of Rio Hondo's occupation, most of Rio Hondo's houses were built facing the prominent hilltop. This pattern in the orientation of domestic structures suggests that the monumental architecture or the hilltop on which it was perched was significant in the lives of Rio Hondo's inhabitants.

In addition to the disembedded character of the nearest monumental architecture, a striking difference between Chan Cahal and Rio Hondo is the fleeting nature of the latter. Houses here were small, loosely clustered, and did not undergo much modification during their relatively short occupation. Rio Hondo dwellings were perishable structures on low platforms made from river cobbles and trash fill, which included *jute* shells, ceramic sherds, and exhausted lithic tools and flakes. These platforms were placed on higher areas of bedrock, likely to avoid flooding, and large boulders were positioned along their edges as retaining walls.

Despite the ephemeral nature of the Rio Hondo settlement, archaeological data reveal a full range of behaviors, from subsistence activities to domestic ritual. The remains of three distinct ritual events were discovered along the eastern edge of one platform, Structure 3 (Figure 8.7). A poorly preserved and likely secondary burial with one small vessel was discovered along the base of the platform at its center point. Directly to the north of this burial, a small, deep hole had been excavated into bedrock, and a complete biface made from high-quality chert was placed inside. A large, symmetrical ground limestone disk had been placed at the northeast corner of the structure. Vogt (1990, 18) has documented the practice among modern Zinacantecos of ritually marking the four corners and centers of fields and new houses in counterclockwise ceremonial circuits. These rituals relate to a quincuncial model of the cosmos, which was evidently integral to ancient Maya cosmology as well (Ashmore 1991; Thompson 1934). The placement of offerings at the eastern and northeastern points of Structure 3 may result from similar rituals meant to dedicate the space and to represent or reproduce the quincuncial universe.

In addition to ritual behaviors, evidence for cooperative economic relationships among Rio Hondo households emerges from careful analysis of the artifacts recovered. For example, overlapping obsidian blades struck from the same core were discovered at two different structures (Strs. 1 and 3; Rissa Trachman, personal communication, 2002). At nearly 200 meters apart (see Figure 8.2), these residences are distant enough from each other to be interpreted as belonging to separate households but were clearly simultaneous participants in the same local economic system. The relationships among Rio Hondo households may have been structured by several facets of life, including kinship, agriculture, and the manufacture of chert tools, which were found in relatively large quantities at Structure 1. In fact, no other excavated site in the area has produced a similar concentration of small craft-specialist tools made from chert (Jason Barrett, personal communication, 2002). These included recycled abraders, flake cores, gravers, burins, and scrapers, made of chert from multiple sources.

Although the households at Rio Hondo certainly interacted with one another, no plaza complex is known to have existed amid residences at the site. The monumental structure(s) on Tomb 5 Hill provided the nearest architectural focal point. This spatial configuration has potentially significant implications for the social and ritual lives and shared base of experience of Rio Hondo's residents. The structures would have been a constant part of the visual environment. Rather than serving as loci for integrative activities, however, the Tomb 5 Hill structures were viewed from a distance, perhaps facilitating events of a more exclusive nature. Situated prominently above and

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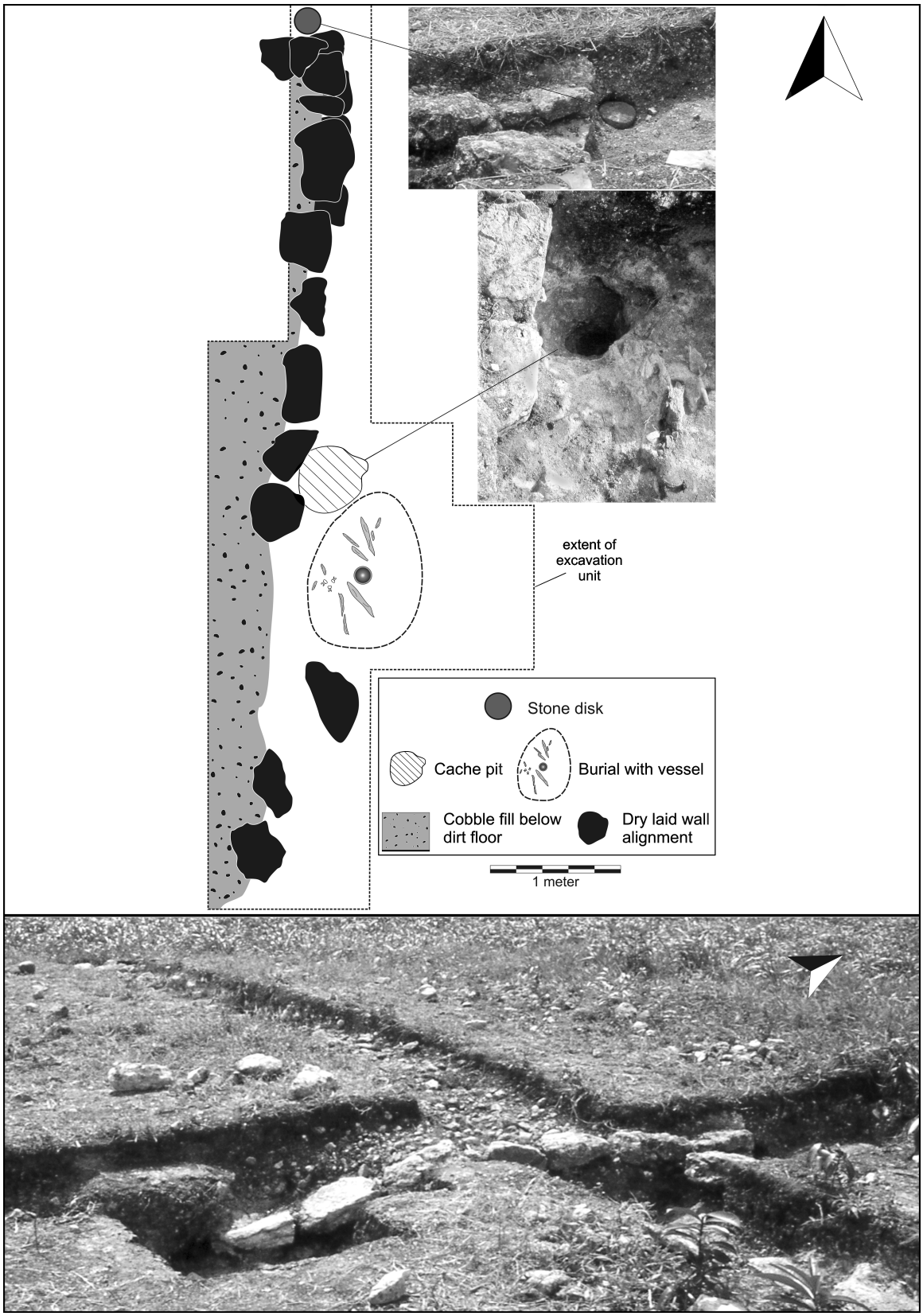

Figure 8.7. Plan and photographs, looking northwest, of Rio Hondo Structure 3. See Figure 8.2 for location of this residence. *Figures by Sarah C. Clayton and Jon C. Lohse.*

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outside the immediate community, the structures may have conveyed polity membership while also symbolizing the great social distance between Rio Hondo and those in power.

EXCHANGE NETWORKS AND REGIONAL ECONOMIC INTEGRATION

In this section I consider the participation of Chan Cahal and Rio Hondo households in networks of exchange through which goods circulated beyond the level of local household production and self-provisioning. I am particularly interested in the consumption, by households within these settlements, of goods exchanged at intraregional and interregional scales. By "intraregional" I am referring to materials generally produced within 30 kilometers of Blue Creek and circulated within this area. At the interregional scale I consider exotic goods that entered the Three Rivers Region and the Blue Creek area, specifically, through trade with distant places and polities. These goods include fine chert tools imported from Colha, in northeastern Belize (Hester and Shafer 1994), obsidian tools, as well as some decorated pottery (see Kosakowsky et al., chapter 6).

In investigating household provisioning at Cerén, Sheets (2000) outlines three different kinds of economy. These differ qualitatively in the level of control that central elites held over the circulation of goods, ranging from complete control, on the one hand, to economic autonomy and self-provisioning among households, on the other. He calls these the vertical economy (elite control), the village economy (trade among households in close proximity), and the household economy (self-sufficiency) and notes that they may have operated concurrently. That is, some categories of goods may have been produced within virtually all households for household use, while others may have been frequently exchanged among households. Still others were overtly controlled or restricted in circulation.

Although these models are useful for conceptualizing degrees of economic centralization, the precise mechanisms of exchange they encompass may vary widely. For example, a vertical economy may be entirely redistributive, involving a flow of tribute expertly managed by political authorities. On the other hand, redistribution may only apply to certain products or communities. Based on a review of case studies, Stark and Garraty (2010, 52) suggest that centralized redistribution is viable at a local (< 80 km) scale (see also Carr 2005) for lightweight items such as obsidian blades (Aoyama 1999). Foodstuffs or household goods that must be frequently replaced, such as pottery, are not likely to be provisioned via redistributive economies (see also Feinman and Garraty 2010, 175; Hirth 1998, 455). In the complete absence of elite intervention, households may engage independently in commercial networks of exchange or in reciprocal exchange with other specific households. With regard to market exchange, transactions may be significantly impacted by central administrative institutions, and political centers may, therefore, tightly articulate with market activity. In solar market systems (C. Smith 1976), for example, central marketplaces are primary points of convergence for producers and consumers from a surrounding service area. This area has been estimated to range, generally, from eight to twelve kilometers (Blanton 1996; Minc 2006; Stark and Ossa 2010). Marketplaces in such systems are important hubs of social and political as well as economic interaction. Expectations concerning spatial, architectural, and other material signatures have permitted excellent studies of marketplace activity in other areas (Cap 2012, 153; Stark and Garraty 2010). Similar analyses applied at Blue Creek may make it possible to determine whether a central marketplace operated there.

If market exchange was operating in the Blue Creek area, some degree of central administration may have been in place to regulate transactions, mediate disputes, levy taxes on vendors or itinerant merchants, or maintain relations with trading partners. Market exchange does not necessarily require elite intervention, however (Abbott 2010), and interregional exchange networks have been shown to endure into the subsequent Postclassic period in the Three Rivers Region, despite the collapse of large centers (Padilla, Morgan, and Lohse 2006, 37; chapter 9, this volume). A similar pattern occurred in the highlands of Mexico, where producers and consumers continued to benefit from market activity after the collapse of Classic states (Blanton et al. 1993).

Although the degree to which elites controlled the circulation of goods in the Three Rivers Region is not known, political centers such as Blue Creek were likely significant as destinations for commodi-

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ties imported from long distances. Demand generated by elites for the exotic goods necessary to the perpetuation of positions of superior status is likely to have significantly motivated the maintenance of trade ties.

Possibilities for household provisioning in complex societies are numerous and often involve nested interactions that crosscut several organizational levels, including individuals, households, communities, and political centers (Hirth 2010). Additionally, different types of goods probably circulated along distinct economic networks (Stark and Garraty 2010). Because of this complexity, it is difficult archaeologically to tease out the patterns that would help clarify the structure of political-economic systems. Nevertheless, data pertaining to the distribution of goods are of fundamental importance for examining the economic relationships among different settlements and sectors of ancient societies (Feinman and Garraty 2010; Hirth 2010).

The analyses presented here constitute a preliminary exploration of variation in patterns of consumption of circulating goods among hinterland communities, with Chan Cahal and Rio Hondo serving as case studies. A high degree of regional economic integration is expected to result in relative homogeneity in artifact assemblages among settlements, especially with regard to goods not produced by local households. Market exchange, whether significantly mediated by central elites, is a regionally integrative economic system (M. Smith 2010, 161). Relative heterogeneity in products consumed, on the other hand, would suggest variation either in economic access or in the degree to which communities participated in regionally integrative exchange networks.

The data presented here were generated by different excavators over several seasons of fieldwork. Data analyzed from Chan Cahal are restricted to the Early Classic in order to maintain temporal comparability with Rio Hondo. Whereas all categories of data are available from domestic contexts at Rio Hondo, the availability of data from similar contexts at Chan Cahal varies. Most represent secondary contexts such as construction fill, which is insufficient for comparisons at the household level, since these deposits may result from cooperative construction activities among multiple households. These data warrant consideration, nonetheless, for several reasons. First, in the Maya lowlands, especially in areas detrimentally impacted by modern agriculture, the systematic recovery of information from numerous, comparable primary contexts such as middens is rare. This leads to an unfortunate situation wherein much of the information related to artifact distribution across the sociospatial landscape is dismissed because it may come from less than ideal (secondary) contexts. Because this study is focused on the comparison of spatially distinctive settlement clusters, data from secondary contexts are appropriate. Although fill assemblages might not directly reflect household-level consumption, it is unlikely that fill contents represent domestic trash generated beyond the settlement. These materials, therefore, represent consumption patterns, on at least a suprahousehold level, that are appropriate for intersettlement comparison.

Obsidian

Obsidian was imported into the Three Rivers Region from distant highland sources in Guatemala and occasionally as far away as central Mexico. Analysis of the material assemblages from Chan Cahal and Rio Hondo indicates that obsidian was accessible to both hinterland settlements, likely via market exchange. Obsidian tools were more prevalent in the domestic assemblages of Chan Cahal, however. Variation in proportions of obsidian tools among residential structures at Chan Cahal suggests that disparate wealth and perhaps status among households was a factor in the accessibility of obsidian tools.

Two methods were used to compare the settlements in terms of their consumption of obsidian tools. First, eight assemblages from domestic structures at Chan Cahal were compared with four from Rio Hondo with respect to the proportion of obsidian artifacts in the total lithic assemblage from each. Table 8.1 shows the artifact counts for each context, the percentages of obsidian in the lithic assemblages, and the frequency of lithic artifacts per 1,000 ceramic sherds, for standardization purposes. In the first comparison, obsidian tool counts were added to those of chert to reflect the possibility that tools made from the two materials were often functionally interchangeable. In a second comparison, obsidian frequency was standardized per 1,000 ceramic sherds, independent of chert-artifact counts.

These independent analyses produced similar results (Figure 8.8). Although the mean proportion

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Table 8.1. Raw counts and proportionate artifact frequencies per domestic structure at Chan Cahal (CC) and Rio Hondo (RH)

Site	Structure	Ceramic Counts	Chert Counts	Obsidian Counts	% Obsidian of Total Lithics	Chert per 1,000 Ceramics	Obsidian per 1,000 Ceramics
CC	L25	292	21	11	34.4%	71.9	3.4
CC	L26	20,076	545	32	5.6%	27.2	1.6
CC	L28	1,267	106	4	3.6%	235.1	8.5
CC	K32	222	19	1	5.0%	85.4	4.5
CC	K34	273	11	0	0.0%	40.3	0.0
CC	L1	779	15	3	16.7%	19.3	3.9
CC	L38/40/41	135	61	0	0.0%	451.9	0.0
CC	L20	1,540	179	14	7.3%	116.2	9.1
RH	1	14,095	321	13	3.9%	22.8	0.9
RH	3	4,228	276	15	5.2%	65.3	3.5
RH	4	680	54	0	0.0%	79.2	0.0
RH	6	71	26	0	0.0%	366.2	0.0

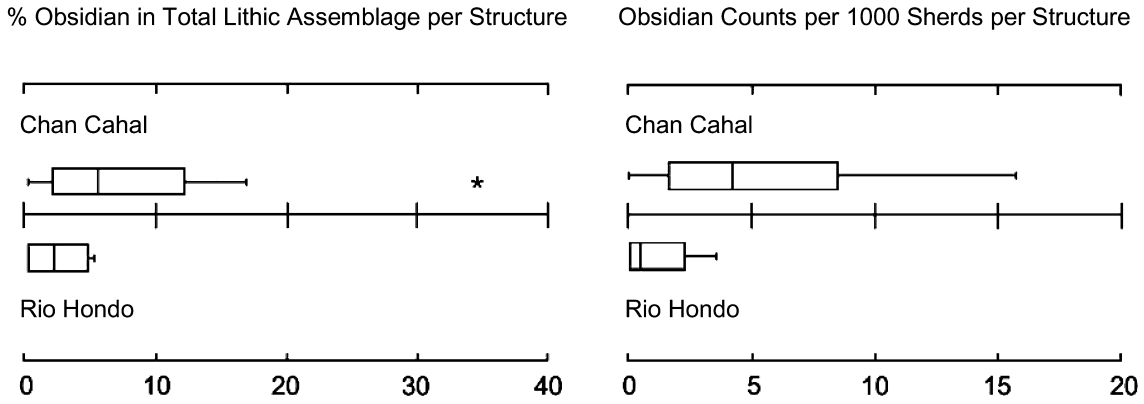

FIGURE 8.8. Obsidian artifact proportions at Chan Cahal and Rio Hondo.

of obsidian tools is low (less than 5% of total lithic assemblages) at both sites, Chan Cahal had a higher mean proportion than Rio Hondo. In addition, the percentage of obsidian in lithic assemblages ranged more widely among residential structures at Chan Cahal, suggesting differentiation in access among households. Differences in the distribution of exotic, more costly artifacts often reflects inequalities in wealth and associated prestige among households (Lesure and Blake 2002, 2). Therefore, the obsidian-distribution pattern here constitutes evidence of social hierarchy and/or wealth disparity among Chan Cahal households that was not present to the same degree at Rio Hondo.

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Chert

Chert outcrops across northwestern Belize are highly heterogeneous, owing to varied processes in their geological deposition. This heterogeneity facilitates the identification of raw-material sources based on macroscopically observable material properties (Barrett 2004, 174). Analyses by Jason Barrett of regional chert deposits and lithic assemblages from several excavated contexts allow for a comparison of Chan Cahal and Rio Hondo in the use of formal tools made from various raw-material sources. For this evaluation, chert tools were assigned to three categories: local, regional, and interregional (Figure 8.9), reflecting scales of circulation, with the highest transport costs associated with the interregional category. The present analysis only considers the material sources of formal tools; further research that examines in detail the processes of tool production will, no doubt, reveal a more complex picture.

"Local" chert sources include outcrops along the escarpment, which are situated primarily in two places, near the Rosita site and in the vicinity of Chan Cahal. The "regional" category represents the upland zone west of the escarpment. Here, large-scale, specialized, tool-production workshops near Blue Creek have been excavated (Barrett 2004). Based on the volume and density of debris, tools produced in these workshops were likely destined for circulation rather than produced for local household provisioning. Finally, the "interregional" category represents fine-quality finished chert tools and eccentrics imported predominantly from the site of Colha, Belize. Chert artifacts produced in specialized workshops at Colha were exported to numerous sites in northern Belize and beyond (Hester and Shafer

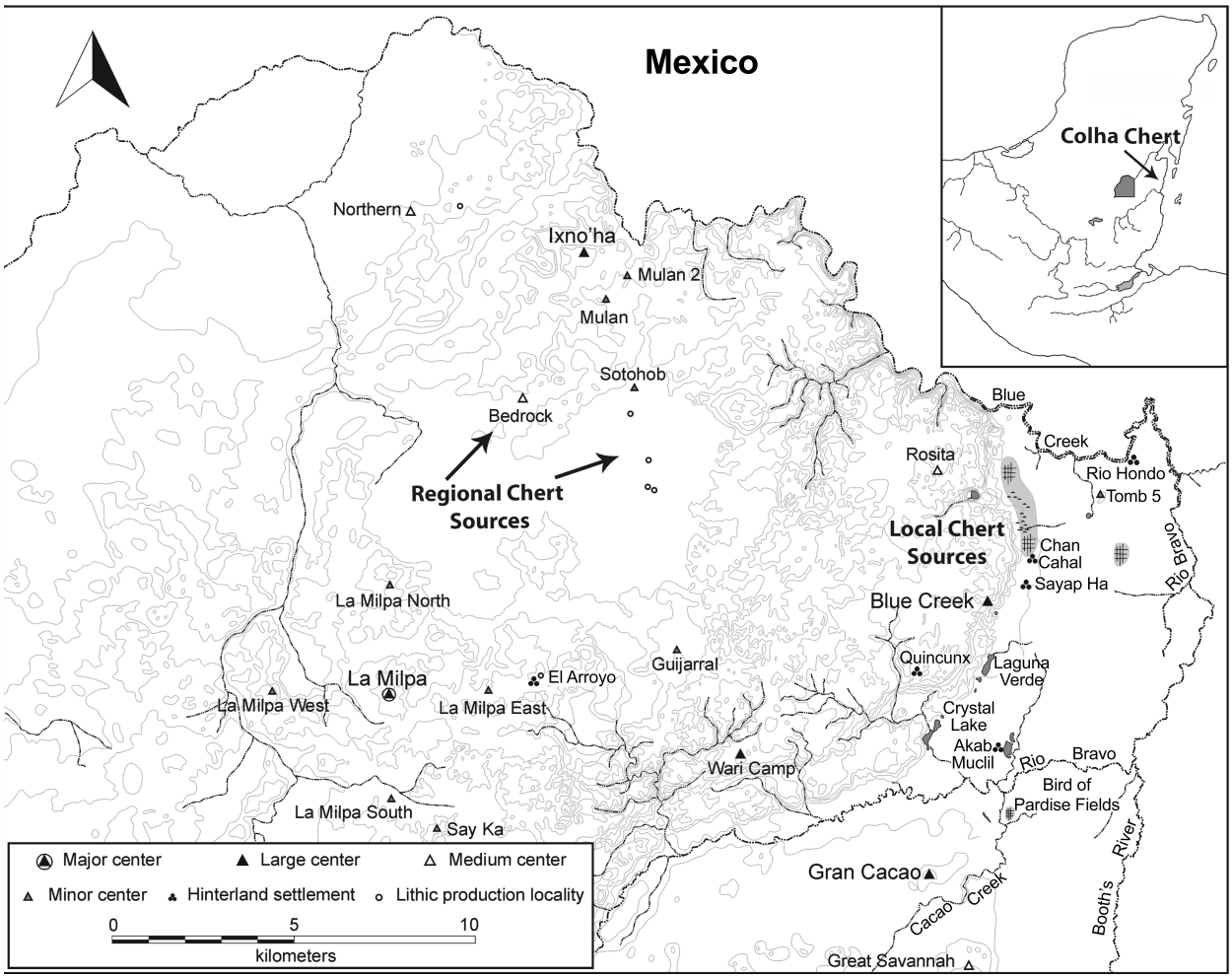

FIGURE 8.9. Map of chert source locations.

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1994). Colha products are likely to have entered the Three Rivers Region via river routes that included the Rio Hondo.

If Chan Cahal and Rio Hondo assemblages included similar proportions of imported and regional chert products, this would suggest participation of the sites in similar, regionally integrative networks (e.g., market exchange). On the other hand, marked disparities in the proportions of imported lithics between the settlements would suggest there were differences across the region in modes of household provisioning. Some possibilities for chert acquisition other than market exchange include centralized redistributive systems, as in Sheets's (2000) vertical economy, elite-focused gift exchange, or reciprocal arrangements among particular communities, as in Sheets's village economy.

As illustrated in Figure 8.10, both settlements had imported chert tools but in significantly differing proportions (although the sample sizes differ, a chi-squared test yields a *p*-value of 0.021). This suggests that residents of Chan Cahal preferred or perhaps were better positioned to acquire imported chert tools, which make up more than half of the sample from this settlement. In contrast, Rio Hondo's residents used tools primarily from regional chert sources; Colha chert tools make up more than 20% of the assemblage from Rio Hondo, however, indicating that these finished, imported products were accessible.

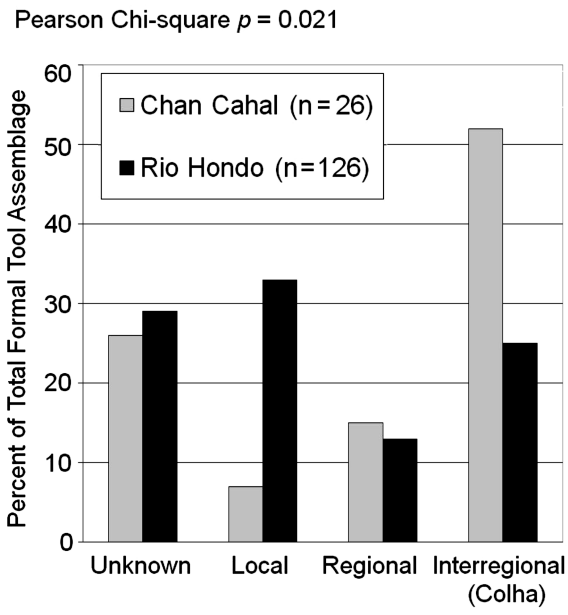

FIGURE 8.10. Proportions of formal chert tools by source category.

Interestingly, the formal tools at Rio Hondo were frequently made from chert originating from outcrops near Chan Cahal, whereas no formal tool in the sample from Chan Cahal represents its nearest sources. The common consumption of products from Colha and from the regional sources to the west suggests that both Rio Hondo and Chan Cahal participated in regional exchange networks. Chan Cahal households may have been more reliant on these networks, however, given the scarcity of local products and the high percentage of exotic goods in its assemblages.

Based on more extensive analyses of lithics in the Blue Creek area, Barrett (personal communication, 2005) notes that a high-quality, fine brown chert of an unknown source has been found only in elite contexts above the escarpment and at Chan Cahal. This pattern suggests that Chan Cahal, or some group of its residents, acquired goods that circulated within more restricted networks, such as through gift exchange. In contrast, the chert tool assemblages at Rio Hondo reflect probable participation in regional-level market exchange but a lesser degree of access to some products. Perhaps the location of the settlement on the banks of the Rio Hondo provided access to imports from the east, such as Colha products, before these products reached the Blue Creek center. Rio Hondo's residents may also have participated in reciprocal exchange with other hinterland settlements, including Chan Cahal, for specific materials.

Ceramics

To investigate differences in the consumption of ceramic products between Rio Hondo and Chan Cahal I compare proportions of the most frequent pottery types in Early Classic ceramic assemblages from each settlement (Figure 8.11). This analysis includes pottery from two domestic structures (U.2 and U.19) at Chan Cahal for which sufficient ceramic data were available and four structures at Rio Hondo (Strs. 1, 3, 4, and 6). Aguila Orange (a monochrome, orange-slipped type that includes several serving forms) makes up the majority of sherds at both Chan Cahal (74%) and Rio Hondo (69%). Chemical compositional studies of pottery and raw-clay specimens in

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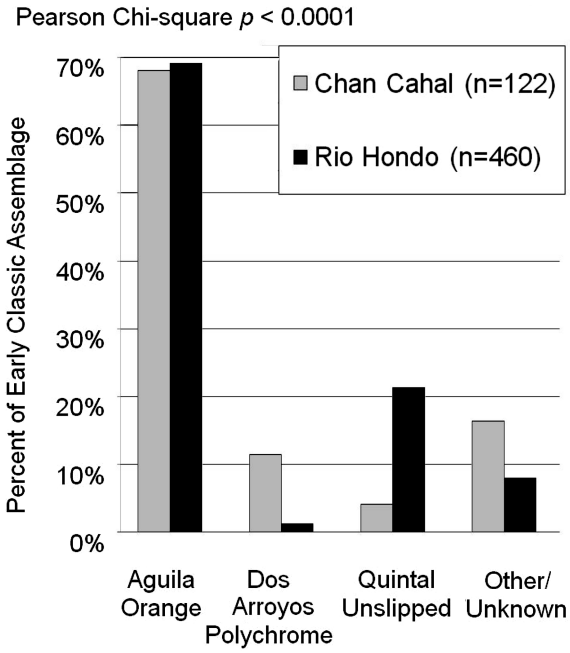

FIGURE 8.11. Proportions of ceramic types present in Early Classic assemblages of Chan Cahal and Rio Hondo.

the Blue Creek area (Little, Speakman, and Glascock 2003; chapter 6, this volume) indicate that Aguila Orange was produced using clay and temper from a variety of local sources.

The Early Classic ceramic assemblages from Chan Cahal and Rio Hondo differ significantly ($p < 0.0001$). Marked disparity is observed in the proportions of Dos Arroyos Orange polychrome vessels, which constitute only 1% of the Rio Hondo sample but 11% of the Chan Cahal sample. Dos Arroyos Orange and other polychromes were painted with rich imagery related to ritual and social life and may have signified particular roles and identities in contexts of exchange, use, and possession. Foias (2002, 236) argues that elites in the Petexbatun region controlled a system of production and distribution of polychrome pottery, which collapsed in step with Terminal Classic political dissolution. She situates glyphic polychrome pottery within an extensive system of feasting, as prestige items that were primarily circulated among elites in ceremonial contexts. If the distribution of polychromes was similarly controlled within Three Rivers Region polities, the higher frequency at Chan Cahal may reflect close connections with Blue Creek elites. For Rio Hondo's residents, in contrast, polychrome pottery may have had little significance as political or social currency.

CONCLUSIONS

The patterns to emerge from this research suggest that many material goods, including imported chert and obsidian tools, could be obtained through participation in intraregional networks of exchange. Chan Cahal appears to have been more tightly integrated into these networks, however; its households enjoyed better access to costlier, imported goods. As well, Chan Cahal seems to have had access, either through greater wealth or tighter social links with central elites, to goods that circulated within more restricted networks, such as polychrome pottery. Several factors may be salient in the differences that developed between the settlements, including their location, modes of internal social organization, and relative longevity and particular social histories on the landscape.

Results of this research highlight diverse ways of living among commoner communities situated in the surrounding regions of better-known Classic Maya political centers. Yaeger and Robin (2004) have published a similar comparison between two settlements, Chan Nòohol and San Lorenzo, located in the hinterland of Xunantunich. Advocating a multiscalar approach, they investigated the internal social organization, domestic economies, and ritual practices of the respective settlements as well as their broader sociopolitical affiliations, concluding that the settlements differed significantly in their historical trajectories and relative positions in the political organization of the Xunantunich polity (Yaeger and Robin 2004, 148). San Lorenzo evidenced markedly more involvement with central elites. The authors cite the larger size and longer occupation of the San Lorenzo settlement as salient in its higher degree of social complexity and more pronounced ties with elite institutions. They stress, however, that longevity and its associated domestic growth does not fully account for the differences between the settlements. Rather, settlement-specific developments must be considered from the perspective of human agency, having occurred in particular and dynamic social and environmental contexts. Importantly, this social heterogeneity would be invisible in the absence of detailed, comparative research.

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Settlement longevity, access to particular resources, and proximity to the center undoubtedly helped shape the distinctive internal social dynamics and intraregional political positioning of the Chan Cahal and Rio Hondo settlements as well. Chan Cahal households varied in social status. This settlement was likely home to low-status laborers and craft specialists as well as individuals who oversaw specific economic or ceremonial activities and may have been closely linked to central political institutions. Mortuary data, particularly the richly adorned individual in burial SH.2, support this idea. Moreover, architectural data reveal organizational shifts within the Chan Cahal settlement that correspond temporally with political changes at the regional scale (chapters 3–4, this volume).

Ritual practices that took place in the context of centrally located ceremonial architecture, Imcolel and the U5 complex, may have been particularly significant in structuring social dynamics among households at Chan Cahal. The practices that linked Chan Cahal households and fostered local leadership structures are likely to have shaped their participation in intraregional economic spheres. The presence of formal plaza complexes at Chan Cahal constitutes evidence for relatively permanent local leadership structures. These may have been organized in terms of lineage and principles of first occupancy (see McAnany 1995, 96–97). Local institutions of authority, through which agrarian labor may have been organized, would have been materially encoded in architecture and legitimized via community-level ritual. They may also have been fundamental in developing and mediating political interactions between households at Chan Cahal and central elites associated with Blue Creek.

Rio Hondo, in contrast, lacks architectural evidence of corporate-group social organization or local leadership structures. Institutionalized local social hierarchy seems to have been absent within the Rio Hondo settlement, perhaps due to its smaller size and dispersed character. Based on the apparent lack of formalized ritual space, the degree of suprahousehold cohesion present at Chan Cahal was, perhaps, never cultivated at Rio Hondo. Significantly, Rio Hondo was settled and abandoned during a time of major political reorganization at the Blue Creek center. It may be one of many settlements that formed on the margins of these dramatic political shifts, at a time when the Blue Creek polity was unable to effectively sustain, integrate, or attract supporting populations. For the duration of their residence along the banks of the river, Rio Hondo households may have embraced a strategy of relative economic self-sufficiency and political distancing. The impermanence of the settlement suggests that this strategy was either temporary, being implemented for as long as it was beneficial to this particular group of families, or ultimately unsustainable under conditions of political reorganization at the regional level.

This study from the Three Rivers Region contributes to a growing corpus of research attesting to marked heterogeneity among small hinterland sites across the Maya lowlands (Canuto 2002; Gonlin 1994; King and Potter 1994; Yaeger 2003; Yaeger and Robin 2004). Social and economic variability unquestionably impacted the political economies that archaeologists seek to reconstruct. Continued investigation of social organization within hinterland settlements as well as their intraregional relationships with political centers and other small settlements alike is imperative to developing comprehensive models of Maya political and economic organization.

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Chapter 9

Enduring the Collapse
Postclassic Occupation at Akab Muclil

Antonio E. Padilla, Molly Morgan, and Kerry L. Sagebiel

The Three Rivers Region of the northeastern Petén in Guatemala and northwestern Belize was once one of the most heavily occupied regions of the Maya lowlands, with some population estimates exceeding 427,000 persons during the later part of the Late Classic, AD 680–810 (Adams et al. 2004, Table 15.1; see chapter 2, this volume). Immediately following this peak, populations across the region sharply declined (Adams et al. 2004; Hageman 1997; Tourtellot, Hammond, and Plank 1997) during what has been referred to as the cultural "collapse" of the ninth and tenth centuries. Reasons for the dramatic demographic shifts of this period are not well understood and are providing fodder for research across the Maya lowlands where this event or process occurred. Possible explanations have included escalating social strife, overexploitation of environmental resources, and breakdowns in local and regional political and economic networks (Demarest, Rice, and Rice 2004a, 2004b).

Despite the sharp population and construction downturns seen across northwestern Belize (see chapters 2, 4, 7, this volume), sites in the region were neither abruptly nor completely abandoned and forgotten. Periodic visitation, monument veneration, and even some light and scattered ephemeral occupations have all long been known (see recent review by Houk, Sullivan, and Valdez 2007). Recent excavations in the hinterlands between Blue Creek and Gran Cacao have recovered evidence for extensive habitation remains, ritual conduct, resource exploitation, and even the prolonged use of agricultural systems. Based on these findings, we argue that the persistence of occupation into the Postclassic period should be understood not just in the context of proximity to diverse natural resources but also as direct outgrowths of Classic-period life and positioning along or near rejuvenated trade routes that appear to have connected the remaining populations of northwestern Belize with the rest of the Mesoamerican world.

Akab Muclil, a small rural settlement in northwestern Belize (Figure 9.1), is among the few sites in the region that exhibit evidence of Postclassic occupation. Many sites, including La Milpa (Sagebiel 2005) and Gran Cacao (Durst 1996), show signs of visitation during this time period and may yet reveal substantial Postclassic remains, but none is so far known to contain the full range of domestic contexts that are present at Akab Muclil. In documenting continued occupation after the Classic florescence and subsequent decline, our research makes an important contribution to how archaeologists in the region can understand the transition from the Classic to Postclassic periods. Additionally, when viewed in the context of regional transformation and continuity, this work can help reshape formerly held and inappropriate notions of the "fall" of the Maya (Webster 2002).

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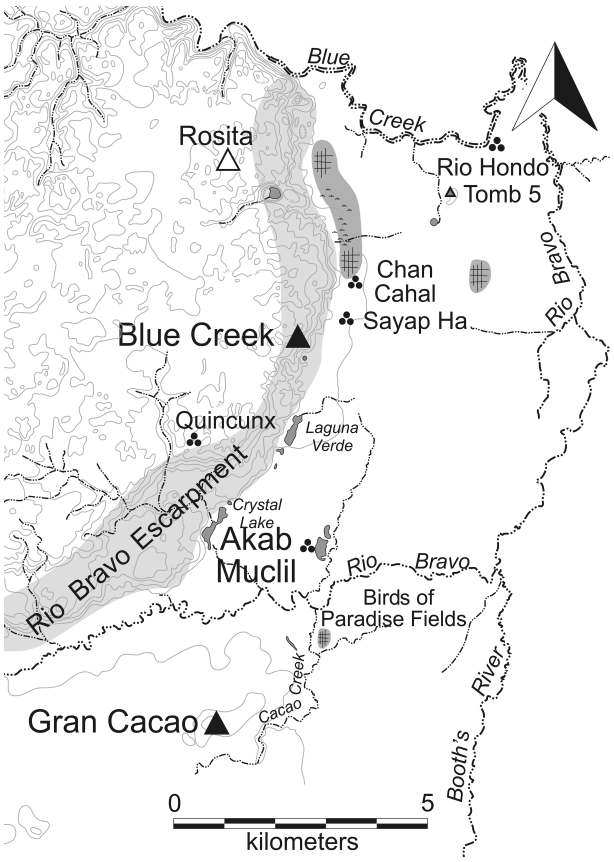

FIGURE 9.1. Upper northwestern Belize with selected hinterland and major sites of the Three Rivers Region.

This chapter provides a brief description of the Late and Terminal Classic-to-Postclassic transitions in the Three Rivers Region. It is followed by a discussion of Akab Muclil, its chronology, and our recent work there. We briefly summarize evidence from other Postclassic sites in northern Belize and in order to present an overview of the larger sociopolitical milieu of which Akab Muclil was a part. Lastly, this chapter discusses important factors contributing to the longevity of the site after the collapse of large centers elsewhere and considers implications for how our work might contribute to understanding Central lowland Maya society in the ninth and tenth centuries.

AKAB MUCLIL AND POLITICAL ECOLOGY IN NORTHWESTERN BELIZE

One central theme of this volume is to look at political configurations and histories as negotiated outcomes involving different status and settlement groups. These groups were directly involved in exploiting natural resources in several ways, either directly, as in the case of Akab Muclil, or through social networks of control and hierarchy. Combining an understanding of direct dependence on the environment for livelihood with how complex sociopolitical arrangements extracted and moved surpluses that sustained local and regional polities is one contribution that political ecology and relationality stands to make to archaeological research (see chapters 1 and 10, this volume). In northwestern Belize, previous research, including many studies in this volume, has demonstrated aspects of agrarian householder ingenuity that contributed to, shaped, and determined to some degree how polities fared through time. Chapters 6–8 by Kosakowsky et al., González, and Clayton make particularly convincing cases for the influence of the general population on economic and political systems. To this end, the political ecology research paradigm makes it clear that regional histories can no longer be understood from only site-center or elite-centric perspectives.

Political ecology and our work at Akab Muclil stand to make an important contribution to the long view of Maya culture history as well. Scholars' understanding of the so-called collapse of the lowland Maya has changed dramatically in the recent past. Early views (Culbert 1973) painted a picture of this period of decline as precipitous, mildly or significantly catastrophic, irreversible, and related variously to "prime-mover factors" (Adams 1973; Sabloff 1973). Willey and Shimkin (1973) proposed a synthetic model of the collapse that made room for the interplay between numerous processes, including increasing elite population and exploitative behavior, a precarious food base, and external threats and instabilities (also Sidrys and Berger 1977). Though specific causes, particularly drought (Gill 2000; Haug et al. 2003; Hodell, Curtis, and Brenner 1995), are sometimes given greater emphasis in contemporary research, current thought on what happened to the Maya around the end of the ninth century AD is not terribly dissimilar to Willey and Shimkin's prescient model (see Demarest, Rice, and Rice 2004b). Among the largest differences today over the standard of 1973 is recognition that regional polities underwent this transformation at slightly different times and for different reasons. Also important is that some centers and regions, particularly in the northern lowlands,

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prospered as never before at the same time that the central and southern lowland centers declined. Today, more so than ever, archaeologists recognize the importance of reconstructing regional histories when addressing important transitional periods and events. This historical context, too, is central to the political ecology view advocated in this research (see chapters 1–2 and 10, this volume).

Again regarding the end of the ninth and tenth centuries in the central lowlands, we suggest that the common question "What happened to the Maya?" be rephrased to "In what ways did Maya society persist through this period?" Clearly, fundamental changes took place, including the sharp decline or cessation in monumental construction and stela erection, both of which argue strongly that Maya elite culture suffered greatest during this period. Evidence such as presented here indicates that each region was also significantly transformed, and that in many important ways Maya life in the central lowlands persisted in vibrant fashion until the arrival of the Spanish. Our political-ecological research suggests that much of this persistence and perseverance was directly related to proximity to environmental diversity and also to participation in economic networks that linked once heavily populated regions with the rest of Mesoamerica.

LATE CLASSIC TO POSTCLASSIC CHRONOLOGY OF NORTHWESTERN BELIZE

Dates concerning the Maya differ from region to region based on chronological markers specific to those regions. Although chronological sequences are proposed for the lowlands in general, region-specific intricacies exist that pertain to the beginning and ending of major cultural periods. Dates presented in the following discussion are based on ceramic information from different analysts who have worked or are actively working in northwestern Belize. This section is meant to contextualize the Late Classic to Postclassic transitions occurring at Akab Muclil (occupied from the Early Classic through the Postclassic) within a wider chronological framework.

During the Late Classic period (AD 600–850) the Three Rivers Region experienced dramatic growth in population (Adams et al. 2004), and every site in the area reached its apogee in monumentality and settlement. Increases in monumental architecture, rural communities situated between large centers, intensive agriculture, and extensive land modifications are all well documented. By the end of the Late Classic the region experienced a decrease in production and an increase of competition between elites for resources (Sullivan and Valdez 2004), signaling the transition from the Late Classic Tepeu 2 ceramic phase to the Terminal Classic Tepeu 3 period (Adams et al. 2004; Lohse 2001; Sullivan and Valdez 2004).

The Terminal Classic (ca. AD 850–900) has traditionally marked the decline of Classic-period Maya civilization in the central and southern lowlands. Across southern areas of the lowlands, massive depopulation occurred, and the period is characterized by the lack of monumental construction projects, the end of the erection of monuments with Long Count dates, and the abandonment of large centers. Similar developments have been noted in the Three Rivers Region, where the Terminal Classic is marked by a substantial decline in population (Adams 1999; Robichaux 1995), an end to monumental construction, and a marked decrease in the quality and quantity of ceramic production (Sullivan 1998). Evidence suggests a "breakdown of elite control and subsequent abandonment of the Three Rivers Region by the end of the Terminal Classic/Tepeu 3 (ca. 850)" (Sullivan and Valdez 2004, 191). Those sites in the area that did survive are described as being crudely maintained, with no massive constructions and architecture that lacks finely cut stones, plastered floors, and mortared walls. Adams et al. (2004, 178) suggest that the architectural condition can be partly attributed to "stone robbing (reuse of stone) from existing structures."

Until recently, very little has been known about the period following the Terminal Classic in northwestern Belize, that is, the Postclassic period (AD 900–Spanish contact). Before 2005 available data reflected only brief pilgrimages and visitations. Squatting and stela resetting at La Milpa (Hammond and Bobo 1994) and the small offerings at Chan Chich (Guderjan 1991) and Dos Hombres (Houk 1996) reveal the temporary nature of these revisits. There is also evidence of a Postclassic presence at Gran Cacao (Durst 1996; Levi 1994), though its nature has yet to be defined. Adams et al. (2004, 178) suggest that "no significant material culture in terms of Postclassic pottery and lithics were observed to indicate a new

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population in place." Our recent work at Akab Muclil, however, reveals an extended occupation dating to the Early Postclassic and begins to link northwestern Belize with the rest of the lowlands during this important time period.

DESCRIPTION AND CHRONOLOGY OF AKAB MUCLIL

The site of Akab Muclil is located on an uplift fault block at the edge of the Rio Bravo alluvial valley in the Rio Bravo embayment zone immediately north of the Rio Bravo. It was first visited by Blue Creek project surveyors in the mid-1990s, at which time some photographs were taken of a looter's trench.[1] Nothing was known with certainty about the site prior to our mapping and excavations in 2005 (Padilla 2007; Padilla, Morgan, and Lohse 2006a, 2006b).

Akab Muclil was a small, nucleated community probably representing an extended corporate group with a limited number of additional inhabitants. The site is situated in an environmentally diverse area with a perennial wetland immediately to the east, the Rio Bravo Escarpment one kilometer to the west, and the Rio Bravo 500 meters to the south (Figure 9.2). The swamp east of the site joins with the Rio Bravo, making both the Caribbean coast and many settlements located upstream accessible by canoe. The site lies almost equidistant between two ceremonial centers: Blue Creek, approximately four kilometers to the north, and Gran Cacao, four kilometers to the south (see Figure 9.1).

Akab Muclil consists of two raised platforms, one standing two meters high immediately south of a higher, four-meter-tall platform (Figure 9.3). The northern platform is approximately 65 meters long, while the southern platform is as much as 25 meters long. Each measures 40 meters east-to-west. Both platforms were constructed on a limestone outcrop that rises from the swampy lands to the east and south, creating a steep face on these sides, while the western and northern edges grade gently into the ground surface.

The site includes 13 prominent structures and several less-visible, near-ground-level or buried features and surfaces that reflect both longer- and shorter-duration occupation. A large, squat pyramidal temple (Str. 1), 4.5 meters high, is at the center of the main plaza area, with most of the site's largest houses (Strs. 2–9) arrayed around the perimeter of this open space and

FIGURE 9.2. Aerial photograph, looking west, showing location of Akab Muclil with Rio Bravo Escarpment visible in background. *Photograph by the authors.*

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facing inward toward the temple. Most of these house mounds measure 1 to 1.5 meters high, with the exception of Structure 9, which is considerably lower. The main platform also contains an unadorned stela base located at the southeast corner (Subop. I in Figure 9.3). The southern platform supports much smaller structures (Strs. 10–11) at the southeastern end and two nonmounded features (designated Strs. 12–13) at the southwestern corner of the investigated site area. The locations of Structures 12–13 are marked by a dense ceramic scatter visible on the surface. Excavations revealed ground-level or buried surfaces of ephemeral structures, perhaps representing ancillary buildings.

Most of the excavations at Akab Muclil were conducted where evidence of architectural remains was most apparent. Units were also placed where numerous ceramic sherds and aquatic fauna were visible in disturbed topsoil. The remainder of the excavation units were placed on what were considered to be possible structures (Strs. 9 and 13) and nonstructural features (Subops. I and N) in order to investigate the visible components of the site. Excavations

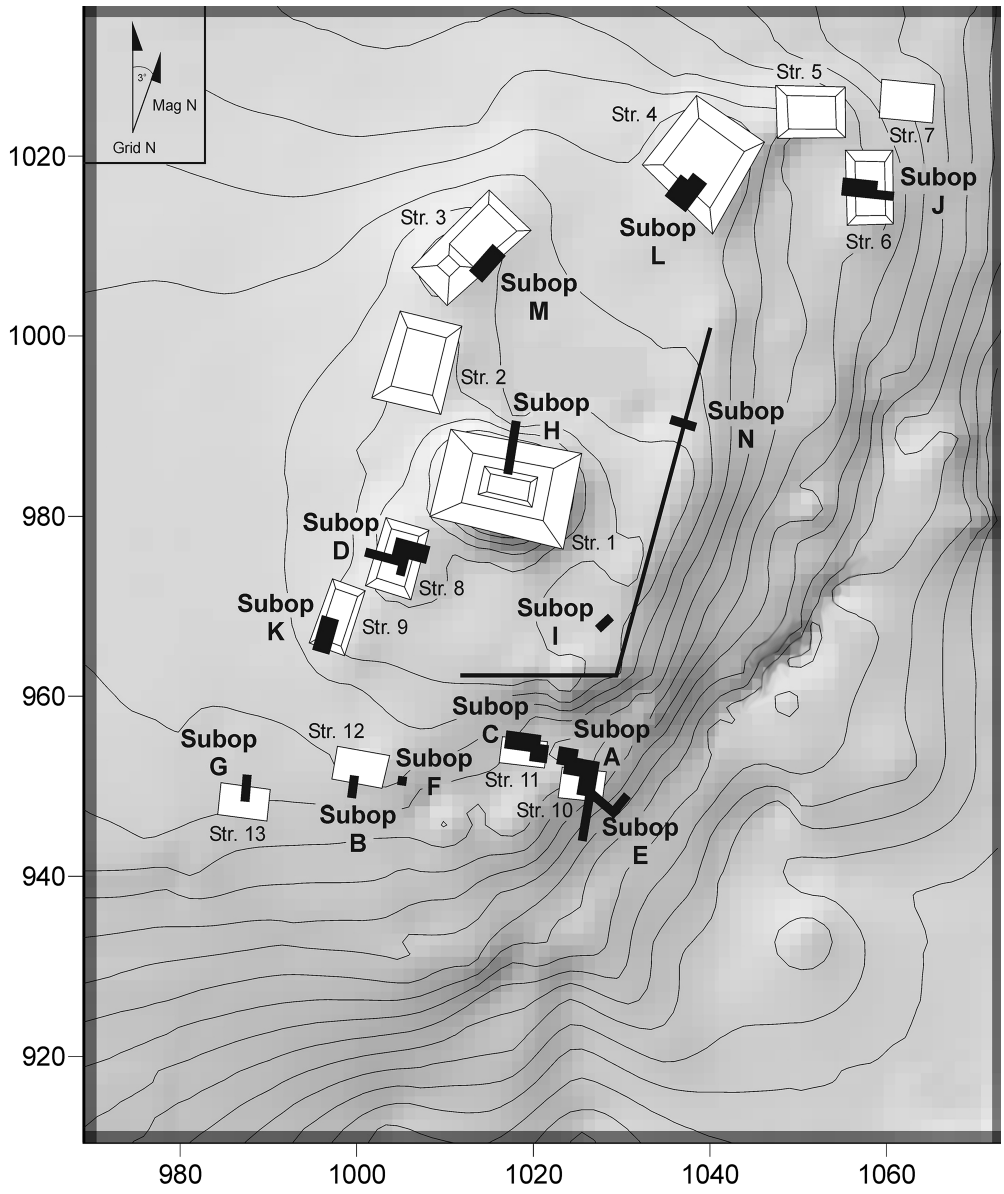

FIGURE 9.3. Akab Muclil site map showing layout of structures and locations of excavation units.

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included a combination of horizontal exposures with vertical penetration to record construction histories, pursue architectural alignments, and explore ceramic and faunal middens visible on the surface.

Excavation and analysis determined that the site was continuously occupied from the Early Classic to the Postclassic. Some ceramics collected from platform-fill contexts are Preclassic, though no unmixed contexts from this early time were recorded. In the site's small central temple, Structure 1, Early Classic construction was centered around a small looted burial crypt, indicating that the founding of the site may have been accompanied by a public ritual tradition involving mortuary practices and key individuals, as seen at other sites throughout the region (see chapters 4 and 8, this volume). This building was further modified and added onto in the Postclassic; curiously, few to no modifications dating to the Late or Terminal Classic were documented.

Excavations of Structures 3–4 and 8–9 on the main platform and Structures 10–12 on the southern platform show that Akab Muclil experienced a growth in population during the Late to Terminal Classic periods. Structures situated on the main platform (Strs. 3–4 and 8–9) were residential in nature at this time, while those on the southern platform (Strs. 11–12) served as possible locations for food preparation. The positioning of the houses along the edges of the platforms and facing toward the central Structure 1 suggests that this small temple remained the focal point of the site from its inception throughout its history. A doorway in the Late Classic version of Structure 8 was exposed, opening up into the courtyard south of Structure 1 and containing a standing stela, indicating that perhaps earlier versions of Structure 1 faced south rather than north.

Artifacts and ecofacts provide information relating to the Late and Terminal Classic subsistence practices of Akab Muclil's residents. Numerous ovate bifaces found throughout the site indicate that the inhabitants were heavily involved in agricultural pursuits. One possible setting for this work is the Birds of Paradise field complex documented less than two kilometers to the south (chapter 3, this volume). It is also probable that site inhabitants were engaged in seasonal or recessional field cultivation along the banks of the nearby Rio Bravo. Faunal remains were recovered from two contexts dated Late–Terminal Classic in Structure 11, an area of the site thought to be used for food processing (Table 9.1). Those remains include turtle, brocket deer, and fish (Timperley 2006), suggesting exploitation of locally available wild resources in addition to agricultural production.

As with most sites in the region, Akab Muclil remained a vibrant, active community in the Late–Terminal Classic. Importantly, though, its exact political affiliations are difficult to discern, and it is possible that the site was to some degree independent from the political sway of its nearest neighbors. Evidence of this comes from the fragmented stela base found set into the main platform at the southeastern corner. The stela (Figure 9.4) is plain and is perhaps a broken remnant of its original size. It was set into a shallow socket lined with large (20–30 cm long) cobbles. Notably, the stela was oriented in its socket so that, like the houses around the edges of the main platform, it faced the central temple Structure 1.

Excavations in Structure 8 revealed additional evidence for elaborate rituals, though of a kind more commonly associated with domestic activities. A rear interior chamber was exposed in the Late Classic version of this house; it contained a double burial of two flexed adult individuals, with the possible remains of an infant present as well (Figure 9.5). These individuals had apparently died, or been sacrificed, at the same time and had been laid to rest partially inside a preexisting bench separated from the rest of the interior space of Structure 8 by a masonry partition. After the interments had been arranged, this narrow space was filled and closed off. The arrangement of these individuals and associated grave goods —including grinding stones, a carved stone spindle whorl, decorative shell ornaments, and burned organic residue between the interments—all suggest ritual practices associated with domestic-scale sacrifice, dedication, and perhaps even cosmological renewal. Both individuals were interred facing to the west, though the eastern individual was oriented with its head to the north while the western individual had its head to the south. Additionally, the eastern interment was offset slightly to the north. Together these postures pose the related concepts of north, right, and up (or rising against) opposing ideas of south, left, and down (or descending).

Possible evidence for Terminal Classic social unrest, to which hinterland dwellers at sites like Akab Muclil would have been particularly vulnerable, was

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Table 9.1. Late Classic, Terminal Classic, and Postclassic fauna from Suboperations B–C and F, Structures 11–12

Lot Number	Bone Description	Animal Type	Chronological Association
B.1	2 shell fragments	Turtle	Postclassic
	1 left tibia, small	Lg. rodent?	
	8 long bone fragments refits	Modern?	
	8 vertebral fragments refits	*Odocoileus* (white-tail deer)	
	10 indeterminante bone fragments	Peccary or Brocket deer	
B.2	1 right tibia	Brocket deer	Postclassic
	1 left scapula fragment	Brocket deer	
	1 right calcaneum	Brocket deer	
	1 vertebral shell fragment	Turtle	
	2 indeterminate mammal fragments		
B.3	1 scapula in 2 fragments	Probably Brocket deer	Postclassic
	14 vertebral fragments	Brocket deer or peccary	
	1 cervical vertebra	Brocket deer or peccary	
	1 plastron fragment	Turtle	
	1 rib fragment		
	8 indeterminate fragments		
B.4	1 left astragalus	cf. White-tail deer	Postclassic
B.5	1 ascending ramus fragment	Possibly peccary	Postclassic
	15 indeterminate fragments		
B.8	1 right tibia	White-tail deer	Postclassic
C.7	21 shell/carapace fragments	Turtle	Late–Terminal Classic
	1 rib (?) fragment	Probably brocket deer	
	1 metatarsal fragment		
C.8	Vertebrae	Fish	Late–Terminal Classic
F.2	2 shell fragments	Turtle	Postclassic
	1 long bone fragment	Indeterminate	
	3 bone fragments, burned	Indeterminate	

Note: Dates based on diagnostic ceramic-type identifications in associated contexts (Padilla 2007, Tables 4.8 and 4.10).

uncovered at the southern end of the site. Here, excavations in Suboperation E revealed a three-course-high stone alignment that had been built directly over the plaster floor of an earlier building, probably a house. Excavators initially thought this later addition, too, represented domestic construction. Exposure of this alignment, however, continued for more than eight meters without reaching its western end. Its east end makes a right-angle turn and continued north for some distance as well (Figure 9.6). The extensive length of the exposed feature seems to suggest that it functioned as a defensive wall rather than some domestic addition.

Evidence of Postclassic occupation at the site was recovered at Structures 1, 4, 6, 8, 10, and 12. In each case, except for Structures 6 and 12, earlier Classic buildings were modified and built over. Structure 6, and presumably the rest of its small

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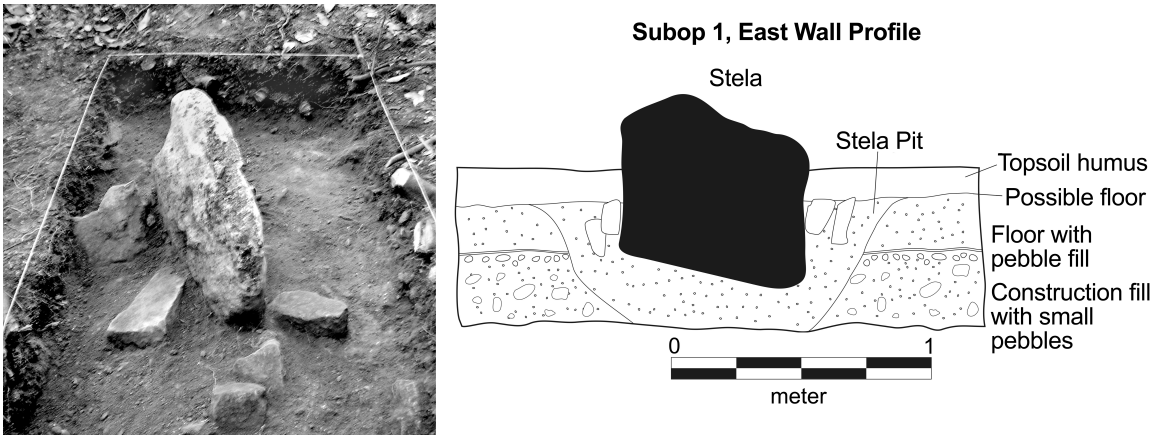

FIGURE 9.4. Stela, perhaps with top broken off, at southeast corner of platform. *Photograph by Jon C. Lohse.*

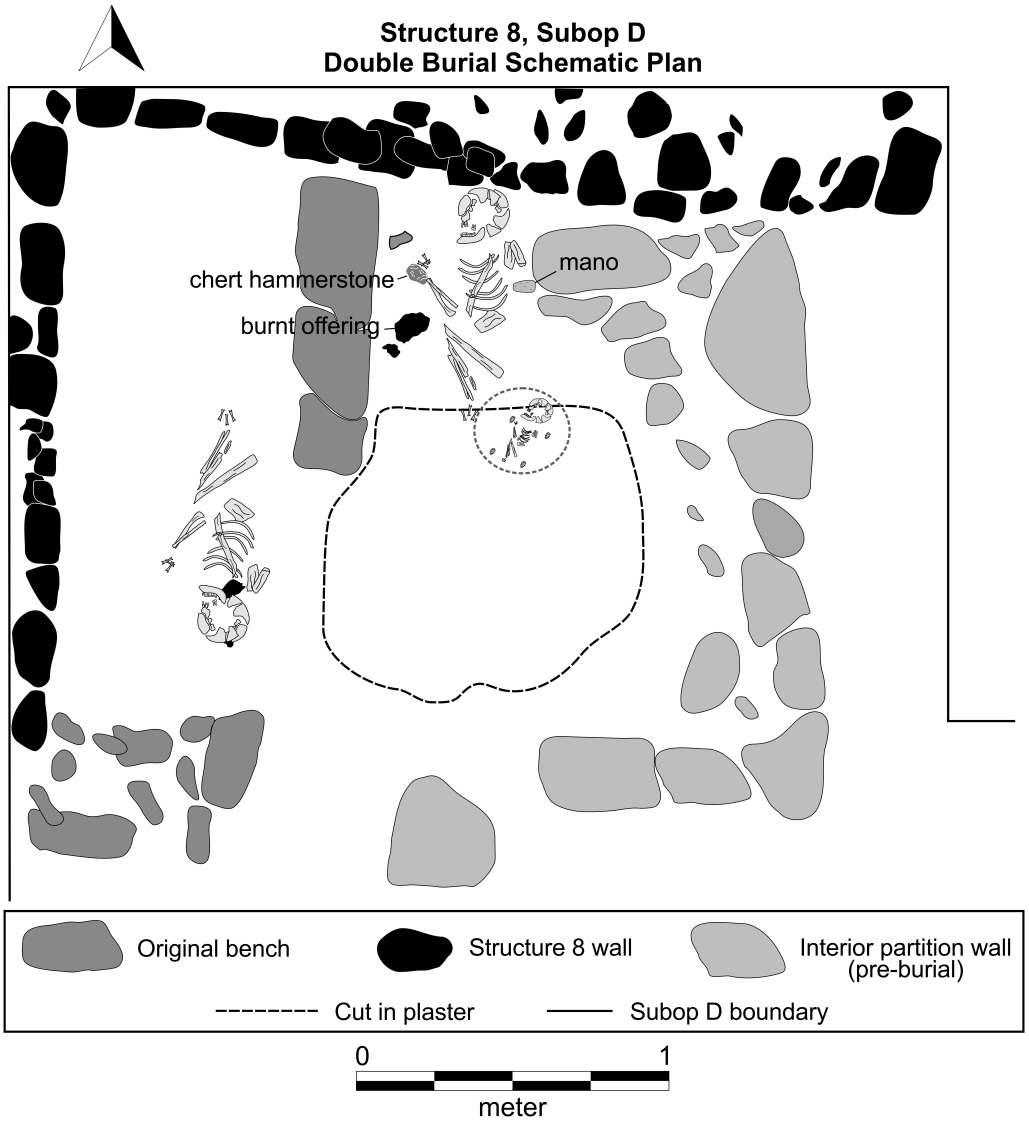

FIGURE 9.5. Plan view of Burial 2 (*left*) and 3 (*right*).

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FIGURE 9.6. Two views of three-course-high defensive wall at southern end of site looking south (*left*) and east (*right*). *Photographs by the authors.*

courtyard, consists of a single construction directly over bedrock and dates entirely to the Postclassic. Structure 12 is a low, ground-level construction, perhaps nothing more than a prepared earthen surface, that is associated with a relatively deep midden of ceramic and faunal debris. Interestingly, the contents of this midden seem to indicate subsistence continuity from earlier periods (see Table 9.1). Elsewhere at the site, most Postclassic elements were built over collapsed debris; Structure 1 is a prime example. It remained the site's focal point during this time, and excavations revealed that the building was significantly expanded. The upper chamber that had been open in earlier time periods was either filled or had filled with collapse debris. This was capped by very large, dry-laid cut stones that raised the height of the temple more than one meter (Figure 9.7). A large frontal extension was also added. The refurbishment of this building found in a context of residential activity and construction suggests that, unlike other sites in the region, Akab Muclil can be viewed as a prosperous and active small community.

Most of the stratigraphic sections that we documented show discontinuities between the Late and Terminal Classic constructions and the overlying Postclassic buildings. The single exception from our work was Structure 4, where a limited exposure in front of the building documented an Early Postclassic front addition that directly abuts the latest Tepeu 2–3 construction (Figure 9.8). Based on this stratigraphic association, and also on the fact that Postclassic inhabitants of the site retained and elaborated on the preexisting Late Classic site plan and layout, we believe that any interruption in site occupation that may have occurred was minimal to nonexistent.

In addition to the ephemeral, near-surface nature of the architecture, another difficulty in discerning the extent and nature of the Postclassic presence here has to do with the weathered and eroded condition of the ceramics. Yet this line of evidence also allows comparison with other sites in the region. Analyses by Kerry Sagebiel (2006) indicate that ceramic types at Akab Muclil are quite similar to the Postclassic ceramics found at Structure 86, or "Gair's House" at La Milpa, a Yucatecan-style "squatters'" house in Plaza A. That low-walled, rectangular structure was associated with Augustine Red: More Force Unslipped, Unspecified Variety, and related types. These types and forms are similar to Buk Phase ceramics at Lamanai and were formerly dated to the

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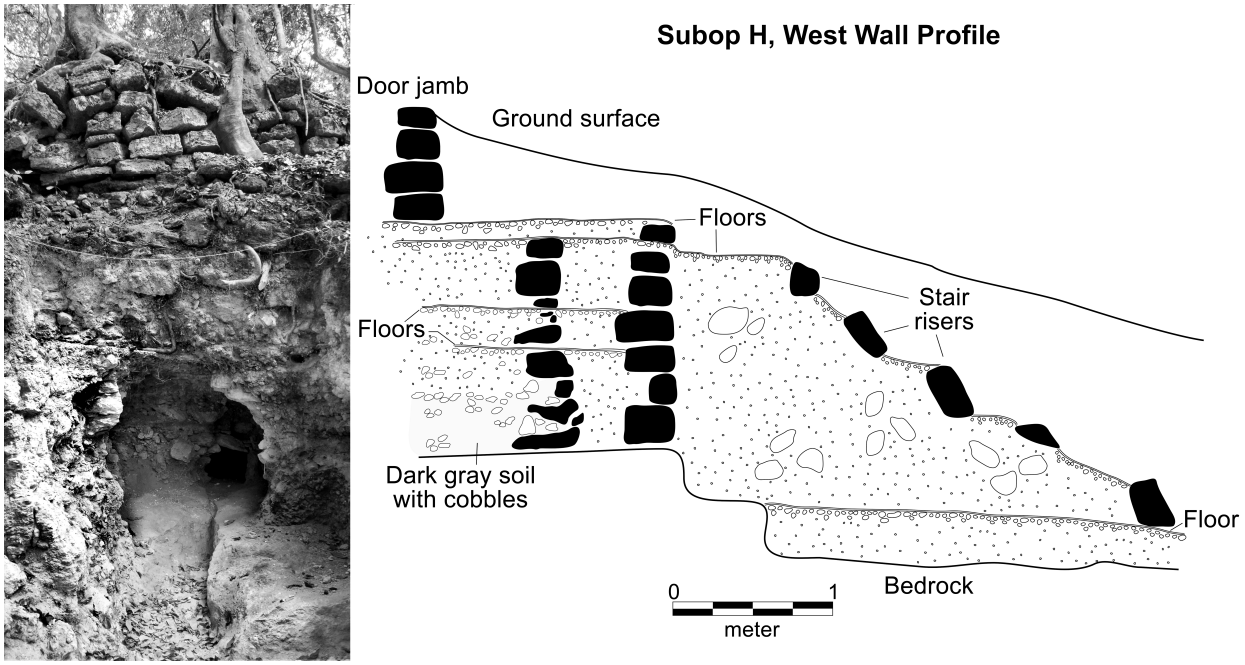

FIGURE 9.7. South wall (*left*) and profile of west wall (*right*) of Suboperation H. At top in photograph the faced stone, which rests on collapsed fill, and the entire frontal addition shown in profile date to the Postclassic.

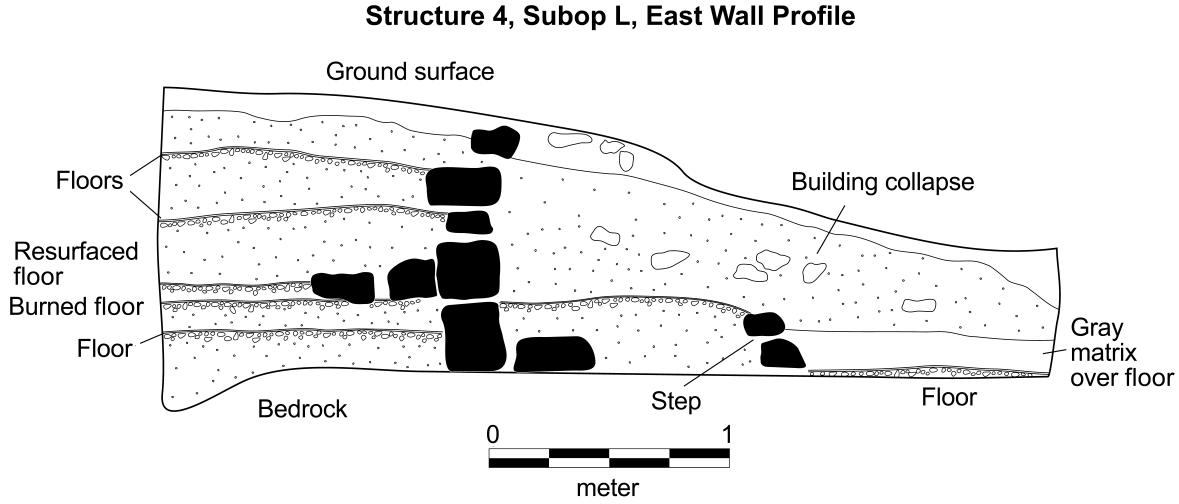

FIGURE 9.8. Profile of Structure 4 showing sequence of Late-to-Terminal Classic floors. The frontal step contained only Postclassic sherds, suggesting that this addition was made without interruption in the building's construction history.

Middle Postclassic (Graham 1987). Some researchers (Graham 2004; Mason and Rosenswig 2005), however, now place the Buk Phase in the Early Postclassic, and Elizabeth Graham states that it "was in full swing by AD 1100" (Graham 2004, 228).

Augustine Red: Unspecified Variety (Adams and Trik 1961; Gifford 1976) has fairly coarse, sandy, red or reddish brown paste. The slip is reminiscent of Preclassic slips in that it is true red, fairly thick, and somewhat waxy. Forms include jars with very tall, out-flaring necks, and small, triangular rims; plates with out-curved sides and beveled lips; and small bowls and *tecomates* with round sides and direct rims with round or beveled lips. Grater bowls with incising on the interior bottom also occur, along with small, round bowls with simple incised designs

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around the exterior rim. Bowl supports consist of hollow, conical feet with single round or oval vents. Effigy feet and human, or possibly animal, heads also occur. A few rims are flange-like with shallow grooves, reminiscent of chalice forms at Lamanai (Graham 1987, Figure 5 d–e).

More Force Unslipped type (Gifford 1976, 305–8; Valdez 1987, 219–20) consists of unslipped jars with tall flaring necks and globular bodies. In addition, within More Force Unslipped types are small, bowl-like censers with crude, slit vents (Figure 9.9). Sagebiel (2006, 90) describes these vessels, as represented at Akab Muclil, as having simple direct rims with round lips but often with small pinched-out or folded rims that are triangular in cross-section. The paste is very sandy and coarse and generally brown to reddish brown. Although the small triangular rim is typical, there appears to be a great deal of variation in rim form. As at La Milpa, there are also some lightly striated body sherds that may indicate a striated variation (see Figure 9.9).

AKAB MUCLIL AND REGIONAL POSTCLASSIC COMMUNITIES

While Akab Muclil's Early Postclassic occupation is so far unique in this region, the site had several neighbors in northern Belize. Some of these include Caye Coco, Caye Muerto, Laguna de On, Lamanai, and Santa Rita (Figure 9.10). The nature of occupation and the location of these sites, both around wetland areas with navigable waterways and defensive positioning, are important in allowing archaeologists to understand how Akab Muclil managed to continue into the Postclassic.

It is probable that the most influential Postclassic neighbor to Akab Muclil was the nearby center of Lamanai, located about 30 kilometers southwest of Akab Muclil (Graham 2004; Pendergast 1981, 1986). This is the only other site in the immediate vicinity that has a continual occupation spanning from the Classic into the Postclassic. Lamanai is on the western shore of the New River Lagoon, giving the site optimal access to trade networks from the Caribbean. Its location along a significant freshwater body both ensured subsistence resources and provided access to ongoing trade, helping Lamanai retain status as a major center from the Late Classic through the Postclassic.

Other Postclassic northern Belize sites also show a tendency to aggregate around water. Laguna de On, also known as Honey Camp Lagoon, is located on a large lagoon at the headwaters of Freshwater Creek (Masson 1993, 1997). Postclassic occupation here is considered to be a scaled-down version of Late Classic life, and Masson (1997) has suggested that it and other similar villages emerged from the "collapse" as focal points of regional political life. As with Lamanai, it appears that Laguna de On succeeded through a dependence on its strategic position for connection to trade through Caribbean networks and natural defensibility of the island location (Masson 1993).

Another important center is Caye Coco, occupied from the Terminal Classic through the Late Postclassic (Masson and Mock 2004). Caye Coco is located on an island at the south end of Progresso Lagoon, also along the Freshwater Creek drainage. Based on the amount of mounded square or rectangular residential platforms, a large public building, and unadorned stone monuments, Masson (1999, 288) argues that the site represents a "Postclassic political center of some significance." Artifacts associated with occupants of Caye Coco show that the site was inhabited by a prosperous community with a subsistence based in agriculture and the exploitation of marine and terrestrial fauna. This community participated in an economy that produced ceramics, shell ornaments, and lithic tools that were exchanged over long distances (Masson 1999, 296).

Caye Muerto, located 800 meters north of Caye Coco, is another late site in Progresso Lagoon. Similarly to Caye Coco, the site is situated on an island in the lagoon, and artifacts collected suggest that the two sites were contemporarily occupied. Other features of the site are also similar to Caye Coco and Laguna de On. All these sites have stone structures that are considered to be censer shrines, based on concentrations of censer fragments. Lithic material found at Caye Muerto is also similar to that at Caye Coco and Laguna de On, consisting of "lenticular bifaces, triangular bifaces, projectile points and other tools from Colha" (Masson 1999, 296). Reliance on regional chert sources that are found to the south of these sites suggests an interregional trade network with surrounding areas.

Among the largest known Postclassic centers in northern Belize is Santa Rita (Chase 1985), located

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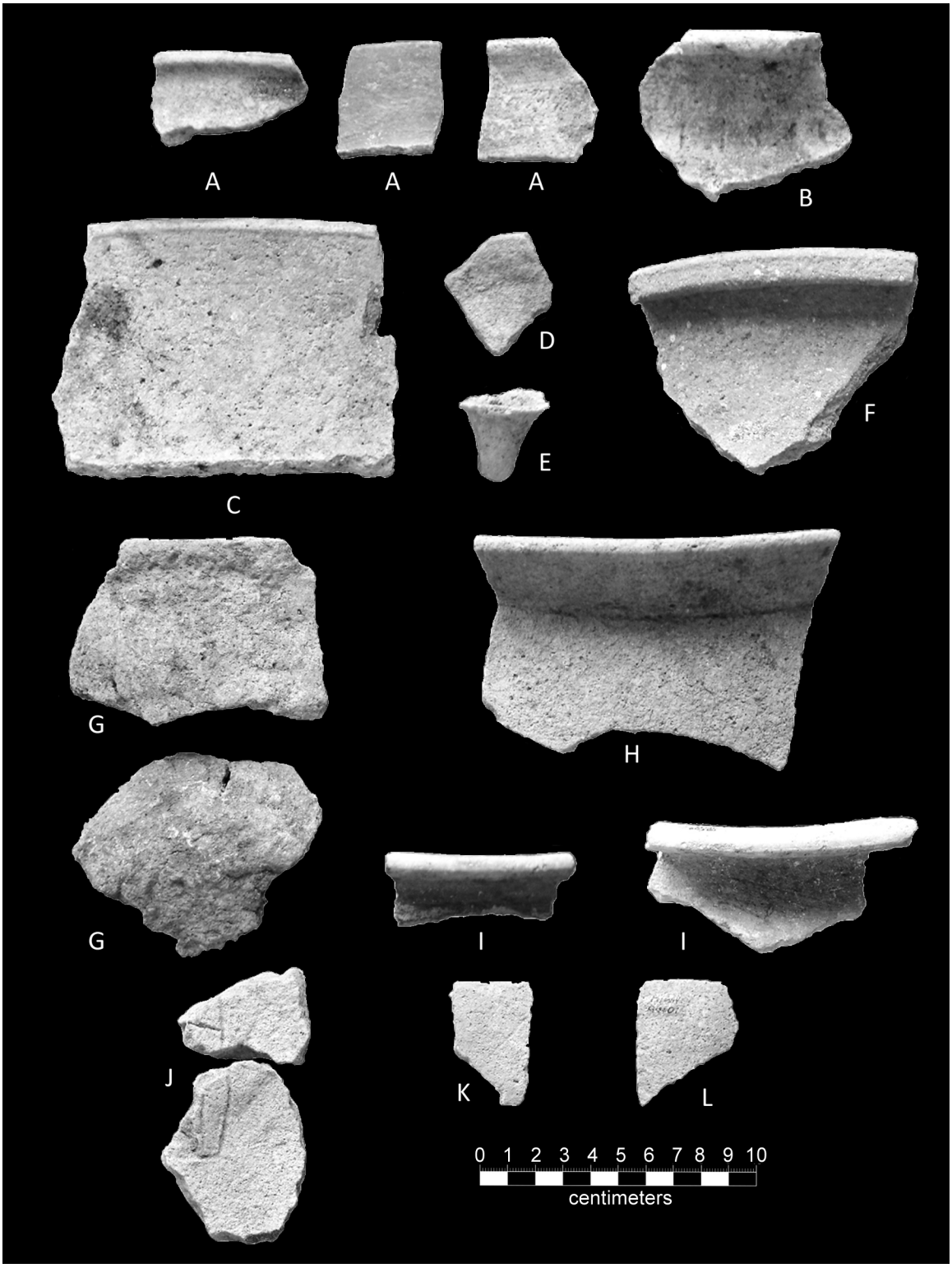

FIGURE 9.9. Early Postclassic sherds from Akab Muclil. *A* through *F* are Augustine Red: Unspecified Variety: (*A*) jars, (*B*) jar with incised neck, (*C*) large plate, (*D*) bowl fragment, (*E*) hollow, conical foot with single vent, (*F*) jar rim. *G* through *I* are More Force Unslipped: (*G*) rim (*top*) and base (*bottom*) of bowl-shaped *incensario* with crude slit vents, (*H*) jar rim, (*I*) jar rims. *J* through *L* are untyped bowl fragments: (*J*) conjoinable grater bowl, (*K*) incised bowl, (*L*) eroded bowl fragment.

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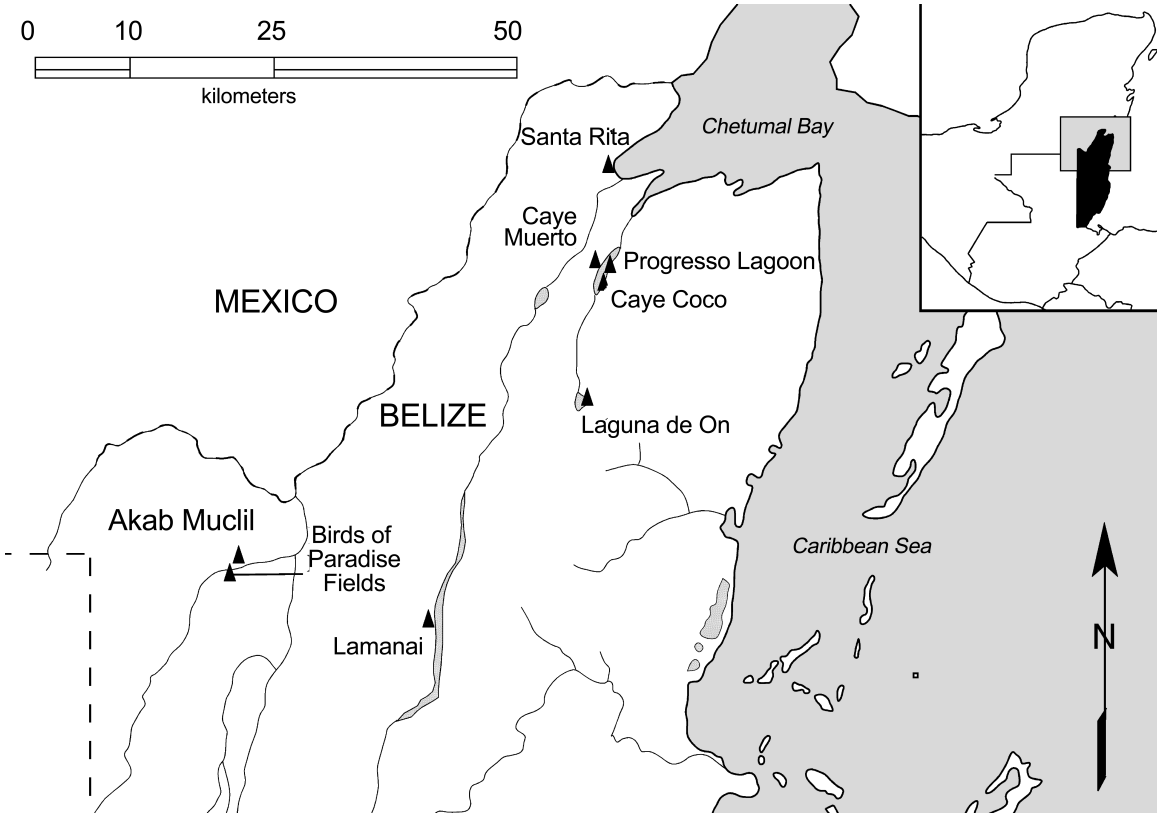

FIGURE 9.10. Northern Belize Postclassic centers. *Map by Brett A. Houk.*

between the New and Hondo Rivers on Chetumal Bay in and around Corozal Town. Occupation of Santa Rita began during the Early Preclassic period and continued until modern times. The Early Postclassic occupation is difficult to discern from the Terminal Classic due to the "blending together of regional traditions in northern Belize by outside populations moving in at the time of the collapse" (Chase and Chase 2004, 247). It was not until the Late Postclassic that Santa Rita reached a population high of 6,800 inhabitants. Construction projects during this period were located on low-lying mounds and in areas where there was no mounding (Chase and Chase 2004). Chase and Chase (2004, 247) speculate that Santa Rita may have been the Maya capital of the province of Chetumal.

CONDITIONS PROMOTING THE LONGEVITY OF AKAB MUCLIL

Based on information presented from the site, it is not immediately evident that Akab Muclil was occupied continuously through the Terminal-to-Postclassic transition. Several buildings, including Structures 1, 8, and 10, were occupied in the Late and perhaps Terminal Classic and have Postclassic components that overlie collapse or fill, revealing that these buildings were left unoccupied for some time in the Terminal Classic. However, Structure 4 demonstrates no such break in occupation. Stratigraphic layers from this building indicate permanent residence at this locale through the Late and Terminal Classic and into the Postclassic. The Postclassic component directly followed earlier construction phases, with a transitional level exhibiting mixed Terminal Classic and Early Postclassic ceramics in the construction fill for a step added to the front of the building. Based on stratigraphic evidence alone, it appears that the inhabitants of Akab Muclil survived this interval and continuously occupied the site, although they may have suffered some population losses at the end of the Late Classic, like most other sites of this time. Additional, albeit indirect, indication that the site was continuously occupied comes from the nearby Birds of Paradise wetland field complex (chapter 3, this volume). Work here has produced a number of radiocarbon dates from raised

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field and infilled canal contexts that show relatively uninterrupted activity to the end of Late Classic and into Postclassic times (Figure 9.11). Although it remains possible that the farmers who maintained and utilized this field system lived elsewhere, clear contextual and stratigraphic evidence from Akab Muclil indicates that they were also present at this site during this important interval.

How can archaeologists understand Akab Muclil's apparent longevity in the face of regional depopulation and abandonment? Like many Postclassic sites found in northern Belize, Akab Muclil is situated in and around an area easily accessible to water. The Rio Bravo lies 500 meters to the south and flows to the north where it joins the Rio Azul (Blue Creek) to become the Rio Hondo, which ultimately flows into Chetumal Bay. This riverine/lacustrine location is a common variable of most northern Belize sites that survive into the Postclassic and would have been important in a period described as wracked with drought (Gill et al. 2007). Akab Muclil's location would have proved advantageous not only for political autonomy throughout its history but also for ensuring subsistence resources during times of stress. Analyses of faunal remains (Timperley 2006) from contexts with mixed pottery, including Postclassic types, indicate a heavy reliance on various terrestrial and aquatic taxa (see Table 9.1), the remains of which were identified from the proposed food preparation areas (Strs. 11–12). Some fauna from the midden exposed overlying Structure 12 show cut marks. In addition, Postclassic subsistence remains include high frequencies of *Pomacea* and *jute*, both freshwater mussels that would have been available nearby. Remains of turtle and fish are present as well.

Another, related factor that may have contributed to Akab Muclil's longevity is its proximity to the Birds of Paradise ditched-field agricultural complex, located less than two kilometers to the south and easily accessible from the site by foot or canoe. Dates and other evidence from these fields have shown that they were constructed in the Late Classic and were no longer maintained by the Terminal Classic (Beach et al. 2009; Luzzadder-Beach, Beach, and Dunning 2012). Beach et al. (chapter 3) suggest that any Postclassic use of the fields was minimal and did not involve maintaining canals in any active way. Nonetheless, this field system, with a drainage network that

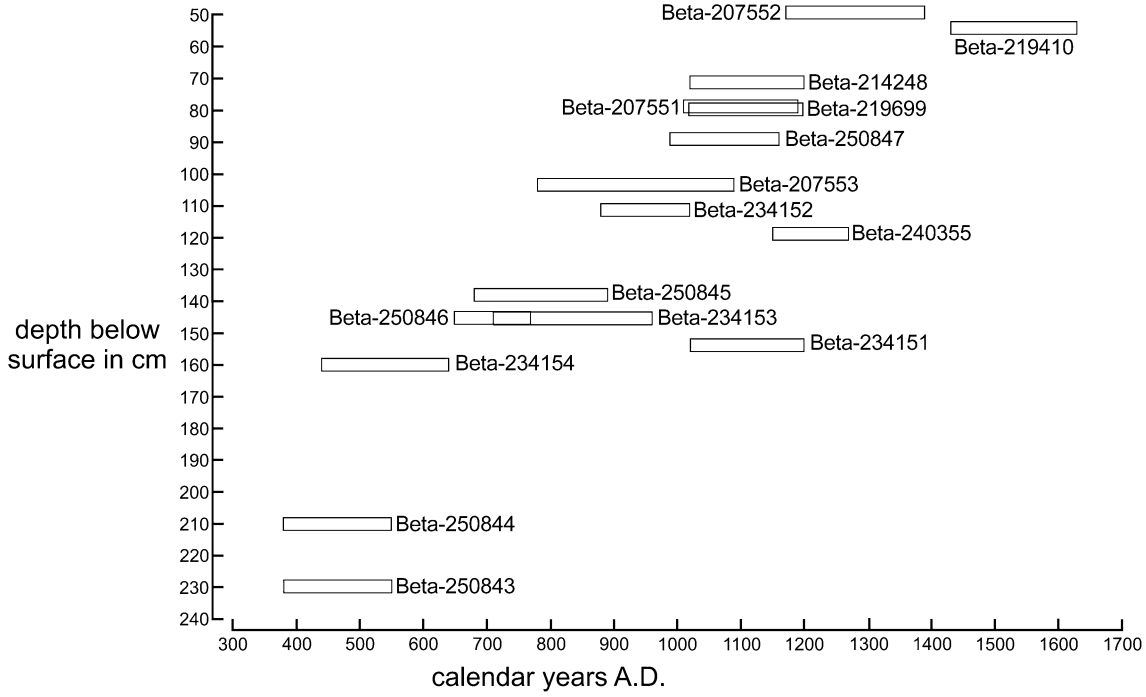

FIGURE 9.11. Calibrated radiocarbon dates presented at two sigma distributions from both field and canal contexts at the Birds of Paradise wetland fields. Note the overlap of dates from ca. AD 850 to 1000, precisely the interval during which most regional centers were abandoned. *From Beach et al. 2009, Table 2.*

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still functions today in times of heavy rain, would have been potentially important for ongoing food production in the immediate area. Luzzadder-Beach, Beach, and Dunning (2012, 3650) report that "the canal sediments return to tropical forest indicators from the lower to upper canal fills, although they also show some Postclassic intrusions of extensive land uses like milpa farming as well as hunting and fishing." Economically useful plants are represented in pollen profiles, and charcoal evidence suggests the extended use of this complex, perhaps under milpa-type conditions involving burning off fallow growth and exploiting the resulting garden-like conditions to cultivate suites of useful crops. Additional surveys are required before it can be concluded that Akab Muclil was the only community that exploited these fields. Akab Muclil is, however, presently the only site known with demonstrated occupation remains that are coeval with the emerging geomorphic and botanical evidence for prolonged use of this agricultural complex. Moreover, it remains a strong possibility that the Late Classic ancestors of Postclassic residents at Akab Muclil were directly involved in the original design and construction of the fields. Here, too, we find evidence of continuity and persistence through the end of the Classic periods.

Lastly, proximity to trade routes was a significant factor in this site's Postclassic endurance. The locations of most Postclassic sites in northern Belize suggest that they participated in long-distance trade connecting their regions with the Gulf of Mexico and Honduras (Masson 1999). During the Postclassic period the fundamental geopolitical focus of the Maya lowlands shifted to sites in the north that became the facilitators of trade. Many artifacts found at Postclassic sites in northern Belize reflect faraway source locales, including obsidian from Central Mexico, highland groundstone, greenstone, and marine shell. Akab Muclil, too, shows evidence of participating in long-distance trade during this period. Among the artifacts recovered from unmixed Postclassic contexts is a piece of green obsidian, which originates in the Pachuca region of central Mexico, and granite from the Maya mountains. Though Akab Muclil is perhaps the most remote Postclassic site yet documented in northern Belize, it clearly participated in established economic networks that helped link it with the rest of the Mesoamerican world.

CONCLUSIONS

Though the central and southern lowlands are notable for the elaborate centers and aristocratic culture that thrived during the Maya Classic, this large territory underwent significant transformations beginning around AD 850. Over a relatively short span of time, much of the region appears to have been depopulated and most of its impressive cities fell to ruins. To understand what must be viewed as one of the most dramatic transformations seen anywhere in the pre-Columbian world, archaeologists need to look not only at the causes of this transformation but also at how and where populations and cultural traditions persisted. As has long been noted, many surviving Postclassic sites were situated in and around coastlines, islands, rivers, and lakes, or lagoons (Chase and Rice 1985). This is especially true for northern Belize sites such as Progresso Lagoon, Caye Coco, Laguna Seca (Masson and Rosenswig 1998), Santa Rita (Chase 1985), Laguna de On (Masson 1993, 1997), and Lamanai (Pendergast 1981). According to Masson (1999, 285), "this aquatic settlement focus appears to be an important one for many communities of this period in Belize." While aquatic resources appear to have been important at Akab Muclil, the inhabitants of this site also continued to practice agriculture; future research might target areas located in proximity to both environmentally diverse zones and relic labor-intensive agricultural complexes from earlier periods.

In addition to subsistence practices, however, the site's location along navigable waterways facilitated participation in long-distance trade routes that linked faraway regions of Mesoamerica. Any disruption in trade that occurred during the tumultuous Terminal Classic was soon overcome, and commerce quickly resumed even in remote areas of the lowlands. The appearance of a full-time merchant and trader class is one of the many features of Postclassic society, and it is informative that this development appears to have played a strong role in cultural continuity, at least where other needs were met. We argue that it was this combination of variables, ecological on the one hand and economic and political on the other, that created conditions favorable to success into the Postclassic period while other centers and smaller sites faced cultural collapse.

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Our research has contributed to an understanding of the Postclassic period both in northern Belize and farther inland, closer to the Petén Plateau. Certain continuities present at Akab Muclil provide clues for conceptually linking the Early Postclassic with earlier time periods. Houses were built at the site either directly atop old abandoned ones or in new courtyards attached to existing plazas. Throughout this process previous site plans and layouts were respected and maintained, even as new home construction was ongoing. Earlier land-use practices, too, were maintained in a rational, sustainable way. Beach et al. (chapter 3, this volume) report no signs of canal maintenance during the Postclassic. Yet with severely diminished regional populations, these systems were probably sufficiently productive to sustain the people that remained. The dedicated use of this labor-intensive agricultural complex reveals the depth of the ties between hinterland farmers and their pursuits.

In short, much of what was lost in the so-called collapse appears to have been limited to the trappings of elite authority and pageantry and all that went with it. To be sure, the loss of elite rule and the services they provided had a dramatic effect on the Maya who were left. But the persistence of cultural traditions afterward reveals the ingenuity of those who remained. In this sense, the answer to the question "What happened to the Maya?" becomes far more complex than frequently imagined, involving equal parts adherence to tradition, economic engagement, and plain perseverance.

NOTE

1. Artifacts reportedly recovered included a collection of Early Classic sherds and other items from the looters' trench, including one greenstone bead that was given to a project worker. No artifact that was recovered during the early visitation is available for study, and no map or report was published by that survey that shows the site's layout or location. The site may have once been known as the Remple Group (Guderjan and Hanratty 2007). The Remple Group, presumably named after the Remple family of the contemporary Blue Creek community, is depicted on Blue Creek project maps far to the north of Akab Muclil (Guderjan 2002, Figure 10), which is on land belonging to the Ed and Carolyn Reimer family. These factors suggest that Akab Muclil's original location was not accurately plotted, if it was even known during the initial site visit. Because no previous account could be reconciled with our findings, the site was treated as a new discovery and given the name Akab Muclil.

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Chapter 10

Recap: Four Reasons for Relationality

Scott R. Hutson

In chapter 1 of this book Jon Lohse reproduces Bishop Diego De Landa's 16th-century comment that, soon after the conquest, native nobles in the Yucatán laughed at the Spanish missionaries because "they gave ear to the poor and rich without distinction" (Tozzer 1941, 97). In this volume many authors do precisely what those nobles found laughable: they attend not just to elites but to everyone else. Furthermore, they do so not incidentally, but programmatically. In other words, they place at the very center of the book the notion that farmers, potters, fisherfolk—a whole cast of characters that seldom set foot in the royal courts of the ancient Maya—play an active role in the constitution of Maya society; that royal courts teeter precariously on a tightrope of fragile and shifting coalitions whose strands were in constant need of respinning. Liz Brumfiel (1992, 556) gave a powerful impetus to this approach in Mesoamerica by asking, in her Distinguished Lecture in Archaeology: "To what extent did commoner response to state formation determine the structure of hierarchy?" Insofar as more and more archaeologists endorse the notion that both leaders and subordinates participate in the negotiation of power relations, the authors in this volume might get the last laugh (for now).

Yet the book's title contains a phrase—"political ecology"—alien to the theories of power and practice at the core of many of the chapters. Is political ecology something new? Or is this just Giddens by another name? In this essay I draw on the book's case studies to highlight four reasons why political ecology should be embraced. Before doing so, however, we must get clear about what political ecology is and how it is different from what's already out there. Greenberg and Park begin their inaugural essay of the *Journal of Political Ecology* by discussing whether political ecology is new. They note that "The social sciences unendingly seem to be repainting the store with new fads, yet business remains bad" (1994, 1). Switching metaphors, they worry that new paradigms, rather than standing on their forebears' shoulders, take an ax to their knees. They assure us, however, that political ecology is not, in the words of Eric Wolf (1990, 588), an "exercise in intellectual deforestation." As Lohse makes clear in chapter 1, it finds its roots in Marxist political economy. A consummate political economist, Wolf gave it its name. How, then, does political ecology—something with which many archaeologists are not yet familiar—relate to political economy—something with which archaeologists are well acquainted? Following Wittgenstein's concept of family resemblance, Greenberg and Park (1994, 8) refuse to police the boundaries between political economy and political ecology, noting merely that the "social and power-centered field of political economy" can benefit from dialogue with ecology's perspective on biological and physical environments.

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Lohse takes a more specific approach in distinguishing political economy from political ecology. In particular, he sees a flaw in how some archaeologists have discussed political economy. Greenberg and Park believe that political economy refers to competition and collusion over policies that advance different class interests. Their examples of political economy—capitalist world systems—occupy, however, a scale that is much broader than the northwestern Belize case studies in this book. For archaeologists, a more workable definition of political economy is the processes by which leaders extract surplus from followers. Such surplus usually comes in two forms: wealth goods and staple/subsistence goods (Brumfiel and Earle 1987, 4, 6). Lohse believes that the production of staple/subsistence goods among the Classic-period Maya has not received enough attention. He makes the case that subsistence production is complex in that some rural communities specialize on resources concentrated in specific locales whereas other communities remain unspecialized. This mosaic of specialized and nonspecialized communities reflects interdependence, but the relationships between communities—their "mechanisms of integration"—are difficult to identify and not successfully predicted by models that presume a large role for political centers (Scarborough and Valdez 2009). This difficulty justifies more attention to the ways in which people were embedded in their environments and the ways in which they negotiated access to land and other resources. This logic is unassailable: if, as Lohse argues, the success of political centers depends on surplus production of subsistence goods, we need to look more carefully at variation and change in microenvironments and how they were managed.

There is, however, a second argument intermingled with Lohse's pitch for more attention to subsistence production. Lohse argues that when "subsistence production is overseen by self-organizing commoners, this production has tended in some studies to be subordinated to or even disarticulated from larger political processes." In my reading, Lohse has identified a flaw not in the theory of political economy but in how some have put it into practice. The root of Lohse's criticism is that when archaeologists talk political economy, they are talking about strategies, decisions, and activities of elites. Thus, non-elites are seen as passive agents in political economies. Due to the focus on elites, archaeologists sometimes do not give as much attention as they should to agrarianists and other rural producers (for examples of the positive trend in the other direction, see LeCount and Yaeger 2010).

Though good uses of political economy must not ignore agrarianists and utilitarian producers, we should not allow the pendulum to swing too far in the other direction. In other words, if researchers have accidentally disarticulated non-elite production from political economy, we should also be on guard against accidentally articulating non-elite production too closely with political economy. For example, it would be a mistake to assume that all surplus production by non-elites was motivated by the extractive policies of leaders. Contra Sahlins's (1972) interpretation of Chayanov's study of the peasants of the Eurasian steppe, Netting (1993; see also Pyburn 2008) showed that certain kinds of farmers, which he called smallholders, produce surplus not simply to pay tribute but to maximize profit, enhance the quality of life, hedge against risk, and more (see Lohse's discussion of Halperin's householder model in chapter 1).

What does this amount to regarding the relationship between political ecology and political economy? Following Greenberg and Park, I do not see political ecology as a paradigm that supersedes political economy. The compelling argument that arises from Lohse's presentation of political ecology is not that political economy lacks the tools for integrating different sectors of Maya society but that our understanding of the relationship between these sectors should be triangulated as best as possible through the economic possibilities afforded by diverse and dispersed environmental resources. In other words, political ecology is political economy with an emphasis on environmental-resource management.

Lohse's essay, however, is about much more than just political ecology. He explicitly takes politics in a direction that is merely implicit in Greenberg and Park (1994). This direction builds on two previous books, also edited by Lohse and his colleagues (Lohse and Valdez 2004; Gonlin and Lohse 2007). In a sophisticated, commanding, and well-read voice, Lohse makes the case that political change results from negotiations in which both elites and commoners play important roles. This is an ecology understood metaphorically, where the stress falls on the relations and interdependencies between elements and where the elements are no longer limited to different species

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in an ecosystem. From this perspective, it is not a drawback that most of the chapters in this volume delve only lightly into the ways that the environment conditioned subsistence practices. Many papers, in fact, find strength in not being limited to discussions of subsistence alone, or politics alone, or exchange alone, or ritual alone: the ancient Maya blurred these spheres themselves (Masson and Freidel 2002; Wells and Davis-Salazar 2007).

The main virtue of the book, then, is the focus on how ancient Maya from all walks of life participated in the production and reproduction of society. This is a focus on relationality. Relationality highlights the interactions between differentially positioned actors. Relationality is a central principle of what has come to be known as social archaeology (Meskell and Preucel 2004). The remainder of this essay focuses on why the relational approach is fruitful. Since many chapters in this book exemplify a relational approach, my comments can be read as a formalization of the links between political ecology and social archaeology, though political ecology is not reducible to social archaeology, since the latter denotes a much broader range of approaches.

Not long ago, Gary Feinman (2002), having been asked to summarize the chapters in a book on power (O'Donovan 2002), titled his concluding chapter "Five Points about Power." Following Feinman's lead, I organize my comments around what I call "Four Reasons for Relationality," each of which represents one of the book's enduring strengths and/or opportunities for investment. My goal in commenting on the chapters is to contextualize them within broader discussions of power, personhood, politics, history, and economics and to connect them to emergent trends in research beyond northwestern Belize. Though my first exposure to Maya archaeology consisted, in fact, of three months in northwestern Belize, my perspective has inevitably been shaped by my subsequent work, all of which has taken place in the northern lowlands. Thus, I cherry-pick several of my examples from this region.

Reason 1: Relationality Adds to Concepts of Power

Consonant with a relational approach, political ecology insists that politics develops from interactions between actors. An additional aspect of relationality not highlighted in this book is that the identities of these actors are not inherent. Rather, they form through ongoing relations with other people, things, places, and conventions (Brück 2001; Fowler 2001; Ingold 1995; Strathern 1988; Taylor 1999; Thomas 1996). Such a concept of identity holds important consequences for our understanding of power.

Lohse (introduction and chapter 1) and González (chapter 7) explicitly discuss theories of power. Gonzalez presents "organizational power," which he describes as "the ability to control, influence, and manage the social environments of others." González notes that elites wield organizational power but that this power is negotiated: people choose to conform to or resist elite strategies. González uses the archaeological record of La Milpa, the Late and Terminal Classic center of the region, and Ixno'ha, a subordinate community, to assess the degrees of conformity and resistance. Although the average width-to-length ratio of Ixno'ha's buildings closely resembles that of La Milpa, the ceramic assemblages of the two sites and the layouts of their site centers were different. In González's words, these data suggest "complex and dynamic relationships between La Milpa and Ixno'ha rather than one based on simple dominance or subservience." González's analysis therefore opens the door for a more subtle concept of power, one that can make sense of the very close similarities in building shape without presuming that one site dominated the other. In chapter 1 Lohse brings us toward such a theory by concurring with Foucault's insight that dominant and subordinate actors engage in a struggle to shape action and thought. For Foucault, subjects "do not first preexist and later enter into combat or harmony . . . subjects emerge on the field of battle and play their roles there and there alone" (Dreyfus and Rabinow 1983, 109). Resistance, therefore, is not a reaction to the imposition of power because "resistance is never in a position of exteriority in relation to power" (Foucault 1978, 95).

Foucault's view of power is fully relational in that actors mutually constitute one another, only existing in relation to one another. The relational approach questions one of the most compelling images of the relation between domination and resistance, penned by James Scott (1985, 36) in *Weapons of the Weak*: "Just as millions of anthozoan polyps create, willy-nilly, a coral reef, so do thousands upon thousands of individual acts

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of insubordination and evasion create a political and economic barrier reef." Occasionally "the ship of state runs aground on such a reef." Scott's delightful analogy suggests that the actions of political subjects and central authorities articulate only when they crash into each other (a suggestion that Scott probably did not intend). A viewpoint more in keeping with Foucault would hold that the weak and strong are not as separate as a barrier reef and a boat. Instead, they bring each other into existence, interlocked, shaping each other. The strong cannot be conceived without the weak, just as a boat makes little sense without water. Or, perhaps the weak are on that boat, with a hand on the helm, helping, as Lohse would have it, chart its course.

Foucault goes further with power. As Lohse reminds us (see chapter 1), Giddens discusses two kinds of power: power over and power to. "Power over" reiterates Weber's position that actor A can compel actor B to act against actor B's wishes. "Power to" is slightly more complex. It means that actor B can do otherwise by resisting actor A, but it also means that an actor can create something positive, such as pleasure or knowledge, without necessarily dominating or resisting some other actor (Miller and Tilley 1984, 7). Yet Foucault adds to these two concepts (power over and power to), making power a boat ride for three. Before people can exercise power over or power to, they have already been acted on by a third kind of power, subjectification. Subjectification refers to the idea that humans cannot become acting subjects without first being subjected to a messy and often unvoiced constellation of norms, dispositions, mannerisms, expected bodily comportments, etc. (Thomas 2002). This third kind of power "is always-already present, constituting that very thing which one attempts to counter it with" (Foucault 1978, 82). Coming into a relationship with these norms and dispositions results in intelligibility: it transforms a mere human into a culturally recognizable person able to act in ways that other people will take seriously (Bourdieu 1977). Terrence Turner (1980, 114) has stated that this set of norms and dispositions "is not only the necessary medium through which we communicate our social status, attitudes, desires, beliefs and ideals (in short, our identities) to others, but also to a large extent constitutes these identities, in ways which we are compelled to conform regardless of our self-consciousness or even our contempt." The conformity that Turner mentions is not always a duplication of norms and precedents. A person can comply with a norm intelligibly without replicating it exactly (see Butler 1993). There is thus some leeway in how we relate to norms, and this leeway allows norms to be reproduced differently, leading to a notion of agency as citationality, the ability to cite norms differently.

The notion of organizational power discussed by González takes a step in this direction insofar as it does not suggest direct, coercive control but, rather, an ability to manage the settings in which action takes place. This influence over the setting of action is important because settings are not mere backdrops for action. They condition daily practice and, following the model of power as subjectification, they shape the dispositions of actors, making such actors amenable to regimes of power. Hodder and Cessford (2004) provide a strong example of this third kind of power in their discussion of the spatial configuration of the setting of daily practice at Çatalhöyük. Hodder and Cessford ask how the residents of such a large, agglomerated village could live peacefully for thousands of years without the apparent existence of centralized authority. "Instead of social rules being imposed by centralized authorities manipulating public rituals," they argue that power and authority were "intimately tied to the construction of bodily routines repeated in daily house practices over days, months, years, decades, centuries, even millennia" (Hodder and Cessford 2004, 22). Within the house, conventions regulated which rooms were kept clean, where certain kinds of plaster were used, which activities could take place in particular areas, and what spots were appropriate for subfloor burials. Furthermore, these houses contained multiple ledges, pillars, relief sculptures, and floors of subtly different elevation. Thus, the setting regulated bodily movement, instilling an embodied sense of order that produced persons receptive to the kind of spatial discipline required for life in a crowded village. Repetitive daily practice therefore subjected people to settled life, yet this subjectification at the same time equipped them with the power to flourish in the world's first delayed-return agricultural societies.

A similar example from Chunchucmil, an Early Classic Maya urban center located in northwestern Yucatán, draws out the point of how power over and power to spring from a more basic, subjectifying

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power embedded in the nondiscursive dispositions cultivated through habitual practice (Hutson 2010a). The following example, which involves massive labor projects, resonates with the discussions in chapters 2 and 4–5. At Chunchucmil, getting from residential areas to the temples, market, and ball court at the center of the site required walking two kinds of routes: *callejuelas* and *sacbes*. The most common walking routes at Chunchucmil—*callejuelas*—curve and meander. On the other hand, *sacbes*, which are found almost exclusively in the center of the site, run straight for hundreds of meters. Also, walking on *callejuelas* meant walking on the natural ground surface. Walking on a *sacbe*, however, meant walking on an elevated, smooth plaster-covered surface. Thus, the experience of walking on a *sacbe* is sharply out of step with the embodied dispositions durably inculcated through the much more common experience of walking along *callejuelas*. This disjunction sensitized walkers to the projects of the authorities who organized the construction of the *sacbes*. Finally, lifting oneself onto a *sacbe* physically exposed one to a massive labor project. The labor is invested in stone, a material with which all people at Chunchucmil would have been greatly familiar through daily activities (grinding corn, constructing and modifying house platforms, making and using tools). This familiarity would have caused people to appreciate the labor sedimented in the *sacbes* under their feet. Thus, due to people's habitual experience with stone, they would have understood the effort required to build the *sacbes* (and temple pyramids). In other words, if it is the case that massive building projects stand as symbols of power over (DeMarrais 2001; Trigger 1990), they only do so because they tap into a more primordial sense of power built from repetitive, embodied relationships to materials.

Back in northwestern Belize, the similarity in width-to-length ratios between Ixno'ha and La Milpa likely expresses a similarity of deeply embedded dispositions, perhaps unvoiced, about the proper way to build a house. González is correct to presume that such similarities in domestic settings may not result from the kind of power in which an authority dictates the details of house construction. Nevertheless, this is still power, but power in subjectification, in that the habitus has a hold over how people build their homes. Of course, such habits are not uniform, as reflected in the variation around the mean at both sites. Different sectors of society have different habitus. In the case of architecture, González suggests that the different sectors are locals versus migrants from the Petén. Class-based differences in habitus also come quickly to mind. This is an important point vis-à-vis Lohse's discussion of class. As Bourdieu (1984) has argued, class cannot always be reduced to Marxist categories such as those endorsed by Resnick and Wolff (1987) and Saitta (1994): producers, appropriators, distributors, and receivers. For example, among the ancient Maya, both farmers and painters of polychrome pots would be considered producers, though the life experience of the painter, usually a noble (Inomata 2001; Inomata et al. 2002; Reents-Budet 1998), and the farmer, usually a commoner, likely contained stark differences (see also Babić 2005, 75).

REASON 2: AUTHORITY RESULTS FROM (UNSTABLE) RELATIONS BETWEEN ACTORS

The authors in this book take a relational perspective by recognizing that authority is a relationship in need of constant management. The political ecology approach does not take political relationships for granted. Because followers always have the option of not supporting a leader, leaders must constantly work to gain and retain support. The political ecology approach recognizes that leaders often do not succeed in achieving full centralization of their polities. Several chapters examine the degree to which centralization took place, the strategies used to gain support for central authorities, and the tactics that resisted centralization. This book examines political relations at multiple levels, including interaction between macroregional centers and local centers (such as that between Tikal and La Milpa), between local centers (such as La Milpa and Blue Creek), and between local centers and small sites (such as Blue Creek and Rio Hondo). Clayton and Padilla, Morgan, and Sagebiel (chapters 8–9) touch on an even smaller level or relation—that between households and the small communities of which they are a part—though the potential at this level has yet to be exhausted (see Robin 2002).

At the highest level, the chapters leave somewhat open the question of who was in charge. In the beginning of chapter 5, Lohse, Sagebiel, and Baron

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argue that northwestern Belize emerged as a unified political entity under the authority of La Milpa or perhaps Tikal. In chapter 2, Houk and Lohse make clear that La Milpa was the largest site in the region in terms of monumental architecture (and also demography: Tourtellot, Everson, and Hammond 2003) and has the most stelae. Houk and Lohse also note that La Milpa's Late Classic pottery shows Petén connections. Yet Blue Creek's Late Classic pottery exhibits closer similarities to pottery from southern Campeche and the Belize River Valley (see also chapter 4, this volume). If Petén versus southern Campeche pottery styles suggests alliances with Tikal versus Calakmul, one might suggest that La Milpa and Blue Creek were on opposite sides of the Tikal-Calakmul rivalry. The recovery of two Chablekal fine gray sherds, from Blue Creek and Ixno'ha, leads Kosakowsky et al. (chapter 6, this volume) to assert, tentatively, a connection with Tikal dating to Tikal's resurgence at the end of the seventh century. What, then, do we make of Blue Creek? Some lines of data suggest allegiance (subordination?) to La Milpa-Tikal, others don't. The resolution, I believe, consists in recognizing that local centers need not fall cleanly into a single, stable sphere of influence (A. Smith 2003, 130–31). We might imagine Blue Creek maintaining connections with both Calakmul and Tikal, perhaps at different times, perhaps at the same time, perhaps playing one off the other. Thus, confusion arises only if we assume that each local center must limit their allegiances to one and only one regional center.

Actors negotiated relations between local centers and their hinterland settlements in a number of ways. In chapter 5, Lohse, Sagebiel, and Baron discuss the ball-court area at the local center of Gran Cacao as a public space that was used by leaders to achieve community integration. Prior to becoming a ball court in the Late Classic period, the space served, in the Late Preclassic, as a venue for feasts and communal offerings that celebrate fertility and renewal. Feasts continued in the Early Classic when a platform that conjoins round and square architectural components was built. Lohse, Sagebiel, and Baron argue that the conjoining of these components symbolizes "time-space beliefs about the path of the sun across the horizon and planes of existence." Round structures at other sites have been argued to forge shared identities. At the same time, the increasingly abstract symbolism of the architecture and the use of fancier pottery in accompanying feasts suggest the "increasingly hierarchical nature of relationships at the site." The construction of the ball court in the Late Classic continues the trend toward exclusionary relationships because ball-game ceremonies stress individual performance. Yet the ball court was highly accessible, suggesting that the space continued to solidify inclusionary relations between leaders and followers.

Ball courts can no longer be associated exclusively with elites. As Lohse, Sagebiel, and Baron note, the existence of seven ball courts of varying size dispersed across a variety of small sites in the Cuyumapa Valley, Honduras, reflects a lack of centralized control over the construction and use of these features (Fox 1996; R. Joyce and Hendon 2000). Other peripheral ball courts include Chawak But'o'ob in northern Belize (Walling et al. 2006) as well as Los Achiotes in the Copán Valley (Canuto and Fash 2004). These data match recent findings in the northern lowlands, where ball courts were once thought to be relatively rare (Kurjack, Maldonado Cárdenas, and Robertson 1991). In the northwest corner of the peninsula, Andrews and Robles Castellanos (2004) recorded 25 new ball courts, 23 dating to the Middle Preclassic and almost all located at small sites with little evidence for political centralization. Hinterland ball courts at small sites have also been recorded in the vicinity of Ichmul de Morley (J. Smith 1999), Ucí (Hutson 2010b), and Chunchucmil (Mazeau 2005).

In this light, Lohse, Sagebiel, and Baron's conclusion that the use of the Late Classic ball court at Gran Cacao reiterated both communal and elite identities seems prudent. We therefore have a case where elites become more salient while at the same time being held accountable by less privileged actors who successfully elicit inclusive ceremonies from their leaders. An implicit strength of this paper is that the parties to the negotiation of power relations are not reduced to rational maximizers. In other words, these actors are not motivated by simplistic notions of bald-faced self-gain. As Hodder (1986) noted, historically specific systems of meaning constitute self-interest. Another way of saying this is that politics and economics are always embedded in morality (see also Houston et al. 2003; Scott 1976). Lohse, Sagebiel, and Baron's concern for the importance of the systems of meaning expressed in the of-

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ferings and round-square architecture shows an appreciation of the culturally specific values that mediated political relations.

A different strategy for incorporating hinterland communities into centralized regimes is the cultivation of intermediate elites (Elson and Covey 2006). In the Belize River Valley, Yaeger (2000) provides compelling data to suggest that intermediaries helped integrate hinterland communities with centralized polities. At the site of San Lorenzo, houses with greater architectural elaboration served as venues for community feasts. These same households also have the only evidence for connections with elites at the nearby regional center, Xunantunich. Thus, the heads of these higher-status households within San Lorenzo served as brokers and points of contact between local farmers and regional leaders. LeCount argues that regional leaders give fancy pottery to such brokers to cultivate alliances (LeCount 2001). Households at Chunchucmil also contained pots (one with a carved nametag inscription), which must have been gifts from elites (Hutson 2010a). A central assumption here is that elites oversaw production of fancy pottery (Reents-Budet 1998; see also chapter 8, this volume). At Blue Creek, Driver and Kosakowsky (chapter 4) note that during the transition from the Early to Late Classic, some important ritual structures appear beyond the site center. The Quincunx Group (Zaro and Lohse 2005), which contains a solar observatory two kilometers southwest of the Blue Creek site center, stands as an example. Whereas Scarborough and Valdez (2009, 219) argue that the Quincunx Group hosted rituals independent of the site center, Saxche Orange Polychrome pottery recovered from the observatory suggests an affiliation with centralized elites.

In chapter 8 Clayton assesses the degree to which centralized strategies of incorporation succeeded in the hinterland of Blue Creek. She uses homogeneity in artifact assemblages between Blue Creek and the hinterland sites of Chan Cahal (located 1.2 km away) and Rio Hondo (located 5.2 km away) as a gauge of centralization of the rural economy (see also chapter 7, this volume). Whereas Chan Cahal has monumental architecture and a long occupation mirroring that of Blue Creek (Middle Preclassic to Terminal Classic), Rio Hondo's six structures were short-lived (confined to the beginning of the Late Classic) and lacked suprahousehold cohesion. Clayton finds that the link between Chan Cahal and Blue Creek was tighter than the link between Rio Hondo and Blue Creek. That Rio Hondo's inhabitants obtained chert from different sources than Blue Creek and Chan Cahal and did not use polychrome pottery suggests to Clayton that they resisted Blue Creek's efforts at incorporation, choosing instead to opt out of integration into centralized systems. I read this as a form of "voting with the feet" (Scott 1985), wherein potential supporters may have left the Blue Creek polity and established a new settlement beyond Blue Creek's orbit of control. Discussions of voting with the feet in the Classic period discuss shifts of allegiance from one leader to another (Inomata 2004; see also Clark and Blake 1994, 21; Lucero 2007). Clayton does not name a polity that may have been competing with Blue Creek for the allegiance of Rio Hondo's settlers. More research across the Hondo River in southern Quintana Roo, Mexico, would be useful here, though not all settlements are necessarily under someone else's control.

Thanks to the careful chronology of Blue Creek presented by Driver and Kosakowsky in chapter 4, we find that Rio Hondo's defection occurs precisely when Blue Creek's three most massive monumental structures receive their most drastic enlargements. In the subsequent Tepeu 2 period, construction at Blue Creek was limited to elite residences. The chronology here suggests that Rio Hondo's defection was a direct response to increasing labor burdens at Blue Creek. Driver and Kosakowsky also note that rural populations increase in the Late Classic. From this perspective, Rio Hondo may have marked the beginning of this trend of moving away from, and weakening, the regional center. The combined notions that (1) leaders must actively provide benefits to their followers or risk losing them and (2) commoners have the agency to opt out or change their affiliation serve as excellent examples of the major theme of the book: that all sectors of society participate actively in political relations.

Alternative readings that do not necessarily involve the weakening of Blue Creek in Tepeu 2 are also possible, however. For example, we learn from Beach, Luzzadder-Beach, and Lohse in chapter 3 that the Late Classic was also the period of major labor investment in the ditched fields northeast and southeast of Blue Creek. Current data do not permit conclusions about whether or not Blue Creek's leaders organized

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the construction of the ditched fields, but it is easy to imagine that the labor power devoted to Blue Creek's temples in Tepeu 1 was merely shifted to Blue Creek's ditched fields in Tepeu 2. Furthermore, certain aspects of Rio Hondo—short occupation, lack of nodal spaces for community integration, less wealth than communities closer to the center—have been used in other regions to make a case for domination as opposed to resistance. For example, sites in the Richland Complex, located 10 to 30 kilometers southeast of Cahokia, share these characteristics (Pauketat 2000). Pauketat, however, has argued that Cahokia established and controlled the Richland Complex farming communities. Pyburn et al. (1998) have made a similar hierarchical argument for short-lived occupations of farmers lacking suprahousehold cohesion on Albion Island, Belize, during the Early Classic.

Whether or not these alternatives are valid, they set up an important question: If multiple lines of evidence suggest the existence of a strongly centralized polity, does this somehow mean that commoners lose their voice? Practice-theory proverbs ("ability to do otherwise," "where there is domination there is resistance") should not be deployed too readily in such situations. For instance, Marshall Sahlins, America's own "master" of practice theory (Ortner 2001), argues that the populist style of history that values the practical actions of commoners fits Western history rather well but that other cultures have other modes of historical consciousness and determination. Although Sahlins (1987, 35) emphatically rejects a "neolithic form of the great-man theory of history" and admits that there can be no anthropology without the populist presuppositions that underlie a relational approach to history, he uses Fijian and Maori history to build a compelling case for what he calls "heroic history," in which kings are the condition for the possibility of community and "the general life conditions of the people are hegemonically ordered, as social form and collective destiny, by the particular dispositions of the powers-that-be" (Sahlins 1987, 36). The ancient Maya, with sacred kings who proclaimed that the appearance of the most basic subsistence crop was contingent on their ritual performances, certainly stand as a candidate for heroic history. It may not come as a surprise that reconciling political ecology with heroic history will require a more deeply historic outlook, to which I now turn.

Reason 3: The Present Is Understood in Relation to the Past

The chapters in this book do not explicitly discuss an important theme in contemporary archaeology: memory (Mills and Walker 2008; Stanton and Magnoni 2008; Van Dyke and Alcock 2003). There is, however, a sense, in some chapters, of the importance of past history and antecedent conditions in the shaping of new actions (Barrett 1999; Pauketat 2001; A. Smith 2003, 121). Of the many studies along these lines, that by Arthur Joyce (2008) fits well in the context of the current book. In the lower Rio Verde Valley of Oaxaca, Mexico, Joyce and his colleagues have documented periods of both centralization and decentralization. During the first period of political centralization, in the Terminal Formative (100 BC–250 AD), rulers could not emphasize their individual power because they were constrained by the communal and corporate principles of the previous period, the Late Formative. The emergence of rulers brought about a form of inequality in tension with traditional egalitarian principles. Joyce argues that this tension led to the collapse of centralization at the beginning of the Early Classic. Leaders in the lower Rio Verde Valley achieved centralization again in the Late Classic, but this form of centralization was also historically contingent and qualitatively different from centralization in the Terminal Formative. Thus, political dynamics are not a timeless cycling between centralization and decentralization (Marcus 1993).

The example from Oaxaca illustrates the importance of history and tradition in circumscribing the strategies available to leaders. The importance of history also shows clearly in the political development of Gran Cacao (chapter 5). Here, as discussed earlier, Late Classic leaders highlighted their increasingly exalted status but in a way that accommodated the communal traditions that prevailed in earlier periods. At Blue Creek, Driver and Kosakowsky (chapter 4) believe changes in the site's major architectural programs reflect "changes in the social logic governing concepts of status and sanctity." Here, I believe it is useful to highlight changes that seem to be reactions to previous logics. For example, at the end of the Early Classic, Structure 4, located at the south edge of Plaza A, was transformed from a high-

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status residence to a temple. This transformation also saw the deposition of caches highlighting inclusive themes such as the layering of the Maya cosmos. Thus, the south side of Plaza A shifts from an exclusive residence to a communal temple. In the Late Classic, momentum seems to swing back the other way, with attention returning to the construction of elite residences. These shifts signify not the unfolding of a preordained plan for the site center but rather a historically contingent struggle over space (see also Gillespie 2008).

The point I am driving at is that a deeper historical approach provides the kind of time frame that allows us to see the relational—"metaphorically ecological"—underpinnings of regimes that seem dominated by elites. For example, the lower Rio Verde Valley shows little evidence for the contestation of authority during the Late Classic, but what happened at the regional center, Rio Viejo, in the Early Postclassic (destruction and denigration of the Classic-period carvings of kings) exposes the tensions underlying previous centralization (A. Joyce, Bustamante, and Levine 2001).

Yet recognizing a degree of autonomy for commoners does not depend on finding denigrated sculptures of rulers. Ashmore, Yaeger, and Robin's (2004) case study from the regional center of Xunantunich provides a way of seeing commoners as parties to political negotiations even when there is little evidence for upheaval. Farmers in Xunantunich's hinterland had access to rich agrarian resources that should have insulated them from the political collapse of Xunantunich at the end of the Classic period. Despite a lack of disease or environmental degradation, however, these hinterland communities disappeared just as did Xunantunich. Ashmore, Yaeger, and Robin argue that these farmsteads appeared as a result of increased demand for food from beleaguered Late Classic polities in the Petén. When these polities collapsed, "the economic and political opportunities and inducements to farmers to settle locally dissolved as well, and weakened rulers in the center could no longer induce or entice people to stay" (Ashmore, Yaeger, and Robin 2004, 321). In the absence of evidence for mass death, Ashmore, Yaeger, and Robin surmise that these farmers simply moved on. Thus, by looking at a broader time frame—the growth, florescence, and decline of Xunantunich and its hinterland—Ashmore, Yaeger, and Robin suggest that commoners had the power to choose their destiny when, on the surface, it looks as though they have no history, that their history merely follows in lockstep that of their leaders.

What happened on the periphery of Xunantunich provides an interesting contrast for what happened at Akab Muclil. Padilla, Morgan, and Sagebiel in chapter 9 argue that Akab Muclil, which had a Classic-period occupation, persisted into the Postclassic period because of its ideal location. Situated within a kilometer of Rio Bravo, the people of Akab Muclil had access to fresh water, marine resources, and a trade route that connected them to the rest of Mesoamerica. Yet sites like Rio Hondo (see chapter 8) and San Lorenzo (near Xunantunich; Ashmore, Yaeger, and Robin 2004; Yaeger 2000) had similar ecological positioning but did not continue into the Postclassic. Unlike San Lorenzo, Akab Muclil is quite distant from the closest major center (it lies 20 km from La Milpa) and equidistant from local centers Gran Cacao and Blue Creek. This might mean that it was not as strongly affiliated with regional leaders and therefore not as heavily affected by these leaders' dwindling fortunes at the end of the Classic period. Yet insulation from regional leaders does not fully explain Akab Muclil's survival, because Rio Hondo was similarly insulated but did not survive. Akab Muclil's survival might have more to do with the fact that, unlike Rio Hondo and San Lorenzo, it had substantial public architecture and a longer occupation history, beginning in the Early Classic with public rituals and mortuary practices in the site's central temple. These founding events, and memories of them, may have created an enduring sense of place. Relations to the past once again condition future prospects.

REASON 4: ANCIENT MAYA ECONOMIES INVOLVED MULTIPLE INTERRELATIONS BETWEEN CLASSES

The political ecology approach explicitly contests the view that "elites and non-elites are viewed through disconnected organizational schemes in which the actions of the latter, most often involved in subsistence and utilitarian production, hold little bearing on the former" (chapter 1, this volume). In other words, political ecology is critical of two-tiered economic models that minimize the relations between

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elites, whose economic roles were said to be limited to the production and exchange of prestige goods, and commoners, who did much of everything else. Elizabeth Graham (2002) makes a compelling argument that even if economic roles were as well defined as I have just made them out to be, elites and commoners would have been much more deeply interrelated than we once thought:

> If elites painted polychromes, they also needed body clays, slip clays, paints, brushes, holders, resins, cleaners, paper for designs, mineral pigments, stands, wooden rollers, tempers, kilns, firewood and sponges, not to mention help in preparing surfaces, preparing ingredients, stoking fires, regulating air flow, getting lunch on time, settling clays, toting water, ordering supplies, keeping track of transactions, training and feeding apprentices and cleaning up the mess at the end of the production day. In other words, when I try to envision production, it is hard to see a prestige economy in action as a phenomenon that is separate from other relationships. Prestige items represent a complex series of relationships, both synchronic and diachronic, and they rely on networks of acquisition in which so-called subsistence demands are embedded. [Graham 2002, 414]

Lohse (chapter 1) cites jade working at Cancuen (Kovacevich 2006) as a case study that bears witness to coordination between elites and non-elites in economic processes. Research by my colleagues and me at Chunchucmil adds another case study in economic interrelationships. In the Early Classic period Chunchucmil consumed abundant obsidian compared with other sites in the northern lowlands. Chunchucmil likely served as the gateway for obsidian entering the northern lowlands from the Gulf of Mexico. Additional data (Dahlin 2003; Dahlin and Ardren 2002; Hutson, Dahlin, and Mazeau 2010) support the hypothesis that Chunchucmil was a merchant center and that its people managed some of the obsidian trade to the northern lowlands. The logistics of this trade (building canoes, outfitting a crew, provisioning for journeys, rowing the canoes over long distances, and carrying them across portages, etc.) involve coordination and cooperation between commoners and elites (Clark 1987, 273; Rathje 1971; Rice 1987, 80). Even if people from Chunchucmil did not manage the trade, furnishing a surplus of local goods (probably salt from the Celestun salt flats, approximately 35 km northwest of Chunchucmil, and other perishable materials from the estuaries and forests west of the city) to exchange for the large quantities of obsidian entering the site would have required coordination of elites and commoners.

Two additional lines of evidence support the close interrelations between these actors. First, the city lacked a dominant monumental plaza. Instead, it had 15 large temple compounds, strongly suggesting the existence of 15 governing factions, each of which would have needed a following of non-elite supporters. Second, household excavations indicate that the leaders of these compounds were not the only ones involved in long-distance trade. For example, Traci Ardren's (2003) excavations in the Lool houselot revealed that this group's shrine had a *talud tablero* facade. Such facades, though they can no longer be considered unambiguous signatures of Teotihuacan influence (García Cook 1984), nonetheless manifest participation in a pan-Mesoamerican sphere of interaction. Excavations in the 'Aak houselot (Hutson 2010a) uncovered 670 obsidian artifacts, 58 jade ornaments, and fragments of a Teotihuacan-style cylinder tripod vessel. In their familiarity with cosmopolitan styles and easy access to exotic foreign goods, the rather modest Lool and 'Aak houselots (and probably others not yet explored intensively) appear to have been well integrated into Chunchucmil's long-distance commerce.

For those who protest that Chunchucmil (or Cancuen) is an economic anomaly, it should be pointed out that at many sites, such as Copán (Hendon 1991), families of quite varied statuses occupied the same domestic compounds and worked together to sustain the house. Furthermore, production of low-status goods (stone tools) often took place in elite contexts, such as the largest temple pyramid at Calakmul (Robin 2004; see also Emery and Aoyama 2007).

Chapter 6, by Kosakowsky and co-authors, focuses not on relations between elites and non-elites but on relations among dispersed non-elites articulated by the production and exchange of utilitarian ceramics. Though Kosakowsky et al. reiterate the roles played by surplus-consuming elites, their compositional data show that the use of multiple, dispersed clay sources in the Late Classic guaranteed

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local management strategies that were, in the aggregate, too complex for centralized authorities to administer (see also Scarborough and Valdez 2009). Kosakowsky et al. also find that neighboring Late Classic sites participated in different local ceramic trade networks, a pattern reminiscent of that reported by Clayton for chert sources.

LAST LAUGH

I have argued that a political ecology approach is a relational approach. As such, it gives serious consideration to four concepts: (1) actors are formed and granted agency through subjection to social conventions and built environments, (2) political authority results from vigilant negotiation and management of relations between leaders and supporters, (3) strategies for shaping these relations are themselves shaped in relation to antecedent political histories, and (4) a robust understanding of ancient Maya economies must recognize the truly extensive economic interrelations between elites and non-elites and the fact that rural homesteads are interdependent even without the intervention of centralized authority. Attending to these kinds of relations brings political ecology in line with a broader group of approaches known as social archaeology, even as political ecology embraces environmental archaeology.

The chapters in this book join many other studies over the last two decades that highlight the contribution of all segments of society. This is an important direction for Maya archaeology, given its original emphasis on elites. When Gordon Willey (Willey et al. 1965) pioneered this direction with his initial work along the Belize River, Linton Satterthwaite doubted him. As the Landa quote that opened this chapter makes clear, Satterthwaite was not the first insider bemused by an outsider wishing to attend to non-elites. Fortunately, the direction followed in this book has become far less laughable.

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CLASSIC MAYA POLITICAL ECOLOGY

EDITED BY JON C. LOHSE

The Classic Maya of the Central Lowlands crafted one of the ancient world's great civilizations in what is today Belize, northern Guatemala, and Yucatan, Mexico. Although the Maya have long been known for their artistic and architectural achievements, the economic and agricultural base of this society has received far less attention. Over the past couple of decades, archaeologists have begun to understand how Maya householders reliably farmed this harsh, fragile, and yet highly productive environment for over 2,000 years. As researchers slowly recognize the technical skills and knowledge required to sustain burgeoning communities and long-distance networks in this setting, not to mention an ever-growing elite class that seems to have contributed little to the daily lives of most ancient Maya, a new view emerges of how regional polities prospered in the face of population increase, political turmoil, and environmental and climatic change. The actions of farmers, potters, tool-makers, and others take on larger implications as archaeologists understand how these and other laborers helped sustain their political communities.

This volume presents a collection of studies that examine from different perspectives, representing both households and site centers, local and regional political processes in northwestern Belize. Data spanning the Archaic to Early Postclassic are presented, with particular analytical focus given to the end of the Early Classic through the Late and Terminal Classic and the geopolitical tumult that defined this period. Cast in the framework of political ecology, together these studies not only shed light on specific class histories of the region, they also advance a theory for understanding the contributions of non-elites to political growth and change over time.

Classic Maya Political Ecology opens a window into pre-Columbian political processes grounded in environmental productivity and a mutual interdependence that defined class relations in northwestern Belize. This volume also outlines a theoretical approach that defines commoners and elites alike as political actors, people who contributed to the long-term success and adaptability of local and regional political communities and the networks that sustained them.

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