

Resilience and Vulnerability in the Maya Hinterlands

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ABSTRACT

Given their grand architecture, intricately carved monuments, and colorful histories, the largest Maya centers have long drawn the attention of archaeologists and non-specialists alike. Early interest in the infamous Maya collapse was, in fact, initially inspired by the discovery of these “lost cities in the jungle.” This research focus was further stimulated by advances in deciphering the Maya hieroglyphic script, and the recognition that monument erection—or in other words, the written histories of most of the southern Lowland centers—came to a rather abrupt end in the 9th century C.E. IHOPE scholars are attempting to elucidate the conditions that lead to the decline of these impressive centers. In doing so, the trajectories of smaller communities, and or those located in hinterlands between the more prominent centers, have emerged as interesting counterpoints that provide unique, and no less significant, examples of resilience and vulnerability. The emerging data suggest that these communities had specific strengths and weaknesses, which in turn provided them with a particular set of challenges, as well as a specific range of coping mechanisms they could marshal when dealing with their ever-changing environment circumstances (i.e., climate change, resource availability, landscape modifications), and the highly dynamic geopolitical landscape within which they were embedded. This paper will discuss some of the key insights derived from our examination of hinterland communities, with particular attention being paid to the broader implications of the contrasting trajectories exhibited by these segments of ancient Maya society. [archaeology, Maya, hinterland, innovation, resilience]

As part of our efforts to explore issues of resilience and vulnerability in the ancient Maya world, IHOPE scholars are not only examining the heartlands of Maya polities, but also their hinterlands. These zones, and their resident communities, are intriguing places to study precisely because of their distinctive characteristics. In this paper we explore issues relating to resilience and vulnerability in three Maya centers located today in different parts of Belize (Figure 11.1), an area of the east-

ern Maya Lowlands that can be geographically characterized as encompassing the Caribbean coastal shelf and the Maya Mountains. Not only did these centers emerge in varied ecological, economic, and political settings, their periods of florescence also occurred at different times during the broader Maya developmental trajectory. These case studies provide a glimpse into the dynamic nature of socio-ecological development and denouement in the Maya hinterlands.

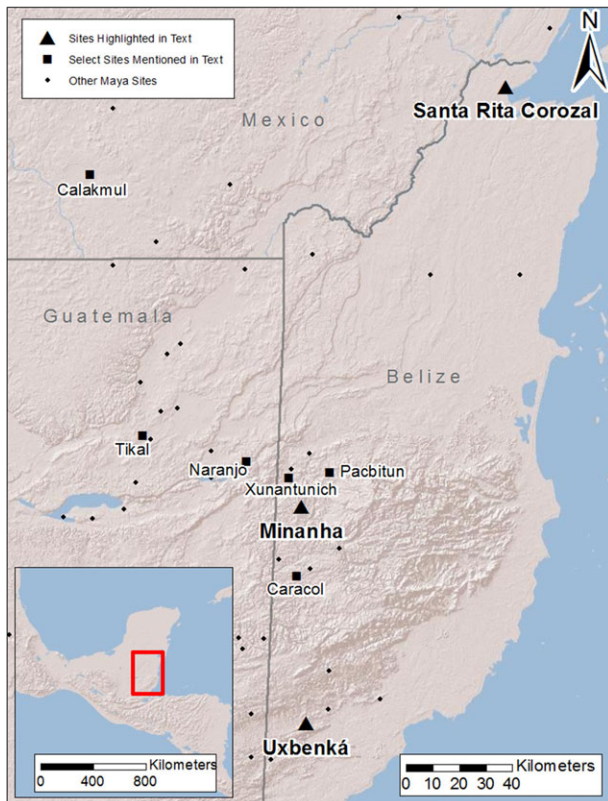


Figure 11.1. Map of the Maya subarea showing the location of the three hinterland case studies.

Resilience and Vulnerability in the Hinterlands

In considering the qualities of hinterlands and how these relate to issues of resilience and vulnerability, it is useful to begin with Igor Kopytoff's (1987, 1999) distinction between internal frontiers, which are zones between two adjacent polities, and external frontiers, which are zones formed as a result of the colonizing expansion of a polity into a sparsely populated and or less politically complex region. When investigating ancient hinterlands, archaeologists study both internal and external frontiers, but often without making a clear distinction between the two. However, the political and economic integration of hinterlands into broader systems, as well as the resilience and vulnerability of hinterland communities, may vary for internal and external frontiers.

Hinterland communities develop in zones that constitute "edges." They may occur not only at the juncture of different political and or cultural units, but also in divergent ecological zones. Thus, the location of a hinterland community may support or minimize its resilience. According to Nancy Turner and her colleagues (2003:456–457), "cultural edges are like ecological edges in that they allow for

diversification of resources, in this case cultural resources. . . In both cases they provide increasing social-ecological resilience as they broaden the diversity of biological species and cultural knowledge that can be drawn upon for livelihood."

Others suggest that hinterland communities have an inherent level of resilience because distance from polity capitals affords them a significant level of autonomy (see also Browman 1997:230). The resilience of hinterland communities may also be enhanced because they are located between competing polities ~~and can~~, therefore, ally themselves with the polity that is most beneficial to local power structures or institutions, and or the polity that has taken the upper hand in a territorial dispute (Hassig 1992:98).

Hinterlands may also have significant vulnerabilities. For example, considerable debate exists concerning how innovative, and hence resilient, hinterland communities are. Sander van der Leeuw (2007:219) posits that hinterlands are disadvantaged when compared to heartlands because the latter are the centers for innovation; the more peripheral a settlement is, the "more unattainable the innovations are." Others suggest that it is during times of stress that loosely integrated hinterlands become vulnerable, because such "modularity" inhibits the transfer of assistance and innovations precisely when they are most needed (Cumming 2011:138; Walker and Salt 2012:95–96). Similarly, Kopytoff (1999:33) argues that there is often a significant level of "cultural conservatism" in hinterland communities, which stifles innovation on the local scale. According to Kopytoff (1999:33–34), although the inhabitants of hinterland communities tend to see themselves as innovators, with substantial leeway to create any kind of society they wish, in reality they bring a significant level of conformity to their social constructions. This is because they rely on a given "political culture," or "cultural baggage" —including technological traditions and conceptions of power, legitimacy, authority, institution building, and political practice—which manifests itself in the form of "ideal patterns and ideal institutional models, rather than being a matter, as in the metropolises, of active practice."

In contrast to the aforementioned perspectives, others advocate for more significant levels of innovation, and hence resilience, in the hinterlands. For example, Kopytoff's (1999) "cyclical model" for hinterland development underscores the key role played by immigrants from polity capitals, or metropolises, who move into hinterland settings and either set up their own communities or merge with those communities established by earlier settlers, thereby enhancing the innovative capacity of the hinterland communities they now call home. This view does, however, continue to favor the idea that all innovation occurs in the heartlands,

which is a stance that has been effectively challenged by those who see hinterlands, themselves, as dynamic places of cultural contact and syncretization, where innovations of all kinds are created, manipulated, and transformed (Lightfoot and Martinez 1995:472). From this perspective, hinterland communities are resilient places precisely because they are centers for innovation, rather than vulnerable peripheries passively awaiting the next innovation to be transferred from the heartland, regardless of whether hinterlands are viewed as creators of, or receptors for, innovation—and the previous discussion suggests that the answer lay somewhere in the middle—most scholars agree that the confluence of local and immigrant cultures, the latter often emanating from multiple metropolises, often leads to the emergence of unique hinterland communities, complete with differing social identities (Schortman 1989). The interstitial character of the hinterland, itself, only serves to enhance this uniqueness. As Kopytoff (1987, 1999) has documented using African examples, hinterland communities may eventually develop into capitals of their own polities, re-initiating the process of hinterland formation, as immigrants from the newly established metropole move out and coalesce with new and existing communities in the new hinterland(s). Often, these communities are seen to “emerge as historically changing, multiple, and branching alignments of social groups and segments” (Wells 2006:268). The mixing of local and immigrant cultures within hinterland settings is central to the establishment of distinct hinterland societies and contributes to the different levels of resilience and vulnerability that characterize specific hinterland socioecological systems. And, while hinterland dynamics are often the focus of study relative to large ancient empires (see for example Wells 2013 for ancient Rome and Malpass and Alconini 2010 for the Inka), the proximity of hinterland Maya sites to the Maya heartland provides additional depth to this discussion.

We should, in fact, expect considerable variability in the levels of resilience exhibited by specific hinterland communities, over both time and space, especially given that they can interface with neighboring political formations in diverse ways. Where hinterlands are integrated indirectly and local power structures are maintained as long as tax or tribute continue to flow to the heartland, we see loosely integrated geopolitical landscapes defined by continually negotiated alliances and or patron-client relationships (Bedford 2009:42, 48; LeCount and Yaeger 2010:31–39), as well as significant functional redundancy, greater response diversity, limited connectivity, and higher levels of resilience (e.g., Holling 2001; Holling and Gunderson 2002; Gunderson and Holling 2002; Walker and Salt 2006). Alternatively, when hinterlands are under the direct control of a political heartland, usually through the installation of

governors emanating from the metropole itself, we see a much more tightly integrated geopolitical landscape consisting of a capital and a series of provinces (Bedford 2009:42, 48; LeCount and Yaeger 2010:31–39), as well as considerable functional specialization, a more limited degree of response diversity, and a high level of interconnectedness—or in other words, “hypercoherence”—leading to diminished resilience over time (Hegmon et al. 2008; Holling and Gunderson 2002; Gunderson and Holling 2002; Walker and Salt 2006:76–77, 164). Of significance here is the fact that a combination of these integrative strategies may be employed at any one time (e.g., see Bedford [2009] for a discussion of the Neo-Assyrian empire, Anderies [2006] for the Hohokom, and van der Leeuw [2005] for Roman Empire in the Rhone Valley). In summary, as archaeologists we are left to consider whether hinterland communities were: (1) ideally positioned, ecologically, culturally, and politically, so as to promote flexibility and resilience when faced with perturbations; (2) rigid and, thus, vulnerable in the face of negative change because they were tightly connected to heartlands and lacked innovative capacity; and or, (3) highly diverse and inherently dynamic, exhibiting significant variability in terms of their ability to deal with unexpected environmental or cultural shocks. We will now turn to our three case studies to illustrate the complex nature of resilience and vulnerability in the ancient Maya hinterlands.

Uxbenká

Our first case study focuses on Uxbenká, a moderately sized polity spread out across the foothills of the Maya Mountains along the eastern periphery of the Maya Lowlands (Figure 11.2). In this region Uxbenká was the first community with the ability to mobilize labor around significant architectural construction and landscape transformations.

During its evolution, Uxbenká underwent a shift from a small village to a complex polity with social differentiation reflected in distinctions between civic-ceremonial and residential spaces and the installation of carved stelae that record statements attesting to the authority and network interactions of individual elites. Research at Uxbenká focuses on building absolute chronologies for the site core areas and settlement (Culleton et al. 2012; Pruffer et al. 2011), on extensive geomorphological analysis assessing productive agricultural strategies (Culleton 2012), understanding economic interactions and the role of trade (Nazaroff et al. 2010), and on placing the development of the polity in the context of its ecological setting and local climate records (Kennett et al. 2012; Walsh et al. in press). These studies are integrated with longitudinal ethnographic work measuring

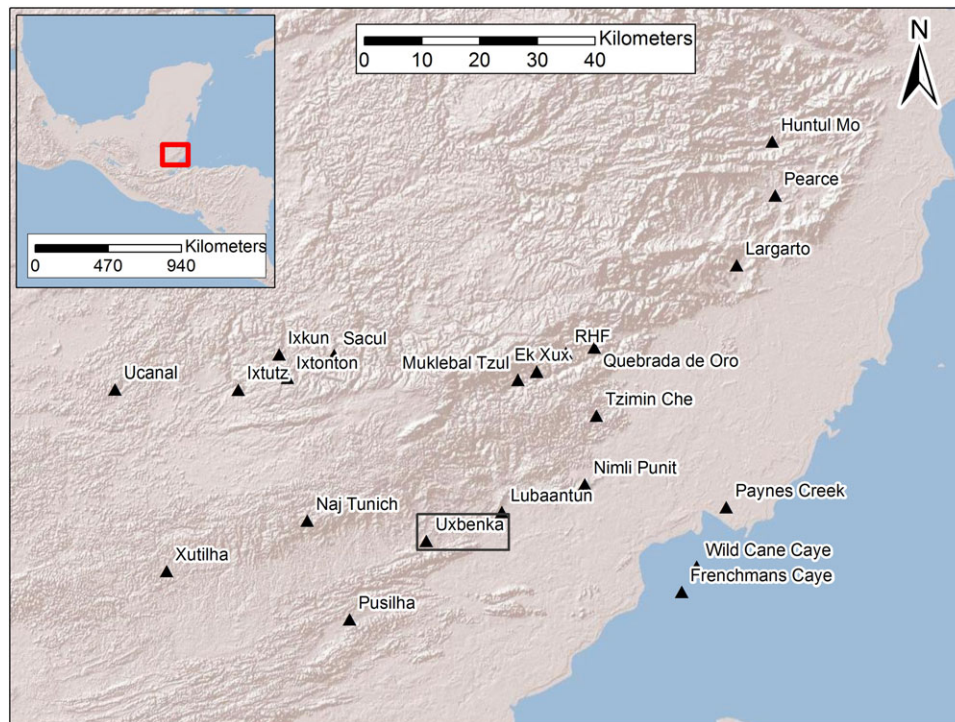


Figure 11.2. Map showing the location of Uxbenka and other centers in, or adjacent to, southern Belize.

agricultural productivity and potential at the Mopan Maya community of Santa Cruz whose residents have recolonized the lands and resources of the ancient polity.

Uxbenká is a peripheral polity (Schortman and Urban 1994) with indicators of economic, political, and ideological links to larger core political centers, but little evidence of having ever fallen under the hegemonic sway of these neighbors (Prufer et al. 2011). The polity began as an agricultural village during the latter part of the Late Preclassic (prior to Cal. 50 B.C.E.–C.E. 50) with small hierarchically undifferentiated households scattered across a series of adjacent hilltops in an otherwise sparsely occupied region. The population that coalesced into a community may have been endogenous. Geomorphological studies at Uxbenka (Culleton 2012) and regional paleoecological records (Walsh et al. in press) indicate land clearing as early as Cal. 1420–1290 B.C.E., with settlers exploiting rich agricultural soils, abundant rainfall, and reliable surface water.

Between Cal. C.E. 60 and 310 Uxbenká underwent significant reorganization, including massive landscape alteration to accommodate public architecture in Groups A, B, and D (Figure 11.3). Entire hilltops and ridges were flattened and expanded by cutting and filling for emergent status-differentiating architectural groups in the core of the Classic Maya center.

A brief period of significantly reduced precipitation from C.E. 400–425 (Kennett et al. 2012) may represent a short hiatus in growth at Uxbenká evidenced by a short cessation of monumental construction (Aquino et al. 2013). During this time there may have been a change in leadership strategies seen in the abandonment of a foundational cave shrine built during the initial development of the polity during the Late Preclassic–Early Classic transition (Moyes and Prufer 2013).

Within several decades of C.E. 400 Uxbenká began to be integrated more fully into the Early Classic Maya traditions. The first carved monuments appear at some point after C.E. 378 but before C.E. 455; some have specific references to Tikal, beginning a three-century tradition of elite texts that describe network interactions and political status. Despite textual references to the Petén heartland, there are no archaeological indicators that suggest Uxbenká was a subordinate of Tikal. The Early Classic was also a period of significant increasing precipitation (Kennett et al. 2012) and an expansion of settlements away from the site core, including the dispersal of elite households (Thompson and Prufer 2013). Some of these architectural groups have significant investment in landscape alteration, likely reflecting the ability of economic elites to mobilize labor and expand their presence in areas of particularly high quality soils close to

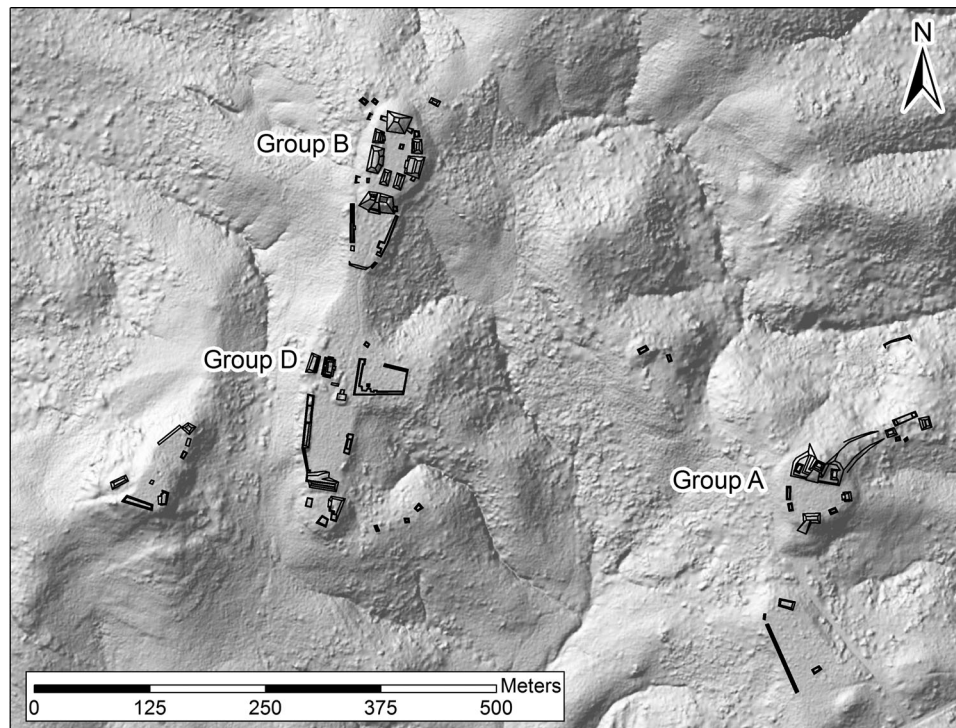


Figure 11.3. LiDAR image of Uxbenka detailing the site core and prominent architectural groups A, B, and D, discussed in the text.

perennial water sources. While this period of rapid growth was likely facilitated by a long period of high rainfall evidenced in a local paleoclimate record (Kennett et al 2012), another factor may have been the unique soils that form in the Rio Blanco Valley. Referred to as the Toledo Beds these sedimentary soils derive from interbedded mudstones, sandstones and limestones that lay close to horizontal. The mudstone strata break down rapidly when exposed to weathering and quickly form new soils (Hartshorn et al. 1984:76–77). Clearing lands for agriculture, including burning, create conditions where soils form rapidly, allowing shortened fallow periods, and allowing more of the landscape to be farmed with minimal intensification (Culleton 2012). These same soils are considered ideal for a range of economically important tree crops, including Cacao (Wright et al. 1959). Combined with some of the highest rainfall rates in Central America (2800–4000 millimeters per year, compared to 1500–2000 millimeters for central Belize and the Peten, Kennett et al. 2012) Uxbenká may have been well suited to maximize agricultural production on less land, and with less investment in terracing or other intensification strategies, and reducing path dependencies.

The Late Classic also witnessed another reorganization that included the construction of final-phase public buildings in Groups B and D, obscuring earlier architecture and

starting after Cal C.E. 650. The final configuration of the site reflects a reorientation of the political center to Group B, a restricted plaza with a northern pyramid and a central ballcourt. In Group A, the Stela Plaza, which housed carved monuments attesting to the dynastic history of the polity and network interactions of leaders, there are no Late Classic constructions, but there is evidence for the re-plastering of surfaces and the continued erection of monuments through the ninth century (Prufer et al. 2011).

Regionally, Uxbenká remained the largest inland polity of any significance until around C.E. 550 when several important polities—including Pusilha, Lubaantun, and Nimli Punit—emerged onto the landscape as regional centers, undoubtedly impacting the geopolitical and economic primacy of Uxbenká on this southeastern periphery (though recent studies indicate that Nim Li Punit may have been founded during the Early Classic; see Fauvelle et al. 2013). Decline appears to have been regional, rapid, and complete with apparent abandonment of political centers and overland trade networks by the end of the ninth century C.E. and only ephemeral evidence of early Postclassic populations, suggesting that the collapse of the political centers was also accompanied by gradual regional depopulation. Paleoecological reconstructions indicate that suggest that human use of fire and subsequent erosion in the watershed became less

common sometime between C.E. 800–1000 (Walsh et al. in press), likely indicating a reduction of land clearing for agriculture. This occurred at the same time as of a decline in rainfall and several protracted droughts well documented across the Maya Lowlands (see Kennett et al. 2012 and references within). It remains unclear whether a reduction of rainfall in this area would alone be sufficient to bring about regional societal collapse, given the overall high precipitation rates in southern Belize. Declines in rainfall in areas of high annual precipitation are unlikely to be as destabilizing as they would be in areas of lower annual precipitation. Stable isotope rainfall reconstructions suggest that multi decadal drought events between C.E. 820–870 were not as severe as the single short event at C.E. 400–425 (Kennett et al. 2012).

In summary, Uxbenká's uniquely rich agricultural soils and location in an area of abundant rainfall likely lent a degree of resilience to both population growth and political stability during its 800 year occupation. Its growth may have also been facilitated by its position along established trade routes linking the Caribbean Sea to the Petén (Nazaroff et al. 2010; Prufer et al. 2011). However, the development of increasingly complex geopolitical regional interaction spheres during the Late Classic, combined with inter-polity competition, population growth, and decisions regarding land-use, may have weakened the polity's ability to withstand the disintegration of political and economic relationships occurring in core areas of the Maya Lowlands (Kennett and Beach, in press).

Minanha

The second case study we discuss in this chapter derives from Minanha, located in the north Vaca Plateau of west central Belize (Figure 11.1). Minanha represents an archetypal hinterland community, and is a classic example of an "internal frontier," given its location on both an ecological and cultural "edge"; it lies immediately to the south of the Belize Valley, west of the Mountain Pine Ridge, and equidistant between the heartlands of the powerful, and competing, Naranjo and Caracol polities (Figure 11.4; Iannone 2005, 2010). In terms of resilience modelling, Minanha's location would have enhanced the ability of its inhabitants to respond to perturbations, because they would have had access to diverse natural and cultural resources.

The north Vaca Plateau is characterized by rugged, karstic topography, small valleys, limited surface water, and dispersed pockets of good soil. Although pioneer populations appear to have entered the sub-region earlier, significant occupation of Minanha proper does not appear to

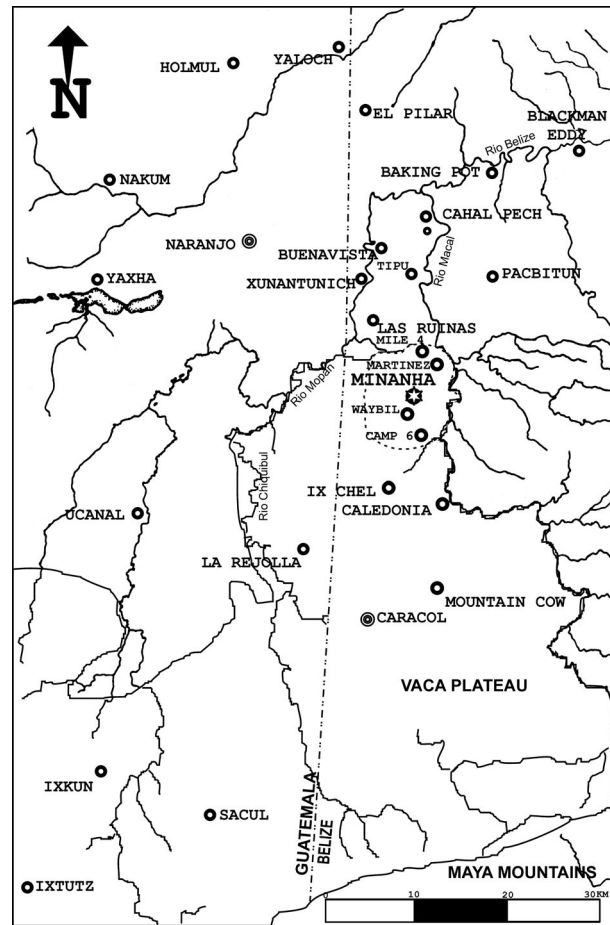


Figure 11.4. Map showing the location of Minanha, its projected polity, and other key centers in, or adjacent to, the Vaca Plateau.

have taken place until sometime in the first century B.C.E. (Iannone 2005), during a time thought to be characterized by a modest drought, according to the sequence obtained from a speleothem from the nearby Macal Chasm cave (Moyes et al. 2009; Webster et al. 2007). These early settlements are found scattered across the Minanha micro-region, in or adjacent to small valleys with good soils and perennial water sources, such as springs (Longstaffe and Iannone 2011; Macrae and Iannone 2011; McCane et al. 2010). This seems to fit Van Andel and Runnels' (1995) concept of "saltation," wherein migrant farmers initially populate small alluvial valleys with fertile soils, carry out low-intensity agricultural production for some time, and then move on to exploit similar valleys, leaving vacant intervening areas of limited productivity (see also Earle et al. 2011:209).

Over the course of the next six and a half centuries the Minanha community continued to grow in size and extent, albeit slowly, and the earliest courtyard groups tethered themselves more firmly to the landscape through the

1
2
3
4 construction of eastern ancestor shrines and by building ter-
5 raced agricultural fields, the latter helping to retain soils
6 and soil moisture in the rugged terrain of the Vaca Plateau
7 (Macrae and Iannone 2011). Alongside this program of
8 niche construction, they did, however, maintain a level of
9 biodiversity and productive flexibility because these im-
10 proved fields only encompassed areas immediately adja-
11 cent to their residential courtyards, while the remaining
12 land continued to be “unimproved” (Macrae and Iannone
13 2011; McCane et al. 2010). Indications are that this small,
14 highly dispersed community was connected to the broader
15 Maya world economically, as is implied by the sharing of
16 ceramic styles and access to raw materials such as shell
17 and jadeite. However, the absence of certain artifacts com-
18 monly found at other centers to the north and south (e.g.,
19 Pacbitun and Caracol, respectively), such as Charlie Chap-
20 lin figures (Lomitola 2012), and Caracol-style face pots
21 (D. Chase and A. Chase 1998), suggests that Minanha
22 continued to be a “deep rural” community that was only
23 loosely incorporated into broader political formations and
24 cultural traditions. On one hand, this would have allowed
25 for some economic and political autonomy, as well as some
26 flexibility to respond to perturbations rapidly, using local
27 knowledge and innovations. For example, the early devel-
28 opment of Minanha’s terrace system would have helped the
29 community maintain productivity during times of declin-
30 ing precipitation, such as the droughts documented for C.E.
31 141, and the period between C.E. 490 and 580 (Webster
32 et al. 2007). At the same time, the loose integration would
33 have also hindered access to heartland innovations, and it
34 apparently limited the ability to acquire certain key com-
35 modities, such as larger obsidian blades (Menzies 2003),
36 leading to some potential vulnerabilities.

37 The nature of integration changed dramatically some-
38 time around the beginning of the 8th century C.E., during
39 an era of significant political change across the Maya Low-
40 lands. At this time some elite migrants, likely from Caracol,
41 established a petty royal court in what would rapidly emerge
42 as the new Minanha epicenter (Iannone 2005; Figure 11.5).

43 The evidence does not support the notion that Min-
44 nanha shifted from being a hinterland to a new, independent
45 heartland, as in the African examples discussed by Kopy-
46 toff (1987, 1999). Rather, Minanha’s rapid growth and ad-
47 herence to certain cultural practices suggest the formation
48 of a new client-kingdom under the auspices of the larger
49 Caracol hegemonic polity, albeit one with comparative au-
50 tonomy, given its distance from the Caracol metropole
51 (Iannone 2009). This may fit the scenario described by Gil
52 Stein (1999) wherein empires or hegemonic polities foster
53 “internal migrations” to encourage state initiatives; although
54 migrants from the heartlands may not necessarily control

land in the hinterlands, they can focus on pacification and
military development, support craft specialization and trade,
and initiate engineering programs aimed at increasing agri-
cultural production (see also Earle et al. 2011:213).

In light of these ideas, it is significant that the new
political body that established itself at Minanha seems to
have effectively inserted itself as a new “patron” by incor-
porating existing courtyards into new construction projects
(Longstaffe and Iannone 2011), encasing extant ritual nodes
within new shrine structures, and aligning new ritual offer-
ings with those previously made by the local community
(Schwake and Iannone 2010). The success of this assimi-
lation project varied, with some of the largest, and longest-
standing residential courtyard groups apparently benefiting
from, and therefore supporting, the new patrons, whereas
other sizable, and equally deep-rooted, courtyard groups
seem to have entered into a period of decline, which im-
plies that they contested the authority of the newcomers
(Iannone 2010; Longstaffe and Iannone 2011; Macrae and
Iannone 2011). That the resulting Minanha polity was syn-
cretic in character is confirmed by a degree of adherence
to certain Caracol-style caching and burial practices at the
same time that more local traditions were continued, such
as the extensive use of slate as capstones in buildings and
grave chambers, and as burial and cache offerings (Iannone
2005, 2010).

Regardless of the apparent unevenness with which they
were accepted by Minanha’s traditional power-brokers, the
migrant elites that arrived at the beginning of the 8th Century
C.E. were able to marshal enough *corvée* labor to construct
an impressive court complex, and to quickly expand the
agricultural productivity of the micro-region by linking the
previously separate terraced fields with longer, but poorer
quality terrace sections (Macrae and Iannone 2011; McCane
et al. 2010). They also commissioned the construction of a
wall around a sizable *bajo* to create a larger and more reliable
source of water (Primrose 2003). These innovations, likely
borrowed from the more densely settled Caracol heartland
settlement (e.g., A. Chase and D. Chase 1998), allowed for
significant population growth, facilitated monumental con-
struction, and for a brief moment transformed Minanha from
a hinterland to a small heartland, as is one of the expectations
of Kopytoff’s cyclical model for hinterland development.

Nevertheless, it is important to consider that many of
the initiatives of this time would have been aimed at provid-
ing taxes to support the new Minanha rulers, and tribute for
their Caracol overlords, which would have drawn increas-
ingly more resources away from the primary producers over
time. These investments also locked the fledgling Minanha
polity into reliance on an increasingly integrated, artificial
environment. This new polity exhibited less biodiversity and

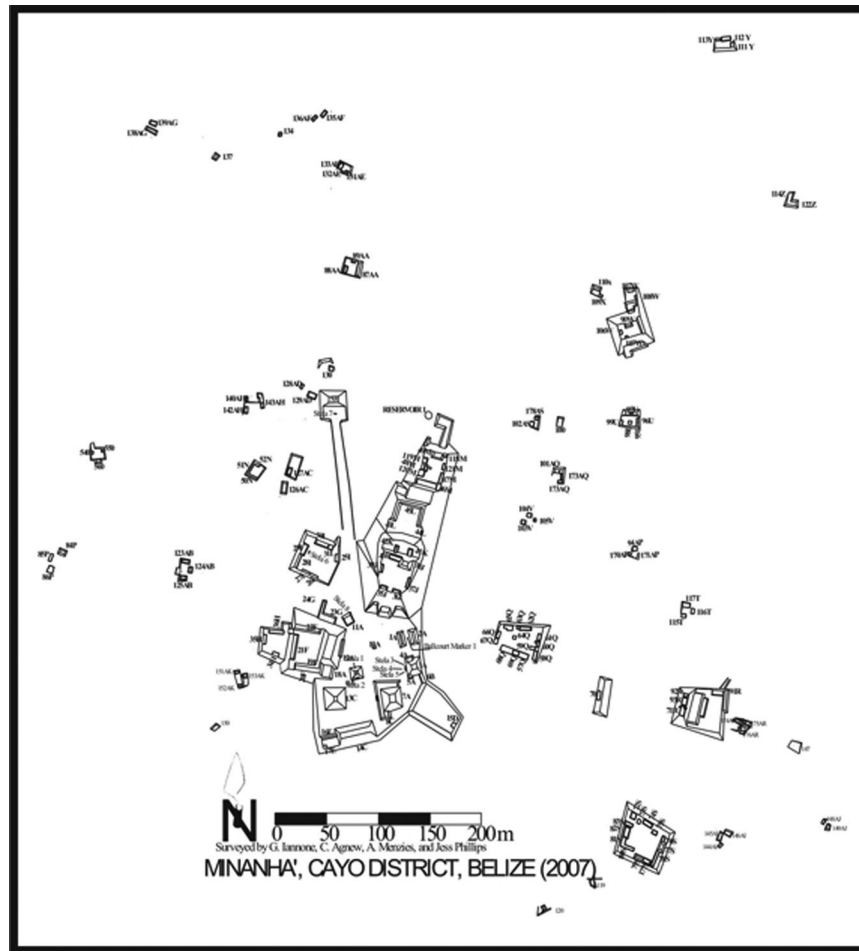


Figure 11.5. Rectified isometric plan of the Minanha epicentral court complex.

did not benefit from some of the support services present at Caracol (A. Chase and D. Chase 2007), such as extensive road and market systems (there is only one intrasite causeway, and as yet, no well-defined market zone at Minanha), a significant level of craft specialization (with the exception of the production of granite tools; Longstaffe 2011), and a far-reaching, efficient trade network. Thus, even though it was expanding in size and complexity, the Minanha polity likely entered a risk spiral and began to exhibit the effects of path dependency, meaning it was increasingly “locked-in” to a specific developmental trajectory that left fewer options to respond to perturbations. This would have led to ever-increasing levels of vulnerability to unexpected environmental or cultural distresses.

Although the Minanha community was more firmly interconnected with the wider Maya world during the 8th century, this did not translate into significant enhancements to its economic resilience, above and beyond the innovations associated with its water management and agricultural sys-

tems. For example, an evaluation of the average width of a sample of obsidian blades concluded that Minanha was the “end of the line” for that particular commodity (Menzies 2003). In other ways, greater integration also led to a certain degree of vulnerability to broader political machinations. For example, a major destruction event occurred in the mid-to-late 8th century, resulting in: (1) the razing and burning of the royal residential courtyard and the emptying of a number of caches and burials, likely in conjunction with the rapid departure of the Minanha ruling family; (2) the sealing off of the epicenter’s principal multiple entry tomb beneath a new shrine structure fronted by a slate stela and two uncarved limestone monuments; and (3) the construction of a new royal residential courtyard with a bi-level throne, possibly indicating a form of patron-client style, joint rule (Iannone 2010; Longstaffe and Iannone 2011; Schwake and Iannone 2010).

This new political regime would apparently not last long. Sometime in the early 9th century Minanha’s royal

residential courtyard was buried beneath 5 meters of rubble, many of its stucco friezes and important stelae were destroyed, and some elite building projects were left abandoned prior to completion (Iannone 2005, 2010; Schwake and Iannone 2010). The elites of the “new political regime” apparently deserted the community, or were forced out, along with a large segment of the support population, primarily the lowest status commoners who may not have had any direct control over key land and water resources (Macrae and Iannone 2011). From the perspective of resilience theory, this scenario fits well with that documented for the American Southwest, where emigration during periods of sociopolitical downturns has been envisioned as a form of adaptive transformation (Hegmon et al. 2008; Nelson et al. 2006). It is likely that a combination of unsustainable growth, overexploitation of resources, droughts, increasing political and economic competition, ideological disillusionment, and the progressively greater interconnectedness of the various elites across the Maya Lowlands, contributed to the downfall. However, this was not the end of the Minanha community. After the demise of the Minanha royal court, the traditional powerbrokers began building anew in their courtyards, once again taking advantage of their control over improved land, perennial water sources, and limited incorporation into the polities that were crumbling around them (Longstaffe and Iannone 2011; Macrae and Iannone 2011). These long-standing, highly resilient residential groups left a footprint not that dissimilar to their Preclassic and Early Classic ancestors (Longstaffe and Iannone 2011).

In summary, the Minanha case study documents the resilient and adaptive quality of some of the larger rural courtyard groups whose roots extend back to the earliest occupation of the micro-region. By improving some of their land through terrace construction and settling near perennial springs, these pioneers—and generations of their descendants—were able to live successfully for a millennium in an environment that is only sparsely populated today. In part, it was the lack of integration into the broader Maya world—and the short-lived Minanha polity—that may have contributed to their success. In contrast, the petty Minanha royal court that emerged in the 8th century was not only more firmly ensconced within the broader network of regional politics, but also reliant on an increasingly more tightly integrated, but also hypercoherent, economic and political system encompassing the micro-region over which it ruled. This is particularly evident in terms of the expansion and control of the surrounding agriculture and water management features. Ultimately, the elite segment of Minanha society proved to be far less resilient, with this experiment in political complexity only lasting for a century (Longstaffe and Iannone 2011). A significant portion of the support pop-

ulation, especially recent immigrants drawn into the micro-region because of the “full-service” nature of the Minanha royal court, ultimately demonstrated a comparable level of vulnerability to perturbations, primarily because they did not control vital resources, such as good agricultural land and reliable water sources (Macrae and Iannone 2011).

Santa Rita Corozal

Our third case study focuses on Santa Rita Corozal, located between the Rio Hondo and the New River in northern Belize, adjacent to Corozal Bay (Figure 11.6). Ancient occupation is present both on the shores of the bay (some low mounds are actually visible under the waters of the bay) and on an inland bluff. The site was well placed relative to both riverine and maritime trade. It was an ecologically advantaged hinterland that was well connected with both inland and maritime neighbors. This access was key throughout its development.

Santa Rita Corozal has been investigated for over a century, first by a local medical doctor (Gann 1900, 1918), subsequently by a series of regional archaeological projects (Green 1973; Pring 1976; Sidrys 1976, 1983), and most recently by the Corozal Postclassic Project (Chase 1981, 1982, 1990; D. Chase and A. Chase 1988, 2004a). While the site is best known for its Postclassic period (post-C.E. 1000) remains and was likely the capital of the Postclassic period province of Chetumal (D. Chase and A. Chase 1988), Santa Rita Corozal (Figure 11.7) was successfully and continuously occupied for the entire span of ancient Maya civilization—and is still occupied today. In contrast to many Maya sites, its population peak was during the Late Postclassic period. Located at a distance from the Classic period (C.E. 250–900) capitals of Tikal, Calakmul, and Caracol—as well as the Late Postclassic period (C.E. 1250–1450) capital of Mayapan—Santa Rita Corozal also maintained greater political and economic autonomy than most centers, in spite of its advantageous location. Thus, it served variously as an innovation receptor, creator, and modifier.

The first sound evidence of occupation of Santa Rita Corozal dates to the Early to Middle Preclassic period (ca. 1200 B.C.E.). Investigations indicate a well-established and precocious regional northern Belize Swasey Ceramic Sphere affiliation for a relatively small village of perhaps 150 inhabitants with population concentrated in the bluff area above the bay. By the Late Preclassic period (300 B.C.E. to C.E. 200), population and settlement had expanded to at least 1000 inhabitants. Sierra Red ceramics from funerary contexts suggest a broad, connected lowland Maya focus during this time. Toward the end of the Late Preclassic (C.E. 1 to

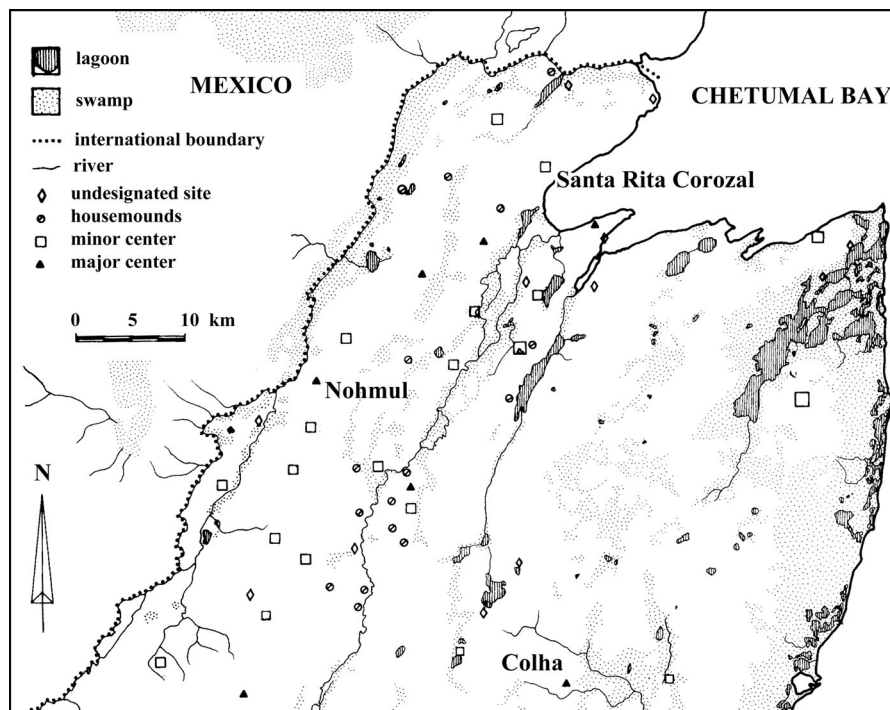


Figure 11.6. Map showing the location of Santa Rita Corozal and other centers in northern Belize (after Hammond 1975:figure 11.1).

250) and Early Classic periods (C.E. 250 to 550) population also grew in size. Evidence of prosperity and status differentiation in interments and constructions is evident, with ceramic and other artifactual ties extending to both the southern and northern Lowlands. The site was a receptor of innovations and trade items, but its connectedness was expressed within its own sociopolitical framework.

While the early population of the central portion of the site was never large, numbering no more than perhaps 1500 people, interments from Santa Rita Corozal Structure 7 suggest that the rulers of this site maintained a high standard of material well-being (D. Chase and A. Chase 2005). In fact, if taken out of context, grave goods within these interments might be taken to suggest that Santa Rita Corozal individuals were far more important politically within the overarching Maya realm than was likely the case (D. Chase and A. Chase 2004a). Late Classic period (C.E. 550–900) population likely increased to approximately 2500. Interestingly, material well-being, as indicated by the presence and similarity of burial offerings, was more widely distributed than in previous periods, and the extreme status distinctions of the Early Classic period were not in evidence, a situation similar to that found in the varied environmental and socio-political situation of the distant Belize Late Classic period capital city of Caracol (D. Chase and A. Chase 2004b). Terminal Classic period and Early Postclassic period (C.E.

900–1200, 1200–1300) remains are present at the site, suggesting continued access to external trade, but likely with flat population numbers.

However, the largest and most extensive occupation at Santa Rita Corozal dates to the Late Postclassic period (C.E. 1300–1550), well after the collapse of inland, mainstream, Classic period centers. The Postclassic period Maya of Santa Rita Corozal substantially reframed Classic period traditions. In particular, ritual caching practices appear to have served to unify the community through calendric ritual (D. Chase and A. Chase 2008). While Santa Rita Corozal ~~throve~~ during its entire history, it was particularly advantaged following the Classic period collapse, perhaps being able to take even greater advantage of its location on a major trade corridor (see also Scarborough and Valdez, Ch. 9 this volume for a discussion of trade). Postclassic Santa Rita Corozal evinced particularly strong ties with the northern lowlands; both ritual practices and material remains (in some cases) are nearly identical to those delineated for Mayapan, some 300 kilometers to the north (D. Chase and A. Chase 2008). Site population ~~expanded and~~ more than tripled; a conservative estimate of the site center population in the Late Postclassic is over 7,000 people. The site prospered until the advent of Spanish conquistadors in C.E. 1532. Later Colonial occupation by the British indicated some limited population continuity with the modern town of Corozal.

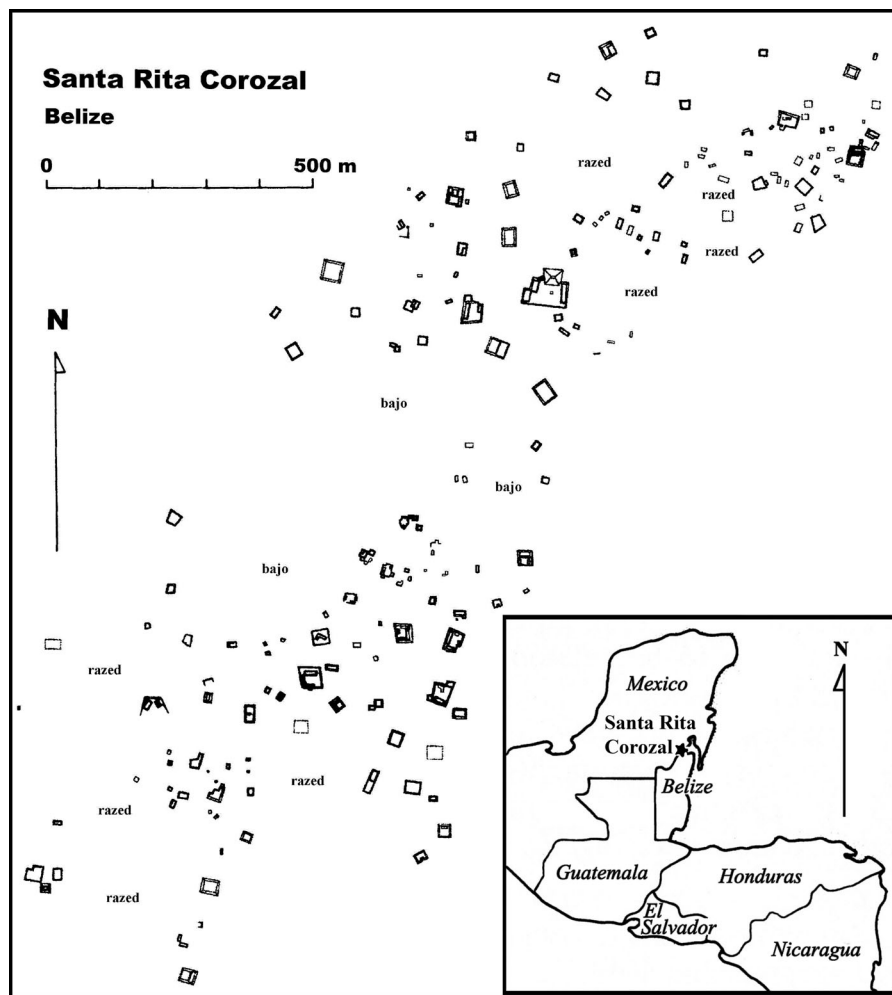


Figure 11.7. Rectified plan of Santa Rita Corozal, Belize showing its location in Belize.

Unlike many southern lowland sites, Santa Rita Corozal was continuously occupied for over three millennia. The site does not appear to have been under direct control of either southern or northern lowland polities, but rather maintained a connection to both. During much of its history, the site appears to have been peripheral to political machinations recorded in hieroglyphic texts. Preclassic and Classic period Santa Rita Corozal remained a small, seemingly independent hinterland polity. Economic ties were extensive, but political integration with neighboring areas was limited—so much so that its Early Classic leaders amassed a vast array of symbols to stress their importance at the “edge” of the Maya world. Ultimately, the site came to serve as the capital of the Postclassic province of Chetumal (D. Chase and A. Chase 1988). The peripheral, yet pivotal, location of Santa Rita Corozal at the juxtaposition of the northern and southern lowlands—with easy access to multiple trade

routes—enabled this resilience, but other mechanisms supported its longevity. For example, while settlement was more densely concentrated than at many Classic period sites, Santa Rita Corozal’s population remained manageable throughout its history—and was easily supported by surrounding agriculture land, a diversity of locally available marine resources, and the resources made available by its position as a transit point for regional trade. Postclassic period cultural adaptations, specifically ritual caching practices, evolved to focus on greater integration of the community as population numbers increased. Postclassic period Santa Rita Corozal—rather than being a site characterized by depopulation, decadence, or decline—was itself a successful dynamic and innovative adaptation. Thus, Santa Rita Corozal’s exceptional location, in conjunction with its smaller and politically peripheral positioning, led to a more nimble and resilient settlement.

Conclusions

While each of these sites was situated in a hinterland location, their physical placements and cultural adaptations varied substantially, being alternatively inland (Uxbenká and Minanha) or riverine and coastal (Santa Rita Corozal). Their “hinterland” position also differed. Uxbenká’s placement in southern Belize partially isolated it from the southern Maya lowland heartland, though it was well integrated in regional and pan-Mesoamerican economies for more than five centuries (Nazaroff et al. 2010). Uxbenká was located in an area of unusual agricultural fertility, lending to it a degree of resilience through reduced agricultural fallow periods and obviating the need for large-scale intensification, such as the terracing found at Minanha. Santa Rita Corozal was positioned at the juxtaposition of the northern and southern Maya Lowlands. Its access to fresh water and marine resources may have afforded it a degree of resilience to food shortages and agricultural uncertainties. Over time, Minanha became increasingly dependent on agricultural and water management systems to sustain its population, innovating through terracing, which also increased integration but reduced biodiversity and led to path dependency.

Both Uxbenká and Santa Rita Corozal have little or no evidence of being under the control of other, larger, polities for any extended period, though both were deeply integrated into regional geopolitical structures. Minanha started as an independent polity, but later fell under the sway of its larger neighbor, Caracol. Located intermediate to the Belize Valley, Naranjo, and Caracol, Minanha was marginalized to some degree by being set at the eastern edge of the southern Lowlands against the largely un-farmable and uninhabitable terrain in the Mountain Pine Ridge. Both Minanha and Uxbenká were always hinterland polities, while Santa Rita Corozal’s hinterland status changed dramatically following the collapse of most southern Lowland polities when it became the capital of the province of Chetumal. Minanha was never really well connected economically (it was the end of the line for trade, and did not exhibit much craft specialization). Uxbenká and Santa Rita Corozal were both situated to take advantage of important trade routes. Uxbenká took full advantage of its location between the Caribbean Sea and the central Petén, and engaged in and mediated trade in obsidian blades and exotic ground stone from distant sources. Similarly, Santa Rita Corozal actively engaged in broad economic networks, though it uniquely allowed the fruits of these relationships to be spread broadly across its populace.

Besides varying in terms of strategic locations, the archaeological histories of these three sites also are varied. Uxbenká and Santa Rita Corozal were each home to Pre-

classic village occupations and were the largest sites in their zones for at least portions of their histories; Minanha never approached the size of the neighboring site of Caracol, but grew to be as least as large as the Belize Valley sites found to its north. Each site sustained a large and well-established Classic period population; however, only Santa Rita Corozal grew to prominence in the Late Postclassic period. Uxbenká and Minanha utilized stone monuments; Santa Rita did not.

The case studies presented here demonstrate the regional and temporal diversity that existed in ancient Maya adaptations in the southern lowlands—even amongst sites that may, in some way, be considered “hinterland.” Despite each of these polities being part of the greater southern Maya Lowlands, each displays unique combinations of subsistence, economic, and political strategies. In each case, decision-making was geared to maximize adaptation to local ecological conditions and to maintain resilience to demographic, environmental, and geopolitical stresses. In each case the consequences of these actions, intended or otherwise, resulted in periods of growth and periods of decline. None of these hinterlands was immune to events occurring in the broad social and economic networks in which they participated. Nor were they exempt from the impacts of changing ecological and climate systems. Uxbenká, Minanha, and Santa Rita Corozal were each nodes in overlapping and interacting economic and sociopolitical networks, as they impacted and were effected by other nodes. By the 9th century C.E. all three of these hinterland polities were deeply impacted by the political and economic disintegration sweeping across the Maya Lowlands (Kennett and Beach in press). At Uxbenká and Minanha this resulted in the abandonment of political institutions, collapse of agricultural systems, and population dispersal. Santa Rita Corozal was able to weather the collapse, albeit initially in a diminished capacity, rising again during the Late Postclassic as an important node in the then dominant economic and political landscape of the northern Lowlands.

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