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Monumental Landscapes of the Maya

Cogitating on a Past Built Environment

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What makes a landscape monumental? While "monumental" might seem an odd term to join with "landscape," the conjunction is extremely apropos for the ancient Maya. Often taken to signify height, monumentality can also include mass, large area, or even sheer effort. As the chapters in this volume demonstrate, Maya landscapes were monumental because of the massive modifications made to the physical terrain, the large-scale building efforts that dotted the topography, and the myriad of ways in which the natural environments were engineered. By the Late Classic period most of the landscapes within Maya sites were infilled with and transformed by constructions. These efforts can be physically seen today upon the terrain surface in both Maya architecture and built subsistence systems, but they are also reflected in their art and iconography.

The monumentality of ancient Maya architecture is perhaps the easiest to comprehend. The large public architecture of the ancient Maya is visible today in the reconstructed ruins that are frequented by tourists as well as in the mounds of earth and rock that still remain to be excavated or stabilized. At a typical site, much of this architecture is spread over the landscape and arranged around a series of plazas. Among the things that impress modern visitors are the massiveness and sheer verticality of Maya pyramids and the vaulted stone roofs that cap many of their palaces and edifices. What is often not as easily comprehended is the fact that, at most sites, extensive bedding, leveling, and infilling occurred relative to the landscape in order to construct the plazas and buildings that make up the various phases of any given site. In fact, much of ancient monumentality is in the horizontal

transformation of a landscape. Temples only serve as projections capping a vast sea of long-term construction efforts.

Some of the monumentality of the landscape is visible directly in other specially constructed features. For instance, Tikal, Guatemala, is largely encircled by a ditch and wall that serves to proclaim the boundaries of that city (D. Webster et al. 2007). And, in the northern Petén, vast systems of intersite causeways serve to show the substantial effort expended in the integration of early polities in this portion of the Maya area. Apart from buildings, boundary walls, and roadways, other visible aspects of monumentality on the Maya landscape are the remains of extensive agricultural modifications to the terrain. The Late Classic Maya concern with ancient subsistence sustainability is evident in these agricultural constructions. These built features include raised fields in wetland areas (Adams 1980; Harrison 1977; Luzzadder-Beach et al. 2012), agricultural terracing in upland regions (Chase and Chase 1998a; Dunning and Beach 1994; Turner 1979), and walled gardens associated with house lots (Folan et al. 1983; Hare et al. 2014). The site of Edzna in Campeche also constructed a series of canals to control water (Matheny et al. 1983); these were presumably associated with raised field agriculture at that site. Given population projections for the Late Classic Maya Lowlands as having housed between 3 to 13 million inhabitants (Turner 1990:302 [Canuto et al. 2018 argue for between 7 to 11 million]), some of this agricultural focus, especially in peripheral areas, may have been done for economic profit, especially since major portions of the Maya region needed to import food (see Dahlin and Chase 2014:143,146,153 for Tikal and Calakmul; and Dahlin et al. 2005 for Chunchucmil).

Like any major civilization, the ancient Maya created anthropogenic landscapes. The reconstitution of the environments in which they lived occurred on a variety of timescales and with vast differences in terms of energy input; some of the landscapes were altered over long periods of time through accretive actions while other landscapes were rapidly changed. But no matter the time scale involved, the environment in which the Late Classic Maya lived was substantially manipulated, reconstituted, and managed. The ancient Maya did not shy away from transforming the world in which they lived. Their impact on the landscape that they occupied and utilized was all-encompassing and can still be seen today in canopy growth patterns that remain as ecofacts of human manipulation of species and the environment itself (e.g., Fedick 2003; Hightower et al. 2014).

Not only were residences and buildings constructed from materials

extracted from the local environments, but often the landscape was substantially terraformed both for agriculture and building materials and also to control the flow of water. Soft bedrock and harder stone were extracted for building materials, often moved some distance from where they were initially quarried. Similarly, Maya refuse was incorporated into the landscape, often at some distance from its place of origin (Chase and Chase 2015:19–20). In other cases, the landscape was denuded of soil and then built back up with the soil being placed behind stone agricultural terraces that were bedded directly on bedrock (Chase and Chase 1998a). Wetland agriculture created fertile land amid a grid of canals or raised fields (Dunning et al. 2002; Turner and Harrison 1983). While wetland agriculture was subject to the vagaries of excessive rainfall and flooding, agricultural terracing managed the flow of water over the landscape (Chase and Weishampel 2016) with the constructed features actually retaining water, determining seepage (to a large degree), and directing flow so as to mitigate erosion.

Maya worldview also speaks to the monumentality of the landscape and the Maya connection to it. This is seen allegorically in Maya iconography and directly in the Maya use of caves. Multiple layered worlds existed according to the ancient Maya; these are symbolically represented in their ritual deposits through the placement of items representing these distinct levels (e.g., D. Chase 1988; Chase and Chase 1998; Mathews and Garber 2004). We can glimpse other worlds in sacred places like caves, which served as portals to the underworld and locations for Maya religious ceremonies (Prufer and Brady 2005; see Moyes, Chapter 15, this volume). The multilayered monumentality of the Maya worldview is thus physically represented in the spatial and archaeological records at various scales and is also emphasized in repeated manifestations in the passageways of Maya time (D. Chase and A. Chase 2020).

Thus, there is no doubt that—while the descriptive term "monumentality" implies height, mass, labor, or extensiveness of features—the physical and symbolic landscapes that the Maya both created and used are properly termed "monumental." The remainder of this chapter explores the relationships that existed between ancient Maya monumentality and landscapes and how they changed through time.

Maya Worldview and Monumental Landscapes

Maya iconography is directly tied to their view of the ancient landscape and their overarching concern with sustainability. The Maya were dependent on

maize agriculture, and maize is amply recorded within their art (Chinchilla M. 2017; Stross 1994; Taube 1996). Their concern with water is depicted through their use of water lilies (Kettunen and Helmke 2013); water lilies only grow in potable water and, thus, serve to highlight Maya knowledge of this landscape association. Other parts of nature also serve to illustrate the relationship that the Maya had with the landscape and its importance in Maya worldview. For instance, crocodiles were interred in a series of deposits at Tikal in order to create a sacred landscape within Tikal's North Acropolis (Chase and Chase 1998:326), and the gridded city of Nix'tun Chich may have been modeled after the scales on a crocodile to emphasize its role as a sacred landscape (Rice 2018). Maya pyramids physically represent the landscape as mountains and are named as such in hieroglyphic texts. The hieroglyph for temple pyramid is *witz* (Schele and Mathews 1998), and it is associated with cosmological locations like "flower mountain" that figure prominently in Maya belief and cosmology (Taube 2004, 2013). Other Maya buildings were modeled into symbolic representations of cavernous earth-monsters emerging from the underworld (Pollock 1980). Finally, caves themselves were incorporated into the Maya monumental landscape as portals to the underworld (Bassie-Sweet 1996; Prufer and Brady 2005); this is evident in their use for rituals that were viewed as being physically carried out in the Maya underworld (Bassie-Sweet 1991).

In analyzing Maya landscapes, researchers have often focused on specific features as being important to the Maya. These features include mountains, hills, volcanoes, caves, and sometimes water (Brady and Ashmore 1999). Thus, often the natural landscape is viewed as being incorporated into the Maya built landscape (see also Demarest and colleagues, Chapter 12; and Woodfill and Wolf, Chapter 3, this volume). Realistically, many of these natural features—mountains, hills, and volcanoes—are more relevant to highland communities than to lowland communities because of the nature of the terrain. Whereas the Lowland Maya had to construct their own "mountains," in the highlands these features dot the landscape, leading various researchers to argue that entire sites were oriented to specific physical features like mountains (see Arroyo [2018:354–355] for the highland sites of Naranjo and Kaminaljuyu as well as Rosenswig and Mendelson [2016] for Izapa). The Lowland Maya appear to have been more focused on caves (see Demarest et al. [Chapter 12], Moyes [Chapter 15], and Woodfill and Wolf [Chapter 3], this volume), even placing some architectural constructions specifically above caves, as can be seen for the site of Las Cuevas in Belize (Moyes et al. 2012), at the Duende complex at Dos Pilas (Brady and

Veni 1992), and at the Temple of the High Priest at Chichen Itza (Thompson 1959:128). Additionally, some architectural constructions, specifically those seen in the Rio Bec area, serve as iconographic entrances to the underworld in that their doorways are modeled as the mouths of earth-monsters (e.g., Pollock 1980); entering the building was literally entering into the earth and, by extension, the underworld.

Water was key in settlement location and landscape (see Arroyo and Henderson, Chapter 7 this volume). The ancient Maya generally avoided situating their major Classic period settlements on bodies of water, possibly because of the underworld connotations of water and its association with death (D. Chase and A. Chase 1989). The association of water and death is specifically represented in the iconography at Tikal where the dead sank in a canoe beneath the water's surface (e.g., Moholy-Nagy 2008:Figs. 189–202). Thus, there were differences between the "watery" underworld and the more "solid" underworld, as represented by caves. Caves represented liminal space into which individuals could traverse and then return to the present surface world (e.g., D. Chase and A. Chase 2009).

Settlement Patterns and Remote Sensing

Long-running debates have ensued within the Maya area as to whether the Maya were urban and whether they engaged in city planning. Both of these questions were difficult to answer—even with extensive settlement-pattern work—because of the difficulty in documenting the full extent of occupation within a semitropical jungle canopy. If city planning was acknowledged, there was often a question over the scale of the planning and whether it was truly monumental. Initially, city plans were tied to Maya cosmology and sites were seen as being cosmologically oriented (implying planning; see Ashmore 1991; Ashmore and Sabloff 2002, 2003; Houk 2017; M. E. Smith 2003, 2005), but Maya city planning realistically went far beyond simple cosmological orientations. Settlement-pattern study and advances in remote sensing, particularly related to lidar, have been able to establish that the ancient Maya were clearly urban and did engage in city planning (Chase and Chase 2007a; Chase and Chase 2017; Chase et al. 1990; Houk 2015; Hutson 2016). However, one must keep in mind that all cities were the result of a process that included both premeditated and spontaneous elements (e.g., Kostof 1991:41).

Settlement-pattern research first documented that Maya residential groups were dispersed and appeared to sprawl over their landscapes. Some

of the earliest extensive mapping was undertaken at the sites of Dzibilchaltun, Mexico (Stuart 1979), Coba, Mexico (Folan et al. 1983), and Tikal, Guatemala (Carr and Hazard 1961), soon followed by extensive work at Calakmul, Mexico (Folan et al. 2001), and Caracol, Belize (A. Chase 1988; Chase and Chase 2001; A. Chase et al. 2011). As this initial settlement work was carried out prior to the advent of lidar, this work was tedious, time-consuming, and done on the ground through great effort. Almost 9,000 structures were revealed in 18 square kilometers at Dzibilchaltun, indicating a population with diverse social statuses (Kurjack 1974). At Tikal, 23 square kilometers were mapped, revealing a population estimated at between 60,000 to 90,000 people (Culbert et al. 1990). Thirty square kilometers were mapped at Calakmul, with a population estimated at 60,000 people (Folan et al. 2001). Twenty-three square kilometers were also mapped at Caracol, which had an estimated population of over 100,000 people (Chase and Chase 1994; A. Chase et al. 2011). More recently, on-the-ground coverage at Chunchucmil, Mexico, almost completely mapped the site (Hutson 2017; Hutson et al. 2008); its population was estimated at 42,000 people at its height (Hutson 2016), meaning that food would have needed to be imported to feed the city's population (Dahlin et al. 2005).

What all of this settlement work has also demonstrated is that the various Maya populations that lived in these ancient centers were closely tied to a variety of agricultural systems (Chase and Chase 2016a). In the Southern Maya Lowlands, there was open space between living groups at sites like Tikal that could have been used for gardens and crops; at Tikal, more intensive farming also occurred along the edges of *bajos* (Lentz et al. 2015). At some sites like Caracol the open spaces between residential groups were clearly used for agriculture, and this was explicitly reflected in the construction of terraces that completely transformed the landscape (Chase and Chase 1998a). A second pattern in the Northern Maya Lowlands saw a denser residential settlement with house lots demarcated by walled areas that were not large enough for sustainable agriculture (see Garduno [1979] for Coba; Hutson et al. [2008] for Chunchucmil), indicating that agricultural fields must have existed outside the urban area (Chase and Chase 2016a; Dahlin et al. 2005). Yet the density of residential settlement at sites throughout the lowlands clearly indicates that the ancient Maya were urban (e.g., Chase et al. 1990; Houk 2015; Hutson 2016). More recent lidar work confirms this (Canuto et al. 2018; A. Chase et al. 2011; Chase, Chase, et al. 2014) but also demonstrates the need for extensive archaeological research in order to better interpret the distribution of settlements across the landscape.

The most recent approach to understanding the monumentality of Maya landscapes has been to employ remote sensing. Perhaps the most spectacular results regarding an understanding of Maya landscapes have been gained from the use of airborne lidar; lidar uses laser beams to penetrate overlaying tree canopy and provide detailed point data of the actual terrain (see A.S.Z. Chase et al. 2017; see Harrison-Buck and colleagues, Chapter 5, this volume, for an example of using drones and photogrammetry to map a denuded landscape with comparable results). The use of airborne lidar over large parts of the Maya area was pioneered at Caracol, Belize. The initial lidar campaign was flown in 2009 and covered an area of 200 square kilometers (Chase et al. 2010; A Chase et al. 2011; D. Chase et al. 2011), firmly demonstrating how large Maya cities were and recording almost 160 square kilometers of continuous agricultural terraces that showed how Caracol's population was able to sustain itself. A second lidar campaign in 2013 was organized by a consortium of archaeologists working in western Belize and was funded by the Alphawood Foundation; this campaign covered an additional 1,050 square kilometers (Chase, Chase, et al. 2014), permitting the definition of Caracol's eastern border (as well as the area to the south, including the site of Las Cuevas), the entire west-central border region of Belize (locating several new sites), and the entire archaeological landscape of the Belize Valley (including a strip through El Pilar). The use of this technology enabled a complete view of the ancient Maya landscape and finally permitted an assessment of its monumentality that was not based only on limited mapped samples of public architecture and settlement.

Since the initial use of lidar at Caracol to penetrate jungle canopy over a large region, Mesoamerican archaeology has been revolutionized by the use of this technology, most recently by a large program in the northern Petén of Guatemala that is causing archaeologists working there to reassess their views of ancient Maya complexity (Canuto et al. 2018). In terms of understanding landscapes (Chase and Chase 2016b; Chase et al. 2012, 2016; Chase and Chase 2017), lidar has been used to detect features like caves (Weishampel et al. 2010), constructed reservoirs (Chase 2016a), and water flow (Chase and Weishampel 2016). Lidar has now been used extensively in southern Belize (e.g., Prufer et al. 2015), throughout Mexico (e.g., Hare et al. 2014; Loughlin et al. 2016; Reese-Taylor et al. 2016; Rosenswig et al. 2013), and in Guatemala (e.g., Canuto et al. 2018; Inomata et al. 2017). The presentation of the Caracol lidar data in India (Weishampel et al. 2010) also led to the successful large-scale use of lidar at Angkor in southeast Asia (Evans et al. 2013). Thus, the use of lidar has forever altered and amplified

our view of how humans modified and used ancient landscapes. Analysis of these landscapes shows the massive efforts that went into their modification, the enormous amount of settlement and architectural construction located on them, and the size and extent of these endeavors (Chase, Lucero, et al. 2014). Caracol is a particularly good example of this effort in that the site covers more than 200 square kilometers and is completely covered with settlement, agricultural terraces, and integrative public architecture and causeways.

Maya City Planning

One approach to the Maya constructed landscape has been the search for specific astronomical or geometric patterning within cities. The arrangement of a western pyramid and an eastern platform supporting three buildings on a public plaza was correlated with horizon-based astronomical observations at Uaxactun, Guatemala (Ricketson and Ricketson 1937); these "E-Groups" (named after the originally investigated Uaxactun plaza) were recognized at many Maya sites, leading researchers to look for other astronomical orientations in Maya sites (e.g., Sprajc 2015). Rather than focusing on astronomy, Peter Harrison (1989, 1999:187–191) argued that important Maya buildings at Tikal were situated relative to each other in terms of right triangles; each corner of the right triangle was situated on an important building axis. In this way, he was able to relate the various building groups at Tikal geometrically to each other, to argue for city planning at the site, and to ascribe specific building patterns to individual Tikal rulers. James Doyle (2013, 2017b:274) has also searched for geometric patterns in the size of early plaza areas and their distance from each other, while Francisco Estrada-Belli (2017) has demonstrated geometric replication of specific angles within secondary E-Groups associated with an early political sphere dominated by the site of Cival, Guatemala. While variations in site orientation over time may not have been present at all Maya sites, whether the ancient Maya consciously used astronomy and geometry in their placement of buildings within a general city plan is an open question.

Some of the earliest replicated monumental architecture placed on the Maya landscape is in evidence by the Middle Preclassic period in two very different architectural forms. E-Groups (defined above) have been long recognized as being among the earliest community architecture built by the ancient Maya (Chase and Chase 1995; Freidel et al. 2017; Inomata et al. 2013). However, the Maya also appear to have experimented relatively early

with gridded cities (e.g., Pugh and Rice 2017), subsequently abandoning them for more dispersed settlements. Both suggest monumental effort in planning, and each may be tied to Maya cosmology and worldview.

The existence of early Maya gridded cities has only been recognized within the last several years, and exactly how and why they exist are unanswered questions. The initial one that was recognized and dated is laid out on an orthogonal grid on the Candelaria Peninsula in western Lake Petén Itza, Guatemala. Archaeological excavations at Nix'tun Chich have shown that this urban plan was in existence in the Middle Preclassic period prior to 500 BCE (Pugh and Rice 2017) and that it predates the better-known gridded city of Teotihuacan in central Mexico by half a millennium. Lidar has also revealed the existence of other early gridded centers at the Guatemalan site of Cival (Estrada-Belli 2017) and in the lower Usumacinta area of Mexico (Inomata et al. 2020); it is suspected that still others will be found and identified as more remote sensing is done (and if the earlier plans have not been obliterated by later construction efforts). What is interesting is that Nix'tun Chich, Cival, and the Mexican examples have an E-Group in their epicentral cores, clearly identifying these sites as within the broader Maya architectural tradition.

As monumental complexes that were replicated across the Maya Lowlands, E-Groups likely constituted the initial constructed foci for Maya communities (for related discussions, see Brown and Yaeger, Chapter 14; and Powis and colleagues, Chapter 13, this volume). E-Groups have been noted in the Maya area as an architectural form since the 1920s (Ricketson 1928), when the Uaxactun namesake group was identified as being a horizon-based observatory likely associated with the Maya agricultural cycle. While having roots in the Late Preclassic period, the Uaxactun E-Group dated predominantly to the Early Classic period. The form of Early Classic E-Groups was even more standardized than earlier Preclassic complexes; the Early Classic version exhibited both a high western pyramid and an eastern platform that was roughly 70 m in length (Chase and Chase 1995, 2017b). Excavations at the site of Cenote in the central Petén, however, also led to the definition of an earlier variant of this architectural form that apparently dated to the Middle Preclassic period. This form exhibited more variability but exhibited an eastern platform that could be over 130 m in length; the beginning versions of these Cenote-style E-Groups often initially involved the modification of bedrock into architectural form (Chase 1983, 1985), something now recognized at other sites (Inomata, Pinzón, Palomo, et al. 2017). The early dating of the "Cenote-style" E-Group was

subsequently confirmed by excavations in the northern part of the Petén (Hansen 1992). We now know that E-Groups were a prevalent architectural form in the Middle and Late Preclassic periods that formed the original monumental complexes for many Maya settlements (Chase and Chase 2017b; Freidel et al. 2017). It should be noted, however, that architectural construction surely predated these E-Groups and involved the infilling and leveling of large expanses of landscape (see Powis and colleagues, Chapter 13, this volume). Rosemary Joyce (2004) has argued that the earliest Maya did not build up but rather out—laterally, in the form of plazas and platforms that constituted massive construction efforts.

The earliest E-Group in the Maya area has been identified and securely dated to ca. 950 BCE at the site of Ceibal, and both excavations and lidar at this site confirm the massive effort that went into producing large flat architectural expanses (Inomata, Pinzón, Palomo, et al. 2017; Inomata et al. 2013). The form of the Maya E-Group may be potentially linked to other architectural prototypes that were found in Chiapas and the Gulf Coast (Lowe 1977). The fact that Olmec-style caches have been found in the Ceibal E-Group (Inomata, Pinzón, Palomo, et al. 2017; Inomata and Triadan 2016) also opens up questions of contact between the Olmec and the Maya. Takeshi Inomata is currently searching for earlier interlinking architectural forms in the low-lying plains of Tabasco; some of the early constructed forms that he has found are massive and evince gridded aspects related to causeways and water. Thus, the Maya focus on landscape monumentality has deep roots.

That the Maya practiced city planning (e.g., Smith 2007) is certain. Cities like Nix'tun Chich were planned as early as the Middle Preclassic (Pugh and Rice 2017); whether the gridding at the site was purposefully planned to symbolically represent the scales on a crocodile (Rice 2018) is probably an overstatement of Maya cosmography. The use of E-Groups at most early centers in the Maya Lowlands is also an example of city planning—and by the Late Preclassic period this architectural form came to specify a Maya identity (Chase and Chase 1995, 2017b, 2019). Subsequently, many Maya centers focused on different building types that were common to most sites but arranged in different ways. During the Classic period, most Maya sites incorporated temples, palaces, ball courts, large plazas, and causeways into their central architecture (Andrews 1975). How these constructions were spatially organized differs at most sites; the components at each site were similar, but the linkages and scales were variable (see Houk 2015). Some

sites, like Tikal, used shorter and broader causeways to link temples with epicentral architecture; other sites, like Caracol and Coba, used causeways as integrative mechanisms (Chase and Chase 2003). The monumentality of certain constructions, particularly in relation to palaces, also can be taken as indicative of the power of the individual ruler at each site. Yet not all planning was top-down, particularly at the interface between community organization at the periphery and the urban landscape of the site core; Melissa Burham and colleagues (Chapter 4, this volume) make a compelling case for generative, or bottom-up, urban planning of outlying minor temples at Late Preclassic Ceibal.

Besides palaces, temples, ball courts, and public plazas and buildings, by the Late Classic period it is also likely that most Maya sites had formal marketplaces (e.g., King 2015). These markets took two different forms; in one form, a centrally constructed vaulted building housed the marketplace (e.g., Tikal; Jones 2015); in the other form, marketplaces were placed in open plaza spaces that were sometimes associated with low-range structures (e.g., Caracol; Chase and Chase 2001). In some cases, a single market plaza exists in the center of the site (e.g., Chunchucmil; Hutson 2016), while in other cities multiple plazas were placed throughout the extended landscape (see Chase et al. [2015]; see also Folan et al. [1983] for Coba). At Caracol, Belize, the city planning involved in the placement of these market plazas is in evidence both in the site layout and in the site's interlinking road system (Chase 2016b; Chase and Chase 2014a).

In past assessments of Maya centers (e.g., Ashmore 1981; Becker 1979), the interlinkage of ancient Maya settlement, agriculture, and landscape led to questions about whether the Maya were urban. The form of a Maya city differs from Western preconceptions of urbanism. In the Old World, many cities consisted of tightly spaced quarters separated by narrow streets (e.g., Smith 2007); they were often walled for protection, and their population density was far greater than that found in the Maya area. Whereas agricultural pursuits were removed from Western cities, in the Maya area. agriculture was conjoined with urban space. This conjunction took the form of both gardens and more extensive agriculture, but it meant that Maya cities were more dispersed over the landscape than their Western counterparts. As noted above, the Maya living in the Northern Maya Lowlands focused on gardens and walled house plots, while their counterparts in the Southern Maya Lowlands employed truly sustainable agriculture within urban limits; thus, cities in the Northern Lowlands evince a denser settlement

compared to those in the Southern Lowlands (Chase and Chase 2016a). Yet, at over 1,000 people per square mile (Chase and Chase 2016b; D. Chase et al. 2011), there is no doubt that the Southern Lowland cities were urban.

Roland Fletcher (1995, 2009) first defined a form of low-density agricultural urbanism for southeast Asia that he felt could be extended to the Maya region and to other tropical areas. His type-city of Angkor in Cambodia practiced rice cultivation and extended over approximately 1,000 square kilometers (Evans et al. 2007). Thus, a Maya city of 200 square kilometers, like Caracol and its agricultural terraces, can be considered to securely lie within the purview of low-density agricultural urbanism (e.g., Isendahl and Smith 2013). Probably more so than Western cities, the sprawl and agriculture exhibited in low-density urbanism are also responsible for more extensive and expansive landscape modifications. The Maya conjunction of low-density urbanism and agriculture truly resulted in an anthropogenic environment on a monumental scale (Chase and Chase 2016b).

The Postclassic Reorganization of Space

Postclassic Maya peoples did not focus as much on terraforming their landscapes as had their predecessors. Instead, there was a change in emphasis in terms of how they treated monumentality. Sites were not as large as they previously had been, and neither were constructions as tall. While the Maya built both permanent and impermanent structures during all time periods, Postclassic period constructions saw a diminished focus on mass and a greater focus on surface veneer. They were hastily put together, often consisting only of base walls that were surmounted by a structure made from perishable materials. However, there was a lavish use of plaster to cover many of these edifices and mask their impermanence. Thus, these later buildings fell apart quickly when exposed to the tropical elements, while the earlier, better-built constructions weathered the passage of time with greater grace. This disparity is partially responsible for the mistaken belief that Postclassic peoples represented a "culturally reduced" reconstitution of the Classic period (Chase and Chase 2004b).

By the end of the Classic period, the majority of the usable Maya landscape had been infilled by residential settlement and agricultural plots amid the many city centers. All of these constructions involved modification of the landscape and the conscious reorganization of space. Yet this monumental landscape was then abandoned by the beginning of the tenth century, and most of the terrain eventually reverted to forest. Interestingly,

unlike most collapses, there was never a complete recovery in the Maya area; Postclassic population levels never returned to those seen in the Classic period (Turner 2018). Only with the advent of modern populations is the landscape once again starting to be both denuded of trees and infilled with people (see Prufer and Kennett, Chapter 2, this volume, for a discussion of long-term patterns of human–land interaction in southern Belize).

With the Maya collapse in the interior of the Yucatan Peninsula, the remnant Maya populations also appear to have moved to areas with bodies of water and especially to the eastern seacoast. The positioning of populations along waterways and seacoasts was likely an economic decision. Long-distance trade had always been important to the Maya (e.g., Lee and Navarrete 1978), but during the Postclassic period the remnant Maya participated in a global economy in which people and trade goods freely moved from northern Mesoamerica, Oaxaca, and the Pacific Coast back and forth with the Maya area. Based on the location of Postclassic cities, like Santa Rita, Corozal, Belize (Chase and Chase 1988), and Tulum, Mexico (Lothrop 1924), this trade was both by river and especially by sea. Chichen Itza in the Northern Maya Lowlands had its own seaport at Isla Cerritos at the time of the Maya collapse (Andrews et al. 1988), and it is likely that the later Postclassic capital of Mayapan, Mexico, also had its own seaport, possibly at Isla Jaina (Inurreta D. and Cobos 2003). The emphasis on and importance of the sea to the Postclassic Maya can also be seen in all of the small shrine structures that line the eastern seacoast of the Yucatan Peninsula (Andrews and Andrews 1975; Lothrop 1924).

Postclassic Maya centers differed from earlier Maya cities. They were generally smaller and more compact, even though dispersed settlement was still common (e.g., for Mayapan, see Hare et al. 2014; Masson and Peraza L. 2014; Pollock et al. 1963). Some of these centers in the Northern Lowlands were walled (Mayapan, Tulum, Xcaret), and other Postclassic centers were protectively located on islands (Chase 1976; Johnson 1985; Sabloff and Rathje 1975), sometimes with extensive dispersed settlement on the shores of lakes (Chase 1990); these settlement locations and constructions are suggestive of a heightened level of conflict—as well as of a dependence on water transport. Yet unwalled Postclassic cities also existed in the Southern Lowlands (e.g. Santa Rita, Corozal [Chase and Chase 1988] and Lamanai, Belize [Pendergast 1981, 1985]), suggesting some continuity with Classic period patterns. Unlike the Classic period, however, the Postclassic impact on the general landscape was minimal, especially in the Maya Southern Lowlands. Whether conflict or other factors inhibited late Maya population

growth, it is clear that Postclassic population levels never reached Classic levels, suggesting that conditions were not right for a full-scale recovery of the older status quo and the monumental aspects of the Maya past.

Conclusion

Maya landscapes were monumental, as can be seen in their buildings and architectural engineering, settlements and road systems, and population levels. The Maya view of the world was also monumental; portals between the underworld and present world were physically represented in building iconography and caves; associated ritual emphasized connections across time. However, Maya monumentality and settlement changed over time. While many of the aspects of Lowland Maya civilization remained constant over the long run, others changed dramatically. Architectural mass and landscape modifications increased over the course of the Classic period and then decreased across much of the lowlands during the Postclassic period. Site sizes also rose and fell; however, population density in Maya settlements also increased over time (even if vast spaces of the lowlands were not occupied). Whether concrete or abstract, archaeological data (collected via excavation, survey, and new interpretive tools) provides perhaps the best indicator of the relationships that existed between ancient Maya monumentality and landscapes by providing us with the ability to view past cities, peoples, and lifeways.