

**PLACE, MEMORY AND THE ANCIENT COSTA RICAN  
LANDSCAPE:  
AN EXPLORATION OF FOOTPATHS, CEMETERIES AND  
HABITATION SITES**

**By**

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**Place, Memory and the Ancient Costa Rican Landscape: An Exploration of Footpaths, Cemeteries and Habitation Sites**

**This Thesis Directed by Professor Payson Sheets**

Since the 1980s, the Proyecto Prehistórico Arenal has been conducting research in the Arenal Region of Northwestern Costa Rica. Up until now, the archaeology has been interpreted using traditional theoretical approaches such as those embedded in Culture History and Processualism. While studies undertaken within these approaches have provided valuable baselines and information regarding chronology and the environment, I believe finer-grained interpretations of social process and transformation can lead to greater insight into the ancient motivations that led to the creation of the archaeological record.

The presence of ancient footpaths, cemeteries and habitation sites can not be easily explained within functional terms. Their formation, use and abandonment are not merely adaptations to a hazardous environment; rather, they appear to have meanings beyond this.

This thesis explores the creation of these villages, cemeteries and footpaths and their possible significance for ancient Costa Rican social construction of memory, space and place. These facets of social life are all too often intertwined with complex notions of landscape, the construction of which is meaningfully constituted. By examining the formation and use of footpaths and cemeteries and the associated rituals, I conclude that the Arenal inhabitants attempted to maintain continuity, by referencing social memories, in their funerary practices despite limitations of space and other logistical constraints. Such continuity was important for maintaining



corporate identity. However, it is through the desire to maintain continuity that change is introduced and incorporated. I even suggest that the strength of the idea of continuity held for many people may explain in part the presence of monumental constructions later in time.



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## CHAPTER 1 INTRODUCTION

This thesis examines the villages, cemeteries and footpaths documented in the Arenal region of Northwestern Costa Rica. I maintain that the formation and continued use of these archaeological features inscribed meaning onto the landscape that reinforced social memory and the ancient significance of space and place. The interpretations and supporting data put forth are the product of the endeavors of the *Proyecto Prehistórico Arenal*, of which I was a member during the 2003-2003 field seasons.

### ***Overview of the Proyecto Prehistórico Arenal***

Since the 1980s the *Proyecto Prehistórico Arenal* (PPA) has been conducting archaeological research in the Arenal region of northwestern Costa Rica. This region is well known for its environmental diversity as well as the recurrence of short and long term climatic variability. While the region is one of the best studied in the world in regards to microclimates, the archaeology is limited, especially in terms of understanding how ancient people interacted with their surroundings. The cultures of Costa Rica and the rest of the Intermediate Area are easily eclipsed in terms of the sociopolitical complexity exhibited by Mesoamerica to the North and the Andean civilizations to the south, resulting in fewer scholars directing their attention to regions in between. The Intermediate Area (Figure 1-1) has often been passed over by researchers as, prehistorically, it paled in comparison demographically, did not

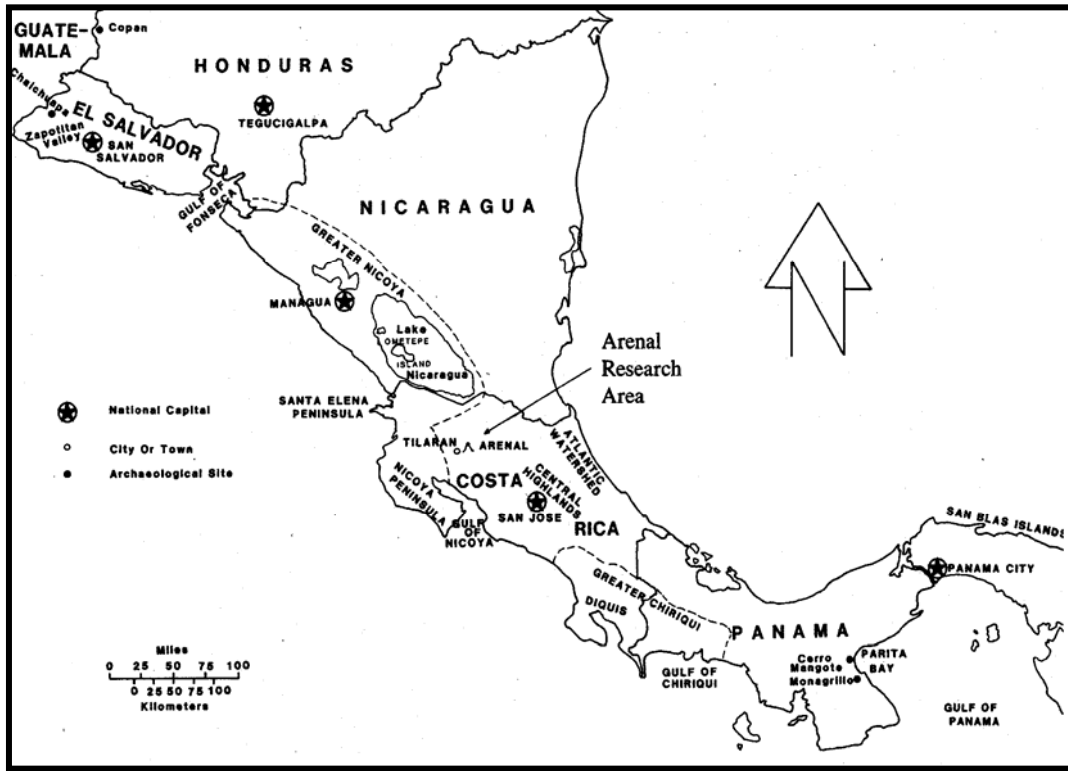


Figure 1-1. Map of the Intermediate Area (Sheets 1994a:4)

engage in intensive agriculture, there were no major monuments constructed, and the region appears to have had little influence on the development of other regions as the economies and political structures here were relatively less complex. However, this has started to change as many archaeologists have begun to conduct work in the region and realize that the cultures of the Intermediate Area are of considerable significance despite what has long been considered their relative lack of social complexity (e.g. Lange 1992, 1996).

One of the largest archaeological projects in Costa Rica in recent years has been the PPA. This project focused primarily on the prehistoric response to major volcanic eruptions from Arenal Volcano and conducted most of the archaeological research in which my particular study is embedded.

It has been inferred that people inhabited the Arenal region of Costa Rica since Paleo-Indian times based on the presence of Clovis-style projectile points recovered in the Turrialba Valley (Snarskis 1984) and on the shore of Lake Arenal (Sheets 1994a). The region is dominated by Arenal Volcano, which has erupted violently ten times in the last 4000 years (Sheets 1994a). Prehistoric Costa Ricans maintained low population densities, with sedentary, ceramic producing villages antedating the earliest Arenal eruptions. Villages dating to the Tronadora Phase (2000 BC – 500 BC) make them the earliest in all of Costa Rica (Sheets 1994a). Prehistoric Costa Ricans never achieved the complexity seen in their neighbors to the north and the south; however, some sites in central Costa Rica were relatively large chiefdoms (Lange, ed, 1992). But the small-scale societies of the Arenal region are considered to have been egalitarian with very little evidence of hierarchy in prehistoric times

(Sheets 1994b). The massive eruptions from Arenal Volcano have provided archaeologists and geologists with an excellent tephra-stratigraphy (Melson 1994) that has been used in the dating of archaeological materials. Conveniently enough, one of the eruptions occurred at nearly the same time as European contact, around AD 1520 (Melson 1994), and is thus very useful in separating historic and prehistoric cultural materials and features.

During the initial field seasons, project members became aware of ancient footpaths dating to both the Arenal (500 BC –AD 600) and the Silencio (AD 600-1300) Phases. Through surveys conducted in the 1980s and 2002, several pre-Colombian cemeteries were located and hypothesized to be possible sites to which these footpaths may have led. In 2003, excavations were carried out at two of these cemeteries: the Poma site (Butler 2005), an Arenal phase cemetery, and the Castrillo site (Weller 2005), an Arenal-Silencio transitional phase cemetery.

Data recovered from these cemeteries are indicative of funerary feasting (Bradley 1994b, Butler 2005b, Weller 2005b). Sheets suggests that feasting may have been undertaken in part to create and maintain relationships between the communities using the cemeteries. Footpaths leading both east and west from cemeteries strengthen the idea that multiple communities were participating in the rituals conducted in the cemeteries (Sheets 1994a). Sheets has posited that these relationships may have been formed as the result of the threat and actuality of volcanic disasters (Sheets 1999). Certain communities would not have been as affected by eruptions as others, making their village a potential refuge for people in need.

However, it is also possible that the assistance these relationships provided during times of environmental disaster was a fortuitous outcome, rather than the purpose of such relationships. Perhaps alternative intercommunity relations were formed prior to Arenal's first eruption (1800 BC) through intermarriage, kinship ties, or even trade. Though there has not yet been a systematic investigation into these hypotheses, alternative social relationships seem likely given the nature of village size and population. Tronadora, Arenal, and Silencio phase villages were rather small, perhaps no more than 20 to 50 people occupying any one village (Sheets, personal communication 2005). Thus, exogamous marriage would have been necessary, linking communities through networks of kinship. Trade, too, could have played a role in the creation of intercommunity relationships; however, more research into the nature of trade in the region is needed to provide insight regarding such exchanges.

How and why people of different communities interacted is still not well understood, but ceramic evidence from cemeteries in the region indicates that interaction did indeed take place, at least in funerary contexts. I argue that the mechanisms underlying these funerary practices are rooted in social memory because the data indicate that the cemeteries and footpath used for generations, and their formation and use defy utilitarian explanations. The work conducted in the 1980s and in 2002-2003 field seasons forms the basis of my dataset, the nature of which has led me to develop the following research objectives and questions.

## *Research Questions and Objectives*

This thesis explores the creation of villages, cemeteries and footpaths and their possible significance for Costa Rican social constructions of memory, space and place. In particular, I intend to look at how memory enabled the symbolic mechanisms, embedded in ritual funerary practices, through which social relationships were created and maintained, and how this influenced the formation, use, and meaningful constitution of the cemeteries and footpaths.

To begin, it is important to situate memory, space and place within a broader theme of landscape. I am concerned with landscape here because I find it a useful concept to attempt an understanding of human movement and activity in expansive spaces. It allows for an integration of the understanding of the natural environment as well as concerns for how past peoples understood and experienced the environment, bringing us closer to realizing the cultural principles and social constructions through which people interacted with, and helped shape, their surroundings. To date, very little outside the paradigms of culture history, socioecology, and hazards theory has been applied to Costa Rican archaeology. I believe that an interpretation based on contemporary social theory can provide different insights into human-landscape interaction.


Landscape is a difficult term to define as many people, past and present, conceptualize landscape in many different ways. Here I employ Knapp and Ashmore's (1999:12-13) expansive category of ideational landscape as my vehicle for considering the significance of sites and their associated footpaths within ancient Costa Rican culture. Ideational landscape conceptualizes landscape not only as a

mental image but also as something that cultivates spiritual values and ideals (Knapp and Ashmore 1999:12). Furthermore, this understanding incorporates more traditional ideas of constructed and conceptualized landscapes. Constructed landscapes encompass the built environment. A conceptualized landscape is one that is formed by the natural world and “interpreted and given meaning through localized practices and experiences” (Knapp and Ashmore 1999:11). The cemeteries and footpaths were constructed and formed in a physical reality, but the meanings behind their use were not merely utilitarian, rather, they were part of a meaningful reality incorporating religious, political and social concepts and relations. Such a line of thought is also valuable in understanding later monumental constructions that may have emulated cultural principles as to how one enters a special place, principles established during more egalitarian times like those of the Arenal and Silencio Phases, in order to legitimate chiefly power.

Ruth Van Dyke and Susan Alcock suggest that social memories are commonly constructed and observed through a number of media including ritual behaviors and places (2003:4). For the ancient Costa Ricans, these rituals and places were produced through spatialized practices within the ideational landscape. For example, continual ritual processions through the footpaths and the funerary feasting within the cemeteries invested and reinvested social memories of these places. Moreover, the footpaths and cemeteries were formed by the actions of those who moved within them, fixing them on the land. But at the same time, their formation restricted those actions, constraining movements within those spaces. That the



footpaths were used for centuries suggests that the practices associated with them were ones deeply sedimented in Costa Rican memory.

By examining the formation, use, and abandonment of footpaths and cemeteries, it is possible to make a number of archaeological inferences. People habitually used the same footpaths and cemeteries for long periods of time; and as documented through excavations, the footpaths and cemeteries were spatially constrained. The footpaths traverse a straight and discrete course despite topography and the cemeteries were bounded by masonry walls and other landscaped features. But the continued use of these cemeteries and footpaths over such long periods of time, led to the alteration of these features. Such alterations include taking apart older tombs in order to build new ones as well as the formation of new paths directly adjacent to exhausted ones. Further, the fact that the cemeteries remain as the only visible  architecture in the region, and the feasting that took place in them, suggests that they were not merely utilitarian. I argue that the cemeteries and footpaths were meaningfully constituted on the landscape through their formation and the performance of funerary rituals within them, and came to be culturally prescribed practices embedded in history and social memory. The footpaths, cemeteries, and rituals were not only significant because they were systems for dealing with the dead, but were also important for intercommunity integration. The presence of multiple footpaths heading in different directions to and from cemeteries and villages, and the variation in ceramic styles represented in the record, suggest multiple communities participated in ceremonies and feasting at the cemeteries. Therefore, this thesis is an attempt at understanding of the underlying social motivations that led to the creation

of these archaeological features in the ancient landscape of the Arenal region of Costa Rica.

The rest of this chapter recounts the history of archaeological research in Costa Rica, and provides a culture-historical account of the prehistory of Northwestern Costa Rica. Chapter two gives an overview of the natural environment and a brief summary of the paleoenvironmental studies conducted in the area. Chapter three outlines past theoretical approaches in Costa Rican archaeology and subsequent interpretations, and presents a post-structural approach to landscape, place and social memory, through which I interpret the data. Post-structural theory has a number of advantages; it enables an understanding of social processes as continuous, though not unchanging. Rather than framed as a series of disjointed chronological markers, it is aimed at understanding change and transition between these imposed distinctions and emphasizes a continuous and fluid history, from the ancient meanings of these practices to their present meaning for contemporary peoples. Further, post-structural theory goes beyond utilitarian and functional explanations to consider how the practices that are reflected in the footpaths and cemeteries were products of broader systems of meanings involving politics and religion. Thinking in this way has allowed archaeologists to ask more reflective questions about how past peoples engaged with the material realities of their landscape, as well as with ideological and ephemeral ones. I believe this approach stands to give greater insight into the ancient social practices of Costa Ricans. Chapter four is a comprehensive description of the available data recovered in the 1980s and 2002-2003. This dataset forms the basis of my analysis.

In Chapter five, I put forth my interpretations. I argue that the practices that created the footpaths and cemeteries have inscribed cultural meaning into the landscape. I attempt an interpretation of the meanings of prehistoric footpaths and cemeteries using relational analogies built from ethnographic data. The beliefs underlying the funerary practices of Bribri Indians in Costa Rica (Bozzoli de Willie 1975, Pittier 1897, Stone 1962, Umaña 1983) and the Cuna in Panama (Dillon 1984) can serve as analogs for the past (Wylie 1992). The ethnographic data fit well with the archaeological data, for example, Bribri and Cuna cemeteries are located far from villages in order to keep the dead and the living separate, and this is exactly what we see in the archaeological record. Additionally, footpaths leading from the village to the cemetery need to be straight or the Bribri souls of the dead will get lost; in plan view, the prehistoric footpaths are very straight. Funerary feasting is an important and integrative occurrence among the Bribri and archaeologically, feasting has been overwhelmingly documented at prehistoric cemeteries. I look to current theoretical understandings of space and place to suggest that the ancient cemeteries, as the only community architecture built during the Arenal and Silencio Phases, were meaningful places on the landscape, and how one enters them (via straight footpaths) was culturally prescribed. The formation and use of cemeteries and footpaths continued in this way for centuries, implying that memory was an underlying social mechanism that influenced these practices. Every time a funeral procession, burial, and feasting event took place, memory was referenced and reinforced. Further, based on the archaeological evidence, it appears that multiple communities were participating in these funerary rituals, and I follow Sheets (1994a, 1999) in suggesting that these



practices fostered intercommunity ties that may have been called on during times of need.

In the last part of Chapter five, I put forth the hypothesis that the construction of monumental roads (*calzadas*) and their relationship to central plazas during later, more socially unequal periods (AD 500-1550) in the Atlantic Watershed region of Costa Rica was a transformation of these same practices begun during the egalitarian times of the Arenal and Silencio Phases and demonstrates historical continuity. Though there appears to be a referencing of history and memory regarding how one enters a special place, the *calzadas* and plazas may have been used to reinforce hierarchy as well as a multi-community corporate identity. Lastly, I summarize and conclude my arguments in Chapter 6.

The footpaths and cemeteries of the Arenal region of Northwestern Costa Rica are exceptional case studies for considering memory, space and place, and the ideational landscape in ancient Costa Rican culture. The continuity in social practices, the unique relationships between villages, footpaths and cemeteries within the landscape, and funerary feasting beg more in-depth reflection on the embeddedness of social memory and its structuring capacity.

The importance of cemeteries and pathways, be they footpaths or monumental roads, in Costa Rican prehistory is starkly apparent when one grapples with the archaeological evidence of their construction—they were laborious endeavors that continued to be used over generations, and our understandings of them cannot be reduced simply to matters of function and practicality.

## **A BREIF HISTORY OF ARCHAEOLOGICAL RESEARCH IN COSTA RICA**

Compared with other regions in the Intermediate Area such as Nicaragua and Honduras, the archaeology of Costa Rica is quite well known. Compared with Mesoamerica, South America, and the Southwest of the United States, it has lagged behind due to a number of reasons, the most significant of which is the lack of imposing architecture and elaborate artifacts. Regardless, many important investigations have revealed a rich and fascinating history in Costa Rica. One of the earliest and most well known scholars to conduct archaeological research in Costa Rica was Carl Vilhem Hartman (1901, 1907), who worked at a number of different sites including Las Mercedes on the Atlantic side, and Las Huacas in Guanacaste. Originally a Swedish botanist, Hartman systematically recorded and published his findings, setting an early standard for Costa Rican archaeologists (Stone 1984). Hartman was the first to rigorously record and map habitation and cemetery features in Costa Rica (Snarskis 1981). In 1926, Samuel K. Lothrop published *Pottery of Costa Rica and Nicaragua*, which sought to classify ceramics through stylistic analysis of pottery in private and museum collections. Sadly, it was several decades before scientific excavations were carried out in Costa Rica (Snarskis 1981, Stone 1984). In 1958, Doris Stone published the *Introduction to the Archaeology of Costa Rica* in which she named the three archaeological regions still used today (Greater Nicoya, Atlantic Watershed-Central Highlands, and the Diquis region).

The efforts of scholars at the Universidad de Costa Rica and the Museo Nacional de Costa Rica have provided a more detailed understanding of Costa Rican prehistory including ceramic sequences and cultural history. Additionally, a number

of other investigations by foreign scholars have contributed to the anthropological knowledge of Costa Rica. These studies include the work of Wolfgang Haberland (1959), who established a ceramic sequence for the upper Diquis region that tied it into what was going on in contemporary Panama; Matthew Stirling (1969), who was the first to correlate in time the ax-god image and nasal snuffers with ceramic vessels; Michael Coe (1962) and Claude F. Baudez (1962, 1967) began investigations on the Nicoya Peninsula at approximately the same time leading to the production of a chronological and ceramic type sequence for the Greater Nicoya subregion; Frederick Lange (1971, 1978, 1979, 1980, 1982-1983) examined specific geographic areas in order to integrate settlement patterns with subsistence patterns. Lange also established a ceramic sequence for northern coastal Guanacaste and the Sapoa River area, and helped to demonstrate the presence of metalworking in Costa Rica. Michael Snarskis (1976), proposed a pottery sequence based on individual modes for the Atlantic Watershed; and Payson Sheets and the *PPA* have produced a number of new finds for the Arenal region of Costa Rica (Sheets, ed, 1984, Sheets, ed, 2005, Sheets and McKee 1994).

All of these scholars have contributed to the archaeological understanding of the different regions in Costa Rica and continue to provide guidance to present archaeologists. Unfortunately, much of the work conducted in Costa Rica does not make it into English language publications, severely limiting the dissemination of information. Conversely, apart from what is written by Costa Ricans, much of the archaeology published in English is not translated and published there.

The following summary is provided for two reasons: to give readers who may not be familiar with Costa Rican archaeology a background, and to situate the following study within the context of work that has already been conducted. This thesis provides new data from, as well as expands on, the work conducted in the Arenal region during the last two decades. However, it offers a different perspective on the ancient communities inhabiting the region and suggests new directions for archaeological research in the Arenal region in particular and in Northwestern Costa Rica in general.

### **THE ARCHAEOLOGY OF COSTA RICA**

Costa Rica has been divided into three cultural regions based on geographical and cultural characteristics: 1) the Greater Nicoya Region; 2) the Atlantic Watershed-Central Highlands; 3) and the southern region of Diquis (Figure 1-2). The Arenal research area straddles the two northern regions, thus, the archaeology of these regions will be summarized. The southern Diquis region is less relevant to my topic and will not be discussed. However, it has been subject to a number of research projects with subsequent publications offering an accounting of the known archaeology (Baudez et. al 1996, Cooke 1984, Drolet 1982-83, 1984, 1992, Haberland 1984, Hoopes 1996, Linares and Ranere 1980, Quilter 2004, Snarskis 1981, Zilberg 1984). I will discuss the archaeology of the Arenal area separately as it presents some interesting cultural blends due to its location on the boundaries of the two distinct regions.

### *The Greater Nicoya Region – Guanacaste and the Nicoya Peninsula*

The Greater Nicoya region is divided into two subregions -- the northern sector of the isthmus of Rivas, Nicaragua, and the southern sector which encompasses Guanacaste and the Nicoya Peninsula in Costa Rica (Figure 1-3). The northern limit in Nicaragua will not be explicitly discussed, but its boundaries have been extended toward the Gulf of Fonseca, Honduras. The southern boundary is located near the Central Pacific of Costa Rica, around the current settlement of Chromes. The eastern limit is defined by the Guanacaste and Tilarán mountain ranges (Corrales and Quntanilla 1996). The Western limit is defined by the Pacific Ocean. This region is also referred to as the Pacific Drainage in this study. Most of the archaeological information for this region comes from sites located in the Bay of Salinas, Sapoa River Valley, Santa Elena Peninsula, the Bay of Culebra, Tamarindo Bay, the Nosara Valley, Tempisque River Valley, the Guanacaste Cordillera, and the Guanacaste-San Carlos Corridor.

### *Periods I, II, and III (?-1000BC) Paleo-Indian through Archaic*

Until the 1980s very little was known of this period in Northwestern Costa Rica and the only evidence of the presence of people in this area prior to 1000 BC was a single fluted biface obtained by Hartman in the 1890's (Lange 1980, Snarskis 1981). However, the PPA conducted surveys and excavations that have revealed more information about this period and will be discussed in a following section. As for most of Costa Rica, these periods are not well understood. Lange (1984) suggests



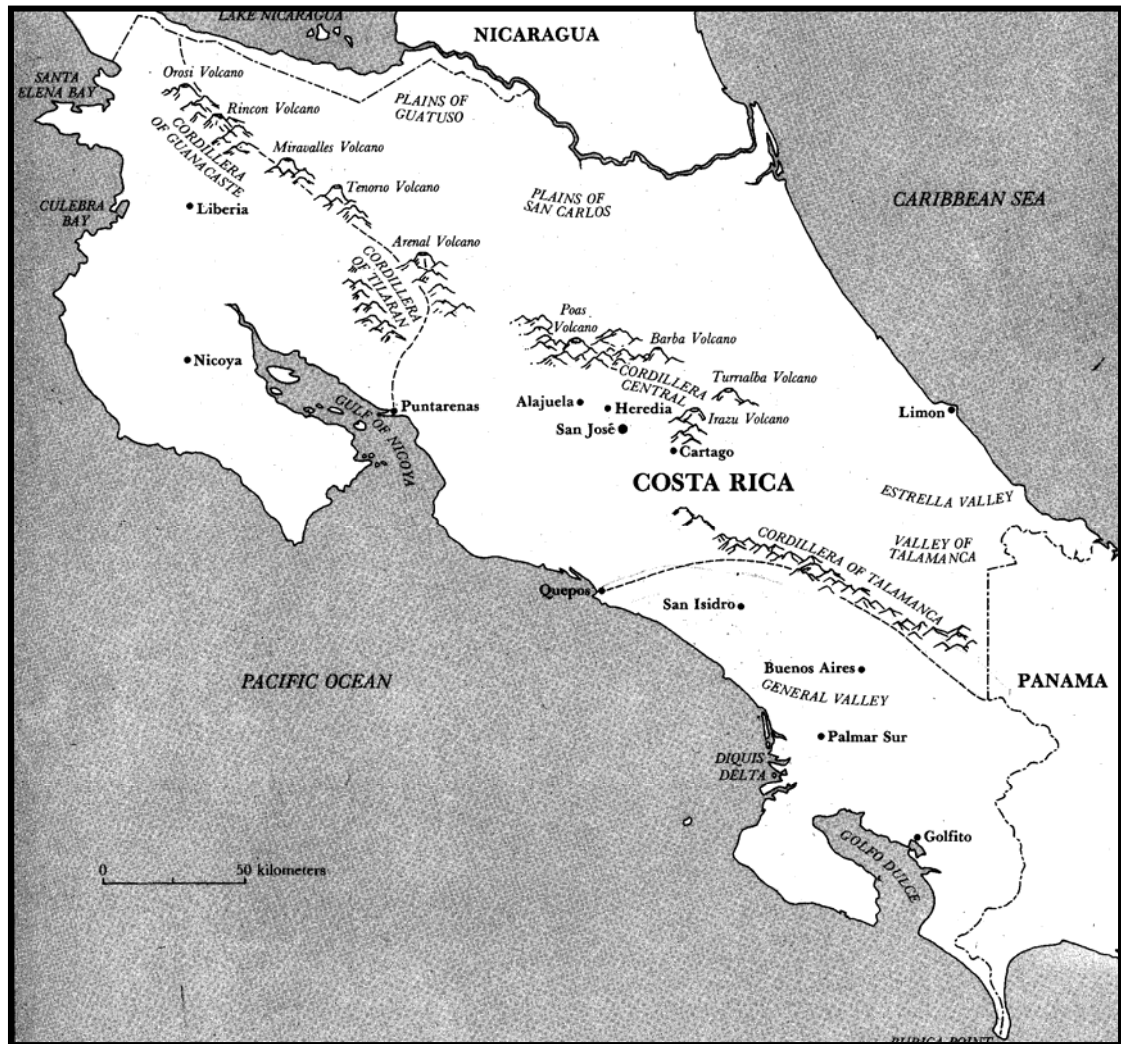


Figure 1-2. Map of Costa Rica. The dashed lines divide the three culture areas; the northwest is the Greater Nicoya sub-region; the northeast and central area is the Atlantic Watershed/Central Highlands sub-region; and the southern area is the Diquis sub-region (Snarskis 1981:13).

that it is possible that this area was so dry prior to 8000 BC that it may not have been suitable for the fauna that the hunters and gathers at this time would have relied on. Some sites have been recorded in lush areas further inland that consisted mainly of non-diagnostic lithic scatters but radiocarbon dates have been used to tentatively suggest a very early occupation (Lange 1984).

#### *Period IV (1000 BC – AD 500) Formative*

It is during this period that we find the first definitive evidence of ceramics in the region. This period has been termed “Zoned Bichrome” due to the predominance of red paint and the natural buff of the fired clay with decoration in horizontal zones (Coe and Baudez 1961, Snarskis 1981). It has been suggested that earlier ceramics existed (Snarskis 1978), but as of yet, such sequences have not been developed. Prior to 1975, most of the archaeological data from this region came from cemeteries. Because of the large size of these cemeteries, sedentary villages in early Period IV have been assumed but rarely discovered or excavated, as they are difficult to locate due to a lack of architectural remains (Lange 1984). Lange has characterized the settlements of this time as cyclical, perhaps characteristic of a population still considerably mobile. However excavations at the Vidor site on the Nicoya coast have encountered earlier levels created by extensive habitation (Lange and Abel-Vidor 1980). Generally, habitation sites are located on the slopes of hills and in low parts of valleys while cemeteries are found on hilltops or ridges considerably far away (Sheets 1994a).

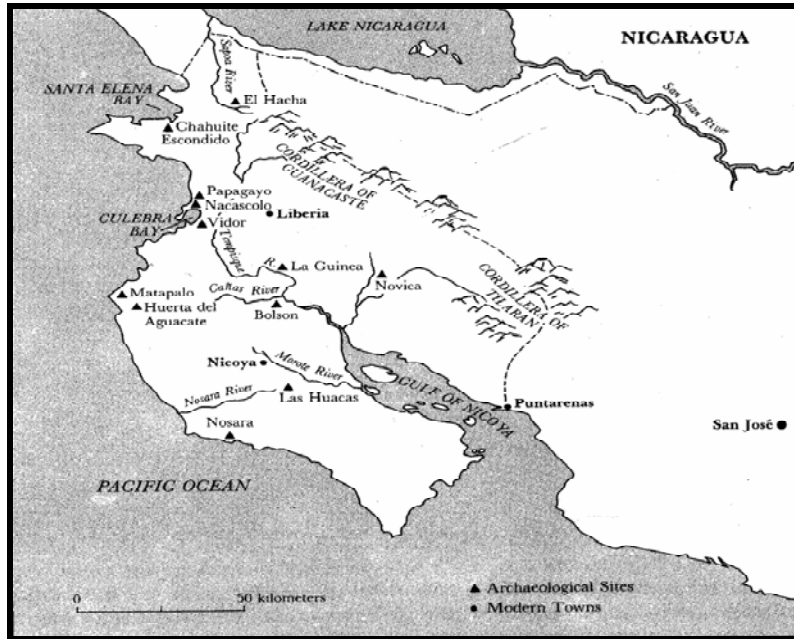


Figure 1-3a. Map of Guanacaste, and lower Greater Nicoya region including some of the topographic features (Snarskis 1981:26).

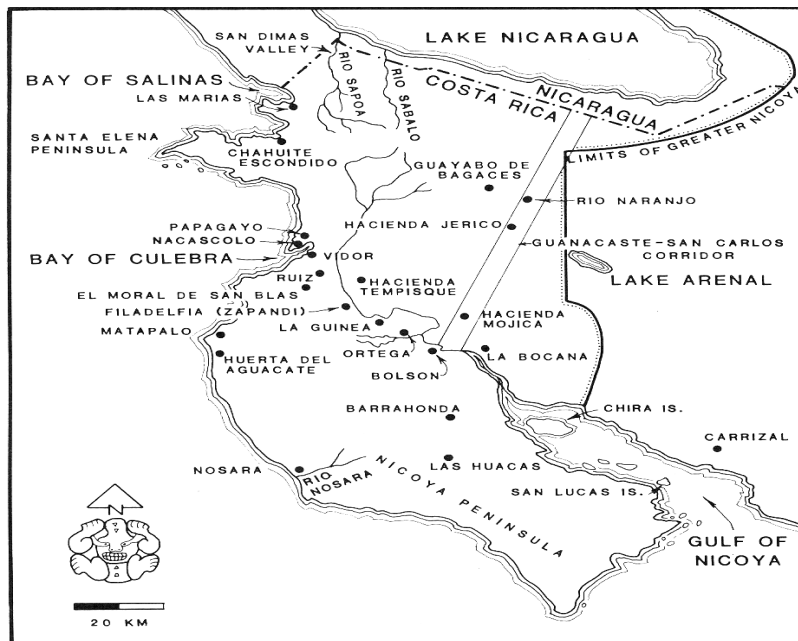


Figure 1-3b. The Greater Nicoya archaeological subarea and sites in its southern sector (Lange 1984:168).

At this time, populations in the region began to increase (Lange 1984, Sheets 1994, Snarskis 1981), though nowhere near the levels seen to the north in Mesoamerica or to the south in the Andes. Based on the evidence for social stratification found in mortuary data, it has been suggested that simple chiefdoms existed, but artifacts indicative of intensification in agricultural subsistence practices continue to be rare (Lange 1984, Snarskis 1981). Sheets (1984, 1994a) has suggested that because of the natural hazards in the regions (volcanic eruptions and earthquakes), people did not rely heavily on agriculture, but rather a mixture of subsistence practices including hunting and gathering of wild foods and minimal horticulture. At approximately AD 300-500, there appears to be an increase in reliance on marine resources at sites near the coast and an overall explosion of sites in the coastal areas (Lange 1984, Norr 1982-1983).

Mortuary customs from this time period are known from only limited examples. Of importance here are the burials found at Hacienda Jericho, Hacienda Mojica, Guayabo de Bagaces, and Rio Naranjo along the Guanacaste-San Carlos Corridor. These burials were in large mounds filled with and covered by large river cobbles (Finch 1982-1983, Lange 1984, Norr 1982-1983, Ryder 1982-1983, Snarskis 1981). These river cobble mounds are characteristic to the Atlantic Watershed rather than Pacific Coastal patterns (Lange 1984). The burial sites of Poma and Castrillo (see Chapter 4) are also mounded with river cobbles, however, at Castrillo, we do see a transition to using *laja* (flat-fracturing stone slabs) which is reflective of later practices. Another well-known cemetery dating to this time period is Las Huacas, excavated by Hartman (1907) in the late 1800s. This cemetery was also constructed

with river cobbles. There was an extraordinary amount of prestige and domestic goods found at this site, including jade, ornate metates, mace heads and elaborate pottery. A number of mace heads have been reported in mortuary contexts in the Central Highlands and have been suggested to indicate, in combination with jadeite artifacts and ornate metates, that their presence indicates social status and rank (Lange 1984, 1992, Snarskis 1981). The presence of jade indicates that interregional trade was taking place, as there have been no jade sources located in Costa Rica (Lange 1984, Snarskis 1981, 1984).

#### *Period V (AD 500 – 1000)*

In the beginning of this period, polychrome ceramic decoration becomes the prevalent style. A few ceramic finds indicate trade with Mesoamerica in early period V, but evidence is limited (Lange 1984). In general, sites are oriented toward the coasts of the ocean and lakes (Lange 1984, Snarskis 1981), but populations overall had begun to decrease from the previous Period IV densities, especially in the Arenal area (Sheets 1994a). The decline of sites inland, and the increase of them on the coasts, may be the result of volcanic activity as a number of studies have identified volcanic ash (tephra) layers in the stratigraphy, the deposition of which could have spurred abandonment. Michael Snarskis (1981) also suggests that the evident change in northern Costa Rica during the eighth and ninth centuries could in part be due to changes occurring in Mesoamerica. Teotihuacan had collapsed and the Maya area was beginning to experience major change as well. Trade with these regions dwindled somewhat and the ceremonial contexts in which Costa Rican elite-

associated artifacts played important roles were significantly altered as prestige objects such as jade, mace-heads and elaborate metates suddenly declined in the middle of Period V (Snarskis 1981). The presence of small chiefdoms continues through this period.

Additionally, while there did seem to be an increase in reliance on maize in late Period IV, there appears to be a decrease in Period V accompanied by an even greater exploitation of marine resources (Lange 1984, Norr 1982-1983, Snarskis 1981). In general, ground stone artifacts are rare in habitation sites during this period, suggesting that maize agriculture was negligible. This is also implicated by the fact that very few C4 plant remains have been identified. In a tropical area such as northern Costa Rica, C3 plants dominate vegetation, thus, C4 vegetation would certainly be noted in floral remains had it been present (Piperno 1994, Sheets 1994a).

#### *Period VI ( AD 1000-1550)*

Increase in sites on the coast of the Nicoya Peninsula, the decrease in ground stone tools, and a heavy reliance on marine resources continues in early Period VI in the Northwestern regions of Costa Rica (Snarskis 1981, Lange 1984). Whole manos and metates have not been found in domestic contexts anywhere in Greater Nicoya, except at the site of La Guinea, during this time period (Lange 1984). The fragments that have been recovered have been reworked into nutting stones, and pestles and mortars used to grind wild nuts and berries (Lange 1984). Lange believes that people during this time were raising crops, but that either their importance in the diet or the

method of processing were such that they left little archaeological evidence (Lange 1984:182).

Mortuary data from early Period VI come mostly from single and multiple primary interments excavated at the site of La Guinea, excavated by Baudez (1967) and Hoopes (1979), the Vidor site, and several sites on the Bay of Culebra (Lange 1984). Some individuals were buried with fine polychrome pottery and trade goods such as copper bells (Lange 1984). Social organization is not well understood but appears to be that of middle range societies, traditionally defined as chiefdoms or ranked societies.

In Period VI, there was an increase in elaborate polychrome pottery, with new types being introduced (Snarskis 1981). Lange (1984:183) suggests that the polychrome ceramics reflect external cultural influences from various, and in some cases still unknown, sources. For instance, Lange (1984) suspects that the Vallejo Polychrome reflects Mixteca-Puebla expansions, but the exact nature of this relationship in Greater Nicoya is still unclear.

Some cast gold artifacts have been recovered in this region, dating to Period VI, but in general they are not common (Lange and Accola 1979). By the end of Period VI, ornate metates have essentially disappeared. Burials consist of simple primary interments and multiple secondary burials, often constructed out of columnar stone slabs, or simply unmarked (Snarskis 1981). Evidence of house forms and sizes is scant, but excavators at La Guinea have recorded an ellipsoidal structure approximately 30-50 meters in diameter (Snarskis 1981). According to early Spanish accounts, villages were centered around a central plaza, which itself was

encompassed the residences and tombs of the ruling household; they recognized maize and bean subsistence, and deity concepts (Snarskis 1981), however, Lange(1984) appropriately urges caution be taken when making interpretations from contact period documents.

### ***Central Highlands-Atlantic Watershed***

The central zone of Costa Rica is ambiguously defined but has traditionally encompassed the Central Pacific drainage, the Central Highlands and Valley, the northern Plains, and the Central Atlantic Watershed (Figure 1-4). Due to the limited nature of the archaeological work that has been done and the relevance to my study, I will only be focusing on the Central Highlands and the Atlantic Watershed subregions. The work that has been done in this subregion has been carried out by only a few people, most notably Michael Snarskis (1976, 1978, 1981, 1984, 1992), Carlos Aguilar (1972), and Oscar Fonseca Zamora (1981). The relatively limited nature of publications has led me to rely closely on summaries of the region and a few accessible articles.

### ***Period I (? – 8000 BC) Paleo-Indian***

Conclusive evidence of human occupation in this region of Costa Rica is virtually absent before 11,000 – 8,000 BC, but dated sites to the north and south of Costa Rica suggest that it should be there (Snarskis 1981, 1984). However, the site of Turrialba in Costa Rica is an example of this time period, though it has only been tentatively dated as being between 11,000 – 6,000 BC (Snarskis 1979, 1981, 1984).



Turrialba is located on the eastern slope of Cordillera Central and appears to have been a lithic workshop spanning thousands of years (Snarskis 1979, 1981, 1984). The Paleo-Indian component has yielded several chipped stone artifacts including fluted points, preforms, snubbed-nosed end scrapers, large blades and burins (Snarskis 1979, 1981, 1984). The site is located near a chert quarry and the site's close proximity to this source probably explains why it was used as a workshop for so many years. As with the Pacific side, information in this period is lacking, only to be alleviated by further research.

#### *Periods II (8000-4000 BC) and III (4000-1000 BC) The Tropical Archaic*

The transition to the Archaic period has been rather neglected, most likely due to difficulties in locating these sites in tropical Costa Rica. As cited in Snarskis (1984), Linares (1976) and Ranere (1971) agree that people at this time were tropical hunter-gatherers subsisting on root- and tree-crops. This claim is based on the presence of a lithic technology that, after being replicated by Ranere, suggests a function of harvesting and processing of these types of crops (Snarskis 1984:201). Other than these limited hypotheses, not much has been posited for this period on the Atlantic Drainage.

#### *Period IV (1000 BC –AD 500) Formative*

It is in the early part of this period that we get the first solid evidence of sedentism and ceramic production. La Montaña complex from Turrialba is the earliest best-known sequence for the region (Snarskis 1981, 1984). Several charcoal samples date

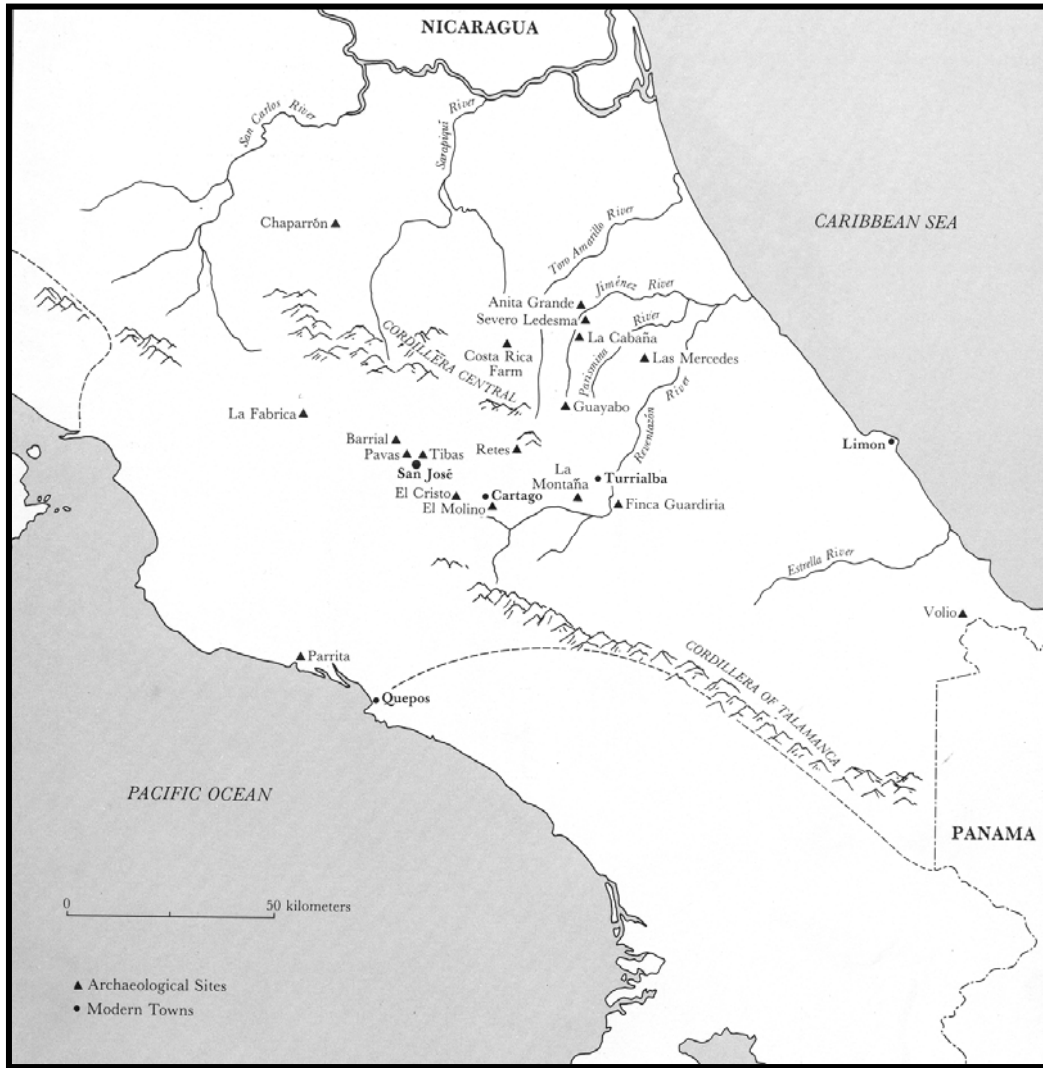
the complex from 1515 BC to 280 BC, clustering around 500 BC (Snarskis 1984:204). Snarskis suggests that the La Montaña people were the last to depend primarily on root and tree crops (Snarskis 1984:204). He supports his hypothesis with the recovery of manos and metates from Turrialba that exhibit a wear pattern (slight polish and battering at the ends similar to a pounder) characteristic of this type of crop processing which does not continue beyond this time.

Another early ceramic complex was discovered in the San Carlos region of the Atlantic Watershed near the town of Chaparron. The Chaparron complex, unlike La Montaña, shows similarity to the Zoned Bichrome ceramics of the Guanacaste-Nicoya region (Snarskis 1981, 1984). Snarskis also suggests that there is an unmistakable Mesoamerican influence in the Chaparron complex, though some have debated his assertion (Lange 1984, Stone 1984).

In the latter half of Period IV, a great population growth is documented (Snarskis 1981, 1984). Snarskis suggests that this population surge may be due to a modified agricultural program and the availability of more farmland in the region (Snarskis 1984:207), however, it is not clear on what he is basing his premise, other than that all sites encountered for this phase were located on fertile coastal plains and valley floors. It has not been demonstrated that sites were absent in other, less fertile areas.

The El Bosque complex dominates this phase, with very similar styles to those of the previous Chaparron complex (Snarskis 1981, 1984). It has been suggested that the large amounts of El Bosque ceramics found at what have been classified as very

Figure 1-4. Map of the Atlantic Watershed/Central Highlands subregion (Snarskis 1981:42)



large, dispersed sites are actually indicative of sequential, smaller occupations conducting swidden agriculture (Snarskis 1984:209).

In this period there appears to be very strong evidence of a ranked, hierarchical social organization. This evidence comes mainly from burial contexts that appear to be differential in the nature of burial customs and grave goods (Snarskis 1981, 1984). Artifacts from these contexts include elaborately decorated flat-topped metates, jade necklaces or pendants, ceramic figurines, rattles, whistles, stamps, pipes, and nasal snuffers (Snarskis 1984). Snarskis proposes considering the flat-topped tripod metates as a being seats of power, authority, or another elite symbol, rather than being used for domestic food processing. He suggests that the wear seen on these metates is very different than that seen on metates found in domestic contexts and has posited that these 'elite' metates were used to grind ritual foods or drugs (Snarskis 1984).

Cemeteries in this region are large, many covering anywhere from 5 to 20 acres (Snarskis 1984). The tombs are constructed from river cobbles, some of which weigh as much as 100 kilograms and were carried from riverbeds from as far away as 50 meter to several kilometers (Snarskis 1984). Typically, El Bosque graves are either rectangular, elliptical, long corridors up to 12 meters long, or scooped out oval areas with no cobbles (Hartman 1907, Snarskis 1984). Many burials have been found under house foundations, but all burials from this time, whether humble or grand, contain grave goods of some sort.

In sum, this period witnessed, probably for the first time, sedentary and ceramic producing villages that participated in maize agriculture (but probably not

dependent on it), ranked and hierarchical organization, and some contact and influence from other regions of Costa Rica as well as minor Mesoamerican stimuli inferred from designs found on pottery and jade work. It has been suggested that chiefdoms were established during this Period (Ricardo Vasquez, personal communication 2005), though no strong evidence on this topic has been published as of yet. It is not until Period V that we find undisputed evidence of a more ranked or stratified social structure.

#### *Period V (AD 500 – 1000)*

Radical transformations occurred in the beginning of this period, demonstrated by changes in house form, ceramics, and other material culture. Some evidence suggests that these changes were the result of a southern influence rather than a Mesoamerican one (Snarskis 1981, 1984). Snarskis (1984, 1981) suggests that with the fall of Teotihuacan and the subsequent collapse of other Mesoamerican civilizations, the Intermediate Area and Costa Rica in particular, experienced an even greater independence from Mesoamerica than in the previous Period IV. However, chronologies are not yet refined enough to demonstrate when this shift to southern stimuli probably occurred (Snarskis 1981, 1984).

The La Selva complex (the local expression of the first half of Period V) eventually dominates, with the El Bosque disappearing sometime in the first few centuries (Snarskis 1984). Changes in celt form are also noticed for this period, as elaborate lapidary work and the quality of greenstone declined (Snarskis 1984). Carbonized remains and smashed vessels recovered at a Turrialba Valley cemetery

suggest the presence of lengthy funerary feasting, or *chichadas*, similar to those described in historic times by Maria Eugenia Bozzoli de Willie (1975). Stone cist tombs dominate construction in cemeteries, and while clearly defined house forms are not accurately known, the introduction of circular houses must have taken place sometime around AD 500 – 800, a poorly known time period in the Atlantic Watershed (Snarskis 1984).

In the Central Highlands, the Curridabat phase spans the whole of Period V. This complex is similar to that of La Selva, and there is more known about this phase from two primary excavations at the sites of La Fábrica de Grecia (Herrer 1979, Guerrero 1981) and Barrial de Heredia. La Fábrica, the earlier of the two based on ceramic evidence, was the site in which the first adobe floor in Costa Rica had been found (Herrer 1979). La Fábrica had 13 circular house foundations, with the largest of these having two opposing rectangular entry ramps (Herrer 1979, Guerrero 1981, Snarskis 1984). Also found at La Fábrica was a major *calzada*, or cobble-paved causeway (Roberto Vasquez, personal communication 2005, Herrer 1979, Guerrero 1981, Snarskis 1984). The significance of this *calzada* and others in the area will be explored in a following chapter. Many unmarked burials were uncovered at La Fábrica underneath house floors, but the site also had an associated cemetery. In this cemetery Guerrero made a remarkable find; a burial resting on three decorated metates, accompanied by a banded jade-like tube identical to examples found in the Cenote of Sacrifice at Chichen Itza (Herrer 1979, Guerrero 1981, Snarskis 1984).

Barrial de Heredia is a multi-component site with occupations continuing from 500 BC to AD 1300. The Period V evidence suggest that domestic structures

were rectangular, with burials beneath floors, and that more special purpose structures were constructed from river cobbles in the more common circular form (Snarskis 1984). Also found at Barrial was a high number of Nicoya polychrome tradewares suggesting well-established trade routes and the presence of crack-lacing of broken pots implies their high-value to the people who owned them (Snarskis 1984).

There continues to be a lack of information on Period V sites in this region, which is unfortunate, as this period appears to be one of flux and change. A single component Period V village has not yet been located and there is now distinct sense that there are fewer sites at this time (Snarskis 1984). However, it is assumed that during this period, metallurgy from the south was introduced and lapidary work wanes. Additionally, there are some archaeologists who suggest that concomitant with the collapse of Mesoamerican states, there was a strengthening of the ranking elite, relying more on prestige goods from South America (Snarskis 1984, 1981, Sheets 1994). This positing is not well-founded as of yet but does pique the interest of many scholars in the area who want to better understand interactions between Mesoamerica, South America and the Intermediate Area.

#### *Period VI (AD 1000-1550)*

In this period, settlements seem to have nucleated into small ceremonial centers with rudimentary architecture, earth-filled mounds, and *calzadas* (cobble paved causeways). The Cabaña complex that characterizes this period is inferior in quality to that of El Bosque, and even La Selva. Feline motifs become popular and Nicoya Polychromes are frequently seen as trade items (Snarskis 1984). Elaborately

carved ceremonial mortars, trays, metates, (especially ones with jaguar effigies), and circular Atlantean forms are diagnostic of this period (Snarskis 1981, 1984). There is an increase in stone sculpture portraying human beings in different positions, from seated figures to individual portraits of heads to warriors with shrunken heads to women holding up their breasts (Snarskis 1981, 1984).

Several large sites date to this period including Las Mercedes, La Fortuna, Cutris, Guayabo de Turrialba, La Cabaña, and Costa Rica Farm. Las Mercedes was the first of these recorded and mapped by Hartman (1901) in the late 1800's, and periodically worked on for the next 100 years. The most recent work is on-going mapping and excavation headed by Ricardo Vasquez of the Museo Nacional de Costa Rica. Sites like Las Mercedes and Costa Rica Farm are currently being destroyed by development, but salvage work conducted by the Museo is taking a lead in recovering as much as possible. Las Mercedes is a rather large site with several large mounds and *calzadas*. Because research is on going, very little of the current work has been written up. Hartman and subsequent archaeologists who have worked at Las Mercedes have only published very limited data on the site (Hartman 1901, Snarskis, 1981, 1984). The mounds and *calzadas* from most of these sites have been fully mapped and will be returned to in Chapter 5. These sites have all been interpreted as ceremonial and funerary.

Tombs from these sites are of the stone cist type and can be circular, ellipsoidal or rectangular (Snarskis 1984). The ethnographic work conducted by Stone (1962), Bozzoli de Willie (1975), and Dillon (1984) have suggested to



archaeologists that the construction of these stone cist tombs was motivated by taboos against the deceased's body touching the earth,

Of all of these sites, Guayabo de Turrialaba is the best known (Aguilar 1972, Fonseca and Hurtado de Mendoza 1984, Murillo 2002). The University of Costa Rica, under the direction for the most part by Carlos Aguilar, and in recent years, Oscar Fonseca, has been working at this site for the last several decades. Guayabo de Turrialba is now a national park and preservation of this site is exemplary.

### ***Arenal Research Area***

Since the 1980's the PPA has been conducting excavations in the Arenal region of northwestern Costa Rica. The Arenal region is located near the modern town of Tilarán in the Cordillera de Tilarán. The research area encompasses Lake Arenal and areas surrounding Arenal Volcano (see Figure 1-5). Surveys and excavations have led to a broadening of the archaeological knowledge of the area in particular, and the Guanacaste- Nicoya and the Atlantic Watershed-Central Highlands regions in general. The largest project to conduct archaeological research in the area prior to the Proyecto Prehistórico Arenal was led by Carlos Aguilar in 1977 (Sheets 1994a). Aguilar conducted extensive test pitting and surveys around Lake Arenal prior to the building of the Sangregado Dam (Sheets 1994a). The Arenal research area straddles the two cultural and environmental regions, making it an informative place in which to study regional interaction and environmental diversity. This area of Costa Rica has the benefit of excellently dated volcanic stratigraphy that has allowed for the construction of a well-understood cultural sequence, temporally and spatially

(Melson 1994). The Proyecto has subdivided the cultural sequence of the area into several different phases that are further subdivided into facets of early, middle and late (Sheets 1994a, see Figure 1-6).

*Period I—Fortuna Phase (?-3000 BC) Paleo-Indian through Archaic*

The recovery of a Clovis style projectile point on the shore of Lake Arenal indicates the presence of humans in the area at least since the tenth millennium BC (Sheets 1994a). However, the Arenal sequence begins with the Fortuna Phase, the local manifestation of the Middle American Archaic. This phase has been loosely defined based on the recovery of a stemmed Archaic point, substantial lithic debitage, and carbonized wood, dating to approximately 3500-3000 BC, from sites G-186, G-162, and G-163—the Tronadora Vieja site (Bradley 1994a, Mueller 1994, Sheets 1994a, 1994b). All of these finds were deposited prior to the first Arenal eruption in approximately 1800 BC (Melson 1994). However, evidence dating to the Fortuna Phase is limited, leaving the Paleo-Indian and Archaic contexts less well understood.

*Tronadora Phase (2000 BC- 500 BC) Late Archaic and Early Formative, Period III and Early Period IV*

There is relatively more information from the next phase, that of the Tronadora Phase. This phase witnessed the spread of sedentary villages throughout the area, near-by secondary burials in small rectangular pits, simple and functional tool technology, but surprisingly elaborate pottery falling within the broader classification of Zoned Bichrome of the Pacific Drainage (Bradley 1994, Hoopes 1994, Sheets 1994a, 1994b). This phase received its name from the oldest known village site

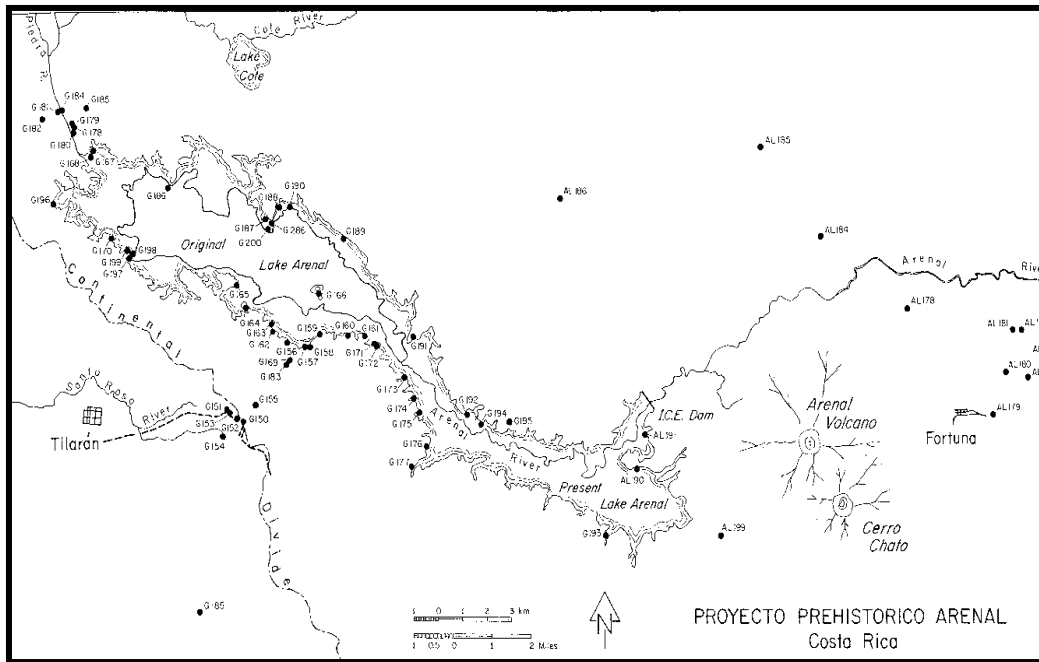


Figure 1-5. Lake Arenal research area. The dots indicate archaeological sites (Sheets 1994a:5).

in all of Costa Rica: Tronadora Vieja, an Archaic and early Formative site on Lake Arenal. This site yields the majority of information about sedentary villages during this time period. Excavations at Tronadora Vieja, have revealed a number of circular domestic structures, special purpose structures, and burials underneath or very close to domestic structures (Bradley 1994a, Sheets 1994b). More information regarding habitation sites comes from the following Arenal and Silencio Phases.

*Arenal Phase (500 BC – AD 500) Late Formative, Period IV*

The Arenal Phase is the local expression of the Tempisque Period as well as the earliest manifestation of the Bagaces (AD 300 – 800) Period in all of Northwestern Costa Rica (Guerrero et. al 1994). However, for the purpose of simplicity, the “Arenal phase” will be used unless otherwise cited. Ceramics during this period have a strong Guanacaste-Nicoya influence (Guerrero 2005).

It is during this phase that a population increase has been documented (Sheets 1994b). As already discussed, populations all over Costa Rica and the rest of the Intermediate Area were increasing. There have been some hypotheses as to why this may have occurred, including an increasing reliance on maize agriculture as well as a climatic and environmental change (Arford 2001, Payson Sheets, personal communication 2005).

The Arenal phase marks the beginning of a pattern of cemetery placement that we can see archaeologically. Prior to 500 BC, people were burying their dead very near their homes. For example, at the site of Tronadora Vieja, archaeologists found

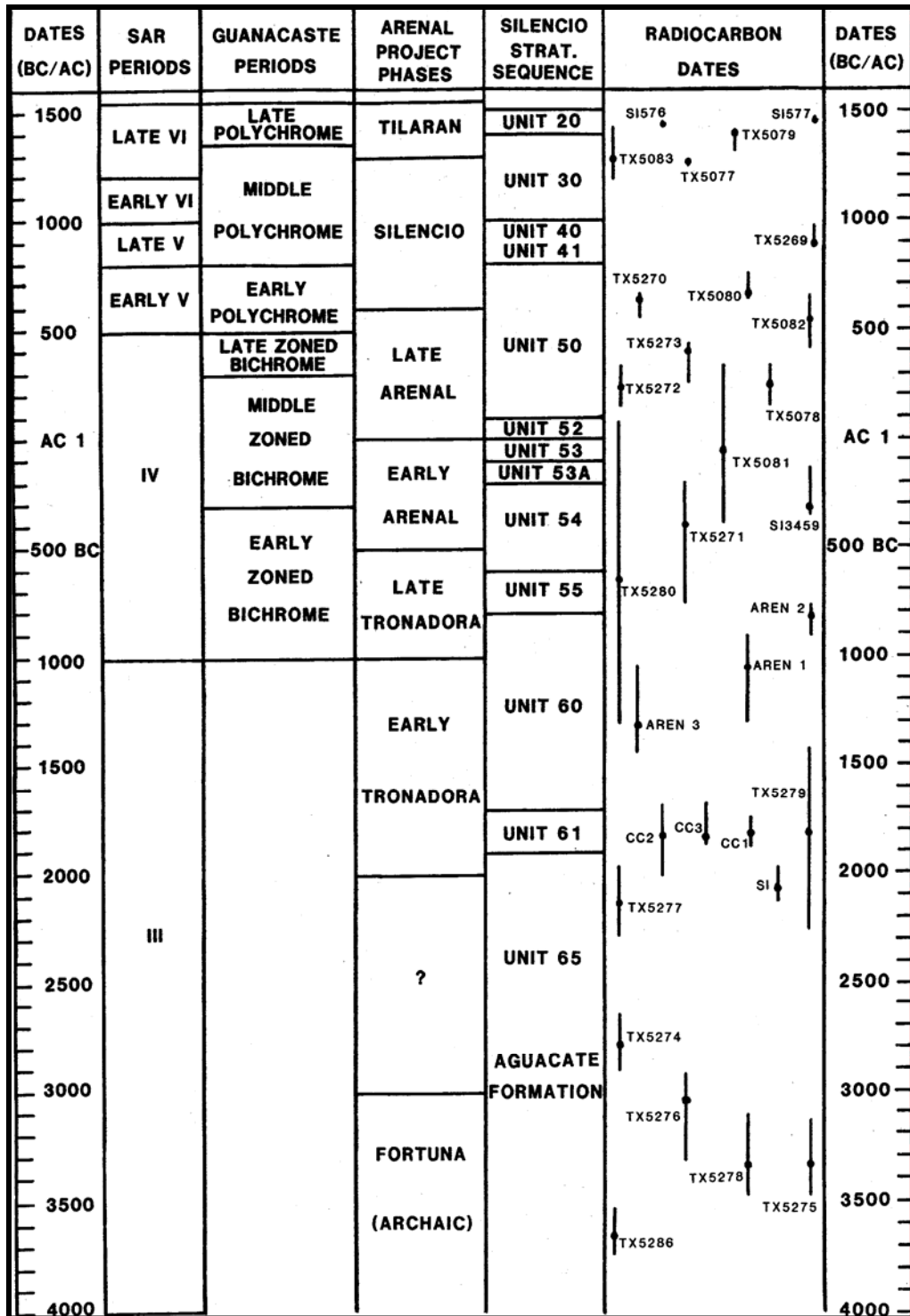


Figure 1-6. Arenal Phase chart and chronology (Sheets 1994a:14).

evidence of burials located very close to or within domestic structures (Bradley 1994a). Subsequent to 500 BC, people began burying their dead much further from the domestic areas. Thus a change from household burials to community burials is evident. At Sitio Bolívar, a cemetery was located on top of a ridge 100 meters away from the village below, and this is the shortest distance recorded as many cemeteries are up to several kilometers from habitation sites (Hoopes and Chenault 1994a). This trend continued until historic times. There are also examples of Arenal phase cemeteries being found but not the habitation sites that they were associated with, indicating a placement of cemeteries even further from villages (Butler 2005). Additionally, tomb construction is similar to that seen on the Atlantic Drainage and Central highlands in that primarily river cobbles and rounded boulders were used (Hoopes and Chenault 1994a). The circular house construction seen at Tronadora Vieja continued into the Arenal phase, as evidenced by the findings at Sitio Bolívar (Hoopes and Chenault 1994a).

A common find at Arenal Phase cemeteries is evidence of ritual and funerary feasting (Bradley 1994a, Butler 2005, Guerrero et al. 1994, Hoopes and Chenault 1994a, Sheets 1994b). In small-scale societies especially, feasting can provide an important setting for not only social integration but competition for status as well (Blitz 1993, Dietler and Hayden 2001). Even though Costa Rican societies at this time are considered small scale, variation in the grave goods has often been considered evidence of the existence of a status hierarchy. Using this line of reasoning, social inequality appears only in the late Arenal Phase (AD 0-600) and becomes developed during the Silencio Phase, overlapping with the Bagaces Period

in other regions (Bradley 1994, Mueller 1994, Guerrero et al. 1994). However, Sheets (personal communication 2005) does not view differentiation in graves goods in these cemeteries as necessarily indicative of hereditary inequality, rather he suggests that these societies were still very much egalitarian and the various graves goods are indicative of other divisions of life, for example, kinship, age, or sex. Evidence outside of mortuary contexts for social differentiation at this time is not available, and many other Arenal Phase and early Silencio Phase cemeteries do not exhibit any significant differentiation in grave goods (Butler 2005, Weller 2005).

It has also been suggested, based on the presence of Arenal phase footpaths (discussed in more detail in Chapters 4 and 5), that the beginnings of feasting rituals also acted to integrate societies from both the Pacific and Atlantic Drainages with Arenal communities. While this premise can be moderately substantiated by ceramic evidence (Guerrero 2005) and the fact that the footpaths are oriented to both the east and the west of the Arenal region, more analysis needs to be done. However, funerary feasting as well as the use of footpaths continues for the following Silencio Phase.

#### *Silencio Phase (AD 500-1300), Late Period V, Early Period VI*

By the beginning of the Silencio Phase, the populations began to steadily decline, Guanacaste-Nicoya influenced polychromes became the most common ceramic style, and both chipped and ground stone tool technology became more elaborate (Sheets 1994a, 1994c). It has been assumed that ancient Costa Ricans primarily subsisted on gathered plants and the hunting of small animals, with minimal

maize agriculture (Sheets 1994a). Stable carbon isotope analysis conducted on bones recovered from the Silencio cemetery was used to determine the percentage of maize in their diets (Bradley 1994b). Maize is the only known dietary staple in Pre-Columbian Costa Rica with a C<sup>4</sup> pathway (Bradley 1994b:117). Therefore, the percentage of maize in the diet is represented in the C-13/C-12 ratio in bone collagen (Bradley 1994b). Results of this analysis show that only 12% of the diet of those individuals consisted of maize (Bradley 1994b).

Cemeteries continued to be placed far from villages. It is at this time that we see stone cist tombs being constructed out of *laja* (flat-fracturing stone slabs). Post-internment funerary rituals, including large amounts of feasting inferred from the quantities of broken ceramics, have been overwhelming documented by the beginning of this phase (Butler 2005, Hoopes and Chenault 1994a, Sheets 1994a, Weller 2005).

The PPA has suggested that these feasting rituals may be related to social network maintenance (McKee et al. 1994, Sheets, NSF proposal 2002). A set of footpaths dating to this phase leads east and west from a Silencio Phase cemetery, El Sitio Silencio, but a terminus in either direction has yet to be located. The footpaths are certainly indicative of travel across the landscape, but they may also be indicative of regional interaction between communities. Sheets has suggested that the paths might be the result of different communities participating in the ritual feasting at the Silencio cemetery in order to form alliances with people in other places in the event that their assistance might be needed during times of environmental crisis such as a volcanic eruption (Bradley 1994b, Sheets 1994a).



The Silencio cemetery is located on top of the continental divide that separates two distinct culture areas; the Greater Nicoya region to the west and the Atlantic Watershed region to the east (Bradley 1994b, Sheets 1994a). The presence of many domestic artifacts at the cemetery is thought to be indicative of feasting associated with funerary ritual (Bradley 1994b). Artifacts include a number of cooking stones, smashed metates, smashed utilitarian vessels and serving dishes (Bradley 1994b). This sort of feasting has been suggested for other archaeological sites in the Atlantic Watershed (Snarskis 1984). There are many communities in the Arenal area, but only one has been documented in association with the Silencio Phase footpaths (see chapters 4 and 5) (Bradley 1994b, McKee et al. 1994, Sheets 1994b).

The presence of footpaths, as well as pottery from other regions, suggest that if feasting was being conducted at this cemetery, it may have been a ritual in which multiple communities participated. The evidence for this is seen in the different types of ceramics (Bradley 1994b) as there are materials from the Greater Nicoya lowlands as well as the Atlantic drainage. While the majority of the ceramics come from the west, the footpaths head towards the west *and* east (Sheets 1994b, White 2005). Clark and Blake (1994) note that when more than one community is involved in feasting, it can result in alliances and other cooperative relationships, an outcome of which would have regional implications. This may explain the notable resiliency of Arenal communities during times of massive environmental disaster. If alliances were formed, then other communities may provide shelter and refuge during times of need. There is no evidence of dramatic cultural change, or effects on population, as a result of major volcanic eruptions in neither the Arenal region nor the Pacific region

(Bradley 1994b, Sheets 1999). The only instance in which a significant change was documented was during the latter part of the Silencio phase, where there is a population increase at the site of Rio Piedra (Sheets 1999). The Rio Piedra are is located farther downwind and to the west of Arenal Volcano and Silencio cemetery and was less affected by the tephra from volcanic eruptions and could have served as a sort of refugee area (Mueller 1994, Sheets personal communication 2005). This inference is heavily based in ecological and hazards theory and will be addressed chapter three.

#### *Tilarán Phase (AD 1300 – 1550) Late Period VI*

Populations continue to decline during this phase, and the strong cultural affiliation with the Guanacaste-Nicoya region is reversed to reveal closer ties with the east and the south (Sheets 1994b). Settlements became more dispersed, and elaborate decoration and polychrome ceramics all but disappear (Sheets 1994b). In this region, much of the living surface was covered by an explosive eruption from Arenal Volcano at AD 1500 (Hoopes and Chenault 1994b, Melson 1994).

## **CONCLUSIONS**

Overall, the whole of Northwestern Costa Rica experienced a gradual transition into sedentary life culminating in relatively large, ranked societies seen only in the Central Highlands and Atlantic Watershed region. Ancient Costa Ricans never reached the densities seen to the north and the south, nor did they rely so heavily on agriculture. It is possible that the stability of populations and dependence

on wild resources enabled the long and continuous history witnessed in these regions, despite massive natural disasters such as volcanic eruptions.

While little is known about the Paleo-Indian and Archaic periods in Costa Rica, continued work by local Costa Rican archaeologists and foreign scholars will hopefully change this. There is substantially more known about the later Periods IV, V, and VI, but this too is variable depending on the region. My work in the Arenal area as part of the PPA attempts to offer a different perspective on ancient Costa Rican life that has not yet been addressed; primarily it is consideration of social memory and meaningfully constituted landscape as underlying social mechanisms.

The following chapters present this view along with my theoretical base for interpretation. While issues of cultural ecology and culture history will be discussed, the primary foundation is recent anthropological social theory. To date, much of the work conducted in Costa Rica presents a disjointed history, one that I view as being confined within the individual phases; rather than aimed at understanding transition and change between them. While my work is limited to the Arenal region, I have attempted to integrate it into the broader Northwestern Costa Rican cultural history, a task that continues to be difficult, but will hopefully demonstrate the usefulness of engaging these theoretical frameworks and how they can open new doors to understanding continuity and change in the history of Costa Rican peoples.

## **CHAPTER 2**

### **THE NATURAL ENVIRONMENT OF NORTHWESTERN COSTA RICA**

The country of Costa Rica lies wholly within the tropics but is comprised of at least twelve different climatic zones (Coen 1983, Herrera 1986, Janzen 1983—see Figure 2-1). Most regions have a dry (December – April) and rainy (May – November) season. Temperatures, however, are dictated more by elevation and location than by season, and range from tropical on the coastal plains to temperate in the interior highlands (Sheets 1994a). The length of daylight varies only slightly throughout the year, so seasonal variations in temperature rarely exceed five to ten degrees Celsius in any given location (Coen 1983). Costa Rica is also home to one of the most active volcanic ranges in the world, making it a very dynamic place in terms of climate, environment and geology (Lange 1984, Sheets 1994). In fact, Arenal Volcano is one of the most active volcanoes in the world and has been studied extensively by researchers from all over the world.

The Arenal research area encompasses great environmental diversity due to the range in microtopography. Its location on the boundaries of both the Atlantic and Pacific drainages has created a region in which aspects of both the Atlantic and Pacific regimes are manifested. Thus, each region (Atlantic, Pacific and Arenal) will be discussed separately.

#### ***Pacific Drainage/ Greater Nicoya Cultural Area***

The Pacific side of Costa Rica is generally more mountainous and volcanic than other regions, with about a quarter of the region being low Pacific Coastal plains.

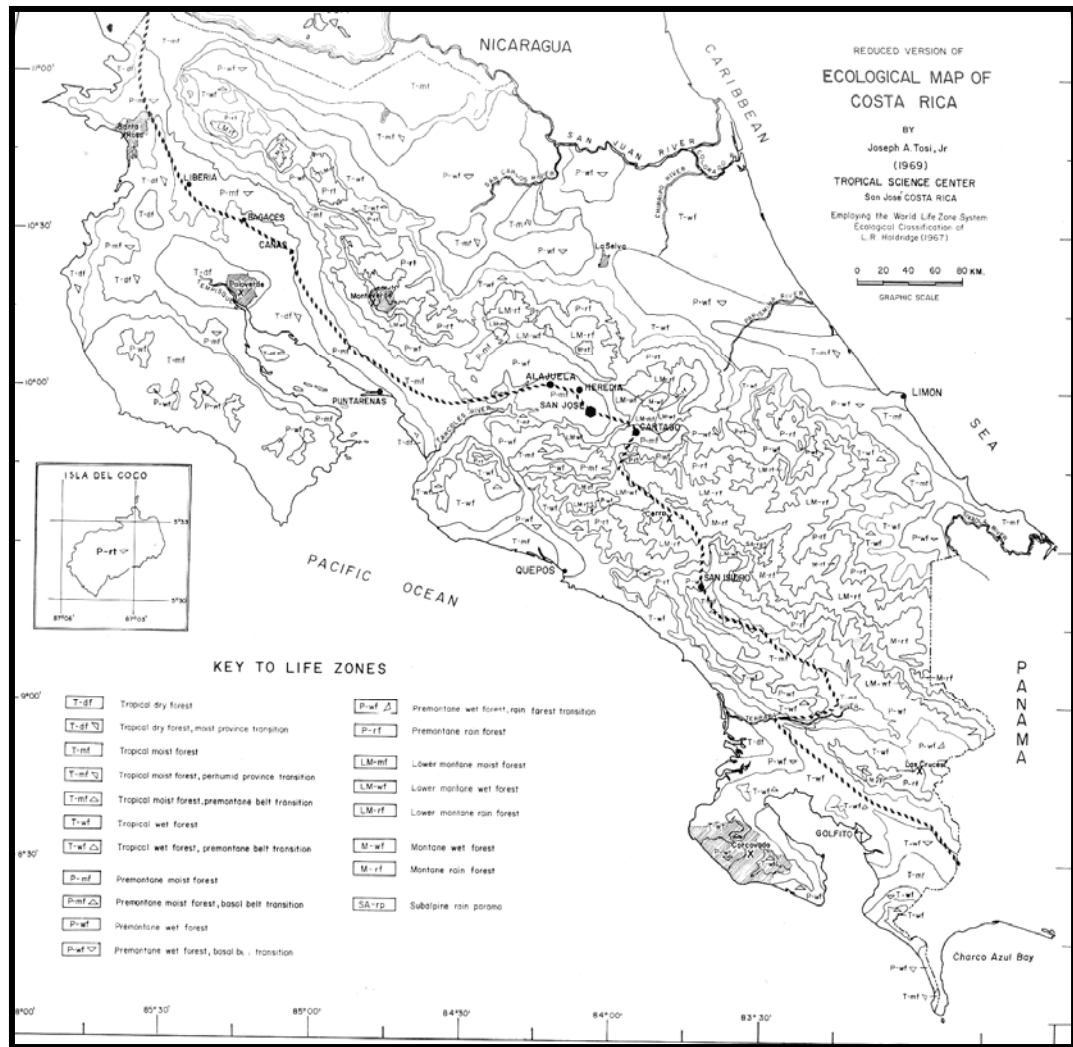


Figure 2-1. Tosi Life Zones of Costa Rica (Janzen 1983:iii).

This region receives much less rainfall than the Atlantic and is characterized by surface streams with relatively small discharges (Coen 1983, Lange 1984). During the rainy winter months, this region can receive 1500 – 2000 mm of rain, depending on the topography (Coen 1983). The Pacific has almost no rain during December to April, and these months are often the hottest months of the year (Coen 1983). The mean temperature at sea level is about 32.6° C during the hottest months as there is much less cloud cover allowing solar radiation to reach the ground (Coen 1983). The Greater Nicoya subregion has very strong winds during the summer often reaching anywhere from 10 to 90 km/hr (Coen 1983).

The soils are generally derived from either alluvial sediments or volcanic ash fall. Near Lake Arenal, the soils are rich in organic matter but are only moderately fertile (Vasquez Morera 1983). Not all volcanic soils are sufficient for agriculture and this may have limited prehistoric subsistence activities (Lange 1984). The Tempisque River drainage between the Nicoya Peninsula and the mainland of Costa Rica is the only extensive area of high soil fertility in Pacific Costa Rica and this is reflected in the density of pre-Colombian sites that seem to be concentrated there (Lange 1984).

Vegetation in this region is diverse, consisting of dry topical forest, seasonal swamps, premontane forests, and tropical moist forests (Janzen 1983). The diversity of vegetation makes this region highly productive in biomass, but not always suitable to agriculture. Today, much of the land has been converted for grazing and some agriculture.

### ***Central Highlands-Atlantic Watershed***

Rugged high terrain in the Central Valley and coastal lowlands characterize much of this region. The Atlantic coastal lowlands in Costa Rica are extremely wet, receiving as much as 5000 mm of rain a year, and in the highlands, as much as 6000 mm at Arenal Volcano, with most of the precipitation occurring during the months of December and January (Coen 1983, Lange 1984). Most of the vegetation in this region is that of tropical rainforests and premontane forests (Janzen 1983). Mean annual temperature at sea level is 29.9° C, and decrease with increases in elevation by about 6.5° C/km (Coen 1983). It is not nearly as windy on the Atlantic side as it is on the Pacific with winds only reaching an average of 7 km/hr (Coen 1983).

In the Central Valley, soils are derived from volcanic ash deposits with moderate fertility. The majority of coastal soils are largely eroded alluvium and low in fertility (Vasquez Morera 1983). This is fairly interesting as the most complex societies to develop in Costa Rica were located in this region of generally low soil fertility. However, the socioecological aspects of this are not a major focus of this project and will only be minimally discussed.

### **ARENAL RESEARCH AREA**

Due to the fact that the Arenal research area sits atop the continental divide, in what is commonly called the Cordillera de Tilarán, the natural environment encompasses considerable climatic and vegetational diversity. Today, the Arenal region of Costa Rica is characterized by its extreme diversity in microclimates due to

rugged topography, and local differences in slope, aspect, and exposure (Arford 2001, Sheets 1994a). Its location on the boundary of the Atlantic Watershed and the Pacific Drainage has resulted in many environmental gradients that can be identified in the relatively small area ranging from Tropical Wet Forest to a variety of Premontane forests (Coen 1983, Janzen 1983, Sheets 1994a—see Figure 2-2). These gradients are distributed discontinuously and the diversity allows for many flora and fauna to be exploited as well as for swidden agriculture.

Many native plants provide edible fruits, nuts, seeds, berries, and roots (Sheets 1994a). It is thought that prehistoric peoples subsisted primarily by gathering foods, and very minimally on agriculture (Sheets 1994, Snarskis 1984). There are many rivers, streams and lakes in the area, of which lakes Arenal and Cote are of particularly relevant importance as much of the prehistoric occupation in the area appears to have been around lake shores (Figure 1-5). The microenvironments near lakes Cote and Arenal are considered to be in the same region as they do not differ significantly on a macro level, however, they are two areas that have been subjected to different studies and will thus be described separately.

### *Lake Arenal*

Climatic and environmental zones around Lake Arenal are variable (see Figure 2-2). While Lake Arenal is technically in the Atlantic Drainage, precipitation on its western end is similar to that of the Pacific gradient, which is characterized by fewer than 2,000 mm of rain annually and has greater seasonality (Coen 1983, Sheets



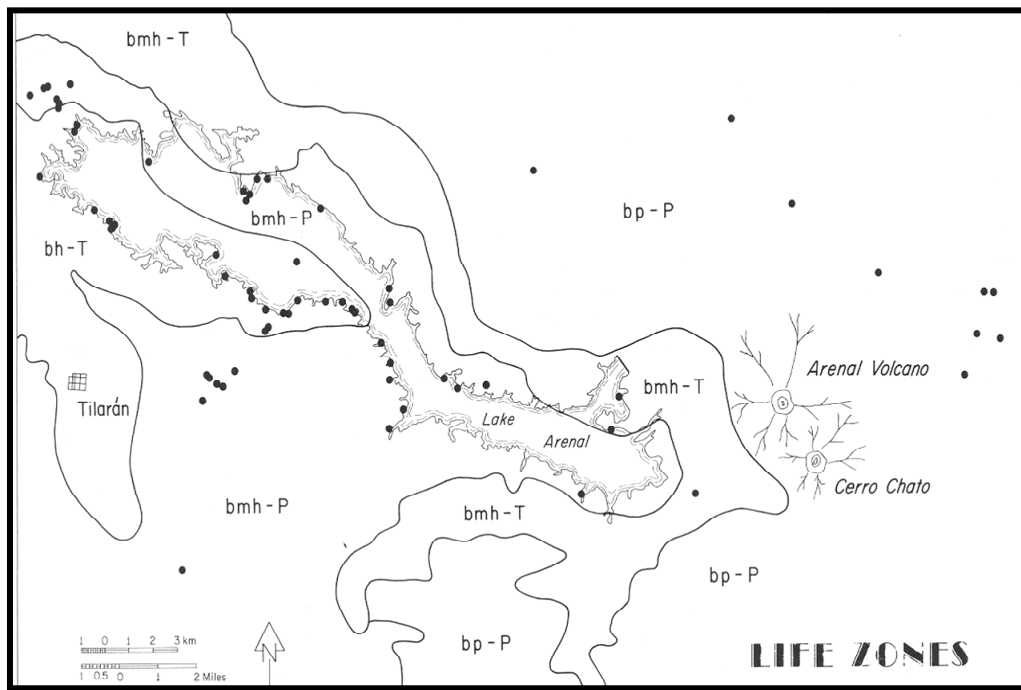


Figure 2-2. Life Zones surrounding Lake Arenal. Refer to Figure 2-1 for life zone definitions (Sheets 1994a:7).

1994a). The eastern portion, around the volcano, is much wetter with more than 6,000 mm of rain and is typical of the Atlantic Watershed regime. The areas surrounding Lake Arenal have been divided into three precipitation provinces: humid (1,400 to 2,000 mm/year), the perhumid (2,000 to 4,000 mm/year), and the superhumid (over 4,000 mm/year) (Coen 1983, Janzen 1983). The humid area is ideal for agriculture and has the highest solar radiation, and the lowest levels of soil acidity. This area is best for short-term cultigens (Sheets 1994a, Vasquez Morera 1983). The perhumid area is the largest in terms of geography and encompasses the greatest percentage of archaeological sites recorded by the *Proyecto Prehistórico Arenal*. In the perhumid area, there are three to six months of excessive precipitation with soils often saturated and moderately poor in fertility. Agriculture is marginal except on shallow slopes and alluvial areas. Permanent or semipermanent crops are best in the perhumid area (Sheets 1994a). The superhumid area is inappropriate for agriculture as there is excessive water creating leaching and erosion hazards, and soils are consistently saturated and have the lowest fertility. This zone also experiences the lowest amount of solar radiation because it has a high number of cloudy and rainy days (Sheets 1994).

The construction of the Sangregado Dam over the Rio Arenal enlarged Lake Arenal from what was once a shallow, swampy body of water to a lake with a surface of some 80 square kilometers. The level of the lake was raised from 512 meters to a maximum of 542 meters (Sheets 1994a). In Precolombian times, Lake Arenal was a large, open lake, but the eruption of Arenal in AD 1500 and subsequent erosion caused the lake to fill up with sediments.

### *Lake Cote*

Lake Cote is the largest natural lake in Costa Rica at 198 hectares (Arford 2001—see Figure 2-3). The surrounding watershed is only 16 square kilometers as it is located within a small mountainous basin. The small Rio Pierna de la Laguna flows into Cote from the northwest, but the lake receives much of its water directly from abundant, almost daily rainfall, and likely through groundwater by way of highly porous soils on the surrounding slopes (Arford 2001).

Northwestern Costa Rica is a very windy place and it is likely that Lake Cote received all kinds of wind-blown deposits (pollen, dust, tephra, etc.) from a very large region, perhaps even from as far away as Nicaragua (Arford 2001). Lake Cote is located along a northwest-southeast trending line of volcanoes, about 28 km northwest of Arenal Volcano (Arford 2001). Tephra from past Arenal eruptions has been deposited in the area of Lake Cote and can be identified in sediment core samples taken from the lake (Arford 2001).

Outside the Cote basin, areas to the south and west are dominated by Pacific air masses and have greater annual ranges in temperature and greater variation in monthly rainfall (Arford 2001). The lake basin and areas to the east are under the influence of the Atlantic climate regime and show less seasonal variability (Arford 2001, Sheets 1994). Today, the area is characterized by Tropical Wet Forest (mostly secondary growth) and 4,200 mm to 6,000 mm of precipitation per year (Arford 2001, Coen 1983, Janzen 1983, Sheets 1994a). Regional wind direction is dominated by northeast tradewinds, with local variation due to topography (Arford 2001).

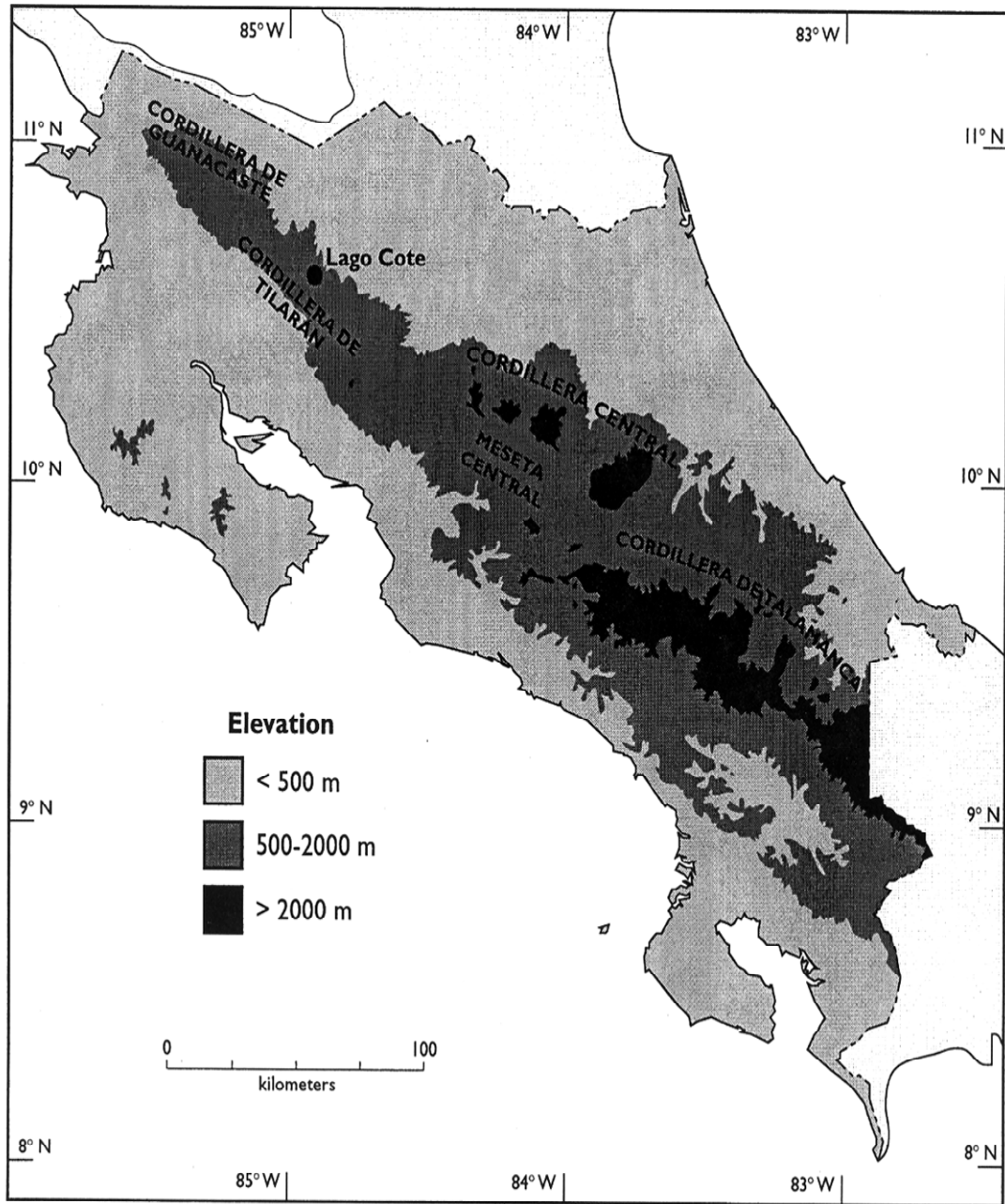


Figure 2-3. Location of Lake Cote in the Cordillera de Tilarán (Arford 2001:7)

Lake Cote and surrounding areas have been subject to a number of paleoenvironmental studies. Sediment core sampling in Lake Cote has given us a detailed look at the past environments (Arford 2001). Speleothems collected from Venado Caverns have also provided very detailed (decadal) information on precipitation and other indicators of climate change (Lachniet 2001).

#### *Sediment Core Samples From Lake Cote*

We are fortunate to have a detailed paleolimnological study with paleoclimatic implications provided by the lake sediment coring in our area. Coring of Lake Cote was conducted in March of 1998 by Martin Arford and Dr. Sally Horn from the University of Tennessee, Knoxville. The results and analysis comprise Arford's Master's thesis (2001). The cores were 2.7 meters and 3.8 meters long (Arford 2001). Pollen in the cores was well preserved which enabled the classification of 7852 pollen grains into 84 taxonomic groups representing 55 families, 42 genera, and several species (Arford 2001). Inferences were drawn in regards to climatic conditions based on plant ecology. Based on stratigraphic grouping of samples, grass pollen and charcoal are seen in high amounts in the lowest (earliest) levels with a sharp decline occurring at 2,600 calibrated years BP (Arford 2001). The decline continues in levels post-2600 BP (Arford 2001). At least 74% of all charcoal fragments appear to be from grass or other herbaceous monocot plants in these earliest levels and charcoal in general declines dramatically in later levels (Arford 2001). In addition, several pollen types typically used as disturbance indicators are found all throughout the

samples, which may indicate forest regrowth after disturbance (anthropogenic or natural) or changes in vegetation due to a change in climate (Arford 2001).

Two maize pollen grains were also identified in the sample. One grain was recovered from a sample dating to about 700 calibrated years BP and the other to 3900 calibrated years BP (Arford 2001). The finding of maize in the sample is significant, as maize pollen does not travel far from its plant source, with most grains usually falling to the ground within 60 meters from the plant. However, it can travel up to 500 meters in very windy conditions (Arford 2001). Therefore, its presence indicates maize cultivation near the lakeshore. Conversely, its absence in other samples is not significant for the same reasons, as it is unlikely to find much maize pollen in such a large lake.

Modern conditions around Lake Cote are not suitable for maize agriculture because of wet and windy conditions, and low light exposure (Sheets 1994a). However, the presence of grass pollen, charcoal, and maize suggest that before 2,600 calibrated years BP, climatic conditions were much drier, warmer, and sunnier, allowing for more maize agriculture. The presence of maize at 700 cal years BP occurs without an increase in charcoal, which would be expected if conditions were suitable for agricultural fires. However, it appears that conditions were too wet for wide spread fires and maize cultivation (Arford 2001). Hence, a climatic shift from drier to wetter conditions around 500 BC is inferred from the pollen and charcoal evidence in the sediment core samples. As stated earlier, this is also the time of a cultural phase change in the Arenal region. Unfortunately, none of the previous archaeological research projects included the area around Lake Cote and it is

uncertain as to what archaeological material exists in this vicinity. Regardless, any suggested climatic change should be confirmed through other proxies. As part of my research, I wanted to look at speleothem formations from Venado Caverns to see if it was possible to verify this change.

### *Speleothems as Indicators of Climatic Variability*

It was necessary for us to identify the suggested climatic shift seen in the Lake Cote sediment cores in other ways in order to further substantiate its occurrence. Speleothem samples from caves can be excellent indicators of climatic variability (see Appendix A). Speleothem samples were collected on two occasions from Venado Caverns located in the Atlantic watershed region. The first set of samples was collected and analyzed by Lachniet (2001). The researcher analyzed stable isotope values to determine levels of precipitation at a decadal time scale (Lachniet 2001). This technique was able to show several episodes of climatic variability; however, the speleothem analyzed ceased forming at 4420 years BP, as determined by Uranium-Thorium (U/Th) dating (Lachniet 2001). This is approximately 2000 years too early for my purposes.

Thus, a second collection took place in the summer of 2003. Analysis of these samples was not successful in providing us with any new information. The samples were formed too early in time (radiocarbon years 6955 +/- 25, 4950 +/- 15, 3620 +/- 20) to be of relevant help in investigating the climate change observed in Arford's sediment core samples.

## CONCLUSIONS

Being attentive to environmental conditions in which one works, especially in regards to the archaeological study of ancient people and their material culture, can help one to better understand the past. While the environment cannot provide all the answers, it can facilitate a more thorough awareness of the conditions in which ancient people lived. I would argue that many research questions can be satisfactorily broached within an environmental or ecological framework, but for one who wants to attempt a finer-grained analysis of past social practices at smaller scale, the ecosystem as the unit of study is not as appropriate as it is for environmental frameworks. In the Arenal region, the environment must have had a great influence on the decisions made, and put into practice, in the past. The people living in the region were subjected to numerous volcanic eruptions, earthquakes, and an overall natural environment that, by its tropical nature, was dynamic. However, very little has been inferred beyond responses and adaptations to environmental conditions.

Costa Rica is extraordinarily diverse in regards to its natural environment, especially in the Arenal research area. I believe that it is due to this very diversity that because general statements that characterize whole regions and expanses of time are inappropriate and a more humanistic theoretical framework is necessary in order to produce a richer understanding of the region's prehistory. The multitude of different environments provided the potential for many different lifeways to be taken up. The many regions in Costa Rica in which people lived during Precolombian times were not always the most efficient or reliable, but they still chose to live there. In this absence of purely ecological explanations, more sociocultural motivations



should be given serious consideration, as they most definitely influenced decision-making in regards to the individual, the community and the larger social structure of these ancient people.

### **CHAPTER 3 THEORY**

The ways in which archaeologists have understood and interpreted the history of Costa Rica have changed dramatically, though slowly, over the last 100 years. Prior to Carl Hartman's excavations in the late 1800s, the material culture of the past was exploited predominantly for the benefit of antiquarians and looters (Coe and Baudez 1961). Still today, the archaeological past is not nearly as central to the culture and identity claims of modern Costa Rican peoples as it may be for others, for example, indigenous Mexicans or Guatemalans (Montejo 2005, Reck 1978, Vogt 1990, Wilkinson 2002). There is very little concern on the part of the majority of indigenous peoples in Costa Rica for what archaeology can tell them, and consequently these people have little voice in public policy (Camacho-Zamora and Murray 1991). This has resulted in very little federal funding for preservation of the past and the enforcement of laws against destroying that past. Sadly, looting and site destruction continue practically unabated.

Scholarly appreciation for the past, however, is much greater, and archaeological research is increasing. Most of the interpretations provided for the prehistory of Costa Rica have been constructed within culture-historical, ecological and processual theoretical approaches; postprocessual approaches have not been applied to Costa Rican archaeology. Processualism has had a considerable influence on how archaeological method and theory is taught today in Costa Rican universities, and subsequently, how local researchers now carry out archaeological work. While

each has advanced the archaeological knowledge of Costa Rica, they are limited in scope, as I discuss below.

It is the purpose of this study to provide an interpretation of a particular aspect of Costa Rican archaeology, that of landscape, by engaging these approaches, but employing elements of post-structural social theory to move beyond their limitations in order to better understand life as ancient Costa Ricans experienced it. Much of the theory I use is considered post-structural because it goes beyond structural or ecological determinism and considers agency and social structure to be in a continuous, on-going process of recursivity; they affect each other through practice. It considers what people did in the past to be recursively related to the social and historical setting of their actions. I wish to demonstrate how the creation of cemeteries and footpaths in the Arenal region of Costa Rica, and their use over generations, has structured certain aspects of ancient life, and how these aspects continued to persist even as change occurred. As will be explained in greater detail in Chapter 4, the construction of these cemeteries and footpaths do not appear to have been simply utilitarian, rather, they adhere to what I believe to be cultural values that challenge a purely utilitarian efficiency and functionality. Taking these considerations into account is important because they have the potential to enable understanding and explanation of the structural schemas and principles of ancient social life. These are rather exploratory ideas in the context of Costa Rican archaeology and I hope to provide at least a baseline for these theoretical considerations for future research.

In this chapter, I summarize the assumptions of various approaches to the past, but also discuss how each has informed my own interpretations. I use Costa Rican archaeology to guide and to flesh out my discussion of these various theoretical frameworks, but at the same time, attempt to critically analyze many of the arguments in order to illustrate their some of their limitations. Finally, I give an in-depth overview of theories of landscape, memory, feasting, space and place; and how these phenomena are conceptualized in poet-structural theory. I believe the applications of these theories can bring us closer to understanding how ancient life was meaningfully constituted.

### **CULTURE HISTORY**

The central theme of culture history can be said to be a concern for chronology (Willey and Sabloff 1993). Additionally, most culture historians use a theoretical framework that has been described as “normative,” in that they treat culture as a body of shared ideas, values, and beliefs. This has resulted in culture classifications based on chronological considerations, with a strong reliance on ethnographic histories and, to some extent, environmental influences (Rouse 1953, Willey and Sabloff 1993: 97). Culture historians are interested in describing the development and change through time. This approach involves such questions as how long people had been in an area; where had they come from; and what has been their history since they arrived. This concern with these sorts of questions led to diffusion and migration theories, and the idea that the norms of one culture could be transmitted over long distances through trade and migration causing a change in

artifact and architectural style in other cultures (Trigger 1989). Culture history was also influenced by the emerging school of historical particularism, advocated most rigorously by Franz Boas (Erickson and Murphy 2003). Scholars from this school argued that each culture was unique, that people were bearers of culture, and each culture developed from its own distinctive history (Erickson and Murphy 2003:76).

There are numerous examples of the application culture history to Costa Rican archaeology. Archaeology became a scientific discipline only recently in Costa Rica, and in the last thirty years, an increasing amount of research has focused on the definition of chronological sequences, settlement patterns, and the sociocultural evolution of regional populations (Coe and Baudez 1961; Corrales and Quintanilla 1996; Hartman 1907, 1991; Lange and Norr 1982-1983; Lange and Stone 1984, Sheets, ed, 1984; Snarskis 1978). Due to a lack of an archaeological baseline in Costa Rica, projects also focused on carrying out surveys in many regions just to describe the archaeological resources in the country (e.g. Corrales and Quintanilla 1996, Sheets, ed, 1984). This sort of basic data produced site distributions and artifact and phase chronologies.

Culture historical approaches in which description and chronology are main objectives are predominant in Costa Rica for the simple reason that very little is known about the archaeology--there was, and still is, a great need to understand chronology and the historical development of the regions. A foundational project by Michael D. Coe and Claude F. Baudez (1961) produced a ceramic chronology that, though modified, is still the basis for relative dating during the Zoned Bichrome period in Northwestern Costa Rica and is an excellent example of the culture history

approach in Costa Rican archaeology. In their article, they concentrate on demarcating the Zoned Bichrome period based on excavations in the coastal region and Tempisque river drainage on the Nicoya Peninsula (Coe and Baudez 1961). They have also contended that, “Central America was participating in at least some of the trait diffusion which linked remote areas of Nuclear America [Mesoamerica and South America] in Formative times” (Coe and Baudez 1961:1) based on some of the cultural material recovered. The diffusion of Mesoamerican traits into Costa Rica has been discussed at some length by a number of scholars, and most notably Snarskis (1981, 1984).

While Coe and Baudez are often cited as being pioneers in Costa Rican archaeology and have provided archaeologists with an invaluable dataset and chronological sequences, they present a somewhat limited description of Costa Rican culture in later Period IV based solely on ceramics (Coe and Baudez 1961). Their claim that Costa Rican peoples were participating in “trait diffusion” is a statement derived only from stylistic elements of pottery rather than any other significantly substantial evidence that interaction and trade were taking place. While stylistic diffusion is a valid way to examine interaction, the problem is with how it is theorized within the culture-history paradigm—it focuses on diffusion as a process of change. The fact that Coe and Baudez were working in a time when scholars were trying to find associations between smaller scale societies and larger, more complex ones in order to define an evolutionary trajectories provided the impetus for such interpretations.

Even within the last 20 years, concerns for evolutionary sequences has prompted researchers to chronologically order and describe the data rather than to provide in-depth interpretations as to what aspects of past human behavior led to the creation of those data; the use of trait diffusion to explain change has led to more concern for artifacts than for people. Though descriptions are laden with theory, they are typically used to characterize entire culture areas and sequences and not necessarily to understand specific histories. Nonetheless, these sorts of datasets have provided valuable baseline data through which to further understand the development of social life in Costa Rica. Hoopes, Lange, Snarskis, Stone, and others, for example, have detailed what is known about the Northwestern, Central Highlands, and Atlantic Watershed regions, and have begun to establish good chronological and ceramic sequences, forming the foundations for archaeological projects undertaken in these areas. (see for example, Corrales and Quintanilla 1996, Hoopes 1994, Lange 1996, Lange and Norr 1982-83, Lange and Stone 1984, Sheets 1984, Snarskis 1981, 1984, Stone 1976).

The practice of culture history in Costa Rica does not explain culture change in a way that brings us closer to understanding ancient life as it was lived. Culture historical interpretations tend to represent ancient life as having a rather static quality to it, in which change was merely detected and presented as period or phase changes; and theories of migration and diffusion were used to explain the appearance, or disappearance, of the traits that were used to define these phases. While culture history has provided us with cultural sequences bracketed in time, and a way to talk about the archaeological record, it has not necessarily helped us to understand or to

explain the relationships between these transitions or transformations. Culture historical theories of diffusion and migration have often resulted in hypothetical contentions that don't necessarily explain much, and often times, were not substantially supported by the data. This is most readily apparent in the earliest publications on Costa Rican archaeology. For example, many scholars have identified Mesoamerican influences in pottery and lapidary work, and even in house form, with little or no direct evidence that there was even contact between these groups (e.g. Coe and Baudez 1961, Snarskis 1981, 1983, 1984, Stone 1984). But these statements are still very speculative.

As archaeology continued in its development as a discipline, the limitations of culture-historical approach became apparent. By the 1960s, scholars in the social sciences, and especially archaeology, believed that their disciplines should follow the trajectory of the natural sciences. Positivist thinking dominated and the scientific method and hypothetico-deductive models were used because they were considered to be free from value judgments and political action (Johnson 1999). Thus, critics of the culture historical approach denounced it as being “unscientific” and static, and that it wasn't able to tell us how societies functioned—something these critics believed to be one of the most important objectives of archaeology (Binford 1962, Johnson 1999, Trigger 1989). Instead, many of these critics argued that in order to be more scientific, one should use artifacts as data with which to test hypotheses, and to evaluate theories about how the world worked (Binford 1962, Watson et al. 1984). Using this method, many now believed they could make generalizations about the past just as their colleagues could do in biology and physics, (Johnson 1999). The



dissatisfaction with the way traditional Americanist archaeology was being conducted led to a shift in paradigms culminating in the New Archaeology. The New Archaeology was a reaction to traditional culture-historical approaches, and its subsequent maturity into processual archaeology led scholars of Costa Rican archaeology to focus on functional and systemic interpretations.

### **PROCESSUAL APPROACHES**

Functionalist approaches drew heavily on the writings of Julian Steward (1949, 1955a, 1955b), and Leslie White (1949), and had an even stronger focus on evolutionary studies than did culture history. Functionalism theorized culture as a system in which its constituent parts were functionally interdependent, with the technological component being most important (Steward 1955a, White 1949). White (1949) believed that cultures progressively evolved as they became more efficient at harnessing energy through the improvement of technology. Steward suggested that the development and functioning of culture was dependent on the ecological conditions in which a group developed, and by looking at environmental adaptations one could show how new cultural patterns arose. Steward's brand of cultural ecology differs from human ecology in that it sought to explain the origins of particular cultural features and patterns that characterized different areas rather than to derive general principles applicable to any cultural-environmental situation (Steward 1955). Thus, a shift in paradigms was evident as archaeologists returned to evolutionary approaches, and the past was reconceptualized in regards to environment, system functioning and evolutionary change.

Cultural systems theory, or the idea that societies were systems, composed of subsystems that functioned to maintain equilibrium with the environment, was brought into archaeology in the 1960s (Rappaport and Vayda 1968). This idea was expanded and developed into what became known as the New Archaeology. The New Archaeology advocated scientific (positivist) approaches and the search for general laws. Later on, the New Archaeology matured into what is now called processual archaeology (Johnson 1999, Trigger 1989). In essence, processual approaches attempted to relate archaeological patterns to the abstract components of systems they represented (e.g. Binford 1962, 1967). A processual approach affects how we view things on a general level because the focus is not only on the functioning of the social system, but also on the ecosystem because human populations were considered to be parts of ecosystems. In Costa Rica, processual approaches have provided us with invaluable information regarding environment, site functionality, and the ecological contexts underling social processes (e.g. Lange 1992, 1996, Lange and Stone 1984, Norr 1996, Snarskis 1981, 1984). Processual interpretations have often portrayed culture as an adaptation, with the environment as a prime mover, but with limited consideration of the sociocultural implications and systems of meaninging in the archaeological record.

In Costa Rican archaeology, a number of different processual approaches have been applied. These are ecological anthropology and hazards theory. Ecological anthropologists suggested that homeostatic functions of culture such as religion and ideology, and not just technology and economy, helped to maintain equilibrium between human populations and the environment (Vayda and Rappaport 1968). In this view, a strong systems orientation is evident in that the institutions or subsystems function

together to preserve the whole ecosystem. Processual ecologists claim that there are two separate goals for this approach: 1) explain how subsystems function in a given population and its environment, 2) to understand the reasons why these traits or subsystems developed. They are not necessarily interested in explicitly explaining the origins of such behaviors (Vayda and Rappaport 1968).

In the mid 1970s, a devastating critique of systems ecology was put forth by Vayda and McKay (1975). They argued that systems ecologists participated in ecological reductionism in that they tend to assume that particular aspects of social organization and culture serve specific functions in adapting local populations to their environment, rather than the aspects themselves possessing internal coherence (Orlove 1980, Vayda and McKay 1975). Thus, ecological approaches took on a more dynamic approach to studying the relations among population, social organization, and culture within their environments (Orlove 1980). Another concern was to identify responses of populations to environmental stress. Vayda and McKay (1975) argue that research on the response to environmental hazards is a shift away from the strong focus on energetics (e.g. White, Rappaport, Binford) and from the assumption of stable equilibrium characteristic of ecological functionalism. Erickson (1999) contends that a scenario based on an understanding of ecosystem stability has been called into question by the New Ecology (see Vayda and McKay 1975) which has subsequently cast doubt on models that present the “normal” environmental parameters to which a populations is adapted (Van Buren 2001:143). Modern hazards research has been re-conceptualized in regards to these concerns.

Hazards theory draws from ecological anthropology, cultural geography, sociology, economics, and political science (Erikson 1999, Sheets 1980, 1999, Van

Buren 2001) to understand the actions of people faced with the occurrence of extreme environmental disasters, such as volcanic eruptions (Sheets and Grayson 1979). Disasters have been increasingly invoked in archaeology as the cause of social transformations (Van Buren 2001). Most researchers recognize that hazards and disasters occur only in relation to human well-being and thus must be defined in terms of their impact on people (Van Buren 2001:130); this becomes even more important when we consider that environmental stressors are culturally constructed. For example, a volcanic eruption is only problematic when it threatens to destroy the environment and lifeways of nearby human populations. If no one is affected, then it is not a disaster. An important concept in the study of disasters and hazards is the notion of vulnerability. Vulnerability is defined as, “the characteristics of individuals or groups that affect their ability to anticipate, contend with, and recover from a disaster” (Van Buren 2001:131). Many scholars studying disasters and hazards have focused on the social, political, and economic causes of vulnerability, and this allowed a focus on the everyday dynamics of society rather than only on exceptional events (Van Buren 2001:131). The concept of vulnerability, however, is not particularly suited to the study of long-term transformations as the result of specific environmental hazards. This has resulted in most modern hazards research being concerned primarily with short-term consequences (Sheets 1980, Van Buren 2001:145). Thus, archaeological work, deriving models and guidance from research on modern populations as well as their own methods, has the potential to broaden the time scale. Much archaeological hazards research centers on macro-scale implications and reactions but is not well suited to explaining the underlying

sociocultural motivations and systems of meaning for prehistoric interaction with the environment, though recent interpretations do recognize that societal reactions are dialectal and historically contingent (Beirsack 1999). I believe a re-theorization of what really constitutes the “everyday dynamics of society” can move us beyond macro-scale interpretations and bring us closer to the subtleties of the underlying social processes, ultimately allowing us to move back and forth between these scales (see below).

The culture-historical and processual approaches briefly outlined above are the frameworks within which much of the work conducted by the *Proyecto Prehistórico Arenal* was designed and carried out, producing a significant amount of the data on which my study is based, and has provided a foundation from which I seek to ask different kinds of questions. The following section outlines some of the ecological studies conducted in Costa Rica, with particular attention being paid to current processual interpretations of culture change in the Arenal region.

#### *Ecological Anthropology and Hazards Theory*

There is a multitude of examples that illustrate the processual and ecological influence in Costa Rican archaeology. This is not surprising for a number of reasons; first, as mentioned above, most scholars who have worked, or continue to work, in Costa Rica have been trained in this school of thought. Second, the environments in which ancient Costa Ricans lived were so varied that archaeologists were driven to account for perceived diversity in settlement patterns and subsistence strategies in order to facilitate explanation and comparison with other regions. Lynette Norr

(1996), for instance, suggests that subsistence patterns had a great deal to do with the settlement patterns on the landscape. Based on the stable isotope analysis of several skeletons from various sites in northern coastal Costa Rica, Norr (1996) concludes that maize was an important staple in only certain locations and only during certain times. She posits environmental changes caused by a drying period and volcanic eruptions around AD 1000 as possible explanations for why these groups who had been practicing limited maize agriculture, became increasingly reliant on marine resources and dramatically reduced maize consumption. Thus, Norr (1996) concluded that the patterns she saw in settlement nucleation in coastal areas were the result of environmental factors.

Lastly, and perhaps more prevalently, many sought to explain why ancient Costa Ricans never realized the societal complexity seen in their neighbors to the north and south, and the diverse, and sometimes uninviting, environment often afforded a useful foundation for explanation. Much of the debate regarding the lack of complexity in Lower Central America, and Costa Rica in particular, has typically been framed within the context of the theories of the relationship between the development of social complexity and tropical subsistence systems (Carniero 1970, Dunning 1995, Hoopes 1991, Lange, ed, 1992, Meggers 1954, Messenger 1991, Snarskis 1984). John Hoopes (1992) provides a sophisticated perspective that argues for a regional model for the emergence of social complexity in which the various regions in the Intermediate Area should be considered individually due to the diverse ecological zones encompassed as well as the specific histories of individual cultures. This model recognizes that many of the Early Formative cultures that emerged in

Nuclear America may not have shared a common cultural ancestry, cosmology or subsistence practices beyond the Paleo-Indian period (Hoopes 1992:72).

An example of the application of Hoopes' model can be seen in the work conducted by the Proyecto Prehistórico Arenal. Sheets (1994) argues that intensifying agriculture would have been difficult in many of the wet eco-zones in the Arenal area and that a broad based subsistence including horticulture and foraging strategies, combined with low population densities, maintained the relative continuity seen in social organization and settlement patterns in the Arenal area. Sheets also addresses the second part of this regional model in regards to specific histories as he contends that the Arenal region should be defined as a new cultural subarea in Costa Rica because the Arenal sites and others in the vicinity, "are not merely peripheral derivations of another cultural tradition, or a blend of two traditions, but a relatively independent tradition, only occasionally accepting and incorporating innovations made elsewhere" (Sheets 1994b: 314).

Additional applications of this regional model can be seen in much of the work carried out by the Arenal project because one of its primary goals was to better understand the hazards posed by, and cultural responses to, eruptions of Arenal Volcano as manifested in settlement patterns and site function (Sheets 1994a). With an increased reliance on the environment for explanations of culture change we see, for the first time, explanations incorporating notions of landscape. At its most basic level, landscape was perceived as a backdrop against which archaeological remains were plotted (Knapp and Ashmore 1999). A more sophisticated consideration of landscape within processual archaeology sees landscape as providing resources, as

places in which to seek refuge, or conversely, as potentially threatening (Knapp and Ashmore 1999). These concepts of landscape have been methodologically employed by the *Proyecto Prehistórico Arenal* in its investigation of ancient footpaths (Sheets and McKee 1994). Interpretations of the data made by Sheets and his colleagues (1994) are deeply entrenched in an ecological and behavioral framework. The overview that follows is derived from the edited volume, *Archaeology, Volcanism, and Remote Sensing in the Arenal Region, Costa Rica* (Sheets and McKee 1994) and personal communications with project members.

#### *Processual Interpretations of the Arenal Region*

The Arenal region has been continuously occupied since Paleo-Indian times to the time of Spanish Contact. Interestingly, very little in the way of profound change in social organization, settlement and subsistence activities since the first settled villages was noted (Sheets 1994b). The first substantial evidence for sedentism comes from the Tronadora phase (2000-500 BC) type site of Tronadora Vieja. This site, located on the shore of Lake Arenal, was revealed to have had relatively sophisticated ceramic vessels, five-meter diameter pole-supported structures, a small amount of carbonized maize kernels, and some manos and metates interpreted as evidence for food processing leading to the inference of Tronadora Vieja as a place in which people lived year round for a number of years. However, based on the small amount of maize and other qualifying evidence, many researchers working with the Arenal Project do not believe that these people were participating in activities resembling subsistence-based agriculture. Rather, Sheets (1994b) firmly contends



that these people subsisted off a variety of plants and animals available locally and only minimally depended on horticulture. This subsistence strategy, according to Sheets (1994a, 1994b) continued at least until Spanish Contact. Also derived from settlement surveys and ceramic counts, the populations in the region remained low as compared to densities in Mesoamerica and in South America. However, within the Arenal region, a substantial increase in population has been noted during the Arenal phase, followed by a decline in the Silencio phase and further decline in the Tilarán phase. Evidence from almost exclusively funerary contexts also suggests to Sheets (1994a, 1994b, personal communication) that complex hierarchy and ranked status did not develop in this region as it did elsewhere in Costa Rica (but see Bradley 1994). He maintains that social organization remained egalitarian from prior to the Tronadora phase to the final prehistoric Tilarán phase (AD 1300-1550).

One of the sites excavated in the Arenal region was the Silencio funerary site dating to the Silencio phase (AD 600-1300). During a 1985 meeting between Sheets and NASA remote sensing specialist, Dr. Thomas Sever, several linear anomalies that turned out to be contemporaneous prehistoric erosional footpaths were identified in remotely sensed imagery (McKee and Sever 1994--remote sensing and dating techniques will be discussed in the following chapter). These footpaths radiated west and east from the cemetery as well as leading to a spring located to the southeast. One of the possible hypotheses advocated by Bradley (1994) for footpaths heading to both the east and west is that there were multiple communities using this cemetery, thus multiple communities created the footpaths. This hypothesis is difficult to evaluate as the project has yet to associate any villages to the east or the

west with the footpaths. There is a known *laja* source (confirmed geochemically) to the west in direct association, but finding associations to the east of the cemetery has been frustrating (Barquero 2005, Sheets, personal communication 2005). The ceramics from Silencio reflect both Atlantic and Pacific influences, with Pacific style ceramics being the most prevalent. Based on ceramic types and context in which they were recovered, it is suggested that funerary feasting took place in the cemetery. The site is located on a prominent ridge visible from long distances to both the east and the west, and it is assumed that people from both sides must have known about its existence (Bradley 1994, Sheets, personal communication 2005). Sheets suggests that multiple communities may have been burying their dead in this cemetery and participating in associated funerary rituals and feasting, jointly, to create and maintain relationships in the event that help and refuge were needed during and after a major volcanic eruption. Communities to the west of the site would not have been as affected by volcanic eruptions as the dominant wind direction is consistently from the northeast (Sheets 1994a), thus some communities may have been favored in terms of seeking help. Thus, these relationships were interpreted as a mechanism by which to maintain resiliency in response to periodic natural disasters.

Clark and Blake (1994) and Dietler and Hayden (2001) have suggested that when more than one community is involved in feasting, the collaboration can result in alliances and other cooperative relationships, which could have regional implications. It has also been suggested that regional social networks play a major role in monitoring and responding to environmental variability in nonhierarchical societies (Rautman 1993). This may explain the remarkable resiliency of Arenal communities

during times of massive environmental disaster (Sheets 1994, 1999). If alliances were formed and maintained through ritual feasting, then other communities may have provided shelter and refuge during times of need. There is no evidence of dramatic cultural change or effects on population as a result of major volcanic eruptions in either the Arenal region or the Pacific/Guanacaste region (Bradley 1994, Sheets 1999). The only instance in which a population change was documented was during the latter part of the Silencio phase, where there is a population increase at the site of Rio Piedra (Mueller 1994, Sheets 1999). However, in comparison to the time that people were living in this large area, this change is quite small. The Rio Piedra area is located to the west of Lake Arenal and the Silencio cemetery and was less affected by the volcanic eruptions (Mueller 1994). Ceramic evidence of feasting and contact between the Pacific culture area and the Atlantic culture area has been recovered at a number of Arenal and Silencio Phase cemeteries (Bradley 1994, Butler 2005, Guerrero 2005, Sheets 2005, Weller 2005, Chapter 4).

One of the major limiting factors of this interpretation is that, as of yet, only two villages are thought to have been associated with footpaths (Sheets and McKee 1994). Many footpath segments are located near unexcavated sites, but only two have actually been recorded as terminating at or within these villages (Sheets and McKee 1994). One of the objectives of the 2002 and 2003 field seasons was to remedy this, but the project was unsuccessful as many traces of segments and entire footpaths have most likely been erased due to modern development and landscape alteration.

The interpretation presented above is highly plausible and offers valuable insight into prehistoric communities living in areas periodically subjected to volcanic disasters. However, I believe that it is limited by its focus on environmental responses, resulting in the restrictions of the theoretical framework to a narrow set of observable phenomena. While there is no doubt that the environment played a role in the lives of these people, I think it is worthwhile to also examine, in finer-grained detail, the complexities of human experience in daily practice and the subtleties of the underlying structure of social life. I also would like to propose that other reasons, such as intermarriage, kinship or trade, may have been influential factors in the creation and maintenance of intercommunity relationships. I believe that a theoretical framework based in recent social theory has the potential to provide us with avenues leading to greater insight into the broader cultural systems of meaning in which the cemeteries and footpaths and the practices that created them were embedded. My research was designed to provide a more fine grained, and often complementary, perspective on human experience within the landscape. The following section is an overview of the mosaic of theoretical tools I believe may prove useful for understanding and explaining the past in a manner that brings us closer to the way ancient people negotiated their world.

### **LANDSCAPE, MEMORY, SPACE AND PLACE**

Processual approaches to landscape have often viewed the landscape as encompassing two distinct parts- the built environment and the natural environment.

Research is typically conducted within a framework that focuses on patterns of

settlement, on the locations of resources, and how these factors contribute to economic or political relationships. More recently, anthropologists have begun to consider the notion of landscape as being socially meaningful and constructed, and not separate from human action. Within these perspectives, the more ephemeral traces of human engagement with the world around them can be discerned (Barrett 1991, Bender 1993, Bradley 1998, Knapp and Ashmore 1999, Van Dyke and Alcock 2003). For example, John Barrett (1991:8) defines landscape as:

[T]he entire surface over which people moved and within which they congregated. That surface was given meaning as people acted upon the world within the context of various demands and obligations which acted upon them. Such actions took place within a certain tempo and at certain locales. Thus, landscape, its form constructed from natural and artificial features, became a culturally meaningful resource through its routine occupancy.

Here, landscape is not only understood as the physical surface on which humans lived, but viewed as contextually and historically contingent: landscape shapes, and is shaped by, human action through time and space. Barrett's definition of landscape has implications for studying social relationships; focusing on the role of active individuals in constructing and interpreting the world around them, and in continually reshaping culture and society (Knapp and Ashmore 1999:7). Barbara Bender (1993:1) articulates that "landscapes are created by people—through their experience and engagement with the world around them. They may be close-grained, worked-upon, lived-in places, or they may be distant and half-fantasized." Using a theoretical perspective that gives notions of landscape more breadth in meaning for different people has the potential for a multifaceted interpretation of human experience.

Many social theorists and archaeologists are concerned with understanding how relating subjects were constituted under conditions beyond their full appreciation or direct control (Dobres and Robb 2004). Traditional approaches have often been too coarse-grained for this kind of analysis, and the actions of people are not separated from those of the cultural or ecological system, leaving very little room to discern the social relations among people or groups. Research designed within a post-structural framework attempts to address these complex issues.

Practice theory (or theories) view social processes as resulting from the on-going recursive relationship between agency and structure (A. Joyce 2004). By structure it is meant those principles that organize and reorganize the on-going process of social interaction and structuration is the process. Pierre Bourdieu (1977) questioned how social practice shapes society by concentrating on the taken-for-granted routines of daily life, or *habitus*, within which people create and become structured by institutions and beliefs that come to be beyond their conscious awareness. As people go about their daily tasks, they may learn rules and constraints through the movements of the body; the rules become “embodied,” in that through bodily practices, social rules and dispositions are put into practice (Bourdieu 1977, Hodder and Cessford 2004:18). In this way, daily practices become social practices and have a dimension that relates to social structuring and restructuring. One way socialization through daily practices can be seen archaeologically is by exploring how people moved through spaces in landscapes, as well as within houses and monuments (Hodder and Cessford 2004, Thomas 1996, Tilley 1994).

Other components of the experience of daily life are temporality and rhythm. Important dimensions of social practice are the relationships with the past (temporality) and the extent to which practices repeat earlier practices (rhythm) as a form of memory of them, in effect, habituating knowledge through daily practice (Hodder and Cessford 2004:18). In his essays on dwelling, Tim Ingold (2000:208) suggests that archaeology is the study of the temporality of landscape. In this view, landscape is constituted as an enduring record of the lives and works of the past generations of those who have dwelt within it, and in so doing, have left something of themselves there (Ingold 2000:189). It is through people's interconnected activities, through their dwelling in the world, that landscape is constituted and reconstituted. These activities form what Ingold calls the "taskscape"—the ensemble of human action. For example, one could view the activities undertaken on a daily basis at Chan Noohol, a Maya site located in present day Belize (Robin 2002) as forming the taskscape of that particular village. In her analysis, Cynthia Robin (2002) takes the position that the "natural" and "cultural" worlds are not binary or opposed, rather they formed a continuum through which activities and experience created a social landscape; daily practices, ritual practices and their relationships to the rest of the Maya were deeply embedded, and continually reconstructed, within the broader social landscape. Robin (2002:253) suggests that the cultural construction of place (see below for a discussion of place and space) at Chan Noohol was created and ordered by molding and extending a form that already existed in the topography of the land and the previously abandoned pre-Classic Maya landscape. The ordered construction of place (activity areas, paths between these areas, fields) provided a framework that

only came into being as residents transformed Chan Noohol from an ordered place to a living space. Over time, the places and spaces of Chan Noohol came to be the living landscape, or the taskscape in Ingold's terms.<sup>1</sup> The chemical analysis of soils at Chan Noohol showed that people intensively used these places for long periods of time and ultimately, people completed the same tasks in the same places, and only at certain times can task differentiation be assumed based on the task at hand, such as planting, harvesting, processing (Robin 2002:258).

Thus, taskscape is a social process, and it is the temporality and rhythm of taskscape that moves social life forward. This is not a chronological movement, but rather a movement that continuously constitutes the landscape within which the taskscape comes into being and is continually reproduced or transformed, and because it is social, it is never finished. Thus, the temporality of landscape is witnessed through the human embodiment of the taskscape, which can only take place as long as people are engaged in activities of dwelling, and the two are essentially inseparable (Ingold 2000:195-197). For archaeological research, we must probe ever deeper into landscape because meaning is to be discovered *in* the landscape and the practices that are recursively implicated in its construction and transformation; and every feature is a potential clue (Ingold 2000:208). If viewed from this perspective, landscape is no longer a static backdrop; rather, it has meaning and is part of the process of structuration. The structuring capabilities of the landscape are not simply results of topography or land fertility, but are much more. People act on the landscape, they shape it, but it also shapes them and this process is

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<sup>1</sup> Cynthia Robin (2002) does not use the terminology of taskscape or cite Ingold's work. I use her study of Chan Noohol here as an example of how, archaeologically, we can detect these patterns and infer how people in the past ordered their lives within the landscape.



always on-going. It can constrain human action, not merely in “environmental” sense, but also through tradition, or the cultural significance placed on certain features in the landscape. With a focus on landscape studies, archaeologies of memory became much more prominent (Knapp and Ashmore 1999).

Knapp and Ashmore suggest that landscape is regarded as the “materialization of memory, fixing social and individual histories in space ...[and that] human memory constructs rather than retrieves...and the past thus originates from the elaboration of cultural memory, which is itself socially constituted” (1999:13). How memory comes to be socially constituted has been nicely elucidated in an example provided by Paul Connerton (1989). Speaking to the work of Maurice Halbwachs, Connerton states that:

We will notice that, most commonly, we appeal to our memory in order to reply to questions which others put to us, or which we imagine that they could ask us, and, in order to reply to them, we envisage ourselves as forming part of the same group or groups as they do...most frequently, if I recall something, it is because others incite me to recall it, because their memory comes to the aid of mine and mine finds support in theirs...every recollection, however personal it might be, even that of events of which we alone were the witness, even that of thoughts and sentiments that remain unexpressed, exists in relationship with a whole ensemble of notions which many other possess: with persons, places, dates, words, forms of language, that is to say with the whole material and moral life of the societies of which we are part or of which we have been a part (Connerton 1989:36).

Connerton (1989) maintains that there are two ways of bringing the past into the present: remembering and acting out. In regards to the application of these ideas to anthropology and archaeology, we can understand acting out, or more specifically, performance, as comparable to daily practice and/or ritual behavior, or in Ingold’s terms, the ensemble of tasks that make up the taskscape.

Connerton (1989) suggests that it is through bodily practices, or movements of the body, that memory is incorporated, habituated, and embodied; and it is through performances of the body that the past is constructed and reconstructed. These ideas accord well with Bourdieu's notion of *habitus*. In his discussion of what he calls performative memory, Connerton views bodily practices as part of what he defines as the object domain. In hermeneutics, the object domain is composed of the objects or practices to which we give meaning. Hermeneutics "is the study of how we give meaning to cultural products, or how we interpret human actions and their products" (Johnson 1999:191). Objects and practices can have multiple meanings, regardless of the original intent, and these meanings can be contested; thus, a hermeneutical analysis attempts to understand only one or some of these meanings, and acknowledges positionality in the interpretation (Gadamer 1976). While performance and bodily practices would seem to be obvious inclusions into the object domain given this definition, these actions are often backgrounded in favor of inscribed meaning, i.e. meanings derived from architecture, language, texts or iconography (Connerton 1989). Bringing these practices back into that domain, to re-present them, is necessary in order to better understand their structuring capacities, which can help us understand the constitution of the ancient landscape, viewed as the human embodiment of the taskscape engaged in in the past (Connerton 1989, Ingold 2000). I believe we can do this by engaging in hermeneutical analysis of landscape and social memory. This process becomes more difficult when, as archaeologists, we attempt an understanding of the past in the past, even more so when we want to

understand those incorporated, or embodied, practices that are not so readily observable and identified in the archaeological record.

In the introduction to the edited volume, *Archaeologies of Memory*, Ruth Van Dyke and Susan Alcock (2003:4) write that ritual behaviors expressed as performative memory are materially visible through evidence of activities such as processions, mortuary treatments, abandonments, feasting, and votive deposition. They also suggest that archaeological research can illuminate social memory through the study of *places*. They state that “places are spaces that have been inscribed with meaning, usually as the result of some past event or attachment...[places] include monuments, landscapes, natural features, tombs, trees, obelisks, shrines, mountain peaks and caves” (Van Dyke and Alcock 2003:5).<sup>2</sup> In his book, *The Practice of Everyday Life*, Michel de Certeau presents a theoretically useful distinction between place and space. For de Certeau (1984:117-118), place [I and others use the term space] is an instantaneous configuration of positions that implies an indication of stability, and is thus ultimately reducible to the fixed “being-there.” Space [place], on the other hand, is relational and produced by the actions of historical subjects; it is active, dynamic, and always in a process of becoming (de Certeau 1984). Place refers to the multifaceted experiences within a space. These experiences may or may not conform to previously constructed and/or conceived meanings but continue to constitute and reconstitute the meaning of these spaces (de Certeau 1984).

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<sup>2</sup> The terminology used here, space and place, occasionally get reversed depending on whose work is being cited. In general, most anthropologists use the above written relationship (e.g. Basso 1996, Van Dyke and Alcock 2003, Van Dyke 2003). After careful research, I have not been able to find an explanation for this reverse in terminology, as space as de Certeau uses it appears to represent the same ideas as place as other would use it. Though I invoke the work of Michel de Certeau, I choose to use place where he would use space in order to follow the anthropological literature most commonly cited (e.g. Basso 1996, Heidegger 1977), but will use his terminology in cited quotes.

In accord with de Certeau, Ingold (2000:192) shows that places are the embodiment of the whole landscape at a particular nexus within it, and that because of this each place is different from another. Heidegger (1977:332) states that, “spaces receive their essential being from particular localities and not from ‘space’ itself” (as quoted in Basso 1996:106). Place owes its character to the experiences it presents to those who spend time there, or simply know of the place, and this in turn, depends on the kinds of activities in which its inhabitants engage (de Certeau 1984:117-118, Ingold 2000:192).<sup>3</sup> In writing on the concept of dwelling, Martin Heidegger (1977) and Keith Basso (1996), suggest that dwelling gives importance to the “forms of consciousness with which individuals perceive and apprehend geographical space...and is said to consist in the multiple ‘lived relationships’ that people maintain with places” (Basso 1996:106). Relationships with places are lived whenever a place becomes the object of awareness (Basso 1996:106). Basso (1996:107) states that, “[w]hen places are actively sensed, the physical landscape becomes wedded to the landscape of the mind, to the roving imagination.” It is through this understanding of landscape, as being intertwined with culturally constructed comprehensions of it, that places and spaces enable those inhabiting them to situate their lives in reference to what came before, and this can be either discursive or nondiscursive.

In many ways, we can think of archaeological patterns and features as the materialization of memory. I aim to elucidate how something as abstract as memory, or a sense of place, was represented in the material reality of landscape, as it was constructed and shaped by ancient Costa Rican peoples. The footpaths, the

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<sup>3</sup> Ingold does not use space in this sense, rather he uses space to refer to the meanings *attached* to the world rather than *gathered from* it (Ingold 2000:192)

cemeteries, and the villages are visible to us as a result of their archaeological study, but what is not so easily identifiable is the meanings and memories attached to them and how they were transformed over time. I wish to demonstrate how the creation of these archaeological features, and their use over generations, has structured certain aspects of ancient life, and how these aspects continued to persist even as change occurred. Archaeology incorporates the study of change over the long term and is thus uniquely suited to studying social landscape and memory. I believe this is so as often the subtleties of change are not readily apparent to those who are experiencing and affecting it; but over the long term, the complex nature of change, influenced by landscape and memory, can be manifested in the archaeological record.

The perspective I have adopted in this thesis does not reject the hard realities of living in an environment that is not always under the control of human action. Rather, I view the environment as part of the landscape and by being so, is inseparable from human perception and interaction. In previous sections, I have summarized work that sees environment and human action as being distinct, and often chronologically ordered in relation to each other. While there is no escaping time as we know it and live it, I wish here to emphasize social time, or how people differentially engaged with each other and their cultural world, as being the driving force behind change. I believe it can help us move away from the chronological markers such as phase transitions that have been traditionally used to signify change and bring us closer to understanding the relationships *among* those transitions. The Arenal region presents an excellent case study because social life, as it has traditionally been interpreted, did not change dramatically for most of the human

occupation in the area. But an analysis using the theories I have outlined above, can reveal the nuance of social life and subtleties of change that are not recognized within more traditional approaches. I believe that it is only then that we will be able to see how striking the changes in social life actually were. We have as our cues the creation and maintenance of a landscape littered with footpaths and cemeteries, whose constructions defy our Western logic, thus forcing us to delve deeper into the landscape in order to bring us closer to indigenous meanings in the past.

## **CHAPTER 4 DATA**

In this chapter, I summarize the relevant data from the Proyecto Prehistórico Arenal. Some summaries are synthesized from the edited volume *Archaeology, Volcanism, and Remote Sensing in the Arenal Region, Costa Rica*, edited by Payson Sheets and Brian R. McKee (1994). Other summaries, including those of Sitio Poma, Sitio Castrillo and recent work with the prehistoric footpaths, are assembled from a volume of *Vinculos*, the Costa Rican journal of archaeology, and unpublished field notes and reports of the 2002 and 2003 project members. Particular focus is placed on the sites and footpaths excavated in 2002 and 2003 as these archaeological features and sites are the ones that inspired this thesis. All work cited has been published elsewhere (Butler 2005, Hamilton 2005, Sheets 2005, Sheets and McKee 1994, Guerrero 2005, Weller 2005, White 2005).

### **DETECTION AND EXCAVATION OF FOOTPATHS**

During the 1985 analysis of color infrared aerial photographs, project members observed a linear feature that led westward from the Silencio Cemetery, made an obtuse bend around a repository of *laja*, extended toward a second *laja* repository on another ridge top and continued westward (McKee et al. 1994:143). It was after this initial discovery that the detection and excavations of prehistoric footpaths became a priority for the *Proyecto Prehistórico Arenal*. Since then, project members, during various field seasons, have detected many linear anomalies and put in 72 trenches in order to confirm or disconfirm them as prehistoric footpaths.

### *Detection of Anomalies-Remote Sensing Applications*

Many different methods and techniques have been used to find and locate linear features including ground survey, windshield survey, and various remote sensing techniques. Remote sensing can be defined as the observation of phenomena at a distance (McKee and Sever 1994:135). The project had access to a number of different remotely sensed imagery such as color infrared (CIR), black and white, and true color aerial photographs; LIDAR; RADAR; Thermal Infrared Multispectral Scanner (TIMS) images; Landsat; and IKONOS images from which we were able to analyze four bands (infrared, red, green and blue) of the electromagnetic spectrum. Of these, the aerial photographs, especially the CIR, and IKONOS imagery proved to be the most successful at revealing these anomalies. The CIR and IKONOS imagery were particularly useful as they were the only ones to provide us with infrared images of the land. Infrared images are sensitive to slight variations in the plant growth, which reflect the chemical, physical and moisture differences of the soils in which the plants are growing (McKee and Sever 1994). The linear anomalies are erosional features (see following section) over which grass and other vegetation have grown, and they appear slightly more exuberant, especially toward the end of the dry season, in the infrared images (see Figures 4-1a and b).

The enhanced linear signature in the images results from a number of factors: 1) chemical and physical properties of the tephra—the tephra layers are less cohesive resulting in easier erosion due to surface runoff being concentrated on the path; 2)



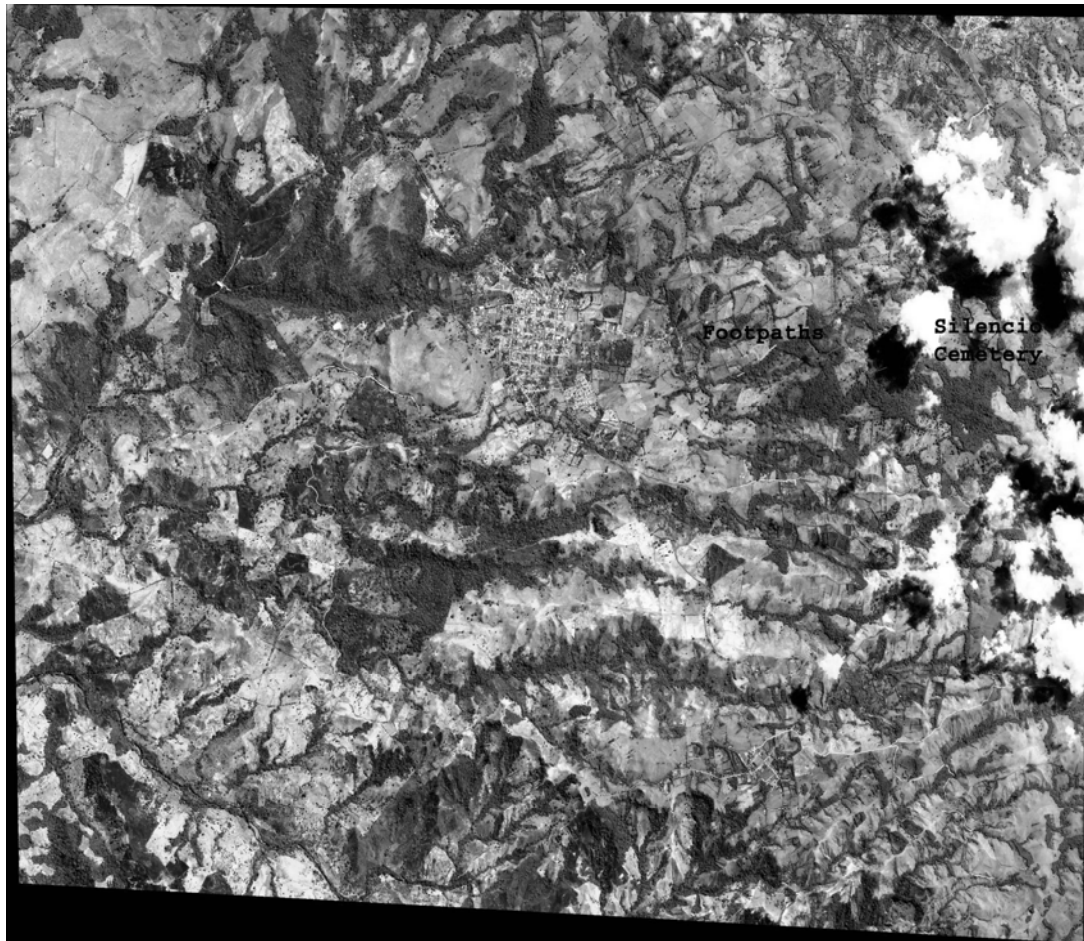


Figure 4-1a. IKONOS satellite image of the study area. The Silencio Cemetery is in the far right of the image. This image covers 11 square kilometers.

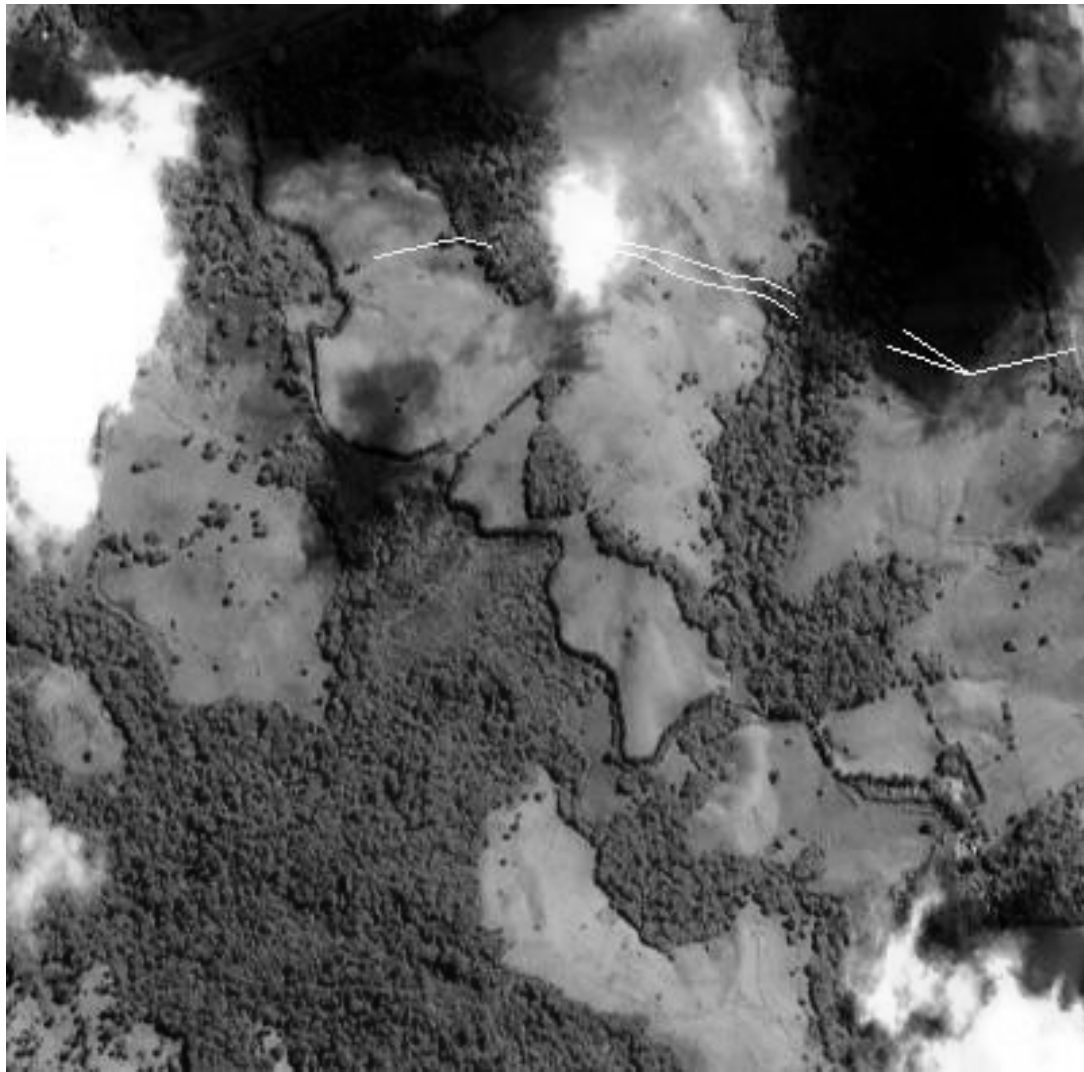


Figure 4-1b. IKONOS image of Silencio Phase footpaths. The linear features are visible just below the white lines indicating their orientation. This image covers approximately one square kilometer.

increased moisture retention—water is concentrated in footpaths as the entrenched nature of them holds more water; 3) re-deposited eroded sediments may have resulted in an enhanced root matrix, and; 4) the combination of factors one, two and three leading to healthier vegetation growing in the abandoned and buried footpaths and making them visible as positive crop marks in the images (McKee and Sever 1994:140, McKee et al. 1994:144). As the dry season nears its end, the adjacent areas lose greater amounts of moisture than do the footpaths, thus, the project has often used infrared images acquired during the end of the dry season.

The detection of footpaths in the 1980's was conducted, for the most part, with the aid of aerial photographs (McKee and Sever 1994). However, for the 2002 and 2003 field seasons, thanks to the Space Act Agreement with NASA and Senior Research Scientist Dr. Thomas Sever, the project was able to acquire and analyze high resolution IKONOS imagery.<sup>4</sup> Each image covered a total of 11 km<sup>2</sup>, making it much easier and more efficient in regards to the observing and “surveying” of the research area (see McKee and Sever 1994, for more details as to the advantages of remote sensing in archaeology).

In the earlier seasons, the detection of footpaths was relatively easy, as the project began this endeavor near the Silencio Cemetery, which is about 970 meters in elevation (Bradley 1994b). This area had little historic disturbance, such as the sugar cane cultivation that occurred in areas below 600 meters and necessary oxcart roads and plowing that were at their peak from about 1880 to 1950 (Sheets, personal communication 2005). However, in later seasons the detection of footpaths became

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<sup>4</sup> Resolution for these images was 4 meters per pixel in the standard and 1 meter per pixel in the panchromatic. See Sever, in press, *Vinculos*, 27. IKONOS is an earth imaging satellite launched by Space Imaging© in 1999.

increasingly more challenging as we looked for footpaths below 600 meters in elevation—the uppermost extent of sugar cane cultivation—despite the high tech tools at our disposal. Due to modern land practices including forest clearing, construction of roads and buildings, sugar cane production, plowing, and cattle grazing, as well as the natural topography of the region, it is highly likely that many prehistoric footpaths have been literally erased from the earth.

Once linear features were detected in the imagery, the next step was to ground truth them in order to determine whether or not these linear anomalies were actually prehistoric features. As there were various linear anomalies (fence lines, pipe lines, oxcart roads and modern roads) visible in the imagery, those known to be either near identified or suspected archaeological sites, as well as those that may be extensions of already known footpaths, were chosen for excavation. Ancient footpaths had never before been detected by remotely sensed imagery, thus, the methodology for confirming them as prehistoric or non-prehistoric had to be developed by *Proyecto Prehistórico Arenal* members (see McKee and Sever 1994, McKee et al. 1994, Weller 2005a).

### ***Excavation of Anomalies***

As detection of prehistoric footpaths in the remotely sensed imagery is only one part of the process, it was necessary to conduct excavations in order to verify that they were indeed produced through the actions of people in the prehistoric past. First, however, it is necessary to discuss how prehistoric footpaths formed into the

archaeological features we see today as well as how they are determined to be prehistoric.

Footpaths and their archaeological remnants were formed as the result of anthropogenic and erosional forces (McKee et al. 1994:151, Weller 2005b). Humans initiated erosion of the footpaths by walking over the ground, clearing vegetation, compacting the soil, and further retarding or preventing vegetation growth (McKee et al. 1994:147, Weller 2005b). The initial feature was a U-shaped incision, perhaps 30 to 70 cm wide (McKee et al. 1994:147, Weller 2005b). As erosion continued, due to the intense and uneven seasonal rainfall characteristic of Costa Rica and continued cultural use, the angle of repose for the U-shaped incision got to be too great (more than 30 degrees), resulted in the sides collapsing in which then created a several meter wide V-shaped feature (McKee et al. 1994:147, Weller 2005b). After abandonment of the footpath, the next volcanic eruption draped a layer of tephra over the path, preserving it in time for future archaeological study (McKee et al. 1994, Weller 2005b; see Figure 4-2).

Footpath entrenchment is affected by a number of factors: 1) the amount of rainfall; 2) degree of slope—flat-lying areas do not experience much erosion and have a slight chance of footpath formation; 3) soil properties—the volcanic tephra has low cohesion which increases erosion while allowing moisture to move through quickly; 4) vegetation—increasing vegetation cover can decrease erosion and vice versa; 5) and human foot traffic (Weller 2005b).

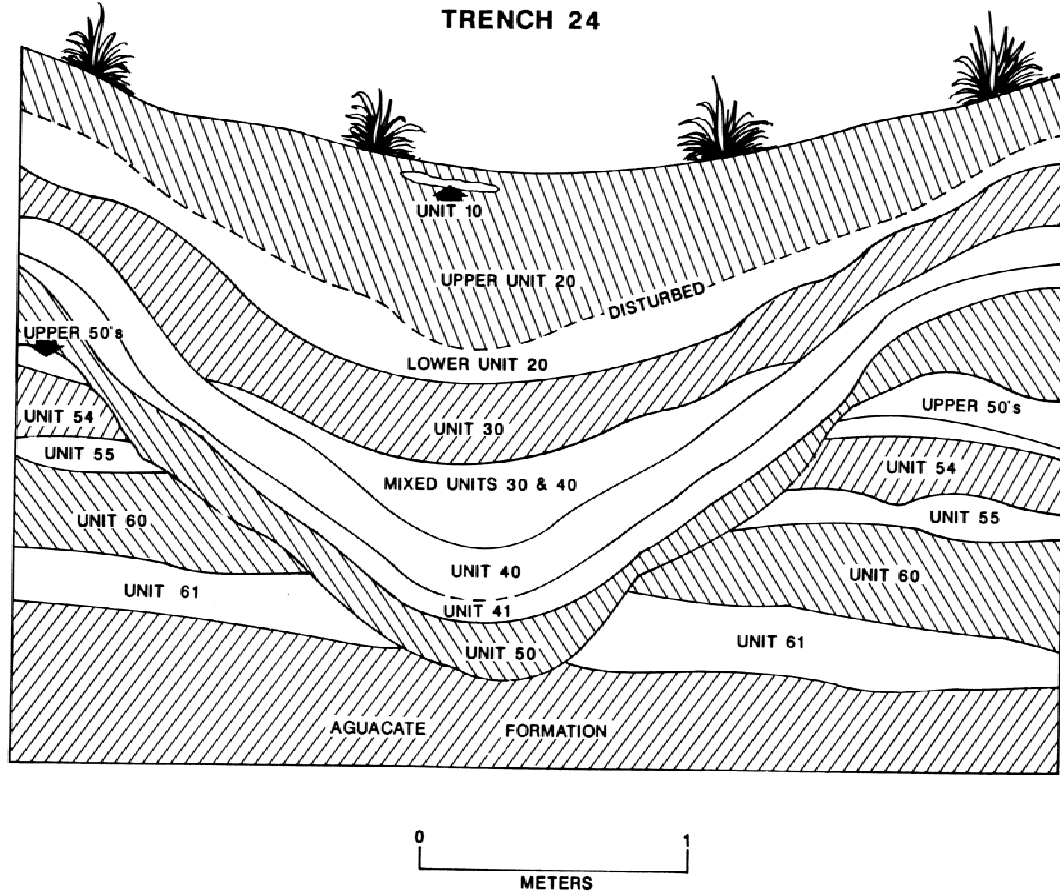


Figure 4-2. Trench profile of prehistoric footpath. The footpath has been covered over with many layers of tephra, preserving it for future archaeological study. Drawing made by Payson Sheets.

The volcanic eruptions, and other sedimentological factors, allowed us to quickly identify the prehistoric/historic/modern/natural construction of these features. The footpaths we see today were not *intentionally* constructed by humans; rather, they were formed by the actions of *both* humans and nature. There were several main criteria used to distinguish footpaths from other linear phenomena. First, the topographic location of the footpaths generally distinguishes them from modern roads. Ancient footpaths tend to stay high, often along ridge tops, and generally follow straight lines, regardless of topographic highs and lows (McKee et al. 1994:145); modern roads typically contour around the topography. Second, natural erosional features do not commonly occur on ridge tops; rather they occur at the steepest slope of the landform as this is the orientation along which water exerts the maximum erosional force, or at low points where flood scouring is at its maximum (McKee et al. 1994:145, Sheets, Personal Communication 2005). Third, the location of these footpath features relative to archaeological sites is suggestive of their human construction and use (McKee et al. 1994:145). Fourth, these features, once excavated, have been found in association with artifacts (McKee et al. 1994: 145). Finally, the volcanic stratigraphy of the area is an excellent indicator of the prehistoric/historic/modern construction (McKee et al. 1994:145).

Arenal Volcano, located about 20 km east of the footpath study area, has erupted violently 10 times in the last 4000 years. The tephra deposits from each of these eruptions have provided the project with a clear and distinct stratigraphy (Melson 1984, 1994). The stratigraphic sequence has been analyzed and dated by Dr.

<i>El Tajo Unit Number</i>	<i>Date</i>	<b>Corresponding Arenal Unit Numbers</b>
1	AD 1968	10
2	AD 1500	20
3	AD 900	30, 40, 41
4	AD 700-900*	41
5	AD 300	50
6	200 BC-AD 1*	53, 53A
7	600 BC*	54
8	800 BC*	55
9	??	60
10	1800 BC	61

Figure 4-3. El Tajo sequence with eruption dates and Corresponding Arenal Unit numbers. El Tajo units include the tephra as well as the soils that developed out of them; Arenal units distinguished between tephra and soils. Adapted from Melson (1994:39). Asterisks (\*) indicate tentative dates.



William Melson (1984, 1994), and Figure 4-3 represents the tephra sequence and the corresponding *Proyecto Prehistórico Arenal* unit sequences. As this work has been published extensively in two places (Melson 1984, 1994), only a brief discussion is provided here using only Arenal unit numbers.

Arenal unit 20 is of particular importance because it was deposited around AD 1500 which is about the same time as Spanish contact in the New World (Melson 1984, 1994). If this unit is intact, it indicates that what lay beneath was prehistoric. (Melson 1984). Unit 30 is the soil formed on top of the volcanically deposited Units 40 and 41 and contains a great deal of cultural material in many locations in the Arenal region (Melson 1984:47). The dating of Units 40/41 is not precise but based on the presence of ceramics dating to the Middle Polychrome, it is suggested that the eruption from which the tephra fell occurred sometime around AD 700-900—this corresponds to the Early Silencio Phase—leaving plenty of time for the Unit 30 soil to develop before the AD 1500 eruption (Melson 1984). The Unit 50 complex includes all units between 50 and 60, but not Unit 60 itself, and dates to the Arenal Phase (Melson 1984). Unit 50 is the soil that developed out of tephra Unit 52 which was probably deposited sometime around AD 1 (Melson 1984, Sheets 1994:14). Many cultural features dating the later part of the Late Arenal Phase and Early Silencio Phase are found in Unit 50, including the beginning of Silencio Phase footpaths. Units 53 and 53A are tentatively dated to 200 BC-AD 1 (Melson 1994, Sheets 1994). Unit 54 was probably deposited at about 600 BC, and Units 55 and 55A, based on associated cultural material, suggest an eruption date of around 800 BC. Unit 60 is a thick, black soil, and Unit 61 dates to 1800 BC and was most likely

the very first major eruption from Arenal (Melson 1994). Unit 65 is the clayey Aguacate Formation formed prior to Arenal's first eruption (Melson 1984).

Once linear anomalies had been identified in the remotely sensed imagery, their latitude/longitude coordinates were recorded and a Global Positioning System (GPS) device was used to locate the features on the ground (Butler 2005b). The position of the trench was then determined (usually placed where the feature traversed the steepest slope) and a two meter by one meter unit was set up (Weller 2005b). Trenches were excavated according to natural stratigraphy, and terminated once Unit 65, or the Aguacate Formation, was reached. Many trenches confirmed the presence of prehistoric footpaths dating to either the Arenal or Silencio Phases (See Figure 4-4).

Other anomalies were also excavated that were not the result of prehistoric use (McKee et al. 1994, Weller 2005b). On the surface of some of these anomalies cannot be distinguished from prehistoric features, thus, only through excavation can features be disconfirmed as footpaths. One salient example was the excavation of a historic oxcart road (McKee et al. 1994). Unit 20 was only intact at the base and unit 10 (deposited in the AD 1968 eruption) was draped over disturbed Unit 20 soils, suggesting to project members that the oxcart road was definitely historic, and probably even dated to the 20<sup>th</sup> century (Sheets, Personal Communication 2005). Other anomalies that turned out to be either historic or modern include an old fence line, a pipe line, and several undetermined features (Sheets 1994, Weller 2005b).

There were several prehistoric footpaths that were confirmed but did not

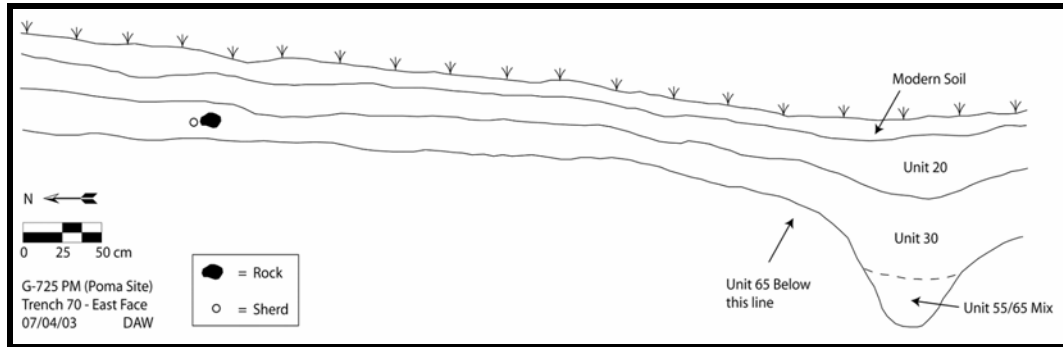
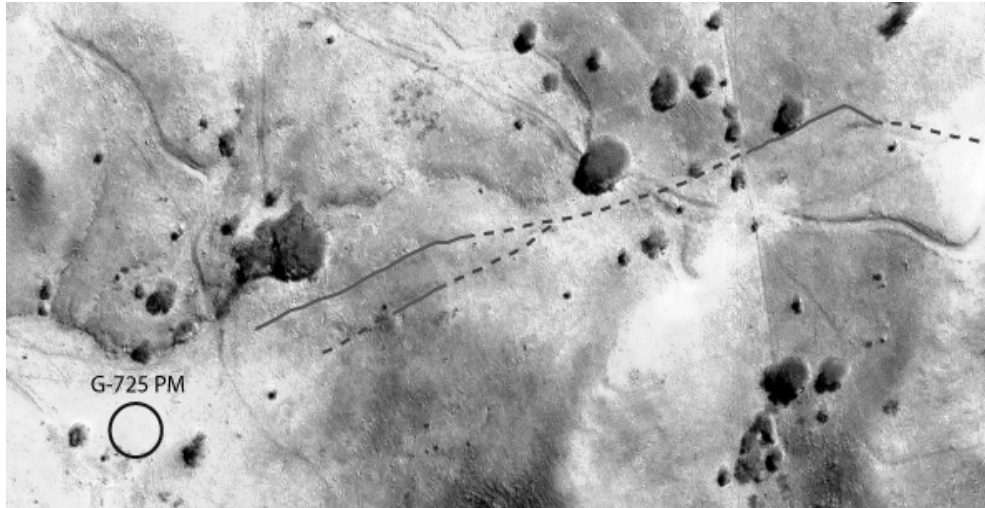


Figure 4-4. The footpath discovered in Trench 70 dates to the Arenal Phase (White 2005).

necessarily follow the pattern we had come to expect—that is, an east-west orientation. For example, a linear anomaly was identified in the IKONOS imagery running north-south, but connecting to an east-west oriented confirmed footpath. This anomaly, called Spur 1, was trenched and confirmed as a prehistoric footpath (Hamilton 2005, Weller 2005b). This feature began at the base of a hill and continued south up to the top of the hill and then was lost. Excavations on the top of this hill produced a few sherds and nothing more (Hamilton 2005). It is possible that the top of the hill was the final destination. Payson Sheets noticed that when one stood at the top of this hill, one could see the ridge top on which the Silencio Cemetery was located (Sheets, Personal Communication 2002). It is the only place for a few kilometers that one could view the cemetery from the trail. It is also likely that the footpath continued but topography or other factors resulted in it not being preserved.

Most footpaths were eroded down to the clayey Aguacate Formation before being abandoned. In several cases, however, once one path was abandoned (most likely due to the fact that walking up and down steep topography on the clayey sediment was very difficult), another path was begun directly next to it (see Figures 4-5a and b). This is seen with the paths leading from Silencio cemetery to the spring, those leading into the Poma site, and in several other locations more distant from an archaeological site (Butler 2005, McKee et al. 1994, White 2005). In regards to the prehistoric footpaths, the first stratigraphic layer that has been eroded away is presumed to have been contemporary with footpath use. In the case of footpaths

Figures 4-5a and b. Once one footpath becomes unusable, another is begun Directly next to the abandoned one. Lines indicate where footpaths are on the ground.



A. Lines indicate footpaths leading into Poma Cemetery. Once one footpath was eroded down to the Aguacate Formation, another path was begun next to it (White 2005).



B. White lines indicate Silencio Phase footpaths heading west from Silencio Cemetery. There are three parallel footpaths in the same location. The black lines indicated Arenal Phase paths. Image created by Michelle Butler.

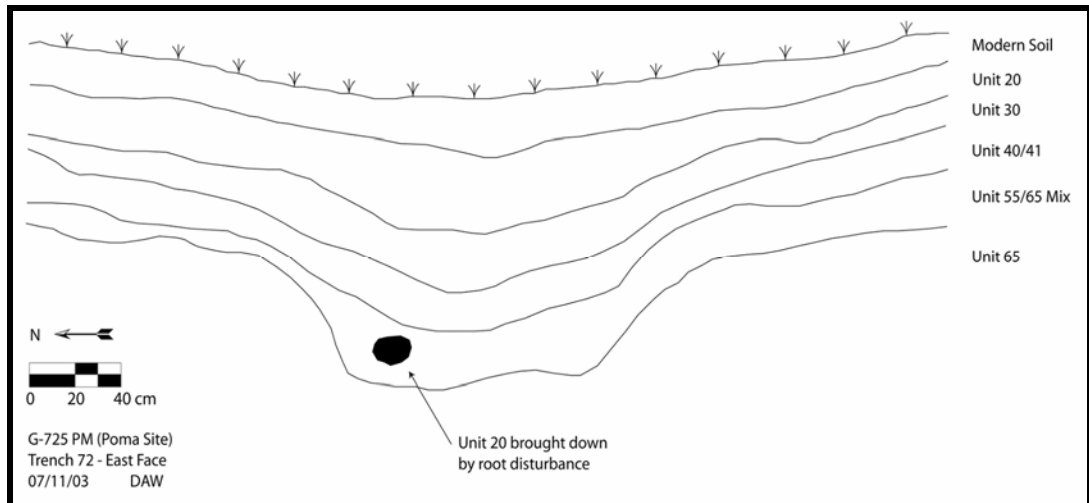


Figure 4-6. The profile of Trench 72 verifies that this footpath was used in the Arenal Phase. The missing Unit 54 and mixed Units 55/65 are characteristic of these paths at this distance from Arenal Volcano(White 2005).

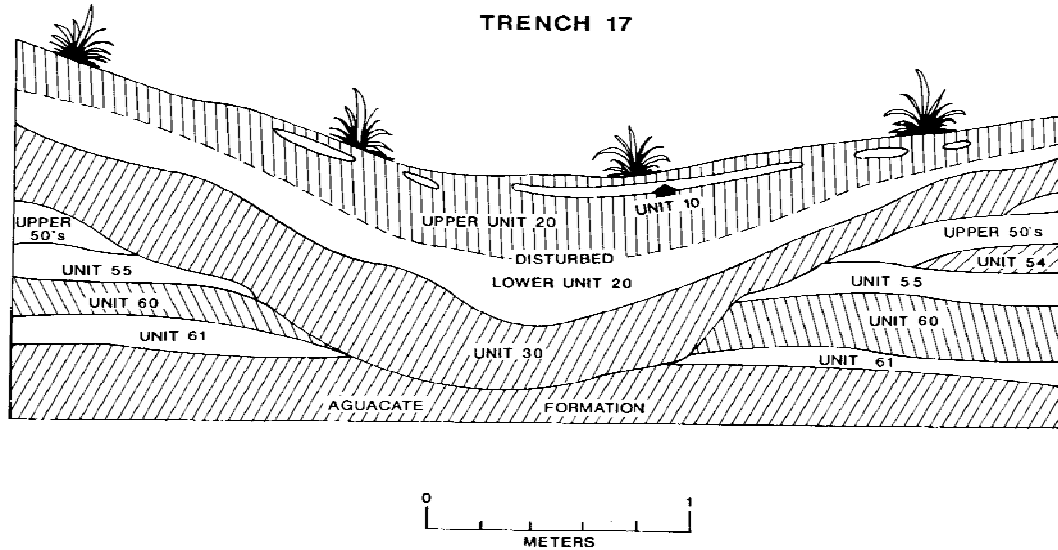


Figure 4-7. Profile of Trench 17 demonstrates that this path was used during the Silencio Phase. Drawing by Payson Sheets.

dated to the Arenal Phase, people started creating and using them on top of Unit 54 (see Figure 4-6); for Silencio Phase footpaths, Unit 50 was the prehistoric ground surface (see Figure 4-7). Footpaths are further related to these phases based on their association with archaeological sites. Two of these sites, Poma and Silencio, will factor prominently in the interpretation of use and meaning of the footpaths (see Chapter 5).

Footpaths have been directly associated with the Poma site, the Silencio site, one habitation site, and the Rio Piedra area, dating to Late Arenal and Early Silencio Phases (Site G-180). Additionally, several caches of *laja* have been associated with ancient footpaths. These *laja* caches have been interpreted as repositories for tomb construction (Hoopes and Chenault 1994b, Sheets, personal communication 2002).

If several footpath segments were to be extrapolated, they too would connect with other cemeteries and habitation sites; unfortunately, this cannot be definitively determined as the footpaths have not preserved in a number of areas. The following summaries of cemeteries and habitation sites are either directly associated with footpaths or are in close proximity to known footpaths.

## **CEMETERIES**

Data from several cemeteries will be discussed in this section, including evidence of construction materials, grave goods, cemetery layout, and presence of feasting. In most instances, bone did not preserve due to the high acidity and moisture content of the soils. Only in the Silencio Cemetery did project members recover osteological remains (see below).

### *Sitio Bolívar*

The information for this section is taken from Hoopes and Chenault (1994a) unless otherwise cited. Sitio Bolívar is a Late Arenal Phase village and is located on a small point of land on the south shore of Laguna Arenal. Sitio Bolívar is approximately 2.5 ha in area and consists of two parts. The habitation area is located on the lakeshore margin and was defined by subsurface features. The mortuary section is located on the ridge top to the south of the habitation area, and was defined by both above surface and subsurface features. The domestic section of the site extends northward beneath the present lake surface. The domestic section of the site will be discussed in a following section.

The mortuary section of the site is located approximately 100 meters from the domestic area, on a ridge top. Although the cemetery is partially looted, excavations revealed that below unit 20, many areas were intact. The cemetery was a small mound, approximately one meter high and at least 8 to 10 meters in diameter. The northern edge of the feature continued beyond the limits of excavations, thus, the general shape of the mound was not determined. The mound was constructed out of large boulders and cobbles, probably carried up from the nearby *quebrada*, or stream.

Three burials were excavated in this cemetery (see Figure 4-8). Each tomb varied in size but all were rectangular in shape, with river cobbles being used to delineate the tombs. The actual burial pits, however, were oval in shape and were originally dug into the Aguacate Formation; the tombs were subsequently enclosed by stones. Though no bones were preserved, the tombs were built for extended burials and the headstone indicated the orientation. Very few grave goods were directly



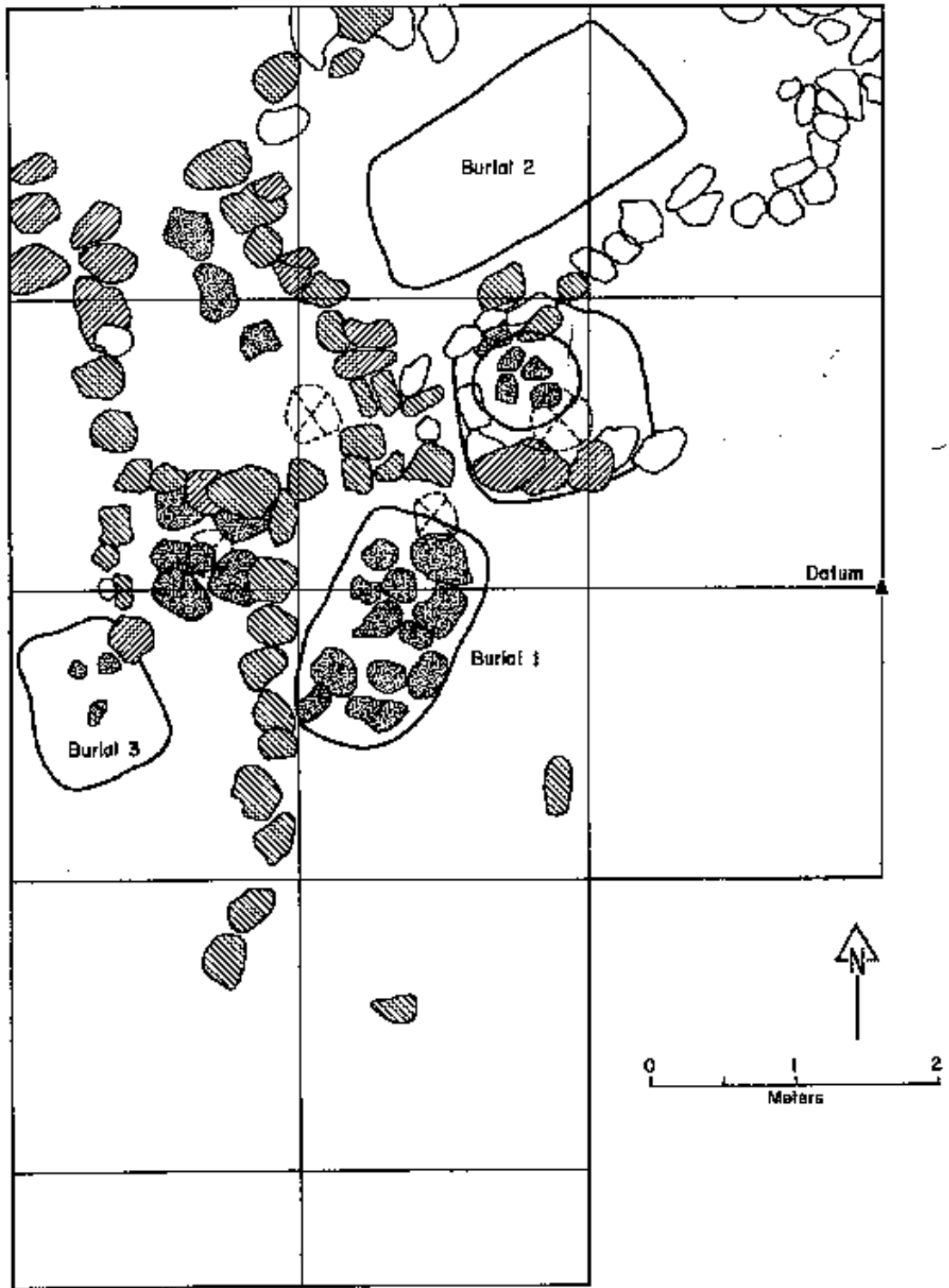


Figure 4-8. Plan of Sitio Bolívar tombs (Hoopes and Chenault 1994a:98).

associated with the burials apart from a few ceramic sherds and some lithic material. However, in the smallest burial pit, a single rounded-bit celt was recovered, and two straight-bit celts were found nearby at the base of the stone alignment delimiting this burial from another.

A dense deposit of sherds, lithic debitage, and ground stone fragments overlaid the boulders and cobbles comprising the top of the mound (see Figure 4-9). The vast majority of sherds come from whole vessels either broken at the cemetery or previously broken elsewhere. The majority of ceramics date to the Late Arenal Phase (AD 300-500) and are stylistically part of the Greater Nicoya Tradition. Ceramics recovered from this cemetery include Los Hermanos Beige, Cervantes, Charco Black-on-Red, Mojica Impressed: Corrida and Arrastrada varieties, and Guinea Incised. These ceramics help place the cemetery to the Late Arenal Phase (AD 300-500). There were approximately 49 ground and polished stone fragments also included in this deposit, including metate fragments, manos, several celt fragments, a part of a slate mirror back, and a nutting stone. Botanical remains consisted of a carbonized fragment of an unidentified fruit, and many samples of carbonized wood from unknown species. No evidence of maize was found in the cemetery but it was found in another section of the site. The presence of this deposit is similar to those at other funerary sites in the Guanacaste-Nicoya region and has been interpreted as evidence of *chichadas*, or feasting, which included smashing of vessels (Lange 1984, Snarskis 1981).

Based on the nature of the ‘compartmentalized’ tombs, and the presence of broken ceramics that appeared to have been either placed or re-deposited in and



Figure 4-9. Dense artifact scatter above the layer of large rocks and boulders in the Sitio Bolívar cemetery (Hoopes and Chenault 1994a:97).

around old tombs as new ones were added, it was interpreted that the cemetery was not built in a single episode. Instead, it was likely used by either a single family, or community, multiple times. However, the dense deposit of cultural materials on top of the mound suggest that it was used one final time, perhaps resulting in some sort of ritual or termination event.

Interestingly, other excavations on the ridge top revealed a part of the area was also used as trash dump. Whether the area was used as a midden at the same time as the cemetery was in use is not clear. However, it is within these midden deposits that carbonized maize kernels were recovered, but the presence of tree crops also indicates that wild foods were still important.

### ***Sitio Poma***

The Poma cemetery, and Arenal Phase site (AD 300-600), sits in a saddle between a hill and a mountain slope; yet, the construction of the cemetery appears to be limited to only a 25x27 meter area. Two parallel footpaths were identified coming down into the cemetery from the east. Based on ceramics, it is probable that the cemetery was used for at least four to five generations (Guerrero 2005). Below the site, down the hill to the south, flows the Rio Quebrada Grande, which was a probable source of river cobbles used in cemetery construction. Excavations revealed a low masonry wall that appeared to define the boundary of tomb placement, as outside of this wall, no tombs were encountered. There seems to be no apparent functional reason for the limited space as the saddle in which the cemetery sits is quite large (see Figure 4-10). Thus, the boundary is highly suggestive of cultural restrictions in



Figure 4-10. The Poma site looking east. Vehicles indicate location of cemetery. The photograph was taken from the top of a hill by Payson Sheets.

regards to the appropriate space in which to bury the dead (see chapter 5). Interestingly, this circumscription resulted in the placement of tombs one on top of the other, often with older tombs being dismantled to make room for later ones. Also revealed within the cemetery was evidence of feasting. The presence of an initial layer of broken ceramics covering the mound and possible food preparation materials (e.g. fire cracked rock, grinding stones and ollas) are indicative of the beginnings what is recognized as unequivocal evidence of funerary feasting in the later Silencio phase cemeteries (Sheets 1994). However, it is highly plausible to suggest that it is in the Arenal phase cemetery contexts that we see the emergence of feasting and ritual practices manifested in the material record for the first time.

In total, three operations were carried out to determine definitively the construction of the mound and determine chronology. It was also of primary importance to determine how the cemetery was associated with the nearby footpaths. The data from Sitio Poma and the associated footpaths will be used extensively in my interpretation (Chapter 5).

#### *The Excavations of Sitio Poma*

Operation 1 was set up on the center of the mound and stratigraphy included intact unit 20, unit 30, and 40/41. Beneath units 40/41, culturally placed river rocks were reached. While pottery and fire-cracked rock were encountered, no discernable pattern was found among the river rocks as the depth of the unit increased. More and more pottery was recovered, including one almost complete miniature “Atlantico”



Figure 4-11. “Atlantico” vessel recovered during excavations of the Poma site.

vessel (Figure 4-11). Juan Vicente Guerrero (2005) identified the “Atlantico” as probably having been made on the Atlantic drainage; however, no one feature could be isolated. The river rock was in Unit 55 (mixed with Unit 50) with bits of Aguacate (Unit 65) inclusions.

As the placement of Operation 1 was in the center of the mound, it is possible that the unit uncovered not only one, but multiple disturbed graves, one on top of the other, creating what looked like a jumble of rocks in a relatively small space (see Figure 4-12). The recovery of several decorative pieces of pottery indicates that this was a place where offerings were made (Sheets 1994, Bradley 1994), but subsequent tomb construction caused disturbance to previously constructed tombs.

The majority of the ceramics recovered in Operation 1 was dated to approximately AD 300-500 and identified as probably made in the Guanacaste lowlands to the west (Guerrero 2005, Hoopes 1994, Vargas et al. 1987). The only exception to the Guanacaste ceramics was the miniature “Atlantico” vessel. The ceramic representation of both sides of the divide, as well as the eastward orientation of the footpaths, indicate some sort of interaction between the people using the cemetery and the Central Highlands/Atlantic Watershed region to the east but overwhelmingly with the Guanacaste Lowlands to the west.

Operation 2 was successful in revealing an isolated circular feature that served as a tomb (see Figure 4-13). During excavation, the humus overburden was removed to reveal intact Unit 20 beneath, indicating that the area has not been disturbed by historic activity, such as extensive looting as seen at Sitio Castrillo (see following





Figure 4-12. Operation 1 at the Poma site. No pattern could be discerned from the placement of rocks in this operation. Photograph by Payson Sheets.



Figure 4-13. Circular tomb in Operation 2 at the Poma site. Photograph taken by Payson Sheets.

section). Beneath Unit 20 the dark rich soil of Unit 30 was encountered in association with large rocks. In prehistoric times, it would have been necessary to haul these rocks from the river below to this locale. Intermixed with the rocks were Units 30 and 40/41. Numerous ceramic sherds were present throughout the matrix.

A clear juncture was present between Unit 55 and the stone architecture that was covered by Units 40/41. In prehistory, Unit 55 and Aguacate (Unit 65) were excavated approximately 40 cm in depth and stones placed against the very edge of this intrusion. It was determined that this feature was constructed with approximately five levels of rock masonry and measures 1.75m in diameter. It is a completely isolated feature with *in situ* stratigraphy surrounding the northern, eastern, and southern edges. It is most probable that an interment was placed at the base of the intrusion and with rock placed over as a cap or top. Carbon samples were collected from the base of the Feature 1 intrusion, providing a date of AD 430-650 (calibrated 2 sigma).

The majority of ceramics identified were of lowland Guanacaste style, and suggest a Late Arenal Phase date of approximately A.D. 300-500 (Hoopes 1994, Guerrero 2005). A ceramic concentration was encountered beneath Units 40/41 and above Unit 55 near the southeastern edge of the feature. The ceramics consisted of the pedestal base to half an out-flaring polychrome bowl identified as Jimenez Polychrome, known to date to before A.D. 800 (Bradley 1994, Guerrero 2005). At the base of a probable mojon (elongated stone used as a headstone), located at the western edge of the tomb, another partial vessel was encountered, typed as Piches

Rojo, and in the form of a bowl with tripod feet (Guerrero 2005). The mojon may have been a grave marker, which had a function similar to modern day tombstones, further indicating that the feature served as a tomb (Sheets 1994a, Bradley 1994b).

Two other partial vessels were recovered in association with this tomb. The first is an incomplete olla, utilitarian in function and the second vessel was located inverted in the southeast corner of the unit and is quite unusual. It is a red-slipped bowl with white paint and a hollow base support in the shape of a bird head (see Figure 4-14), most likely a parrot or eagle, which are common motifs in the area (Snarskis personal communication 2003, Guerrero 2005). It may be Chavez white-on-red (Zoned Bichrome) but the type is uncertain. This vessel was the most elaborate of the collection.

After the success of Operation 2, Operation 3 was also placed at the northeastern edge of the cemetery mound. This operation exposed 4 features that were all circular in shape with several layers of rock masonry creating the outer walls (Figures 4-15a and b). Feature 1 was not excavated as it was clear that only the bottom layer of masonry was intact due to Features 3 and 4 having been constructed over it (see Figure 4-16). The upper layers of masonry missing from Feature 1 were removed in antiquity. This is what would be expected if the people using the cemetery constructed tombs one on top of the other, as evidenced in Operation 1.

Excavations of feature 2 revealed a great deal of pottery outside of the feature. However, only certain cultural deposits appeared to be in-situ. These excavations also exposed a layer of rock that seemed to demarcate a formal boundary to the cemetery (see Figures 4-17). This boundary is oriented approximately southwest to



Figure 4-14. Bird effigy support recovered from Operation 2 at the Poma site. Photograph taken by Errin Weller.



Figure 4-15a. Operation 3 at the Poma site. Feature 1(far right), Feature 2(far left), and Feature 3(middle) are visible. Feature 4 was still unexposed in the east wall at the time this photograph was taken. Photo taken facing south, by Payson Sheets.



Figure 4-15b. Feature 4 (left) and Feature 3 (right) of operation 3 at the Poma site. Photo taken facing north by Payson Sheets.



Figure 4-16. Feature 1 was dismantled in antiquity. Feature 3 is visible in upper right corner and Feature 4 is partially visible in the upper left. Photograph taken by Payson Sheets.



Figure 4-17. Masonry wall demarcating the limits of the Poma cemetery. Photograph taken by Payson Sheets.



northeast following the edge of the mound. The re-use of stones from pre-existing tombs may have been the result of spatial restrictions (see chapter 5).

Feature 2 appeared to be intact on the western portion of the circle. However, on the eastern half, the upper layers of masonry were not in place. The center rocks of the feature were removed in hopes of exposing a change in soil, or a point of intrusion, but only re-deposited unit 55 was encountered.

The ceramics recovered from Feature 2 date to the Late Arenal phase and are stylistically Guanacaste-Nicoya (Guerrero 2005). However, only two deposits were thought to have been exposed *in-situ*. The pots were only partially reconstructable. In addition, inside Feature 2, in the re-deposited unit 55, a portion of a grinding stone was recovered, which is included in the total of 4 lithics recovered from Feature 2 (Sheets 2005).

Feature 3 was located in the south central portion of Operation 3. An extension to the unit was placed over Feature 3 to further expose the southern half. This extension revealed Feature 4, which was not excavated. Feature 4 was intact and very similar to Feature 1 in Operation 2 and was therefore left unexcavated. The construction of Feature 3 appeared to be intact with four layers of masonry (see Figure 4-18). The outer circle was composed of large river rocks in clear alignment, while the rocks in the center of the feature were smaller with no clear pattern of placement. The center rocks were removed and the center was excavated down to Aguacate (130 cm below the bottom layer of masonry). There was no evidence of an intrusion within the feature. The layer of re-deposited Unit 55 in this feature was also

Figure 4-18



Figure 4-18a. Outside of Feature 3 in Operation 3 of the Poma site Feature 1 (visible in lower right). This feature was constructed with four layers of masonry. Photograph taken by Payson Sheets.



Figure 4-18b. Masonry layers visible on the inside of Feature 3 of Operation 3 at the Poma site. Photograph taken by Payson Sheets.

very thick, further corroborating the theory that the redeposition was natural in the area. The ceramics recovered in Feature 3 were not significantly different than those recovered from other features and operations with respect to typology. Only one lithic flake was recovered.

Sitio Poma is very similar to other cemeteries dating to this time period (Hoopes and Chenault 1994a, Guerrero et al. 1988, Lange 1984, Snarskis 1981). One difference noted from Sitio Bolívar is that Poma is located so far away from a village that we are not sure which village was actually supplying the bodies. However, this is not unusual in the region as a whole. It does appear that the footpaths coming into the site are contemporaneous (White 2005), leading us to assume that had the footpaths been completely preserved, we would have found the village or villages that had been using this cemetery. Sitio Bolívar and Sitio Poma are the two cemeteries from which the majority of my data come from for burial practices in the Arenal area. Further elaboration and interpretation of these practices can be found in chapter 5.

### ***Sitio Castrillo***

The Castrillo cemetery, measuring 19x32 meters, was highly disturbed by looting activities but excavations were still able to extract valuable data from this context (Weller 2005a). The site was found on survey in 2002, and was chosen for excavations due to its proximity to a Silencio Phase footpath. Three excavation units revealed that materials used for tomb construction were composed of both river rocks and *laja* slabs (Weller 2005a). In the Arenal phase, only river rocks are encountered for use in tomb construction, while in Silencio Phase cemeteries, *laja* is the preferred

material (Butler 2005a, Sheets 1994b). Thus, the occurrence of both types of material, as well as ceramics dating to both the Late Arenal and Silencio Phases, provide evidence for this cemetery as being used during this transition (Weller 2005a, see chapter 5). While we were not able to detect a masonry wall or any other explicit boundary marker, the cemetery is significantly mounded (see Figure 4-19), approximately 3 meters in height, with no tombs occurring outside of the mound (Weller 2005a). The mounding indicates similar constraints as observed at Sitio Poma, Sitio Bolívar and many other cemeteries, in the creation of space (see Chapter 5).

Although the site had been subjected to intense looting activities, it was initially believed that *in situ* cultural material could be recovered. However, after excavating several operations, the only *in situ* feature revealed was the bottom layer of *laja* stones used as the base of a tomb. Nonetheless, it does appear that river cobbles were initially used in the original construction, with *laja* eventually replacing the cobbles in later tomb constructions, indicative of continuing construction from the Arenal Phase to the Silencio Phase (Weller 2005a).

Ceramics recovered from the site include the types of Carillo, Mojica Impressed, Congo Punctated, and Dos Hermanos Beige which provide evidence that the cemetery was in use from the Late Arenal through the early Silencio phases, approximately AD300-AD 800 (Guerrero 2005, Weller 2005). An unusual find at this cemetery consisted of a small, incised *laja* (see Figure 4-20). The only other incised *laja* found in the region is at the Neblina site, which is discussed below (Sheets 2005). The occurrence of incised *laja* in cemeteries is reasonably indicative



Figure 4-19. The Castrillo cemetery mound. Photograph taken by Payson Sheets.



Figure 4-20. Incised *laja* recovered from the Castrillo site. Photograph taken by Payson Sheets.



Figure 4-21. Miniature axe recovered from the Castrillo site. Photograph taken by Payson Sheets.

of the ritual importance of this stone in cemetery contexts, as opposed to habitation sites where *laja* is not usually encountered (Sheets 2005). Other evidence of the occurrence of ritual activities include the presence of a miniature axe that could never have been used on wood (Figure 4-21), numerous broken sherds and fire cracked rock and grinding stones typically used in food preparation for funerary feasting (Weller 2005a). While the site is not intact, it is useful when considering this transition from the Arenal Phase to the Silencio Phase. The following summary of Silencio Cemetery provides much greater detail in regards to the construction of Silencio Phase cemeteries as well as the practices engaged in at this time.

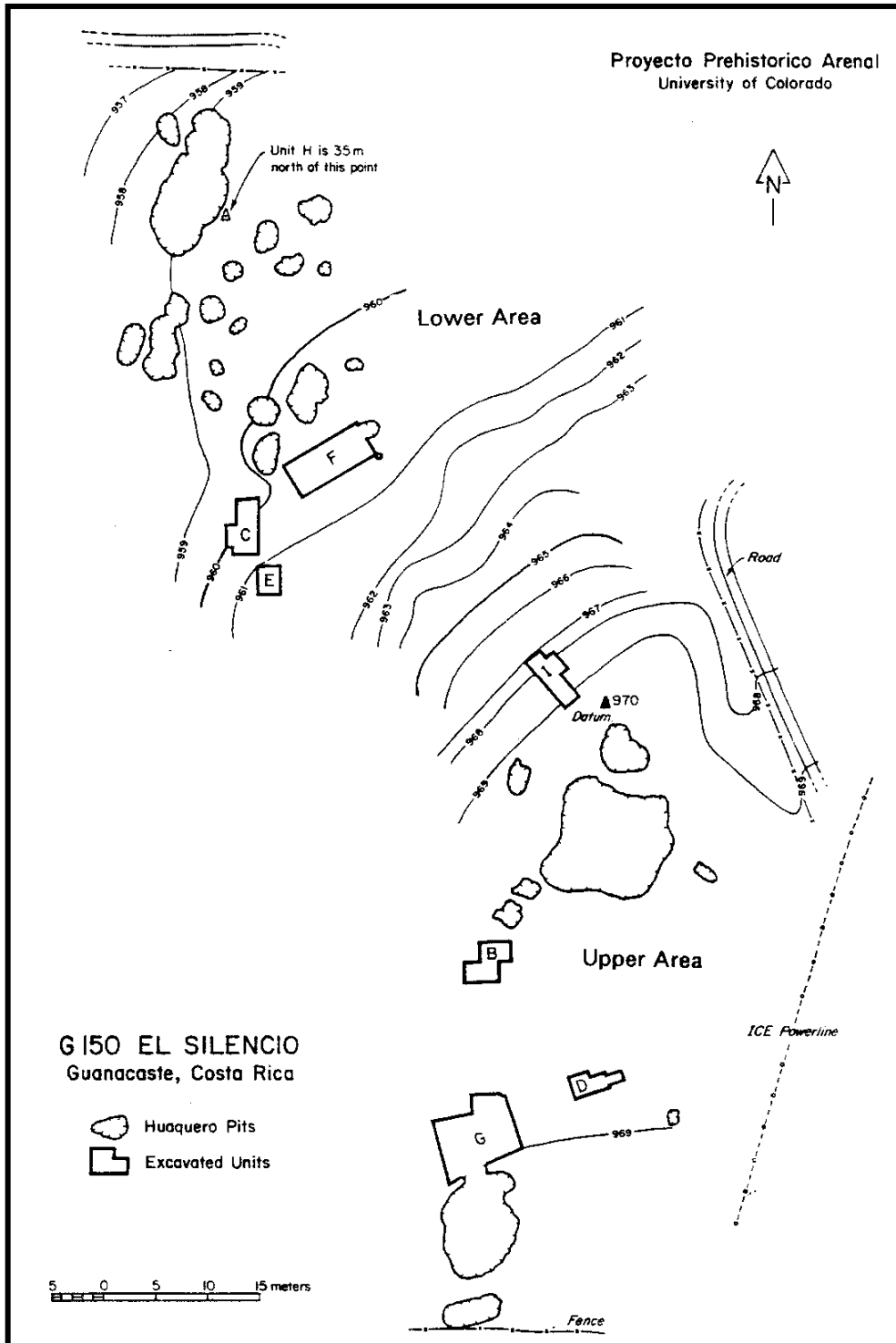
### ***Silencio Cemetery***

Information for this section is taken from Bradley (1994b) unless otherwise cited. The Silencio Cemetery is a moderately sized Early and Middle Polychrome site located on the Continental Divide between Tilarán and Lake Arenal. Excavations in 1984 revealed 12 burials dating to two distinct periods as well as prehistoric landscaping involving the movement of large rocks and earth. Additionally, artifacts recovered indicate the occurrence of intensive feasting activity.

Excavations revealed that the cemetery was divided up into two parts, an upper and lower part (Figure 4-22). Burials from the upper part were emplaced prior to the deposition of Units 40/41 which dates to AD 700 (Bradley 1994b, Sheets 1994a). Based on ceramics, the activity in this portion of the cemetery is dated to the Late Arenal and Early Silencio Phases. Six burials were observed and each consists of stone cist tombs constructed out of *laja*. Burial pits were dug into Unit 50 and



Figure 4-22. The Silencio Cemetery (Bradley 1994b:107).



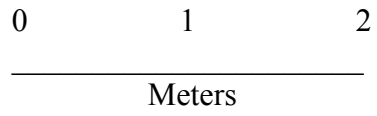
continued through unit 60, with the bottom of the burial being in Unit 65 (Aguacate). Tombs consisted of vertical pieces of *laja* forming the sides and large pieces of *laja* lying flat to form the top of the tomb (Figure 4-23). Most burials also had an elongated piece of *laja* (mojon) placed at the head of the tomb. However, a few of the tombs has carved metates forming either part of the wall or as the headstone. Most of these burials contained some well-preserved bone materials, which were later used for stable isotope analysis. These burials varied in terms of graves goods; in one, a gold avian pendant was recovered, four others contained metates and polychrome pots, and the last contained nothing at all.

Also revealed in the upper area of the cemetery was a large dry-laid *laja* wall that was over one meter in height and three meters wide. The lower portion of the wall was a retaining wall used to level off the western edge of the cemetery. Several flat lying *laja* were also placed at the juncture between the upper area and the lower area and most likely served as steps, connecting the two areas. The lack of intact Units 40 and 41 suggest that the steps were an addition to the cemetery subsequent to the emplacement of burials in the upper area, however, Bradley suggests that the presence of intact Units 40 and 41 in adjacent areas indicates construction of the steps prior to that eruption (Bradley 1994a:113).

The lower area burials probably postdate the fall of Units 40 and 41 but this was only definitely determined for two of the burials. Six burials were excavated in this area, four of which were partial stone cist tombs with vertical pieces of *laja* forming the sides and horizontal pieces capping the tomb (Figure 4-24). Two of these four burials had small tripod metates placed horizontally over the head. The grave

Figure 4-23. Stone cist tomb from the Silencio Cemetery (Bradley 1994a:111)





G I50C Plan

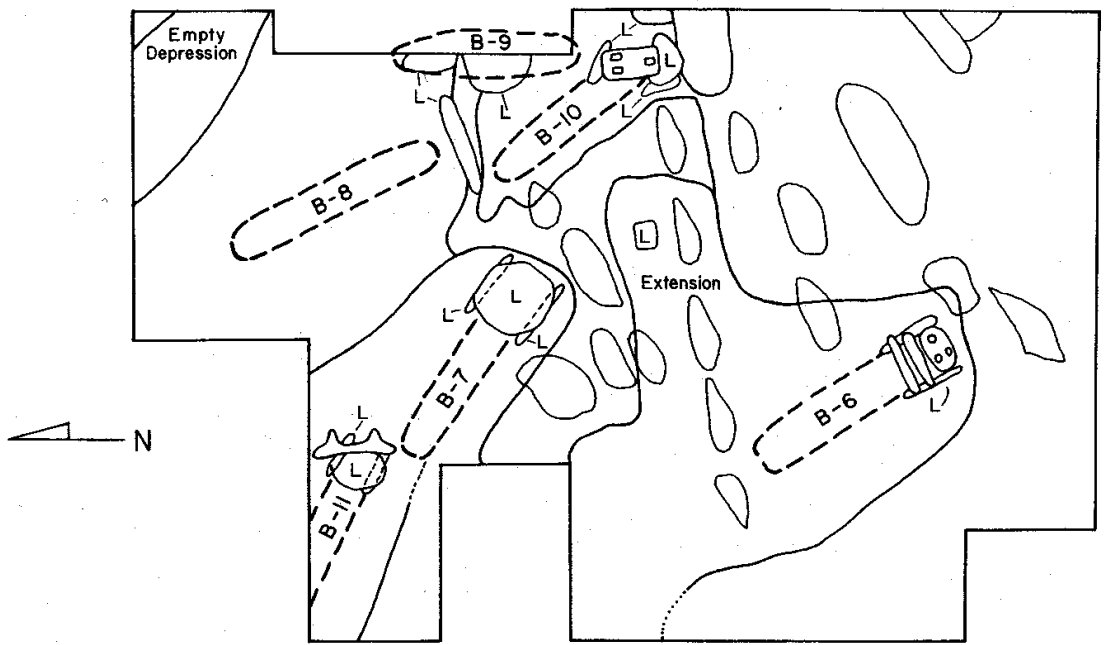


Figure 4-24. Lower area burials from the Silencio Cemetery (Bradley 1994b:113).

goods in these four burials were also variable with one containing only sherds; two containing greenstone beads, sherds, and lithic flakes; and another containing sherds, lithic flakes, and a large tripod metate. Two other burials were excavated in the Lower area, dating to the late Silencio Phase. These two burials were definitely emplaced subsequent to the deposition of Units 40 and 41. Both of these burials appeared to have been expedient as they were shallow with only one vertical *laja* placed as a headstone in one, and two flat-lying *laja* were placed over the upper body of the other. Neither of these burials contained any grave goods. There may be a number of interpretations of these lower area burials; they may have been of people of lower social status; from a smaller family; gender or age differences; or simply that the upper area was used up (Bradley 1994a, Sheets, Personal Communication 2005).

Evidence for other activities performed at the cemetery include large quantities of chipped- and ground stone artifacts, cooking stones, and dense deposits of smashed utilitarian and decorative ceramics (Bradley 1994a, Sheets 1994c). These indicated that cooking, tool manufacture, and woodworking activities took place at the cemetery (Bradley 1994a). It is possible that people were spending a great deal of time in the cemetery, and perhaps participating in lengthy *chichadas* (Bozzoli de Willie 1975).

The Silencio Cemetery shows many characteristics of cemeteries found in the Atlantic Watershed/Central Highlands area, but also contains a mixture of pottery from both the east and the west regions. Silencio is the primary site from which funerary data come from for my interpretation (see chapter 5).

### ***Other Cemeteries Located On Surveys***

*Survey in 1984.* A number of cemeteries were recorded during this survey. Several dated to the Arenal Phase based on river cobble construction and ceramics visible on the surface. Site G-182 heavily looted but was apparently entirely constructed out of river cobbles with no *laja* used (Mueller 1994). A large Mojica Incised vessel (Zoned Bichrome) was found that may have been a burial urn containing an infant (Mueller 1994). Three sites (G-197, G-198, and G-199) were probably all part of the same cemetery (Mueller 1994), located on what is now an island just off the south shore of Laguna Arenal. Prehistorically, the site would have been on the slopes of a single tall hill (Mueller 1994). Evidence of domestic activity in the form of cooking stones, fire-cracked rock, and metate fragments was recorded. Additionally, the presence of cores, hammerstones, and flakes indicates on-site tool manufacture.

Two cemeteries dating to both the Late Arenal and Silencio Phases were recorded. Site G-184 is located on the slightly elevated floodplain of Rio Piedra. This site has two circular burial mounds; one is approximately 50 meters in diameter and the other is approximately 25 meters in diameter (Mueller 1994). Tombs are constructed primarily of river cobbles, but some *laja* slabs were noted. This site appears to have been partially artificially constructed as five courses of stone facing cover the southern part, which is built up about one meter above the floodplain (Mueller 1994). Based on ceramics, it appears that this site was used primarily during the Late Arenal Phase and use declined during the Silencio Phase (Mueller 1994). G-181 is a small cemetery on a low rise about 70 meters in diameter (Mueller 1994).

Most tombs were constructed out of river rock but a number of *laja* slabs and elongated mojons were also observed (Mueller 1994); this cemetery is similar to Castrillo. Unique ground and one incised stone were recovered from this site, despite the extensive vandalism (Mueller 1994). This site was most intensively used during the Silencio Phase based on the artifacts present, and is connected by a footpath to a contemporaneous habitation site, discussed below (Mueller 1994, McKee et al. 1994). This footpath traverses steep topography between the Silencio Cemetery and the village site, rather than taking the easier route along the river.

*Survey in 2002.* Ten cemeteries were recorded in the 2002 survey, of which Sitio Poma and Sitio Castrillo were two and are described above. The rest of the cemeteries appear to be Arenal phase due to the use of river cobbles in tomb construction (White 2005). Eight of the ten cemeteries are moderately looted, and the other two are reportedly intact. The inaccessibility of these cemeteries, and the careful protection of caretakers and landowners, most likely explain why they have not been looted (White 2005).

The data from the cemeteries summarized in this section help to elucidate mortuary practices during the Arenal and Silencio Phases. We are fortunate to have data from both of these phases as well as from what appears to be a transitional phase. However, mortuary practices alone are not sufficient to interpret a broad range of social practices, thus, summaries of habitation sites recorded and/or excavated by project members in the 1980s are necessary.

## HABITATION SITES

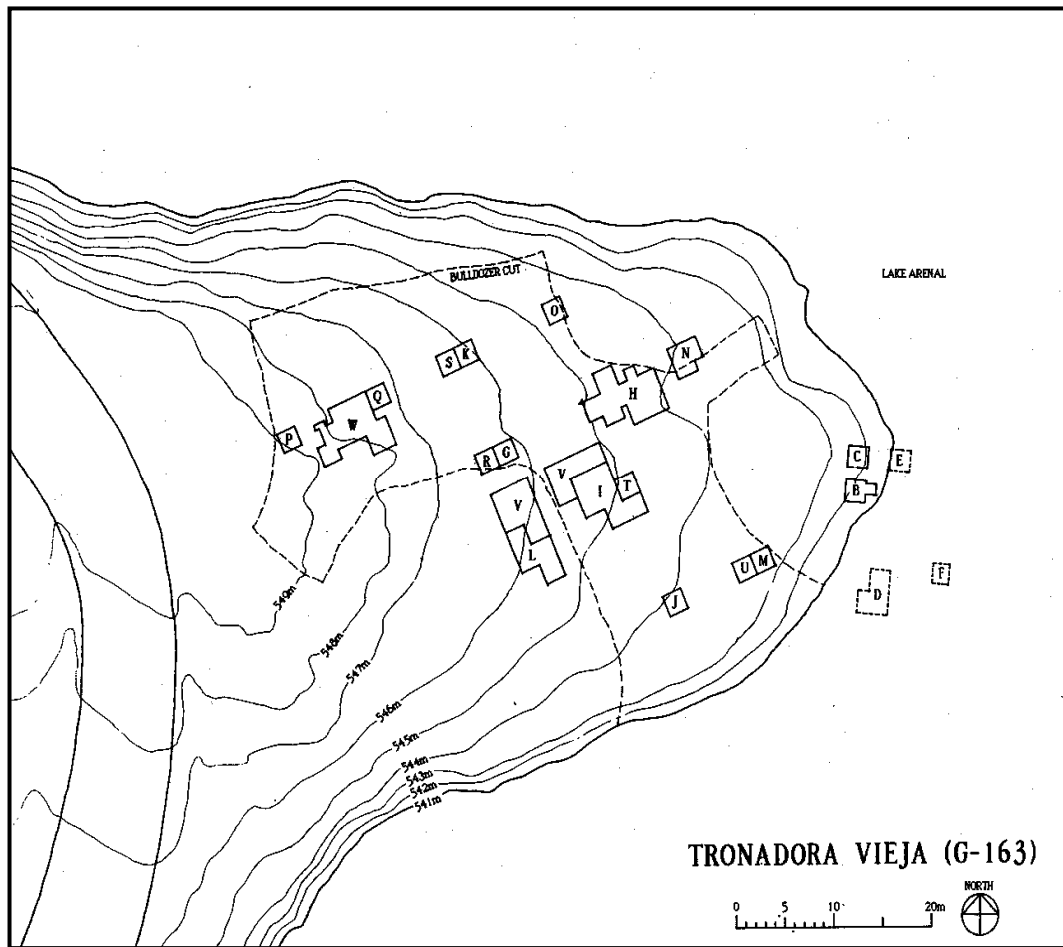
Habitation sites in the Arenal region have been documented for all phases. This has helped the Project to better understand settlement patterns in the region as well as social organization and complexity. Unfortunately, many sites are now under water due to the construction of the Sangregado dam, which enlarged the surface of Lake Arenal to 80 km<sup>2</sup> (Sheets 1994a). Surveys conducted prior to the building of the dam documented a number of sites along the original lake shore (Aguilar 1984), and the survey in 1984 was able to document a number of other sites in the regions, of which two were excavated (Mueller 1994). The summaries provided here detail the data recovered from sites dating to the Tronadora, Arenal and Silencio Phases.

### *Tronadora Vieja*

Tronadora Vieja (Figure 4-25) is the oldest known village site in all of Costa Rica and information for this site is taken from Bradley (1994a) unless otherwise cited. The site is located on the present shoreline of Lake Arenal, about 8 km northeast of the Continental Divide. Tronadora Vieja has evidence of occupation beginning in the Fortuna Phase (?-3000 BC) through the Early Arenal Phase (500 BC- AD 1). Fortuna Phase deposits include two hearths and two lithic workshops (Bradley 1994a, Sheets 1994c). Tronadora Phase features clearly pre-date the deposition of Unit 61 which fell at about 1800 BC. Both phases are found in the Aguacate Formation. Excavations exposed several structure floors with postholes indicating wattle and daub construction, and numerous other features and artifacts.



Figure 4-25. Site plan of Tronadora Vieja (Bradley 1994a:75).



The floor of Structure 1 corresponds to the top of soil Unit 64, which was subsequently covered by the tephra of Unit 61. The structure is round and approximately 5.25 meters in diameter. Seven postholes were uncovered, which were partially filled with Unit 61 tephra indicating abandonment prior to that eruption. Three additional postholes were found inside of the structure, presumably for additional structure supports, room dividers, or supports for platforms for cooking, sleeping, or storage. Also associated with the structure were many cooking stones, and fire-cracked rocks, chalcedony core and flake, a mano, and several ceramic sherds.

Structure 2 was located approximately 22 meters east of Structure 1. The living floor is also on top of Unit 64, with several postholes having been observed, but with a less clear pattern than those in Structure 1. A curvilinear clay feature that traverses a four meter length outside of the structure was also recorded (see Figure 4-26), and based on ethnographic findings (Dillon 1984), has been suggested to be a drainage berm. No artifacts were found associated with the floor. The observance of many other postholes at the site suggest several structures, however, the patterns were not very clear.

Structure 3 is a post-Unit 61 Tronadora phase structure. A 3.5 meter line of postholes associated with this structure has been inferred as representing a wall, but was not fully excavated. Three distinct living surfaces were observed in this excavation with postholes being the most definable in the lowest. Two features were indicate some sort of ancillary structure. Several features have been associated with

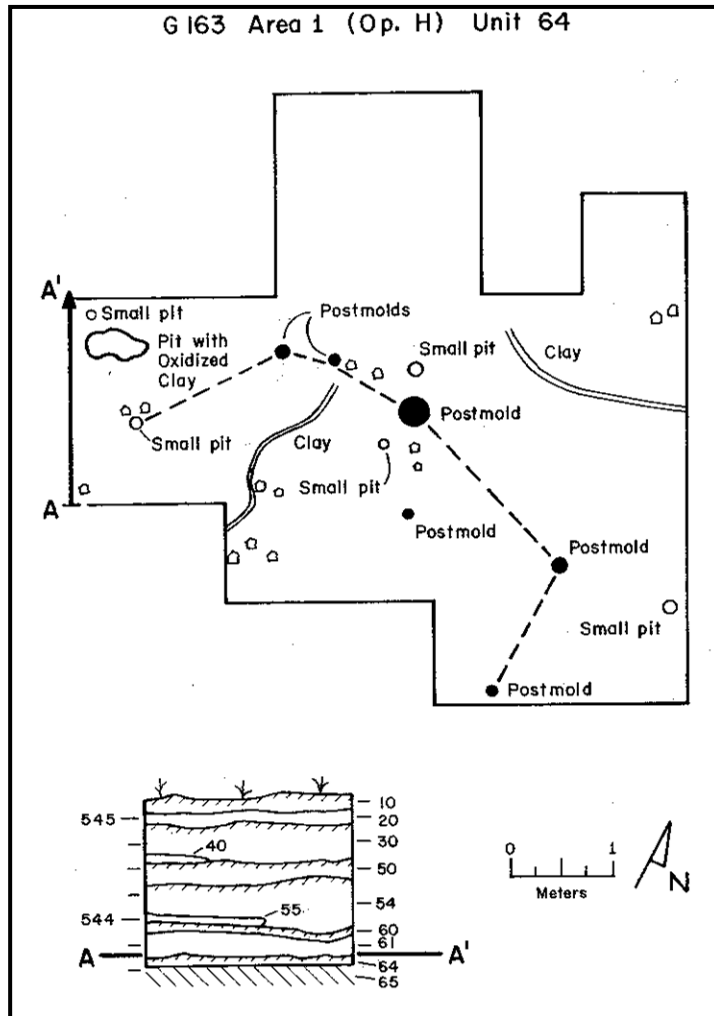


Figure 4-26. Curvilinear clay feature and stratigraphy of Structure 1 at Tronadora Vieja (Bradley 1994b:78).

associated with this structure; Feature 1 was a 1x1 meter pit containing charcoal and ceramics; Feature 2 was a scatter of fire-cracked rocks and cooking stones. A carbonized maize kernel was found in feature 2. Many artifacts were found on the lowest living floor including ceramic sherds, metate fragments, and lithic flakes.

Structure 4 is also a post-Unit 61 structure and is defined by six postholes, but the overall floorplan is undefined. Postholes to the northeast of the structure indicate that this structure may have been associated with two concentrations of cooking stones, fire-cracked rock, a hearth, and a stone alignment that may have been a wall.

Structure 5 is an Early Arenal Phase structure in which the living surface corresponds to Unit 54. A prepared clay floor and five postholes were uncovered. The posthole pattern suggests that the structure is roughly rectangular with rounded corners. Four pits were found to be associated with this structure, but the living floor was almost completely devoid of artifacts. There was partial evidence of a second Early Arenal Phase structure, but was not fully excavated. A pit feature was observed that contained Mojica Incised pottery and carbonized *Zea Mays* (Piperno 1994) cob fragments just beneath the surface of Unit 65. It is believed that this pit feature is a burial due to the presence of a white paste-like substance which was similar to the highly decomposed bone observed at the Silencio Cemetery.

It has been interpreted that the Tronadora and Arenal Phase occupants of the site used a single, relatively small structure constructed from a framework of postholes with a likely thatched roof. Hearths were outside of the house, and burials appear to also be outside of structures. Based on the lack of domesticated food findings (other than the carbonized kernel), it is suggested that people practiced

broad-based subsistence with only minimal horticulture (Clary 1994, Sheets 1994b). In terms of social organization, there has been no evidence to suggest anything beyond egalitarian communities (Sheets 1994b).

### *Sitio Bolívar*

The location of Sitio Bolívar has been previously discussed in the cemetery component of this chapter (see above), and all information is taken from Hoopes and Chenault (1994a). The domestic portion of the site is partially covered by the current surface of the lake (Figure 4-27). However, this surface fluctuates during dry and wet seasons, and has partially eroded the site. Two structures and several firepits were recorded and excavated.

The remains of one small structure are indicated by a circular pattern of six postholes. This structure has been partially eroded by lake shore wave action (Figure 4-28). The structure is approximately three meters in diameter, but nothing remains of the living surface, with the exception of a small, elevated patch of hard earth at the western end. A second structure, larger than the one described above, is marked by eight postholes and is approximately 5.5 meters in diameter. As with the other structure, the living surface has not preserved and no artifacts were recovered with the structure.

Several pits were recorded and excavated, with most containing fire-cracked rock, cooking stones, charcoal, groundstone fragments, lithics and ceramics. Two of

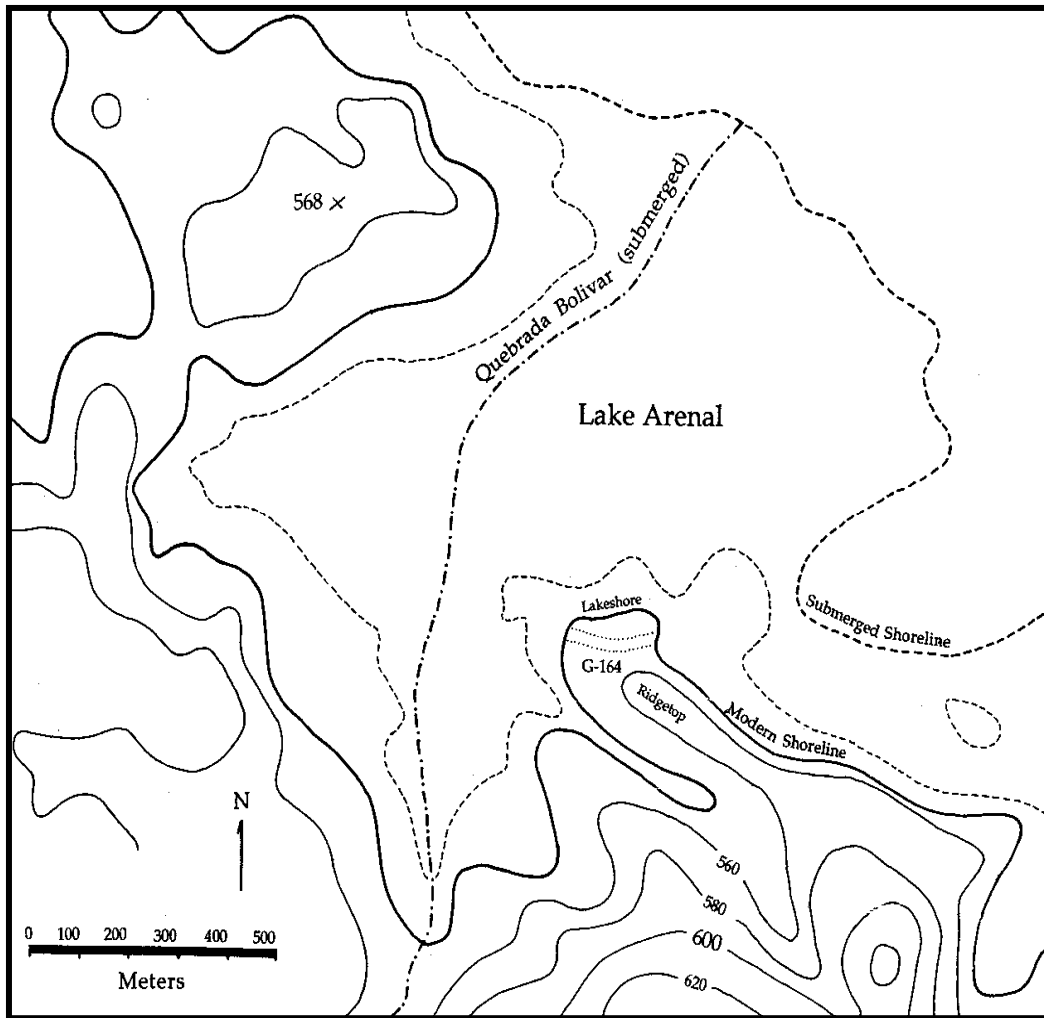


Figure 4-27. Sitio Bolívar (G-164) was partially covered by the expanded Lake Arenal after the building of the Sangregado dam (Hoopes and Chenault 1994a:88).

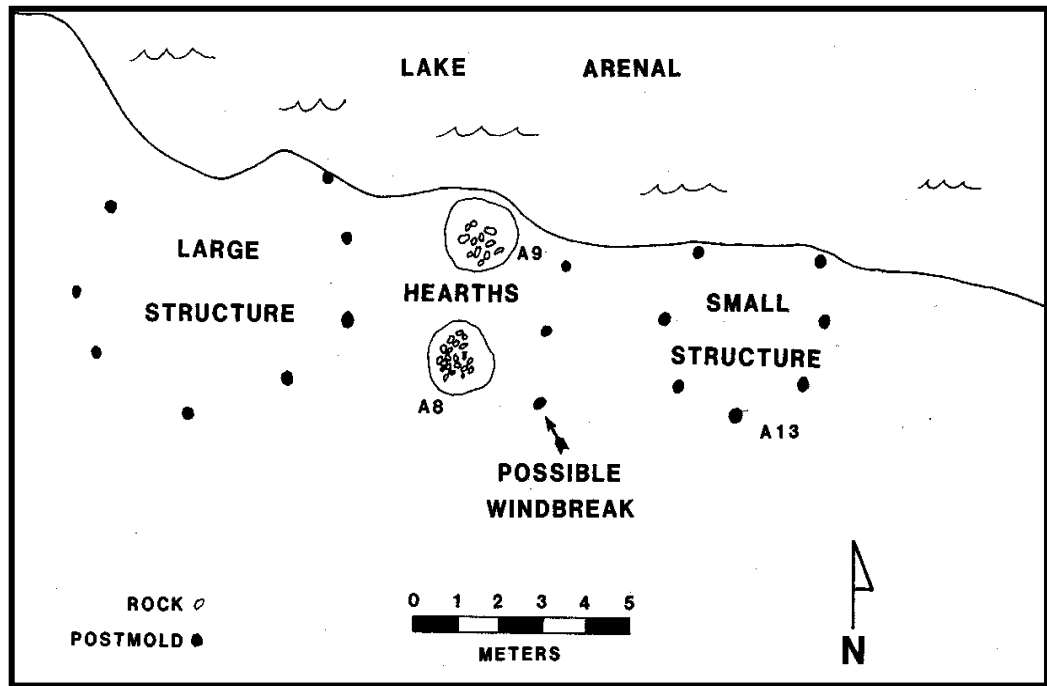


Figure 4-28. Sitio Bolívar structures and hearths. The site has been partially eroded on the northern side by the wave action of Lake Arenal (Hoopes and Chenault 1994a:91).

the hearths are located between the two structures. The differences in the amount of fire-cracked rock between hearths suggest that one was cleaned after use. Numerous ceramic sherds indicate that the site was occupied during the Arenal Phase (Hoopes 1994, Hoopes and Chenault 1994a). As discussed above, it appears that part of the ridge top was used as a midden for the domestic activities.

Interpretations of this site are limited due to the erosion caused by the lake, but Hoopes and Chenault (1994a) have suggested that the larger structure was most likely a family dwelling and the smaller one may have served as some sort of special-function structure such a sweat bath or storage space.

No other round structures have been recorded dating to this phase in Northwestern Costa Rica. Thus, it appears that the circular house form is a continuing tradition established in the Tronadora Phase. These structures are distinctly different from contemporaneous structures reported for the Atlantic Watershed region and will be discussed in a subsequent section.

### **SPECIAL USE SITES: THE SANTA ROSA RIVER VALLEY SITES**

The Santa Rosa River Valley sites are located west of Silencio Cemetery on the western side of the Continental Divide (Hoopes and Chenault 1994b). The river originates just southwest of the Divide and drains westward toward the Pacific Drainage (Hoopes and Chenault 1994b).

The Neblina site is located approximately 5km south of Lake Arenal and sits on a ridge top that faces the Silencio Cemetery ridge top (Hoopes and Chenault 1994b). Horizontal excavations exposed a large concentration of *laja* piled together,



making a roughly rectangular shape measuring approximately 5.4 meters east-west and 1.8 meters north-south (Hoopes and Chenault 1994b). Based on stratigraphy, the site dates to the Silencio Phase. Looting of the site exposed a large, elongated *laja* with incised line over part of the surface (Hoopes and Chenault 1994b, Sheets 1994c). This site was determined to be a *laja* cache and is situated on one of the westward oriented footpaths leading out of the Silencio Cemetery (Hoopes and Chenault 1994b). It has been suggested that the prehistoric uses of the cemetery and footpath were storing *laja* here for tomb construction (Sheets, personal communication 2002). The nearest *laja* source is Cerro Tovar, located 10 km to the west (Barquero 2005).

Las Piedras is another cache of *laja* and is situated approximately 500 meters southeast of Neblina, and 250 meters northwest of Silencio Cemetery, just downslope from the ridge top, on the same footpath as Neblina (Hoopes and Chenault 1994b). The stratigraphy indicates that both *laja* repositories and footpath use were contemporary. One chipped stone celt, one scraper, two hammerstones, two flakes, and one percussion blade were recovered (Hoopes and Chenault 1994b, Sheets 1994c). This site has been interpreted as a work area for the activities taking place at Silencio Cemetery. The presence of some cooking stones and fire-cracked rock suggest that some cooking may have taken place here (Hoopes and Chenault 1994b).

El Jefe Suerte is also located on the footpath, and excavations here uncovered ceramics dating to both the Arenal and Silencio Phases (Hoopes and Chenault 1994b). Abundant evidence for cooking at this site is seen in the form of cooking stones and fire-cracked rock in association with charred sherds (Hoopes and Chenault

1994b). No other features were associated with the site, but it is located adjacent to the stream which was a good water source.

### **SITES DOCUMENTED ON SURVEY IN 1984**

Several habitation sites were documented on the survey conducted in 1984, with only one having been thoroughly documented (see Mueller 1994:71-72). Site G-180, overlooks the Rio Piedra River floodplain, which flows into the western end of Lake Arenal (Mueller 1994). This site is rather large, with a large flat area on top of a hill just east of the Rio Piedra appears to have been the focus of activities based on the density of artifacts on the surface (Mueller 1994). Ceramics date to both the Arenal and Silencio Phases. It has been suggested that the presence of Belén Incised ceramics may indicate a ritual function for the site, however, this is only tentative (Hoopes 1994). G-180 is connected to the G-184 cemetery by a prehistoric footpath (McKee et al. 1994, Mueller 1994). Trench 37 (see Figure 4-29) profiles the footpaths prehistoric nature.

### **POPULATION AND DEMOGRAPHY**

Based on the number of sites documented and ceramic counts, it has been suggested that populations were relatively low during the Tronadora Phase, increased to their greatest numbers during the Arenal Phase and subsequently declined in the Silencio Phase, and declined even further during the final prehistoric Tilarán Phase (Hoopes 1994, Sheets 1994b). The only area in the region that did not seem to

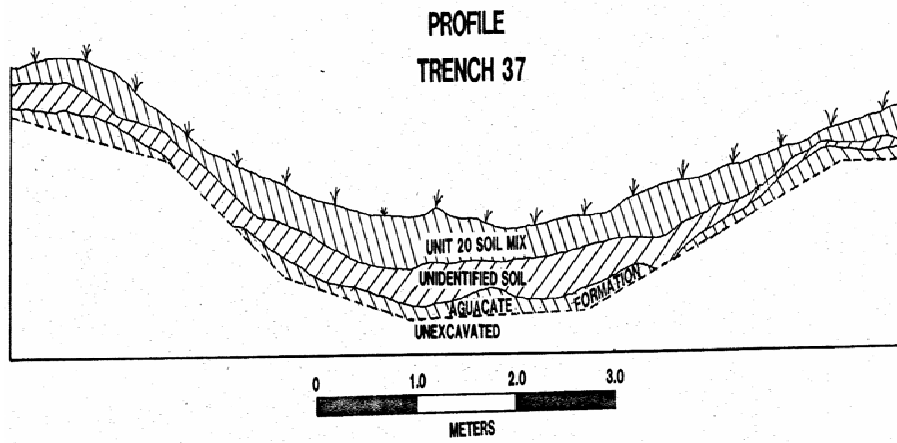
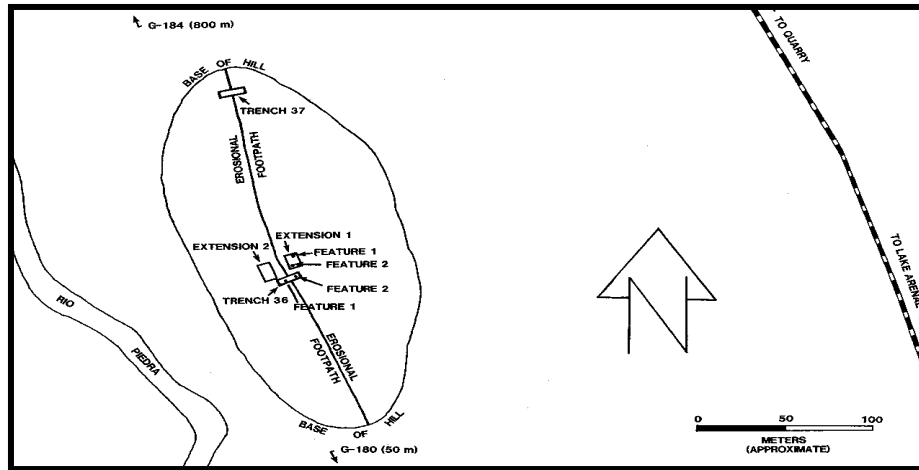


Figure 4-29. Site G-180 with footpath traversing through the site. Below is Trench 37 showing the footpath in profile (McKee et al. 1994:144).

decline during the Silencio Phase was the Piedra River Valley. This may have been due to a number of reasons, but as of yet, the only hypothesis posited relates to the fact that this area, being west of the Arenal Volcano and thus less effected by ash fall, may have been an location in which people could seek refuge during times of need (see chapter 3). Relative to Mesoamerica and South America, populations in general were very low, but within the region, the change in population densities is somewhat dramatic. The increase during the Arenal Phase has not been explained, as the typical explanations do not apply here (e.g. intensification of agriculture, intensification of trade). However, population in the region has shifted back and forth over time as to what other regions in Costa Rica seem to have been influencing the people living there.

### **SUMMARY**

Not much is known about the Late Archaic/Early Formative period in Costa Rica in general. However, Hoopes (1994:207) suggests that the appearance of a sophisticated ceramic complex is either the result of an expansion of pottery-using populations into a region of previously preceramic societies or existing preceramic population's adoption of a developed ceramic technology. According to Hoopes, the Tronadora Complex is clearly related to both Chapparón and La Montaña (Atlantic Watershed/Central Highlands complexes), but the data are inadequate for determining which of the three is the oldest (Hoopes 1994:207). Hoopes also suggests the inland valleys of northwestern Costa Rica had a jump on sedentism and ceramic technology over the coastal areas (Hoopes 1994:207).

During the Arenal Phase there is more evidence for a stronger relationship between the Arenal region and Greater Nicoya, and even suggests that with the appearance of Arenal Phase type ceramics, the Arenal region should be considered the easternmost extent of Greater Nicoya (Hoopes 1994, but see Sheets 1994b). Late Arenal Phase ceramics continued to be types common to Guanacaste, but it is during this part of the phase that we get the appearance of types and modes common to the Atlantic Watershed (Hoopes 1994). House structures retain the circular plans seen in the Tronadora Phase, but this is in contrast to the rectangular houses during the contemporaneous El Bosque Phase structures of the Atlantic Watershed (Hoopes 1994, Hoopes and Chenault 1994a, Snarskis 1984). During the Arenal Phase, people started constructing cemeteries much further from the villages typically on high ridges or hill tops, something very common in Guanacaste at this time (Hoopes and Chenault 1994a, Lange and Scheidenehelm 1972). A Guanacaste link is further evidenced by the choice of construction of cemetery mounds using river cobbles (Hoopes and Chenault 1994, Norr 1982-1983, Ryder 1982, 1983). The large quantities and dense deposits of ceramics that have been inferred as ritual deposits and even evidence of feasting, however, appear more frequently in sites found in the Atlantic Watershed/Central Highlands (Hoopes and Chenault 1994a, Lange 1984, Snarskis 1981, 1984). This poses an interesting question especially because the ceramics that were used in these feasts were stylistically Guanacaste.

During the Silencio Phase, the tradition of separating villages and cemeteries continues as well as placing cemeteries at higher elevations, and this is something seen all over Costa Rica (Bradley 1994b, Lange 1982-1983, Snarskis 1981, 1984). The

greatest similarities, however, seem to be with the Atlantic Watershed/Central Highlands regions. The similarities include large cemeteries located on hilltops, stone cist graves, and the use of stone in landscaping (Bradley 1994b). Feasting has also been noted at a number of sites in Atlantic Watershed region (Snarskis 1984). However, no other archaeologists have noted footpaths connecting villages and cemeteries.

The connections between the Arenal area sites and other regions will be elaborated on in more detail in chapter 5. Nonetheless, there is not a great deal of information concerning all the various aspects of life, especially domestic life, for each of the phases. Thus, the focus of the next chapter will be on the cemeteries and footpaths, with archaeological and ethnographic data used to further the interpretation of domestic activities where necessary. There is abundant information from funerary contexts as cemeteries were, and are, the most common and visible sites available to archaeologists.

## **CHAPTER 5**

### **ANCIENT COSTA RICAN LANDSCAPE, MEMORY, SPACE AND PLACE**

The materialization of social memory and ancient conceptions of landscape can be inferred through archaeological remains available to us today. Ancient Costa Ricans left traces of these meaningfully constituted features in the form of villages, cemeteries, and the footpaths that connected them. This chapter proposes an interpretation of the archaeology of the Arenal region of Northwestern Costa Rica during the Arenal (500 BC-AD 500) and Silencio (AD 500-1300) Phases and suggests some implications for the patterns seen later in the archaeological record, specifically, the origins of monumentality. Through relative and absolute dating of these features, it has been concluded that the footpaths, cemeteries and villages were used and occupied for hundreds of years (Bradley 1994, Butler 2005a, 2005b, Guerrero 2005, Hoopes and Chenault 1994a, 1994b, Sheets 2005, Weller 2005a, 2005b White 2005), indicating that the practices that constructed these features were in part a result of the continued construction of social memory. We also see aspects of change as represented by the different burial practices and constructions of tombs from the Tronadora Phase (2000 BC-500 BC) to the Arenal Phase to the Silencio Phase. We can also document structural continuities through change: for example, the cemeteries continued to be loci of feasting and ritual.

The footpaths as well are evidence of continuity. Though two spatially and temporally distinct sets of footpaths were present in the Arenal region, their similar mode of use, formation, and preservation suggests continuities in meaning. The Arenal and Silencio Phase cemeteries are characterized by differing social practices primarily evidenced by which type of tomb construction materials (river rocks or *laja*) were used

and changes in pottery used in feasting and as burial offerings. We have a number of sites in which a transition between these archaeological materials has been documented (e.g. the Castrillo cemetery), and by extension, the funerary practices that resulted in their presence in the archaeological record. I argue that these processions through the footpaths and funerary feasting were integrative rituals and ceremonies participated in by multiple communities that enabled the production of a corporate identity. Further, because we can document that these rituals occurred over and over again for long periods of time, I suggest references to past events, in the form of remembrance, would have been necessary in order to perform the appropriate rituals and ceremonies. Referencing the past constructed and reinforced a social memory of the appropriate funerary ceremonies as well as of the ancestors and their relation to living people. I speculate that these affiliative practices also may have served to facilitate a wider social network involving intermarriage, kinship, and trade. Perhaps these social networks also developed to facilitate community responses to volcanic hazards and disasters. It is conceivable that any or all of these relationships were either factors in the initiation of multi-community funerary ceremonies or were fortuitous outcomes. Only more research that specifically investigates such relationships will clarify this. However, because Sheets (1994a, 1994b, 1992, 1999) has addressed the issue of why such community interaction took place, at least in the cemeteries, and makes a plausible argument for environmental stressors, I accentuate volcanic eruptions as one possibility, though intermarriage, kinship and trade are also considered.

Cemeteries have been overemphasized, as long as archaeology has been practiced in Costa Rica, because they are the only permanent, large-scale community-oriented



features and thus are easier to find, and often have elegant artifacts. However, one of the important goals of the Proyecto Prehistórico Arenal was to expand the range of excavated contexts by also excavating several habitation sites, two of which have been documented in association with footpaths leading to cemeteries.

The Arenal region was periodically subjected to explosive volcanic eruptions, perhaps necessitating the creation and maintenance of social networks through which some communities may have sought help and refuge from those not as affected by the eruptions (Sheets 1999). Rituals conducted while moving through the footpaths and in the cemeteries themselves may have been one way in which ancient Costa Ricans were able to sustain these relationships: processions in footpaths and mortuary rituals were practices by which a larger, multi-community identity was constructed and reproduced. As documented ethnographically, indigenous groups in Costa Rica construct and maintain sections of cemeteries for individual clans to bury the bones of their dead (Bozzoli de Willie 1975, Stone 1962). These cemeteries are also used for many generations. While today indigenous clan groups are not as far apart geographically as they were in the past, and face different crises (e.g. economic and political marginalization), ethnographic cases can still provide insight into the ancient motivations for those same features observable in the archaeological record (Dillon 1984).

All practices are ultimately social and a fine-grained analysis can illuminate aspects of ancient life as it was experienced at the micro-scale. The ancient people inhabiting the Arenal region did things that are not always easily explained by environmental factors. Thus, I believe an interpretation that seeks to get closer to prehistoric ideational landscapes can help us to understand the influence of social

memory and broaden our knowledge of life in the past. The following discussion provides an alternative explanation for cemeteries and footpaths than has been provided previously (e.g. Bradley 1994b, Sheets 1994a, 1994b, 1999).

### **FOOTPATHS AND CEMETERIES AS MEANINGFULLY CONSTITUTED**

We first see the formation and use of footpaths and spatially distinct cemeteries in the Arenal Phase (500 BC-AD 600). Two cemetery sites have been documented as associated with these footpaths; the Poma site and site G-180 (Butler 2005a, Mueller 1994, Weller 2005a, 2005b White 2005). Silencio Phase footpaths, on the other hand, were connected to a number of sites including Silencio Cemetery, two *laja* repositories (Neblina and Las Piedras), and the site of El Jefe Suerte that contains evidence for some domestic activity (Hoopes and Chenault 1994b, McKee et al. 1994). A number of other cemeteries, including Castrillo, are located very near footpath segments, but direct association could not be definitively determined (White 2005).

Neither set of footpaths can be wholly explained as utilitarian. While they were certainly used in a functional sense (e.g. to collect water from the Silencio Spring, or collecting *laja* from the Cerro Tovar source many kilometers away, traveling from place to place), they did so in a fashion that would have required a great deal of energy from those who used them, thus alternate meanings and significance must have been attached to the footpaths. The many kilometers of topography traversed was hilly and steep, and at the time of use, would have been covered in rainforest; and these paths are generally very straight. The paths are straight in two senses; in plan view they form almost a straight line from point to point, and they also lead straight up and down hills rather than

contouring. The paths do not follow the most efficient course through the landscape; therefore, these footpaths had other, culturally meaningful purposes than merely efficient travel.

That the paths lead to cemeteries located far from villages is not inconsequential. Maria Eugenia Bozzoli de Willie (1975:95), while discussing the belief systems surrounding death of the Bribri Indians of Costa Rica, reports that after someone has died, a funeral procession takes place in which the Bribri travel along a path to a cemetery several kilometers away, and “one or two women walked with a ball of yarn tying up threads over streams, other paths, and ditches, so that the trail was well delimited and bridges were provided for the soul, who was supposed to be coming behind the corpse.” The Bribri believe that if the path for the dead is not well marked, the soul will wander off and not be able to find its way to the cemetery or back to their home in the village (Bozzoli de Willie 1975). This cultural belief produces a possible explanation for the nature of the prehistoric footpaths. If the footpaths had been constructed to follow the path of least resistance, they would have taken many curves and turns in order to avoid steep hills. But if the Arenal and Silencio Phase people believed that the only way the soul could find its way was via a straight path, the most energetically efficient route would not be an option. It is also stated in Bozzoli de Willie’s (1975:126) ethnography that one part of the soul initially stays behind in the village and the other part goes to the cemetery with the procession. The part that stays in the village stays forever, but the part that goes to the cemetery must, “go straight up to the sky first, then it goes where the sun rises, there it has another trail different from that of the sun” (Bozzoli de Willie 1975:126). The up-down imagery may be viewed as travel up and over the topography.

Bozzoli de Willie (1975:145) states that there are two dimensions or directions in the Bribri world: below and above, downward and upward; the two cosmic planes are connected by a road. Perhaps the processional to the cemetery is mimicking the path the soul will take on its journey between the worlds.

The need to have a straight path on which the soul can travel may also explain why several footpath areas have multiple path segments, located adjacent to one another (see Figure 5-1). Footpath use accelerated erosion, and the clayey Aguacate Formation was eventually exposed, making movement difficult within the paths especially during the rainy season as the clay gets very slippery when wet. However, if the paths must be straight and continuous for the soul, then the obvious answer would be to begin another footpath right next to the exhausted one. This is in fact something we see in the archaeological record (McKee et al. 1994, White 2005). Every effort was made to continue using the same set of footpaths by using a parallel adjacent path when particular segments became unusable.

It is clear that the footpaths, both prehistorically and ethnographically, played a significant role in the lives of those who used them. As has been suggested by Tim Ingold for a different case, these paths imposed habitual patterns on the movement of people (Ingold 2000:204, citing Jackson 1989:149). The footpaths were initially created by these movements and once visible, acted to structure and restructure those very practices. As the prehistoric footpaths became entrenched, they limited the possibilities of how one moved through and experienced them. No matter how wide the incision came to be, the paths always remained narrow during use, suggesting that single file



Figure 5-1. Multiple footpaths constructed parallel to each other, heading west from Silencio Cemetery. Photograph by Payson Sheets.

processions were the cultural standard. Additionally, as the paths became deeper, they would have restricted the view people had of the countryside. These footpaths created a network, connecting villages and cemeteries, and this network exists in a physical reality, fixing on the land the funerary activities of Arenal communities. In essence, it is the taskscape made visible (Ingold 2000:204). Paths guide people to a world of ancestors and intercommunity relations.

The landscape on which the footpaths were inscribed was invested and reinvested with meaning through time. Based on volcanic stratigraphy, the footpaths were most certainly used beginning sometime after 500 BC and continued into the AD 1000s. There may be other paths in the region that have yet to be found that could extend this time period. Much of the imagery cited by Bozzoli de Willie (1975) and Stone (1962) depicts a world animated by souls and otherworlds and is a testament to the meaningful constitution of landscape. In a sense, people were taken out of the everyday when processing through the entrenched footpaths, and entered a more sacred landscape beneath the surface. For example, using the Bribri as an analogy, in order for the souls of the dead to pass on to the world of SuLa (the keeper of souls), they must first travel all over the Bribri landscape, visiting every place the body went while it was alive (Bozzoli de Willie 1975, Stone 1962); and the souls will have many things to contend with along the way, including getting lost, finding food and water, and most of all, finding the cemetery in which the body was placed. Thus a well-marked and very straight path was necessary to keep the souls from losing their way.

There can be no paths without places and no places without paths (Ingold 2000:205). The cemeteries, villages and resource loci excavated by the Proyecto

Prehistórico Arenal are all places to which footpaths led. Just as the footpaths cannot be explained as purely functional, neither can the cemeteries be explained as simply places to bury the dead. These cemeteries are obviously ritually charged and pregnant with meaning. The Bolívar, Poma, Castrillo and Silencio cemeteries contain evidence from which social practices relating to death and burials can be inferred.

In each of these cemeteries, and many others in Costa Rica, evidence of feasting has been documented (Blanco et al. 1986, Bradley 1994b, Butler 2005a, Finch 1982-1983, Guerrero et al. 1988, Guerrero et al. 1992, Guerrero et al. 1994, Gutierrez 1982-1983, Hoopes and Chenault 1994a, Lange 1984, Lange and Stone 1984, Norr 1982-1983, Ryder 1982-1983, Snarskis 1981, 1984). Feasting has been inferred from the dense deposits of broken and charred ceramics in and around tombs and evidence of food processing such as manos, metates, cooking stones, and fire cracked rock. Furthermore, funerary feasting rituals have been noted for a number of ethnographic groups (Dietler and Hayden 2001, Dillon 1984, Huntington and Metcalf 1979) including those in Costa Rica (Bozzoli de Willie 1975, Stone 1962).

Among the Bribri, feasting is one of the most important rituals that take place during a funeral (Bozzoli de Willie 1975, Stone 1962). The Bribri believe that the soul needs to bring a package full of food and drink with it to the SuLa's place (Bozzoli de Willie 1975:128). If the package is not good, the soul will not get close to SuLa, who has the best hammocks and comfortable places to sit (Bozzoli de Willie 1975:128). There are two events that take place when a person dies; the first occurs immediately at death, when the body is removed from the house, wrapped in leaves and taken to the forest. The

second event occurs about a year later, when the bones of the person are taken to the cemetery. It is at the cemetery where the major feasting takes place.

Dietler and Hayden (2001: 4) suggest that feasts, as ritual practices, are ideal stages for important social transactions. Dietler (2001:66) suggests that all feasts are political (but not only political) and serve to create and maintain social relations at various scales, in effect, creating *communitas*. Feasts could be events through which the exchange of valuables were made, marriage partners chosen, or social alliances were created; or even a more overt political arena in which authority and power were attained and contested (Dietler and Hayden 2001). Further, Dietler (2001:70) claims that anthropology needs to move beyond the idea of feasts for maintaining social solidarity, and look at feasts as being historically instrumental ritual practices that create, define and transform identity and structures of power. He suggests that the most compelling and effective political symbols are those that are not overtly political, but rather, have an ambiguous multivocality (Dietler 2001:71). Food and drink are something people experienced daily, and in the context of ritual, especially emotionally charged rituals such as those undertaken at Arenal cemeteries; increased significance of food and drink tends to be more ambiguous and multivocal, than if other, less accessible items were objects of ritual such as jade or gold.

Feasting in the Arenal region was an integrative ritual that helped maintain community relations, relations that were important for small communities that needed each other for social transactions including intermarriage, trade and help during times of need. Bozzoli de Willie (1975:142) argues that Bribri feasts are reciprocal, and the deceased and relatives provided the food. She suggests that foods and drink are



manipulated as symbols of exchange, and must be abundant in order to provide the appropriate death package. The traditional “buriers” (those who are allowed to actually touch the bones) must eat the meat provided or the soul won’t find a straight path (Bozzoli de Willie 1975:143). Perhaps if, as Sheets (1994b, 1999) suggests, feasting and funerary rituals at cemeteries in the Arenal region were conducted in order to maintain relationships with other communities, then the notion of food as symbols of exchange (e.g reciprocal feasting) could have facilitated these kinds of relationships. Stinginess is the only sin recognized by the Bribri and if a person, or a community, is very stingy, they will not find peace in the world of SuLa (Bozzoli de Willie 1975, Stone 1962). If we assume a similar stigma against stinginess in the past, help and refuge would most certainly have been provided in times of need, but those seeking the help may have reciprocated in other ways, perhaps during funerary feasts. This interpretation recognizes the reciprocity as a social and political transaction, but it is likely that feasts also had importance in regards to maintaining other facets of intercommunity relations such as kinship and intermarriage. The feasting rituals can also be considered significant because they inscribed the cemeteries with meaning.

When the time came for a funeral, ancient Costa Ricans must have thought of the place (e.g. the Bolivar, Poma, Castrillo, and Silencio cemeteries) in which the ceremonies would occur, which could have lead to thoughts of other times and other people, all of which would have been experienced slightly differently. Processions and funerary ceremonies referenced the past through an awareness of ancestors, but variation in burial practices would have made each event slightly different than the one before. Each new experience acts to shape and reshape how one senses a place, resulting in the place being

dynamic despite its physical anchoring. This is most obvious in the tomb construction and deconstruction observed at the Poma cemetery as well as in transitional cemeteries such as Castrillo in which construction materials and pottery change over time. If a death required that an old tomb be deconstructed in order to make room for a new one, the practice of this would have been quite different than if only a new tomb needed to be built. And if new construction materials were being introduced, as was the case at Castrillo, the practice of figuring out the right amount of *laja* to use, where to place it, and estimating the spatial constraints involved with a new tomb form would have resulted in a different experience than if river cobbles continued to be used. These experiences added to the biographies of those to whom the experience belonged. Each time a community participated in funerary rituals it could have had a different feel for different people depending on tomb construction, whom the funeral was for, who was conducting the ceremonies, the songs that were sung, even what kind of food and drink would have been provided. Each event would not have been exactly the same as that before it, despite attempts to replicate the appropriate ceremony.

However, there is little doubt that funerary ceremonies would have been prescriptive. It has been documented in many cultures that there is an appropriate way to bury the dead, and this must be followed if one is to achieve the culturally desired afterlife (Dulanto 2002, Gillespie 2002, Silverman 2002). This is certainly true for the Bribri of Costa Rica (Bozzoli de Willie 1975, Stone 1962). But what, then, is actually being called upon in order to perform the appropriate ceremonies? I argue that it is social memory.

The bodily movements required of performative ceremonies in effect embody the master narrative of these ceremonies. The master narrative is not simply a story, but rather, it is a collective, historical autobiography (Connerton 1989: 70) and part of the corporate identity. Social memory is part of this master narrative and each citation, or act of remembrance, of the past, serves to re-inscribe the history as well as the perpetuation of the funerary ceremonies. We see in Costa Rican archaeology and ethnography that there *was* a right way to bury the dead and it didn't change dramatically for many generations as indicated by the stratigraphy and pottery. This involved the culturally appointed place and the culturally acceptable rituals (i.e. processions, feasting and vessel smashing). That the place was important is clear because the cemeteries and footpaths were physically bounded. The space of the cemetery was constructed through rock landscaping and deep entrenchment, respectively, and did not openly allow much room for variability in how one moved through and in these places and spaces. Clearly, ceremonies are not re-invented every time, but each performance is a fresh incarnation of those traditions and by consciously repeating the past, the past is given presentness, thus reconfirming the master narrative of that particular culture (Connerton 1989:63) and the history of intercommunity relations. Through the literal performances of funerary rituals and ceremonies, memory and history were reconstituted, their continuity was ensured; and the social relations that these practices embodied were reproduced.

We do see, however, that some things changed over time, particularly in regards to tomb construction and placement of footpaths. In small scale, egalitarian communities, change may have been induced in the pursuit of continuity. Thus, it is useful to think about variation in cemetery construction as deviations from the “master

narrative” in order to preserve the practices and places. Remembering is a constructive process, and each time this process occurs, there is the possibility for variation in memory due to differing associations and dispositions of those to whom the memory belongs. Over generations, this variation resulted in changing practices, seen archaeologically in the Arenal region through the process of formation of two sets of footpaths, alterations in tomb construction and changes in pottery.

I suggest that the meanings of those practices remained the same even when changes in construction materials and new footpaths can be documented. Perhaps such changes were the result of unintended consequences, leading to the replacement of *laja* over river cobbles as the preferred construction material. Further, it is likely that the formation of footpaths via entrenchment was entirely inadvertent. The PPA has tried very hard to find evidence of intentional construction of the paths, but with no results. Rosemary Joyce (2004) has suggested that many of the major constructions we tend to view as the beginnings of monumentality were actually not intended for the reasons archaeologists have traditionally assigned to them (i.e. visibility, permanence, power). Rather, monumentality itself was an unintended consequence of practices meant to create structures (or infrastructure) for more community-oriented events (R. Joyce 2004). Thus, changes in the archaeological record could simply be the result of unintended consequences in efforts to maintain continuity.

Such unintentionality is most evident in construction of Costa Rican cemeteries and footpath formation during the Arenal and Silencio Phases. Cemeteries were in effect, the result of a person or a group of people, deciding that a particular place was an appropriate location in which to bury the dead. They then proceeded to spatially bound it

by constructing walls like those seen at the Poma and Silencio cemeteries. Over generations as more tombs were constructed, the cemeteries were built up eventually creating large mounds. As stated before, cemeteries in Northwestern Costa Rica were the only community architecture, but the mounds we see today are a result of long-term accretion. Thus, it is likely that the cemetery mounds seen in the Arenal region and elsewhere in Costa Rica became the cultural standard over time, as mounds came to dominate cemetery form.

For example, in the Poma cemetery, there is evidence of tomb deconstruction (see chapter 4) that suggests that the cemetery was filling up and space needed to be made for subsequent tombs. The cemetery was used for several hundred years, as evidenced by the ceramic sequences. The people occupying the area continued to construct tombs in the cemetery, leading to the build up of the cemetery until it elevated the surface into a mound. If the Poma cemetery was the culturally appropriate place to bury the dead, as the evidence suggests, then the mounding and the maintenance of its culturally imposed boundaries while still making space for new tombs implies that what was important was not so much the preservation of older tombs, but the place itself. Thus, a great deal of energy was put into maintaining a space that was culturally created and bounded, and changing the internal structure of that space (deconstructing and constructing tombs) would have been a necessary practice in order to preserve the external structure of the cemetery. Using the same place generation after generation speaks to the significance of ancestor worship, but is also likely that the place was a location that held other cultural meanings connected to the landscape for reasons that are difficult to know but may

perhaps have been related to other features of the natural landscape that were considered sacred like water, vistas, or hilltops.

Another example of the desire to maintain continuity bringing about different practices can be found at the Castrillo cemetery. The Castrillo cemetery was also used during the Late Arenal Phase, but use continued for several hundred years into the Early Silencio Phase (Guerrero 2005, Sheets 1994b, Weller 2005a). Construction materials here consisted of both river rocks and *laja*, which became the dominant construction material in the Middle and Late Silencio Phases (Bradley 1994b, Sheets 1994b). Ceramics types were predominantly Late Zoned Bichrome and Early Polychrome, two ceramic sequences characteristic of the Greater Nicoya subregion. *Laja* was used to construct stone cist tombs in which primary, extended burials were laid out (Bradley 1994b, Lange 1984, Sheets 1994b, Snarskis 1981, 1984). Again, as with the Poma cemetery, the spatial boundaries of Castrillo were clearly marked by the upward growth of the mound itself. Though the cemetery was badly looted and we cannot be sure if the river cobble constructions were of corridor or circular tombs, we do know that they eventually shifted to stone cist tombs, which have many similarities with tombs in the Atlantic Watershed/Central Highlands at around the same time approximately AD 500-800 (Bradley 1994b, Snarskis 1984, Weller 2005a). Stone cist tombs have also been noted at other Guanacaste cemeteries (Ryder 1982-1983). It is possible that given the similarities in tomb and cemetery construction, that the communities in the Arenal region were a part of an even larger corporate identity shared with all of Northern Costa Rica.

In the Silencio Cemetery, all tomb constructions are of the stone cist type, with *laja* as the only construction material along with “mojones” or elongated headstones

quarried from the same Tovar source as the *laja*, and the ceramic style is predominantly Guanacaste (Bradley 1994b). What is interesting here is that the cemetery was constructed in two areas, the upper and the lower, during the early and late Silencio Phases, respectively. The upper portion was landscaped with *laja* and a *laja* retaining wall marks its boundaries (Bradley 1994b). It is possible that as the upper area began to fill up, the lower area was constructed. Regardless, the cemetery as a whole is still restricted to a limited space and remained the appropriate place to bury the dead. This implication is further substantiated by the two somewhat expedient burials in the lower area. Even though they did not receive the same treatment as other burials, they were still placed within the boundaries of the cemetery.

The shift in construction materials from river cobbles to *laja* likely occurred over many years as is suggested from evidence at the Castrillo cemetery, implying that social traditions were not easily given up. Bradley (1994b) suggests that there may have been an increase in inequality during the Silencio Phase, and perhaps as certain people gained more status in these communities, new social practices were introduced, or vice versa. Availability of resources also does not adequately explain the shift from river cobble construction to the use of *laja*, as *laja* was actually more difficult to acquire, given that only one source was mined (Barquero 2005). Perhaps *laja* was a form of “wealth” invested in special burials in the cemetery. Because the cemetery was ultimately a symbol of the corporate identity, the use of wealth items such as *laja* could have been an attempt to demonstrate individual or political authority. Cemeteries would have been the perfect place for this given that feasting was carried out, and according to Dietler (2001), feasts are excellent stages for exhibiting social and political competence. However,

Bradley's claim is based solely on mortuary data and has not been substantiated elsewhere in the archaeological record of the Arenal region.

Sitio Bolívar, an Arenal Phase cemetery, was also constructed out of river rocks (Hoopes and Chenault 1994a), but the tomb construction implies extended primary burials. River cobble construction of what has been called "corridor" tombs is most closely related to Atlantic traditions (Hoopes and Chenault 1994a, Snarskis 1981, 1984). The variation in tomb construction between Sitio Bolívar and the Poma site has previously been attributed to influences from the east and the west, respectively (Butler 2005a, Hoopes and Chenault 1994a). Bolívar is located closer to Arenal Volcano than is Poma, which is further to the west. The people using the Bolívar cemetery may have had more contact with people to the east, resulting in a greater influence on their practices. However, the circular form of domestic structures of Sitio Bolívar differs from Atlantic traditions in which rectangular house structures are more common (Hoopes and Chenault 1994a, Snarskis 1981, 1984). Thus, if only funerary rituals were being performed together, the similar tomb form but different house structures would be understandable. Most of the ceramics have distinct Greater Nicoya style seen in both domestic and funerary contexts (Hoopes 1994, Sheets 1994b). However, it seems likely that groups from different ceramic producing regions were probably not engaging in feasting at this cemetery. Rather, funerary feasting may have been bringing local people together to bury the dead, but also for facilitating intermarriage and kinship networks.

However, in several other cemeteries in Guanacaste, ceramic vessels from the Atlantic Watershed and Central Highlands were recovered, mostly as grave goods (Baudez 1967, Ryder 1982-1983, Snarskis and Blanco 1978). Thus, in order to further



examine the nature of interregional and even intercommunity interaction, more analysis would be needed in regards to the differential treatment of ceramics. In the Poma cemetery, only one Atlantic style vessel (see Figure 4-11) was recovered, and it was most likely an offering, as it was almost whole, but all other ceramics, including the smashed ones, were Zoned Bichrome from the Guanacaste Lowlands to the west (Guerrero 2005), suggesting that very little interaction with communities from the Atlantic Watershed region took place. This vessel may have been significant for understanding intercommunity interaction, but this is difficult to judge as the context is not perfectly clear given the jumbled nature of archaeological materials revealed in this excavation operation.

I believe that closer attention should be paid as to why certain social practices appear to persist over many generations, in this case, the funerary rituals and the significance of the place. For example, in examining the possibility that relationships were established to maintain social and economic flexibility in the face of environmental disaster and hazards, we have to consider that an average of 400 years passed without a single volcanic eruption occurring. However, Arenal always loomed in the distance, reminding people of its potential threat. A social memory of times past would no doubt be extant, thus, certain rituals were likely regarded as vital to sustaining their way of life. The Arenal region has been interpreted previously as being relatively stable in terms of population and subsistence (Sheets 1992). The ancient inhabitants of the region were periodically subjected to major volcanic eruptions that would have had the potential to severely and permanently disrupt life, but this is not what is seen in the archaeological

record. Rather, persistence and continuity is overwhelmingly documented (Sheets and McKee 1994).

Of course, the cemeteries and footpaths were created by people living in villages. These villages did not have big populations, perhaps only 20 to 50 people living in a single village, and exogamy would have been necessary. This would have created kinship networks and other intercommunity ties. The Proyecto Prehistórico Arenal has excavated three villages: Tronadora Vieja (Bradley 1994a), Sitio Bolivar (Hoopes and Chenault 1994a), and site G-180 (McKee et al 1994, Mueller 1994). As stated previously, Tronadora Vieja was established prior to the first Arenal eruption. In this village, secondary burials are located near or under house floors. There is no evidence of feasting; rather, the only evidence suggesting some sort of ritual took place was the presence of ceramic offerings in the graves. Perhaps these intercommunity relationships were already in place at this time, but after the first volcanic eruption, they were modified and/or intensified through intercommunity ritual practices including processions along paths as well as feasting and other mortuary ceremonies in cemeteries located between villages. We first see funerary feasting in the Arenal Phase. Sitio Bolivar and G-180 are both Arenal Phase habitation sites whose cemeteries can be located. The Bolivar cemetery sits atop a hill 100 meters from the associated habitation site and site G-180 is clearly associated with an Arenal Phase footpath that connects it to an Arenal Phase cemetery (Mueller 1994). The path goes straight up and straight down a very steep hill rather than contouring around, even though contouring would have made the trip from the village to the cemetery much easier and faster (Payson Sheets, personal communication 2005).

Sheets has suggested that the intensity of the first Arenal eruption may have been enough to alter previous religious or spiritual practices, leading to different ideas on how the dead should be treated as well as the need for or intensification of relationships with other communities (Payson Sheets, personal communication 2005). Perhaps the ancient Costa Ricans associated that disaster with angering their ancestors and decided that the ancestors were too powerful to keep so close to the village. Similar ideas have been documented in ethnographic populations (e.g. Dillon 1984), and though it is just speculation in this archaeological case, an example from the San Blas Cuna of Panama may prove useful.

Dillon (1984) conducted an ethnoarchaeological study of Cuna living and burial practices. The Cuna construct their cemeteries far from their villages, on high ridgetops (Dillon 1984). When Dillon asked the Cuna about the reasons why cemeteries were so far away, “it was stated that the dead ‘were more content to be away from town’ and they were not bothered with noise, smoke, children, barking dogs and so forth” (Dillon 1984:60). Conversely, the living were also happier with the dead farther away (Dillon 1984). Nonetheless, the Cuna consider the cemeteries to be an important part of the landscape and this motivates their constant care and attention to the cemeteries and individual graves (Dillon 1984).

The villages excavated by the project do not appear to differ much in regards to house form or layout. Rather, what is different from the Tronadora to the Arenal Phase, are the burial practices. Not only are cemeteries farther from villages, but of the many funerary feasts conducted at these places, some may likely have engaged people from multiple communities.

A collective memory of volcanic eruptions and their short-term effects on certain groups could have added another dimension to intercommunity relationships. Even so, it could still be a memory of these disasters that resulted in the persistence of such relationships given that Arenal always loomed in the distance (Sheets 1994a). These performances (or processions through the footpaths and funerary feasting) carried out in a meaningfully constituted landscape essentially embodied the memories of why the traditions were begun in the first place, and continued regardless of whether or not there was imminent danger, or even if the memories of those disasters were too distant to recall regularly.

Persistence and continuity through change have also been observed for the Bribri and the following can serve as justification for using the Bribri as an ethnographic analogy. In regards to practices surrounding death, many traditions have a long history despite Spanish colonization and attempts at converting them to Catholicism (see Bozzoli de Willie 1975, Stone 1962). Stone (1962:30) notes that many of the burial rituals undertaken follow traditional beliefs rooted in oral history, which is a form of social memory, but today are blessed by a Roman Catholic priest. Even the younger generation of Bribri still respect these rituals, because, in the words of one, “this is the custom, as is a law, and one has to do it whether one likes it or not” (Stone 1962:30).

The cemeteries and footpaths created networks in the landscape. These networks were maintained through prescribed, habituated practices embedded in social memory that tied communities together. These features, through their inscription into a meaningfully constituted landscape, participated in the process of memory construction and structuration. Memory structures social practices, which act to structure social life in

general. The persistence of funerary feasting and the construction of cemeteries can be inferred as practices that were carried out in a very prescribed manner, despite changes in construction materials.

These practices can even be more generally discussed in terms of how one enters and leaves any places of significance. The presence of footpaths leading to cemeteries and villages in the Arenal region has been documented and discussed in terms of human engagement with the landscape. Cemeteries are special, meaningful places and how one enters and leaves them is culturally defined based on certain beliefs about how the dead should be treated. I have argued that inferences as to why this was so important can be supported through ethnographic analogies of mortuary rituals among the Bribri. Now, however, I would like to consider uses of the past in the past to develop a theory in regards to the origins of monumentality in Costa Rica. What I propose is in opposition to my previous emphasis on continuity in that I suggest that as ranked societies emerged, elements of meaning were transformed in regards to pathways, but superficial similarities persisted in pathway form. The following discussion is an attempt to look at how practices established during the Arenal and Silencio Phases in the Arenal region may have been referenced by emerging elites in the Atlantic Watershed in an effort to legitimate social inequality.

## **DISCUSSION**

During Period VI (AD 1000-1550), in the Atlantic Watershed and Central Highlands region, the first appearance of what has been typically defined as monumental architecture was documented (see Figure 5-2, Snarskis 1984). Settlements seem to have

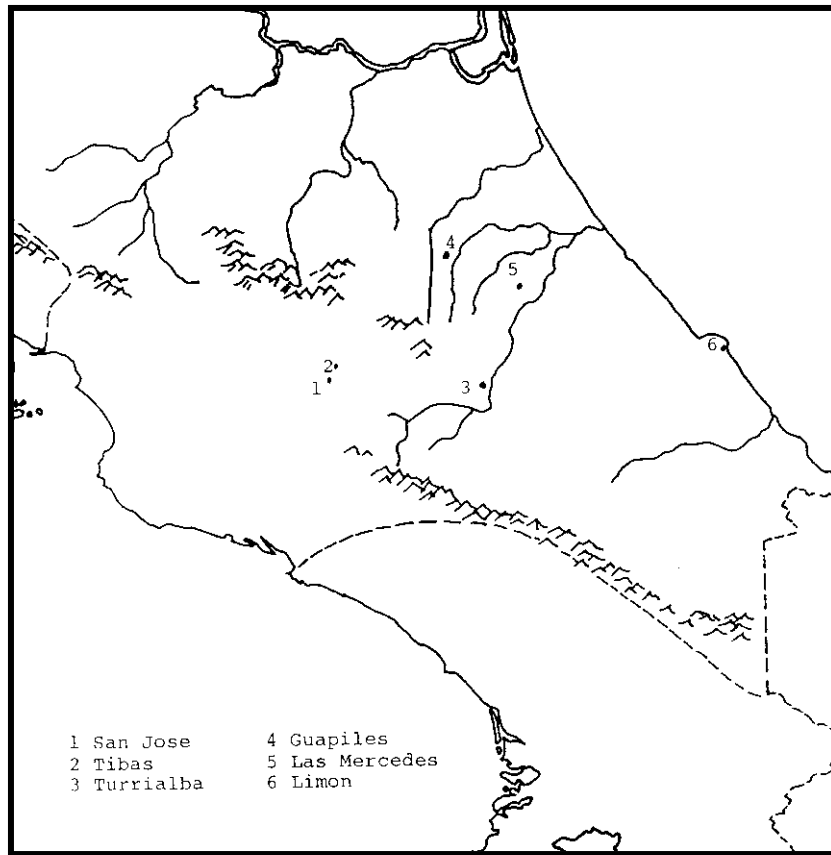


Figure 5-2. Map of Atlantic Watershed-Central Highlands regions with the location of some of the monumental sites (Graham 1992:166).

nucleated into small ceremonial centers with earth-filled, cobble mounds, quadrangular plazas formed by raised edges, and cobble paved causeways called *calzadas* (Snarskis 1984). Many of the ceremonial centers include elite residential mounds and burials and large plazas. The *calzadas* directed entry and exit from the plazas (Fonseca 1981, Snarskis 1981). These features, especially the *calzadas*, are noted at a number of sites including Guayabo de Turrialba, La Fábrica, Cutris, Las Mercedes, La Cabaña, and Costa Rica Farm (Hartman 1991, Herrero 1979, Lange 1992, Sheets 2004, Snarskis 1984, 1992, Vasquez, Personal Communication 2005). The focus of this discussion is on the *calzadas* as entryways, and what they may have meant. Moreover, I would suggest that the arrangement of *calzadas* and plazas replicate a spatial plan similar to that of the footpaths and cemeteries in the Arenal region.

The earliest dated *calzadas* may come from the site of Las Mercedes (Vasquez, personal communication, 2005). Carl Hartman first excavated Las Mercedes in the early 20<sup>th</sup> century (Hartman 1991 [1901]). Hartman originally dated the monumental architecture to Period VI, but recent investigations have suggested to some that Las Mercedes may be as old as Period IV (Ricardo Vasquez, personal communication 2005). *Calzadas* at Las Mercedes are associated with the principal mound at the site. La Fábrica has been dated to Later Period V, but also has a *calzada*, approximately 45 meters in length, associated with a principal mound (Guerrero 1981, Herrero 1979, Snarskis 1984)

The site of Costa Rica Farm dates to Period VI and has two large circular mounds with stairways adjoining a rectangular plaza. A *calzada* connects the plaza and another plaza-like feature almost 300 meters away (Snarskis 1984). La Cabaña also has two principal mounds with staircases leading down to a plaza; a *calzada* leads into the plaza

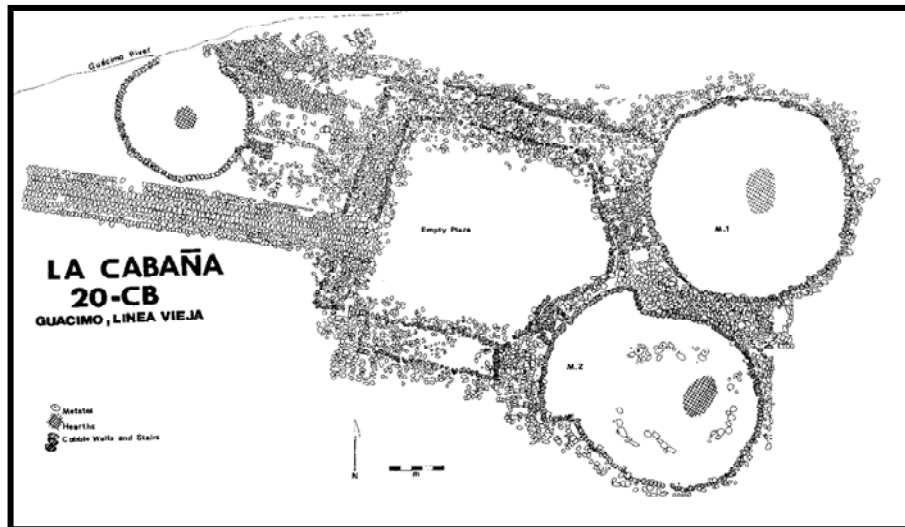


Figure 5-3. Map of La Cabana (above) and the site during excavation (Snarskis 1992:155)



opposite the stairways (see Figure 5-3, Snarskis 1984). Guayabo de Turrialba is the best-known archaeological site in Costa Rica and it too has *calzadas* leading into the ceremonial center of the site. One *calzada* is a paved entryway that first passes through a gate flanked by two square mounds half a kilometer from the center of the site (see Figure 5-4, Fonseca 1981, 1984, Snarskis 1984). This causeway runs for approximately 15 kilometers (Snarskis, personal communication 2002).

The site of Cutris was first found and mapped by Vasquez and Guerrero, and has recently become a focus of research for Proyecto Prehistórico Arenal director Payson Sheets. Sheets has used aerial photos as well as satellite imagery to identify the sunken roadways at this site (see Figure 5-5). These roadways are not considered *calzadas* as they are not stone paved. Cutris has four radiating and sunken roadways leading into the center of the site, and another two sunken processionways partially encircling the center. The roadways have been traced for many kilometers from the center (Sheets 2004). Interestingly, Sheets noted that as the roadways approached the center, at about a kilometer out, they widen considerably to over 50 meters (Sheets 2004). Spaced at regular intervals of 300 meters are stone platforms on the tops of the berms that form the “walls” of the roadways (Sheets 2004).

The ceremonial centers and their associated *calzadas* are considered to be monumental in scale (Fonseca 1984, Sheets 2004, Snarskis 1984). Following Lekson (1999:3), a ‘monument’ is a class of art, object, building, or infrastructure, and ‘monumentality’ is a quality. A monument is a feature or building that tends to be of relatively large size and relatively permanent materials, which exceeds in form, function,

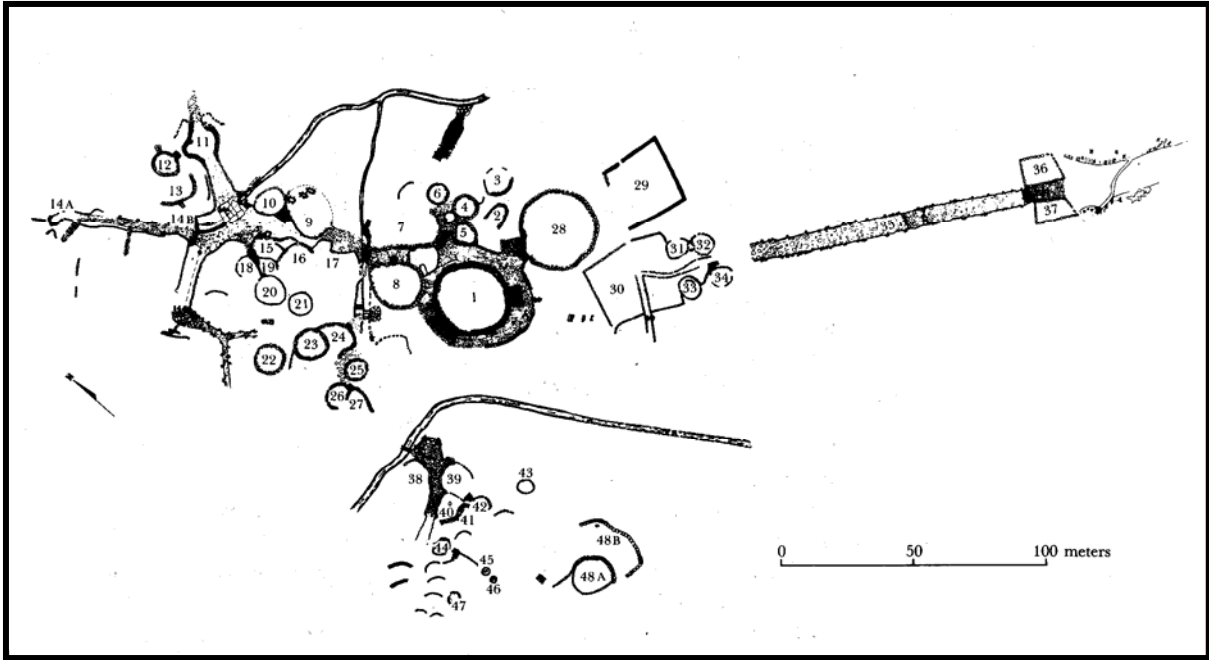


Figure 5-4. Map of the ceremonial and elite residential center of Guayabo de Turrialba. The east road leading into the center is located in the right of the figure. “Guard towers” are labeled 36 and 37 (Fonseca 1981:105).



Figure 5-5. Quickbird satellite image of Cutris. The white lines indicate known sunken roadways radiating out from the site center. Image created by Payson Sheets and Tom Sever.

meaning, or quotidian purposes any utilitarian roles the monument may have been intended to perform (Lekson 1999:1, Trigger 1990:119).

These monuments then serve as meaningful places. A contextual understanding of these places views them as spaces that have been inscribed with meaning, usually as the result of some past event or attachment. For example, Ruth Van Dyke (2003:181) suggests that at Chaco, architecture and landscape were employed to reference the past as part of the construction of new social configurations. She argues that the boom in great kiva constructions during the 1000s' AD is an example of Chacoan leaders' use of architecture to reference more egalitarian Pueblo I and Basketmaker III periods. The circular, subterranean structures evoke earlier, communal ideologies and integrative practices, helping to naturalize new and unequal distributions of labor, surplus and prestige (Van Dyke 2003:191). Pauketat and Alt (2003) suggest that the founding of Cahokia in 1050 AD was based on the social construction of memory in regards to mounds encountered in the past.

There are few places in the Eastern Woodlands where mound building persisted from the fourth millennium BC to contact. That fact emphasizes the importance of pilgrimages, regional demographic shifts, and migrations in the history of places. And it emphasizes the potential significance of the construction of social memory in the punctuated history of mound construction of the Mississippi Valley. There, regions were abandoned, unusual places were founded, and memories were actively constructed – and perhaps in the case of Cahokia's abandonment – intentionally forgotten (Pauketat and Alt 2003:170).

I have argued that during the Arenal and Silencio Phases, and perhaps contemporary phases in other regions, the way in which one entered a special place, via footpaths, was established. Based on what we know about footpath formation (see chapter 4), the deep entrenchment was most likely an unintended consequence of bodily practices, but the paths were eventually incorporated into the social structure by

becoming the culturally prescribed way to enter a cemetery. The users of the footpaths may not have been immediately aware of the fact that as the paths were exposed to the elements as well as human movement, they would become deeper and deeper, making them permanent features on the landscape. Rosemary Joyce (2004) suggests that unintended permanency of such features would have been incorporated into social life; this is what we see with the footpaths.

It may very well be possible that the people building and living in these relatively new ceremonial centers such as Las Mercedes, Cutris, and others were aware of the footpaths and recognized them to be important aspects of ceremony and ritual. While this awareness of earlier landscape features has not been documented in Costa Rica, it has been in other regions in which monumental architecture was built, e.g. the Maya region (R. Joyce 2004). Thus, I suggest the idea that as ranked societies emerged, especially in the Atlantic Watershed and Central Highlands region, the culturally prescribed practice of how one enters a place of ritual significance (e.g. plazas) was maintained; but the meaning was transformed as it was incorporated into the new social structure.

Thus, it may be useful to begin to think about how and why *calzadas* and entrenched roadways became such important features in the ceremonial centers by referencing the past in the past. More research would be needed to substantiate this, but one possibility to consider is that these *calzadas* were the result of the reincorporation of earlier social practices into the new social order. Following Rosemary Joyce (2004:20), once the *calzadas* were built, these features would have presented the potential for differential access rights to, and knowledge of, the plazas. However, the basic repertoire of how one moved through *calzadas* had been developed during more egalitarian times

and was already part of the structure constituted by the actions of those people.

Referencing the earlier paths that took people from the everyday world into the world of ancestors and corporate relations transformed these inscribed practices into forms that would legitimate inequality by associating elites with special, bounded spaces. These plaza spaces, too, could have been referencing spatial bounded cemeteries in their construction.

For the Arenal groups, the cemeteries were the only venues that we have discovered to date in which people gathered and engaged in intercommunity ritual, therefore, these would have been the primary places in which corporate identity was produced. This statement is strengthened by the fact that these are the places in which their ancestors were buried further imbuing them with a sense of memory and history of who they were. Thus, the rituals associated with the footpaths and cemeteries brought people together and in part historically constituted the living communities through their performance. But comparable performances in plazas and *calzadas* may have been used to differentiate emerging elites from commoners, to create a new history by referencing the old one.

Perhaps the *calzadas* were built with the intention of evoking past meanings, but this evocation may have in fact been used to legitimate a new social hierarchy. The *calzadas* and plazas may have offered a similar sense of place, but by this time, access was more restricted and formalized. Not all who entered the plazas were of the same social status, and perhaps even those of higher status had begun entering these special places from the stairways attached to mounds. The stairways and *calzadas* would have distinguished and differentiated participants in the ceremonies, and may have been one

way of legitimating emerging social distinctions. I believe we can theorize about the maintenance of continuity in small-scale egalitarian groups, but when inequality emerges some *appearance* of continuity remains vital. Through the referencing of past meanings the obvious disjunctures in social relationships are masked and can gain acceptance in society.

Many of the *calzadas* are several kilometers long and those people traveling through the landscape on the roadways would have known that they were going somewhere special to be a part of the event that would be occurring in the ceremonial center. This must also have been the awareness that the ancient inhabitants of the Arenal region had when traveling through the footpaths to the cemeteries. A meaningfully constituted landscape in which people sensed and lived the relationships with the places they were coming from and heading to is ever present in the lives of people, regardless of whether or not this relationship was being manipulated.

## SUMMARIES AND CONCLUSIONS

In Costa Rica, and the Arenal region in particular, scholars have attempted to understand how people managed to live and thrive in diverse tropical environments that had the potential, and reality, to threaten their lives and their way of life. The work conducted by the Proyecto Prehistórico Arenal is an excellent example of a research design that has incorporated the natural hazards of the Arenal region into interpretations of the archaeological record. However, I have argued in this thesis that while this research has certainly enlightened our understanding of the past, it is limited by its necessary adherence macro-scale phenomena. Thus, I have suggested that in order to

attempt a finer-grained interpretation of ancient life, we must turn our attention to the influence of social memory and a sense of place and situate these constructs in a landscape that has been meaningfully constituted.

I argued that the Arenal and Silencio Phase footpaths and cemeteries, after their initial formation, reinforced the culturally appropriate funerary rituals and building techniques, and these practices became deeply embedded in social memory and history. The footpaths came to be fixed on the land through human induced and natural erosion. As the footpaths became more entrenched through time, they came to be the culturally prescribed way to enter cemeteries. Drawing from ethnographic accounts of Cuna and Bribri belief systems regarding death and burial practices, I have argued that the straightness of footpaths, despite rugged topography, documented in the archaeological record, may be a result of the belief that the souls of dead needed a straight path through which to find their way from the village to the cemetery and to the otherworld.

The footpath leading into the cemetery is the only visibly marked entrance. The cemeteries were intentionally constructed and the spatial boundaries were clearly demarcated. In prehistory, these cemeteries were the only visible, community-oriented architecture, indicating the rituals and ceremonies conducted in them (i.e. feasting) were integrative. Further, many of the Arenal area cemeteries contain evidence for multi-community feasting, which is further suggestive of the creation and maintenance of a broader corporate identity. Such multi-group relationships could have been the result of a number of factors including intermarriage, kinship, trade, or the need for some communities to seek refuge with other communities during and after volcanic eruptions.



Both the footpaths and cemeteries were used for hundreds of years during the Arenal and Silencio Phases as documented by stratigraphy and ceramics. This continuity in funerary practices in the Arenal region indicates that such practices were culturally fixed. However, slight variations in tomb construction and footpath formation have been documented. There was a transition from using river cobbles in tomb construction during the Arenal Phase to using *laja* in the Silencio Phase and this change in construction material necessitated a change in tomb form (circular tombs in the Arenal Phase and stone-cist tombs in the Silencio Phase). Also, some footpaths eventually eroded down to the clayey Aguacate formation, making movement difficult especially during the wet season. Once this happened, new paths were begun directly adjacent to the exhausted ones. Despite these changes, however, the footpaths and cemeteries themselves remained culturally delineated.

Thus, I have argued that the cemeteries were important places on the landscape, connected to villages by footpaths; and together, the cemeteries, footpaths and villages made up a meaningful network that was physically inscribed on the landscape through the repeated practice of funerary rituals involving processions and feasting. Each time a death occurred, memory was recalled in order to facilitate the performance of the appropriate funerary rituals, further sedimenting such practices in history. Moreover, the feasting carried out in cemeteries tied multiple communities into this network, reinforcing a broader corporate identity. A shared corporate identity allows for communal interaction through which various needs of small egalitarian communities (i.e. exogamous marriage, trade, refuge) could be met.

The cultural practices of processing to cemeteries through a footpath, and entering the cemetery from one place, were established in the Arenal region. However, the similar spatial arrangement of *calzadas* and plazas is observed at a number of monumental sites in the Atlantic Watershed/Central Highlands region. *Calzadas* were built to be very straight, and appear to be the only place through which commoners could have entered the plazas. Thus, I suggest that similar cultural principles to those established in the Arenal region, were responsible for the relationship between plazas and *calzadas*. But what is different is that elites appear to have other entrances (stairways leading from platform mounds down into the plazas). Therefore, how one entered these special places (plazas) was dictated by one's social status and position. Thus, I suggest that the spatial arrangement of plazas and *calzadas* was meant to reference more egalitarian times in order to mask the emerging social inequality. The performances carried out in the *calzadas* and plazas may have served to reinforce a broader corporate identity of which both commoners and elites were a part, but the introduction of differential access (as a result of the construction of stairways) to the plazas may have had a part in ultimately legitimating a new social hierarchy.

In essence, I have argued that certain places (cemeteries and plazas) held special meaning for people, and this meaning was reinforced through how one entered the place as well as the performances carried out in them. These places were part of a meaningfully constituted network intentionally and unintentionally inscribed on the landscape. The physical presence of these networks reinforced memories of the practices that created them. Further, these networks enabled the production of broader corporate identity through which intercommunity relations could be maintained.

An understanding of the influence of social memory, a sense of place, and a landscape constructed to promote cultural values and ideals can provide insight into ancient behavior and practices in finer-grained detail than traditional approaches. Used together, however, culture historical, processual, and more recent social theories can broaden our knowledge and understanding of the past in a way that allows us to move between the macro and the micro scale of human societies. Humans are complex social beings and we cannot even begin to understand the decisions and processes that created the archaeological record without moving between these scales. Used in conjunction, interpretations are less limited in scope, and the phenomena that can be explained become numerous. This has already been recognized in a number of other cultural regions, but in Costa Rica, it has yet to take hold. Thus, I suggest that closer attention be paid to the subtle aspects of social life in ancient Costa Rica, which can lead to a greater appreciation for these societies, recognition of their complexity, and their importance in understanding development of small-scale and ranked societies.

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## **APPENDIX A SPELEOTHEM COLLECTIONS**

Speleothems can be excellent indicators of climatic variability (Bradley 1999, Lachniet 2001). Another proxy that showed the same suggested climate change seen in the Lake Cote sediment core samples was needed to further substantiate that change. Thus, a collection of speleothem samples was carried out in 2003 from Venado Caverns, Costa Rica. Speleothems from this cave had already been collected and analyzed (Lachniet 2001), demonstrating that climate information could be extracted from them. Unfortunately, this first collection produced dates too early in time to be of use for this project. Thus, a second collection was necessary in hopes of obtaining dates and information closer to 500 BC.

Speleothems are formed either through evaporation of water or through degassing of carbon dioxide from water droplets (Bradley 1999). They grow by calcite accretion over thousands of years (Lachniet 2001:4). Water that has percolated through soil and been in contact with decaying organic matter usually builds up a partial pressure of carbon dioxide exceeding that of the cave atmosphere, thus, when water enters the cave after having been compressed as groundwater moving through the earth, degassing of carbon dioxide occurs, causing the water to become supersaturated with calcite, which is then precipitated (Bradley 1999). The deposition of speleothems is dependent on a number of factors – geological, hydrological, chemical, and climatic (Bradley 1999). A change in any one of these factors will be recorded by the speleothem. However, the cessation of speleothem growth over a large geographic area is most likely due to a climatic factor, so dating periods of speleothem growth can provide useful paleoclimatic data (Bradley 1999). Because speleothems grow in sheltered environments and escape

radical surface alterations, they can provide long, often-continuous records of past environmental conditions (Bradley 1999).

The temperature of the cave is “recorded” during speleothem growth; and the cave temperature typically equals the mean annual temperature of the region (Lachniet 2001). Any change in this temperature would thus be identifiable in the speleothem sample. Additionally, the  $\delta^{18}\text{O}$  of speleothem calcite is determined by the  $\delta^{18}\text{O}$  values of the groundwater and cave temperature (Lachniet 2001); and  $\delta^{18}\text{O}$  values of groundwater are reflective of the climatic environment of the surrounding region. Therefore, through a detailed process of dating and analysis, speleothems can be used to produce a robust and long term record of paleoclimatic variability.

The first step towards producing a record for our purposes was to date the samples through AMS. The samples were thin-sectioned, polished and the speleothem rings broken out. Much of this work was made possible through the efforts of Paul Boni of the University of Colorado geology rock lab and Jim White and Jocelyn Turnbull of INSTAAR. We chose to date rings that had been laid down at the beginning, middle and end of the sample formation. These samples were then dated by the INSTAAR radiocarbon lab. Unfortunately, the samples were too early in time (radiocarbon years 6955 +/- 25, 4950 +/- 15, 3620 +/- 20), and no further analysis was undertaken.