UCLA
UCLA Electronic Theses and Dissertations

Title
Inca Strategies of Conquest and Control: Toward a Comprehensive Model of Pre-Modern Imperial Administration on the South-Central Coast of Peru

Permalink
https://escholarship.org/uc/item/04d9d80w

Author
Hill, Kevin Bassett

Publication Date
2020

Peer reviewed|Thesis/dissertation

eScholarship.org Powered by the California Digital Library
University of California

UNIVERSITY OF CALIFORNIA

Los Angeles

Inca Strategies of Conquest and Control:

Toward a Comprehensive Model of

Pre-Modern Imperial Administration on the South-Central Coast of Peru

A dissertation submitted in partial satisfaction of the

requirements for the degree of Doctor of Philosophy

in Archaeology

by

Kevin Bassett Hill

2020

© Copyright by

Kevin Bassett Hill

2020

ABSTRACT OF THE DISSERTATION

Inca Strategies of Conquest and Control:

Toward a Comprehensive Model of

Pre-Modern Imperial Administration on the South-Central Coast of Peru

by

Kevin Bassett Hill

Doctor of Philosophy in Archaeology

University of California, Los Angeles, 2020

Professor Charles S. Stanish, Chair

This dissertation uses regional archaeological settlement data to develop a model of Inca imperialism along the south-central Peruvian coast during the terminal decades of the fifteenth century CE. A close investigation of lower and middle valley of Cañete, home to the Late Intermediate Period (c. 1100-1450 CE) societies, Huarco and Lunahuaná, along with survey data from the neighboring valley, Chincha, provide both the foundation and impetus for the regional model. The great disparity between the abundance of Late Horizon (1450-1532 CE) Inca

architecture and artifacts in middle valley Cañete and the near absence of this evidence in the middle valley of Chincha is best explained within the context of the relationship between the lower and middle areas of each valley and a systematic examination of the south-central coast region as a whole.

This regional overview presents the Late Intermediate Period sociopolitical and cultural context and what archaeology and ethnohistory reveals about how the Inca came to control each valley. Particularly illuminating is the variety of architectural layouts and features seen at the primary Inca administrative settlements in each area. This patterned diversity allows for the development of a theoretical model which links the archaeological signatures of Inca control to a set of imperial strategies pursued in the negotiation between state interests and practical limitations.

More precise spatial modeling of pre-Inca political boundaries allows for a better understanding of the way the physical landscape structured local political boundaries. A valley by valley explanation of Inca administration reveals that each of the primary Inca sites functioned as the central element of an imperial control strategy oriented about the larger area. What results is a detailed, comprehensive patchwork of Inca imperial modalities, with recognizable material signatures, potentially applicable to the wider Andean sphere.

This dissertation of Kevin Bassett Hill is approved.

Stella Elise Nair

Gregson T. Schachner

Teofilo F. Ruiz

Lawrence S. Coben

Charles S. Stanish, Committee Chair

University of California, Los Angeles

2020

To Areli, Ektor, and Nikolás.

Table of Contents

List of Tables and Figures

Acknowledgements

This has been a long process and I have been helped by many people along the way. I would like to first thank my dissertation advisor, Dr. Charles Stanish, for his unwavering support and encouragement. Many years ago, Chip gave me the opportunity to travel to the Andes, an experience which changed my life and began my graduate academic career.

I would also like to thank my committee members: Dr. Stella Nair, Dr. Greg Schachner, Dr. Larry Coben, and Dr. Teofilo Ruiz for their valuable feedback on my writing and research as well as the equally valuable career advice.

I am thankful for the generous support provided by the NSF Graduate Research Fellowships Program, the Eugene V. Cota-Robles Fellowship, the UCLA Archaeology Program, and the Cotsen Institute of Archaeology.

I am grateful for the opportunity to survey and excavate in Lunahuaná along with the Proyecto Arqueológico de Cañete under the directorship of Dr. Larry Coben and Lic. Eberth Serrudo. I want to give special thanks to Alberto Tapia for clambering up and down hillsides with me in the hot Lunahuaná sun and Erika Cabello for excellent, detailed site reports.

I also want to thank my colleagues from Chincha, including Benjamin Nigra, Terrah Jones, and Jacob Bongers. My time spent working with the group, surveying in the middle valley, provided an invaluable comparable perspective for my own research.

I do not want to forget to mention my Andean chronicles reading group: Georgi Kyorlenski and Lisl Shoepflin. Y muchas gracias a Chely Valdés for meticulous editing.

I would like to thank my father, Kenneth Hill, my mother, Linda Bassett, and my sister, Kathryn Hill for their endless love.

And finally, I want to thank my wife Areli for being my patient, loving, supportive partner through the ups and through the downs. I could not have done this without you.

Vita

Kevin Bassett Hill

2008	B.A., Anthropology Harvard University
2009; 2014	Eugene V. Cota-Robles Fellowship
2010-2013	National Science Foundation Graduate Research Fellowship
2013	M.A., Archaeology University of California Los Angeles
2015-2018	Teaching Assistant Life Sciences/Cluster Program University of California Los Angeles

CHAPTER ONE

Project Introduction

Introduction

The objective of this dissertation is to explore and interpret the connections between the archaeological vestiges of Inca imperialism (architecture, artifacts, settlement data) and the goals, strategies, organizing principles, and worldview of the Inca state in negotiation with the diverse peoples and geographies of conquered territories. At the most basic level, this is an effort to answer how and why the Inca state chose where and when to invest its ample, yet limited resources. The research focuses on an episode of Inca imperialism (the military conquest of the Huarco of the Cañete Valley (Figure 1-1) and the broader incorporation of the south-central coast of Peru during the late fifteenth century CE) to gain general insight about history and process specific to that civilization and the peoples with whom it interacted. The perspective gathered from this case study touches on wider theoretical issues. How is an empire defined? What are the relevant differences between state and non-state polities? What are the regularities (if any) that can be established in reference to this example of territorial expansion and others?

A fundamental consideration is opposition – in categories of time and space – and the reality of these oppositions as experienced by past and present actors. Two key examples are:

(a) the cultural historical (temporal/material) demarcation between the Pre-Inca and Inca Period

(b) the geographical (spatial/ecological) division between highlands, midlands, and coast.

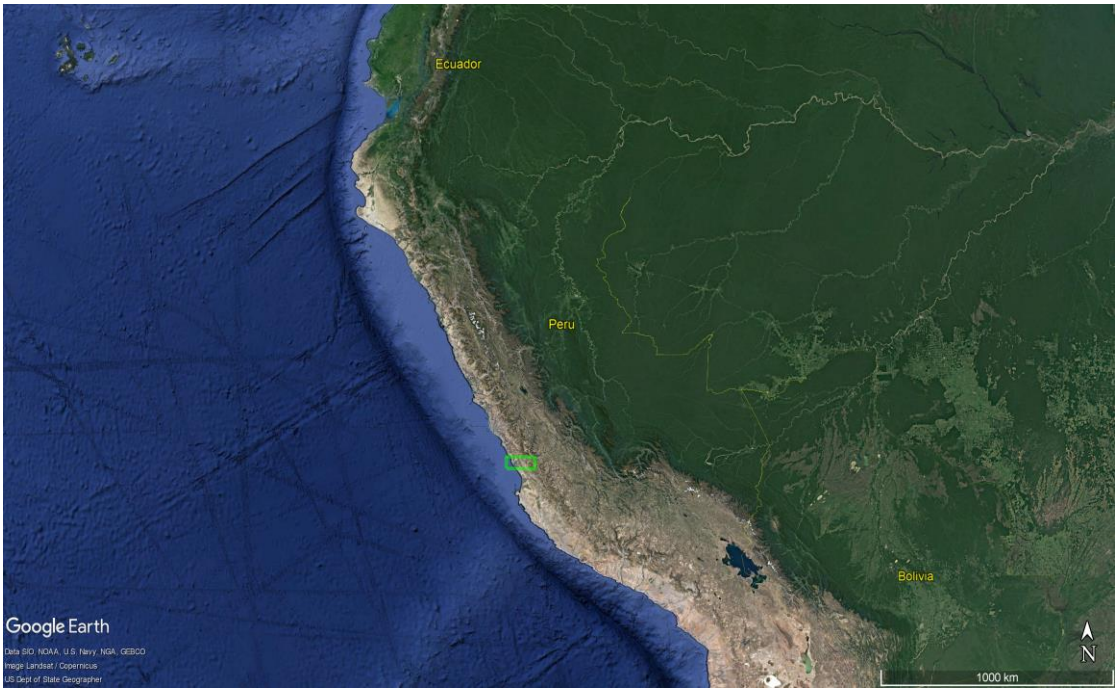

Figure 1-1 Geography of Peru and surrounding nations. Cañete/Lunahuaná area outlined in green.

These categories pervade and, in many respects, structure this discussion as it will be demonstrated that the Inca constructed the former in navigating the latter. This is not a unique circumstance, and these themes evoke a larger theoretical and historical context in which geographical alterity and landscapes at the nexus of cultural and political interchange facilitate the construction and imposition of identity.

This inquiry is multi-scalar. The varying dimensions of cultural landscape and socio-political control require diverse methodological approaches. The data collected provide an opportunity to identify patterns which emerge at different scales of analysis. Along the Peruvian coast, the regularities and discontinuities of physical geography provide a template for establishing socio-spatial categories, which evidence suggests were salient in the minds of people living in past societies. At the smallest scale, ecological zones based on elevation within

each coastal river valley are physical divisions in the Andean landscape which play a role in structuring the distribution of local polities.

Each of these ecological zones, analyzed across all drainages in the region, comprise the second, larger view. Centuries of exchange in ideas and objects between diverse groups of people within the lower, middle, or upper areas of neighboring valleys has led to complexity in the archaeological record and uncertainty concerning the boundaries of political and cultural spheres of influence. The observation that pre-Inca polities in the study area are generally structured at the scale of single river valleys does not preclude an exploration of broader connections of ideology, trade, and transhumance.

The grand-scale, summary view comprises all drainages, at all elevations, within the study region. As mentioned above, within each drainage, political control is most prominent and at a larger scale, divisions between ecological zones manifest as an opposition between ethno-cultural spheres. Unification at the largest, regional scale is coincident with the appearance of the Inca Empire and its novel conception and technologies of political and economic control.

The data utilized at each scale of analysis will vary. At the scale of an individual drainage, archaeological excavation, survey/reconnaissance, and a close reading of the ethnohistorical record will allow for useful characterization. When approaching generalizations across geographic/ethno-cultural zones and beyond to the regional level, a synthetic approach to the archaeological/ethnohistorical literature from constituent areas, as well as spatial analysis of site networks, will be required.

This dissertation is organized around three primary topics:

(a) Inca imperialism,

(b) the temporal and spatial oppositions of Late Intermediate/Late Horizon[1] and lowland/highland outlined above, and

(c) what a detailed investigation of the archaeological record from late fifteenth century Cañete and the surrounding region reveals about (a) and (b).

The discussion of Inca imperialism benefits from more than a century of academic scholarship on the topic. Special attention will be paid to the case in point: the expansion of the Inca state into the south-central coast of Peru during the late fifteenth century. In addition, there will be an attempt to draw parallels between the Inca case and other notable examples of pre-modern imperialism as portrayed in the archaeological and historical record. Major theoretical themes include defining empire versus state versus non-state complex polities and why these distinctions are important for a discussion of conquest, administration, territoriality, and identity.

The prevalent temporal and geographic oppositions will be addressed in detail in the context of the lower, middle, and upper valley zones of coastal Peruvian drainages and the socio-political upheaval of the relatively short period of time immediately preceding and following the incursion of the Inca state in this region. Along with a broader overview of Late Intermediate Period dynamics in the Andes, it bears mentioning that a similar interplay between highland and lowland polities/cultures in varied historical contexts demonstrates that alterity, landscape, and space/identity are enduring theoretical themes.

With regards to Cañete in particular, research suggests that the archaeological settlement pattern in the middle valley area, known as Lunahuaná (Figure 1-2), differs from neighboring

[1] Pre-Inca (Late Intermediate c. 1100-1450 CE) and Inca (Late Horizon c. 1450-1532 CE) cultural periods discussed further below.

Figure 1-2 View of middle valley Cañete (Lunahuaná) landscape with Inca structures in foreground.

coastal valleys in the density and distribution of Inca architecture, including administrative, agricultural, and storage sites. Chincha, the river valley to the immediate south, provides a principal comparative context, given the absence of Inca architecture in the middle valley and the far more amicable relationship between local leadership and the Inca suggested by ethnohistorical sources. The settlement data from these two valleys lend support to a model of selective Inca administrative strategy applicable to a broad extent of the Peruvian south-central coast. From Chancay at the northern reach of the study area, through the Lima valleys (Chillón, Rímac and Lurín) and south to Cañete and Chincha, an overview of Inca control demonstrates their state administration possessed a nuanced understanding of both:

(a) macro-regional processes of environment, ethnicity, and demography and

(b) the contingencies of local politics.

To summarize the discussion which follows, three key points should be highlighted. First, the Cañete case, while striking in its details, is not actually unique. The contrast between militarism and diplomacy proposed by historical sources and supported by direct data collection in Cañete and Chincha can be seen in comparisons of nearby valleys such as Chillón and Lurín. As will be seen, the absence of dense settlement within the middle valley area of Chincha is somewhat exceptional as groups including the Chancay, Sisicaya, Calango, Coayllo, and Lunahuaná were organized as centralized polities in the midland areas[2] of several coastal drainages in the study area. The main point is that the data from Cañete clarify and are clarified by their context within a region marked by similar geographic, political, and cultural complexity. The third and fourth chapters of this dissertation provide this regional context and demonstrate why this perspective is necessary for understanding what happened in Cañete.

Second, this dissertation shows how the application of anthropological theory to a close study of archaeological settlement data and ethnohistorical sources allows delineation, with much more precision than previously attempted, of Late Intermediate Period polities and the territory each of these held along the south-central Peruvian coast. The procedures explored in the latter two chapters facilitate reinterpretation of a complex political landscape upon which several iterations of political imagination are superimposed. Distinctions between the territoriality of local groups, Inca territoriality, and Spanish colonial interpretations of these forms of territoriality will be drawn in order to clarify certain misapprehensions regarding the nature of pre-Inca political control and unintended conflations of cultural and political spheres of influence.

[2] This coastal Andean ecological zone is known locally as the "*chaupiyunga*" (Quechua) "middle coast" and is defined in this dissertation as the area between 200 and 900 meters above sea level (masl).

Finally, it will be shown that the way in which the Inca state established control of the region demonstrates a keen understanding of political, cultural, and geographic divisions. This control (materialized in the form of medium to large administrative settlements) does not manifest as a spectrum of intensity or directness. Instead, it is more accurate to speak of modes of Inca imperial control which cluster within the multi-dimensional space of diverse state interests (i.e. centrality, penetration, and volition). These considerations (in part) structured Inca strategy such that administration settlements are patterned, spatially and architecturally, in a meaningful way.

Structure

Chapter Two reviews relevant theoretical discussions in the historical and anthropological study of states and empires. Specific definitions of pre-modern colonialism and imperialism allow for relevant distinctions to be drawn between these complex social entities. Afterward, the chapter introduces the Inca Empire, provides a regional overview of the Inca period (Late Horizon) and the prior cultural epoch (Late Intermediate Period), and outlines the leading model(s) of Inca imperialism. A multi-dimensional, modal model is proposed to develop a more nuanced understanding of Inca provincial control.

Chapter Three introduces the primary study area, the Cañete coastal river valley, where a unique combination of a rich ethnohistorical record and abundant examples of Inca settlements and architecture provides insight into a classic example of direct, militaristic imperialism.

Chapter Four summarizes the results of targeted Inca site reconnaissance within the middle valley area of Cañete, known as Lunahuaná, with a focus on Inca site clusters, sites types,

and architectural layouts. The sizeable number of Inca sites in the middle valley, including large settlements such as Incahuasi and Cruz Blanca, is contrasted with the near absence of Inca architecture in the middle valley area of Chincha, the drainage to the immediate south.

Chapter Five broadens the perspective from Cañete (and Chincha) to the south-central coast study area in general. This valley-by-valley overview compiles a wide range of ethnohistorical and archaeological data from more than a dozen drainages. These data have never been properly synthesized at this scale and resolution. When analyzed as a cohesive whole, patterns emerge. Certain regularities are interpreted as opportunistic manipulation of local conflict and geographical/political divisions by the Inca state. The location, size, and layout of Inca administrative centers reveal four main strategies of Inca imperialism (viceregal, competitive, aggregative, territorial) which were selectively deployed in the pursuit of varied state interests (volition, penetration, and centrality).

Chapter Six revisits the regional overview using the new the model of Inca imperialism explored in the previous chapter as a framing device. To facilitate a detailed, functional interpretation of important Inca administrative centers within the region, a novel, spatial procedure more precisely models the territorial boundaries of pre-Inca polities.

Chapter Seven summarizes the insights provided by the approach outlined in the previous chapters: a synthesis of ethnohistorical sources, archaeological settlement/architectural data, and anthropological theory of complex societies. The concluding chapter recommends the application of similar methodology in other regions of Inca provincial control and provides suggestions for further avenues of data collection and interpretation for the Cañete area.

Figure 1-3 Inca Empire (outlined in blue) and important regional centers. Incahuasi is the primary Inca center in middle valley Cañete.

CHAPTER TWO

The Inca Empire and the Late Intermediate Period

Ancient States and Empires

The description, characterization, and explanation of ancient empires remains a topic of scholarly interest both at the regional (Luttwak 2016; Fitzpatrick-McKinley 2015; Kuhrt 2007; Rogers 2012; Parker 2012) and comparative (Burbank and Cooper 2010; Areshian 2013) scale, supplementing some of the foundational studies in the discipline (Garnsey and Whittaker 1982; Kautsky 1982; Sinopoli 1994). The parallel historical and structural development of polities separated by substantial time and distance is a compelling avenue of research towards formulating generalizations about cultural process. Case studies and area syntheses (Collier 1982; Broda 2015) in the Americas provide new perspectives on a corpus of knowledge rooted in the famed empires of European and Asian antiquity.

Carla Sinopoli (1994) identifies territorial expansion as a defining and universal process of historical empires, despite the diversity of motives or strategies for consolidation and administration (Sinopoli 1994:162). While this may be a necessary component of any definition of empire, it may not be sufficient, as territorial expansion is observed in the genesis of many ancient states not commonly considered empires as such (Spencer 2010). Empire or not, territorial expansion requires some degree of targeted or general control in newly claimed lands. Where that control is persistent or institutionalized in formal relationships of governance, it can be thought of as political control. This can be contrasted with transient control based on military campaigns or the various social interactions less oriented around control such as economic

exchange or ideological influence (Mann 1986). The pursuit of political control by expansionist states (or empires) involves subjugation or at the very least – direct negotiation, with the existing, local political hierarchy.

Before examining the implications of such an interfacing of political hierarchies, it is necessary to work through some definitions. The term, state, can be understood as either defining:

(a) the administrative/political apparatus of a certain type of society, or

(b) an imagined totality of the people, place, culture, history, ideology, economy, etc. of that same society.

Although the latter meaning refers to a social collective rather than the epicenter of political organization, it can also effectively encompass both in common usage. The type of states of interest here are what have been referred to as agrarian states to differentiate the autocratic, preindustrial, territorial states that existed in prior millennia from mercantile/capitalist, constitutional, nation states of the past few centuries (Burbank and Cooper 2010:8; Mann 1986:109-136). Anthony Giddens (1986) proposes that the structural axis of the agrarian state is the relationship between an urban core and its rural hinterland. The city is the "storage container" of managerial resources around which agrarian states are built; it is the locus of the administrative apparatus that features in the first, technical definition of the state mentioned above (Giddens 1986:183). From this perspective, ancient states are a specific kind of social entity brought about by the interaction between a concentration of administrative, economic, and ideological resources (the urban center) and the people, landscape, and material production of the surrounding area (the rural hinterland). which provides the bulk of the human and productive capital sustaining this relationship.

The emergence of societies ruled by a state is a significant, autochthonous development in the history of several world regions (Marcus 2008). Aside from speculation on the circumstances facilitating the emergence of the first states (e.g. Carneiro 1970), the advent of this novel form of social complexity set the stage for a new era of dynamic interaction both among states and between state and non-state polities. In untangling these interactions, organizational principles are perhaps the key to factor in distinguishing state and non-state societies. Complex, centralized polities at the center of regional civilizational spheres such as Chaco in the American Southwest (Mills 2002), Cahokia in the American Midwest (Pauketat 1997) and Chavín de Huantar in the central Peruvian highlands (Rick 2008) are prominent New World examples of a what may be termed "middle range" or intermediate societies in the archaeological and ethnographic record (Feinman and Neitzel 1984). Similar complex polities existed in the Old World perhaps as early as 4500 BCE (Van de Mieropp 2004:15-16). These were not states; they were a different kind of centralized, inegalitarian society, often termed ranked polities due to a power structure reckoned through relative position in a genealogical tree (Sahlins 1963). In the coastal Andes, archaeological data reveals the signatures of both local and complex ranked polities including tiered settlement patterns, territorial boundaries, and monumental architecture (Earle 1987:288-290).

Amidst the ongoing efforts to move away from unilineal social evolutionary schemes, there are renewed pleas (Pauketat 2007) to recenter discussion on the historical and environmental context of intermediate societies and their unique contribution to marco-civilizational process rather than a more generic focus on the structure of institutions or the politicking of leadership. These critiques granted, the inescapable fact is that in this study, a primary goal is understanding the process by which the Inca state made decisions about how to

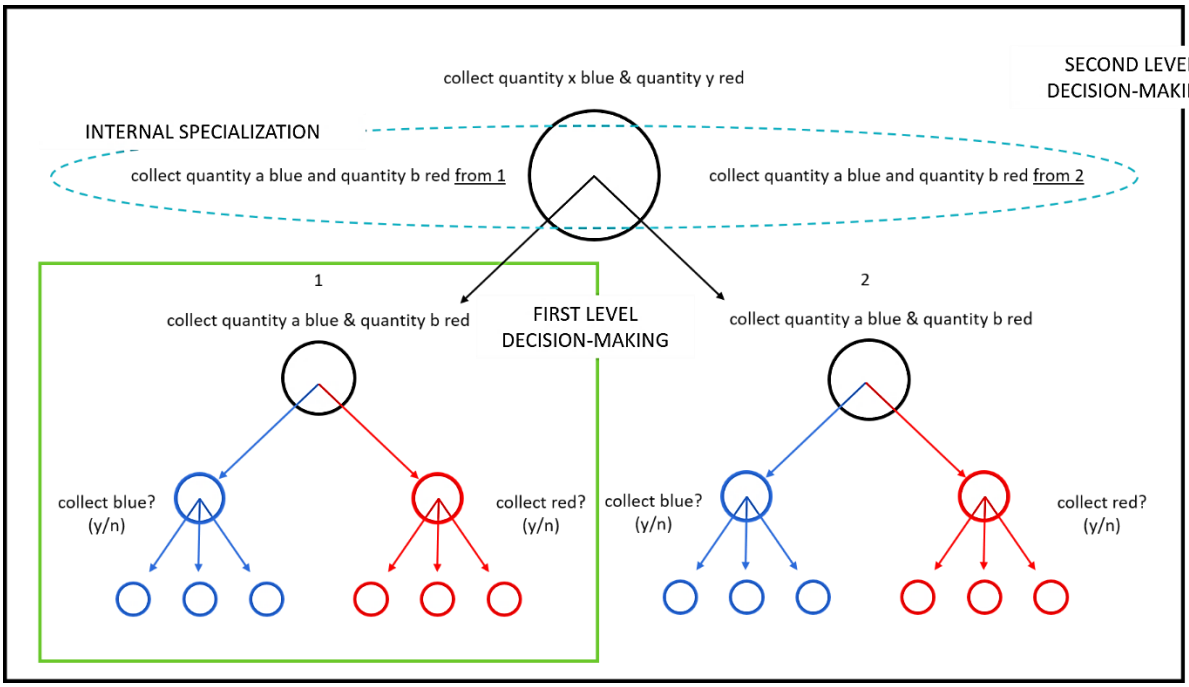

Figure 2-1 Schematic illustrating the concept of decision-making levels and internal specialization. In this basic scenario, the first-level decision-makers (1 & 2) manage groups collecting resources categorized as "blue" and "red". Each manager issues directives to red and blue collectors based on target quantities (a & b) for each. The orders they send down are simple "yes" or "no" instructions. The second-level (apex in this example) decision-maker is internally specialized. Because the ultimate target amounts for red and blue (x & y) are sourced from quantities a & b generated by both first-order managers (1 & 2), partitioned, coordinated management becomes necessary.

absorb local populations and their leadership into the expanding empire. As such, certain emphasis must be placed on structural differences between the organization of the Inca state and the groups they encountered. This requires a more focused definition of the state.

Henry Wright and Gregory Johnson (1975) orient their definition of the state around its specialized administrative activities (i.e. its political control). They hypothesize that any political control hierarchy in which there is more than one level of executive authority (more than three levels of decision-making in total) will entail the development of compartmentalization or specialization in the activities of the central management (Wright and Johnson 1975:267). The oft-cited description of the state's organizational structure based on this principle is that it is both externally and internally specialized (Figure 2-1) (Wright 1977:383). Intermediate, rank

societies, in contrast, are externally specialized for the control and oversight of lower tiers in the political hierarchy, but they do not require an institutionalized, internal specialization.

This internal specialization is what is commonly conceived of as a government bureaucracy. Max Weber, in his classic sociological tract, *Economy and Society* (1921), outlines the characteristics of bureaucratic structure. Within each official jurisdictional area:

(1) The regular activities required for the purposes of the bureaucratically governed structure are assigned as official duties.
(2) The authority to give the commands required for the discharge of these duties is distributed in a stable way and is strictly delimited by rules concerning the coercive means, physical, sacerdotal, or otherwise, which may be placed at the disposal of officials.
(3) Methodical provision is made for the regular and continuous fulfillment of these duties and for the exercise of the corresponding rights, only persons who qualify under general rules are employed (Weber 1978 [1921]: 956).

Despite Weber's primary interest in the bureaucratic structure of governments and capital firms of his time, he makes the relevant observation that the above features describe varying degrees of bureaucratization observed in different times and places throughout history. He distinguishes bureaucratic governance from patrimonial governance in which commissions and responsibilities are performed on an ad hoc basis by trusted family, allies, and retainers of the ruler. The circumstances in which a society organized through patron relationships may adopt a more formal, administrative structure are varied and include territorial expansion, war, regional pacification, and the establishment and maintenance of vital infrastructure. In these cases, it is the intensification and/or diversification of administrative tasks that leads to bureaucratization

rather than the qualitative expansion of an existing administrative apparatus (Weber 1978 [1921]: 971).

The implication is that the initial and perhaps generative work of the nascent state is the consolidation of new arenas of political control. This initial period involves expansion within a core area and typically, the incorporation of competing local polities. This process is well studied in the Oaxaca Valley, Mexico, where the Zapotec state (formational period c. 300-100 BCE) centered at Monte Albán emerged in the aftermath of a period of conflict between several distinct groups within the valley (Spencer 2003). Another example of core area consolidation by an early state is initial period Tiwanaku (c. 300-400 CE) near Lake Titicaca in Bolivia (Berman 1997). Prior to the selective expansion of Tiwanaku to far-flung areas of the Titicaca Basin and beyond, Tiwanaku solidified its control of rival polities in its core territory. Of key importance in this process was the assimilation of Lukurmata, a neighboring political center where architecture and ceramics increasingly adopted the canons of Tiwanaku as the emerging state grew in power (Janusek 1999). As will be seen later in this section, a similar pattern can be observed in the archaeological record of Cusco during the development of the early Inca state (Bauer and Covey 2002). Since the development of most ancient states involves this local expansion, the nature of expansion outside of the core area is the process which will more usefully distinguish states from empires, or, more accurately, since empires *are* a kind of state, imperialism from colonialism.[3]

Although the incorporation of an extant state within the control hierarchy of another (Chase-Dunn 2005:174-175) or the successful assimilation of distinct cultures, languages, and

[3] In the context of historical overseas expansion by European powers into areas of Africa, Asia, and the Americas, the terms "colonialism" and "imperialism" are often used interchangeably. In this dissertation, these terms are deliberately contrasted to illustrate important differences between the types of activities pursued by ancient states outside of a core area. In the Andes, Inca imperialism marks a departure from the political and economic strategies pursued by earlier states in select colonial contexts. This idea is further developed in this chapter.

ethnicities (Flannery 2004:9) often accompany the development of empires, these are not essential. The definitive action of what will be called imperialism in this study, is the control of large regions of territory and populations outside of the state core territory. Although many non-imperialistic states gain control of select, distant areas of strategic or economic importance, these colonial enclaves exert a limited influence on the everyday lives of the surrounding population. While economic extraction and cultural imposition may characterize the interaction, there generally is an absence of economic control over the production in the larger region and little attempt to govern local populations directly. In contrast, expansive states that pursue imperial expansion (empires), come to control both large territories and populations far from their core area. The Inca, like other ancient empires (ex. Neo-Assyrian; Yamada 2005) constructed a network of roadways and administrative centers across their conquered lands to exercise varying degrees of economic and political control. This variance is an important consideration and indeed there are many cases in which an imperial state will elect to pursue extractive or collaborative strategies which more closely resemble what was termed colonialism above. To summarize the use of these concepts: there is a range of economic, political, and ideological projects pursued at state settlements outside of the core territory. Imperialism requires significant investment in political control and the restructuring of economic activities. States which undertake this settlement strategy in provincial lands can be called empires.

The Inca Empire

Inca scholarship, spanning more than a century of historical and archaeological investigation (Rowe 1946; Rostworowski 1999a; D'Altroy 2003; Morris 2007) continues to contribute to the study of ancient empires. During the course of this work, theories of Inca

society have implicated a variety of factors such as the vertical Andean environment (Murra 1980), modes of political economy (D'Altroy and Earle 1985; Patterson 1987; Stanish 1997), the organization of labor (LeVine 1987) ritual, pilgrimage, and performance (Bauer and Stanish 2001; Coben 2006), ideology (Patterson 1986; Conrad 1981) built infrastructure (Hyslop 1984; D'Altroy and Hastorf 1984), landscape (Wernke 2008), architecture (Dean 2010; Niles 1992; Nair 2015) and objects (Bray 2003; Cummins 2007) as central to understanding Inca success and limitations within the heartland surrounding their capital, Cusco, and throughout the vast region under control of the empire. The Inca Empire, Tawantinsuyu[4], was the largest indigenous empire in the Americas, extending at its height, the length of the Andes from modern day Colombia to Argentina. From their homeland, Cusco in southeastern Peru, the Inca managed to

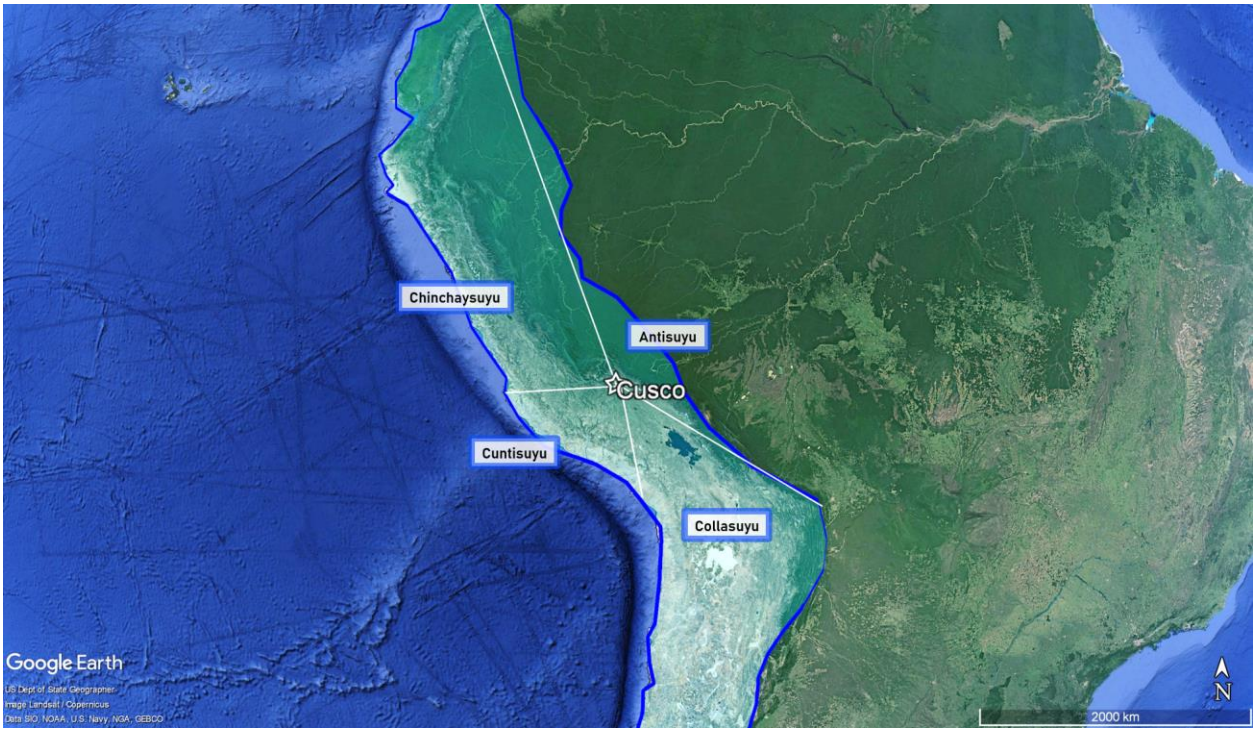

Figure 2-2 The four quarters of the Inca realm

[4] *Tawantinsuyu (*Quechua*) "tawa"* four; "suyu" regions. The four quarters of the empire were Chinchaysuyu, Antisuyu, Cuntisuyu, and Collasuyu. (Figure 2-2)

incorporate a dizzying array of cultures and environments within a little more than a century. This rapid political expansion was accomplished through a combination of shrewd diplomacy, superior organizational capacity, selective militarism, and expert leveraging of local cultural cleavages. The Inca are an interesting case in the comparative study of ancient empires as the state administration oversaw a massive bureaucracy without the use of writing[5] and they managed an interregional economy without the use of markets.

The abundance of information about the Inca comes from a combination of historical and archaeological sources. The primary group of ethnohistorical sources are the written accounts and descriptions given by Spanish explorers, ecclesiastics, and colonial administrators, supported by the testimony of indigenous informers, collectively referred to as "the chronicles" (Pease 2008). The second broad category of textual sources are colonial administrative documents produced by local authorities during the turbulent transition to Spanish rule. These documents were often assembled in the interest of determining the legal status of land tenure claimed by various ethnic factions and *allyus* (kin based corporate groups) dating to the Inca period and earlier. All these histories were manufactured within a dynamic social context, amidst the complexity of personal and cultural politics.

Archaeological data are the complementary piece of the puzzle. The Inca are perhaps best known for a distinctive architectural style (Figures 2-3; 2-4), exemplified at sites such as Machu Picchu (Gasparini and Margolies 1980; Protzen 2000). The mortarless ashlar and polygonal masonry is iconic and unmistakable. In a world of fluid political boundaries, multifaceted ethnicities, and fifteenth century communications technology, the Inca utilized architecture to

[5] Administrative accounting was accomplished, in part, with *quipus*, recording devices used to encode information in knotted cords.

proclaim their presence and purpose on the landscape for living witnesses and future generations (Niles 1992). Despite a diversity of construction materials and techniques, certain formal principles in the planning of structures and settlements in combination with signature elements facilitates determination of Inca influence in a wide array of archaeological contexts, with the caveat that for Inca architecture, form does not always map on easily to function (Nair 2015). At a larger scale, the patterning of settlement within a region may also reveal features which are diagnostically Inca. Given the political organization as an interregional conquest state, the tiers of administration are visible in the types of sites with Inca characteristics. Inca artifacts, primarily ceramics, are another broad indicator of Inca presence in each area. These range from decorated finewares imported from Cusco, to local imitations of these same wares, and hybrid forms which incorporate stylistic elements from Inca and local traditions.

From the outset the Inca imperial project was subject to scrutiny, debate, and justification. From what is revealed through the ethnohistorical record, the Inca, like many conquerors, defended their subjugation of conquered peoples by arguing that theirs was, in essence, a civilizing mission, portraying the world that existed before the Inca as one marked by chaos and violence. Pedro Cieza de León, writing in the sixteenth century, relates one of the earliest written versions of this imperial apologia. He states:

> Muchas veces pregunté a los moradores detas provincias lo que sabían que en ellas hubo antes que los Incas los señoreasen, y sobre esto dicen que todos visvían desordenadamente y que muchos andaban desnudos, hechos salvages, sin tener casas ni otras moradas que cuevas de la muchas que vemos haber en riscos grandes y peñascos, de donde salían a comer de lo que hallaban por los campos. Otros hacían en los cerros castillos que llaman pucaras, desde donde, ahullando con lenguas estrañas, salían a pelear

> unos con otros sobre las tierras de labor o por otras causas y se mataban muchos dellos…todos eran behetrías sin orden, porque cierto dicen no tenían señores ni más que capitanes con los cuales salían a las guerras…(Cieza 1967 [1553]:201).

Cieza's report is sensational. As one of the earliest writers in the genera known collectively as Inca chronicles (Pease 2008) he had the advantage of direct access to firsthand observation as well as testimony from informants who lived in the Inca world before European arrival. Nonetheless, he lacked the perspective gained over time by successive Spanish witnesses who appreciated the uniquely Andean context, relying less on exotic framing analogies borrowed from the *Reconquista*. While his narrative reflects certain aspects of life in the pre-Inca Andes (Arkush 2015; Arkush and Tung 2013), the contrast drawn between the government, architecture, production, and language of the Inca and the allegedly leaderless, cave-dwelling, forager-barbarian peoples they conquered, could not be more clear. Not only do the Inca bring pacification and leadership, the tropes of nakedness and scrounging are primitive ills, positioned to be remedied through the state's rational craft and agriculture economy.

Throughout the early Spanish colonial period, political jockeying in the wake of the Inca civil war and subsequent conflicts between the conquistadors and the remnants of the Inca state further structured interpretations of Inca imperialism. Depictions of Inca rule ranging from idyllic communism to ruthless despotism were presented in the sixteenth and seventeenth centuries in service of the political agendas of the time (MacCormack 2008). It is important to understand that in these very first decades of interaction, no unitary perspective on the Inca held sway, and the personalities of individual leaders were as much of interest as any general characterization. *Suma y Narración de los Incas* (c. 1551) written by Juan Diez de Betanzos is an enduring reminder of this fact. As a Spaniard married to an Inca noblewoman who happened to

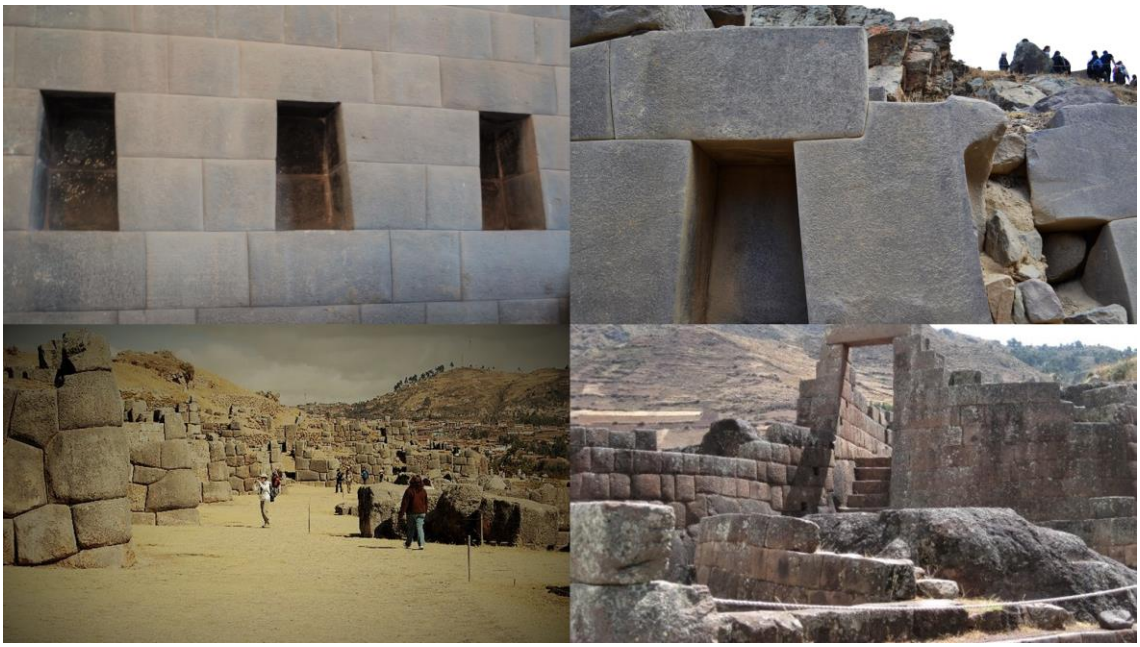

Figure 2-3 Examples of Inca masonry from the Cusco area.

Figure 2-4 Inca stonework and structures at Cusco, Pisac, and Ollantaytambo.

be a former wife of the Inca emperor Atahuallpa (d. 1533 CE), the chronicle of Betanzos provides an unparalleled glimpse into subtleties of culture and statecraft. It also stands as an apt illustration of divergent political interests and deep rivalries between remaining members of each *panaca*, or descent group. For his part, he frames Atahuallpa's brother, Huáscar (d. 1532), as a Caligula-like figure, wholly unworthy of his brief time in power in both temperament and conduct.

Others who documented the early stages of Spanish colonialism had different loyalties. Pedro Sarmiento de Gamboa's characterizations of the general Andean populace in his *Historia de los Incas* (1572), provides justification for Spanish colonial interest. His description of life prior to the tenure of Viceroy Toledo becomes a somewhat ironic mirror-image of certain indigenous elites' conceptions of the pre-Inca past. He writes:

> …estaban en riscos y breñas, donde no podian ser curados ni doctrinados, antes vivian y morian como fieras salvajes, idolatrisando como en tiempos de sus tiranos ingas…(Sarmiento 1988 [1572]:15-16).

Again, tropes of improper dwelling and the brutishness of everyday life are brought to bear, though in this case the particularly Christian accusation of idolatry rounds out the list of charges. This time, it is the reforms of the Spanish Crown which are emblematic of civilization in marked contrast with Inca tyranny.

Sabine MacCormack underscores the degree to which the traditions of classical antiquity guided and continue to influence interpretations of the Inca. Rome was the fundamental touchstone and Spanish writers who held Inca achievements in high esteem made a favorable comparison with the model empire in its language, politics, and great feats of engineering

(MacCormack 2008:33-36). As an example, Bernabé Cobo, in *La Historia del Nuevo Mundo* (1653), remarks on the similarity of the royal titles "Caesar" and "Inca", the Roman Vestals and the Inca *acllahuasi*,[6] and the Pantheon of Rome and the Qoricancha[7] of Cusco (Cobo 1956 [1653]). The uncritical deployment of Roman imperial tropes in the service of Inca explanations inspired a countercurrent of particularistic appraisal best exemplified in the work of anthropologist John Murra. The appeal of *lo andino* – the idea that there is an essentially Andean way of doing civilization, kinship, political economy, etc. – is that it decenters a Eurocentric worldview and evaluates the historical achievements of the region on its own terms. However, this orientation has in turn been subject to criticism (Kolata 2013:24-25) not only for eliding anthropological comparison, but also for collapsing intricate historical trajectories into a static structural monolith.

By the twentieth century, the multitude of available historical and archaeological data allowed professional scholars such as María Rostworowski, John Rowe, and Dorothy Menzel to outline the broad chronological and spatial contours of the Inca world, setting the stage for finer-grained investigation. One of the achievements of this early systematization was establishing a relatively coherent interregional chronology, aided in part by the observation that Inca expansion typically corresponds to an abrupt disjuncture in the ceramic record henceforth referred to as the Late Horizon (Figure 2-5). The Late Horizon (LH; c. 1450-1532 CE), within the commonly accepted Andean cultural historical framework, is defined (in relative terms) as the period when

[6] *Acllawasi* (Quechua) "*aclla*" = chosen women; "*huasi*" = house.
[7] Qoricancha (Quechua) "qori" = gold; "cancha" = enclosure. The sun temple in Cusco. The religious center of the empire. Portions of its curved walls of ashlar masonry survive as the foundation of the Spanish convent of Santo Domingo.

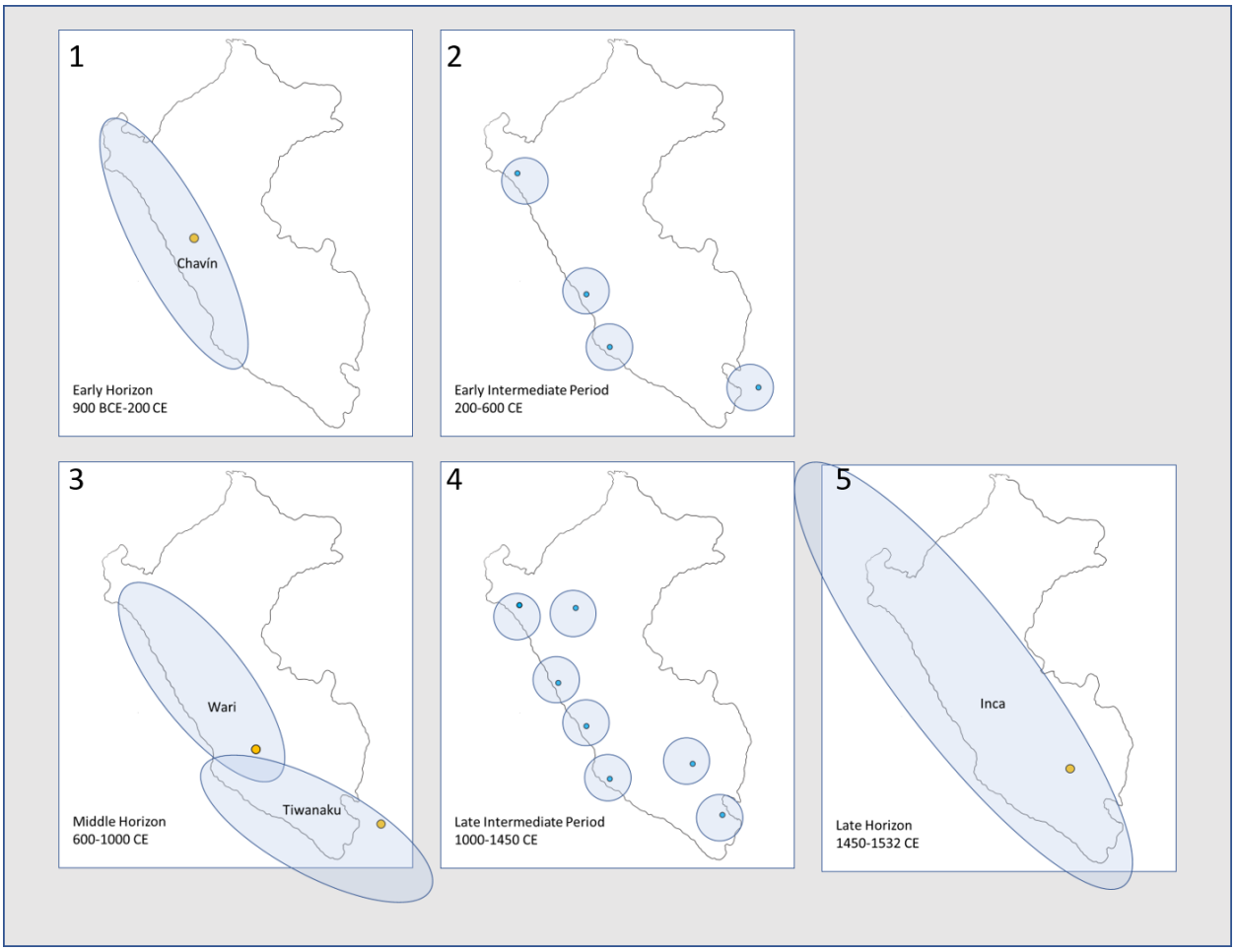

Figure 2-5 Graphic representation of Andean horizons and intermediate periods (chronological order 1-5).

imperial era Inca ceramics appear in the archaeological record as imports, local productions, and hybrid forms. Working within the Andean horizon paradigm, the preceding era is known as the Late Intermediate Period (LIP; c. 1100-1450 CE), an interregnum between the Inca horizon and the preceding Middle Horizon (MH; c. 600-1100 CE), itself defined by the expansion of the original highland Andean states, Wari and Tiwanaku. Belying these simple designations is the fact that archaeological material from a wide array of cultures and societies is lumped into each of these relative chronological categories, including the Inca or Late Horizon. Although groups assimilated into the Inca Empire can be further divided geographically between highland and coastal Andean groups, this dichotomy similarly elides a significant degree of local diversity.

Throughout the last four decades, data from several important area studies on Inca imperialism provided context for more careful consideration of local differences as well as surer footing for regional generalizations. Research in highland areas such as the Mantaro Valley, Titicaca Basin, and the Quito area of Ecuador, as well as in coastal areas such as Moche and Lima, have highlighted the great variety of Inca imperial strategy in response to a multitude of geographic, cultural, and political contexts. This observation has become almost cliché in Inca studies, as bland commentary on "diversity" or "flexibility", while rooted in fact, often substitutes for detailed explanation. Perhaps the most durable (and thoughtful) summation of the Inca imperial process belongs to Terence D'Altroy and his territorial control – hegemonic control continuum (D'Atroy 1992). D'Altroy makes the important contribution of identifying an explanatory variable, one which he argues structures the observed diversity of Inca control. In this case, varying levels of investment (in time, human/material resources, political capital, infrastructure, etc.) allocated toward extraction and control in each territorial context produces a mosaic empire with different shades (i.e. varying intensity) of direct and indirect rule. As will be discussed in more detail below, Alan Covey (2008b) materializes these degrees of investment, establishing an important distinction between new Inca administrative centers constructed in places where political centralization was absent, and administrative enclaves placed at the political centers of existing polities. There is a tension, however, between the *continuum* of investment implied by D'Altroy's model and the *types* of administrative settlements offered by Covey. One possible way to deal with this tension is the acknowledgement that different kinds of Inca administrative strategies may in fact be materialized in the architectural and cultural remnants of provincial settlements, but perhaps these strategies exist in a more complex space of

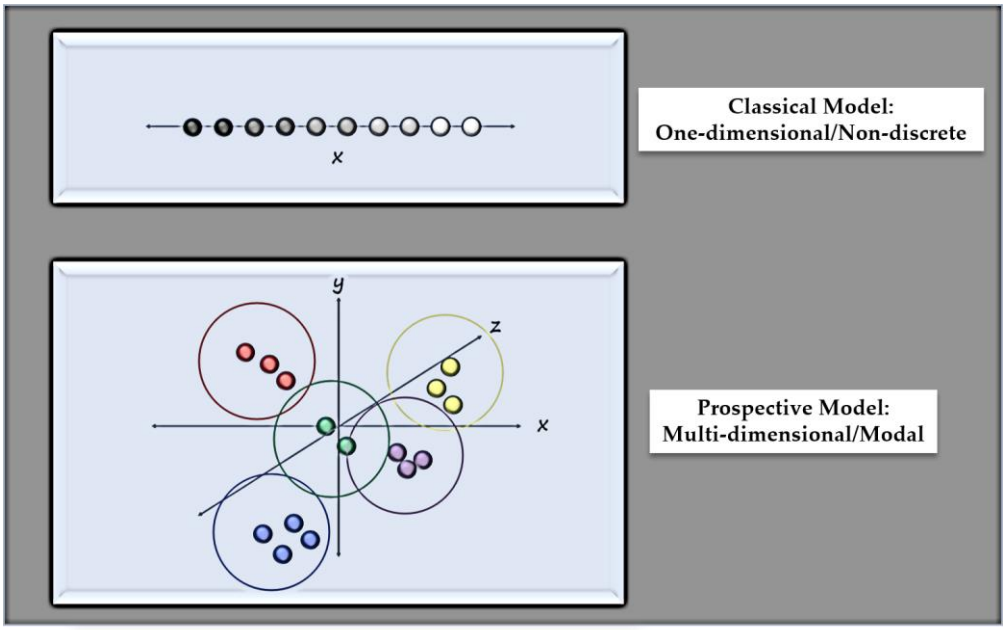

Figure 2-6 Graphic visualization of the classic model of Inca imperialism (top) and a generic outline of the kind of model pursued in this study (bottom).

imperial priorities. In other words, the single continuous variable of investment can be unpacked into several divergent interests (Figure 2-6). Utilizing regional archaeological data, it is possible to develop more precise and comprehensive models amenable to generating testable hypotheses.

Regional Perspectives on the Late Intermediate Period and the Inca

The archaeological record of the Late Intermediate and Late Horizon periods along the south-central coast of Peru is best understood within the broader context of Andean regionalism, culture history, and political development. The Late Intermediate Period spans the time between the decline of the Middle Horizon highland states, Wari and Tiwanaku, and the emergence of Tawantinsuyu (the empire of the Inca) as a regional, conquest state. The Inca controlled most of Andean South America by 1532, the date of Spanish contact. The Late Horizon, or the period of

Inca hegemony, varies based on region, but typically only includes the terminal two or three decades of the fifteenth century and the first three of the sixteenth.

The Late Intermediate Period remains understudied and somewhat difficult to characterize due to a lack of broad cultural or political unification. Recent comprehensive surveys of the literature for this period (Covey 2008a; Dulanto 2008) allow for a few generalizations. In the Andean highlands, these include (a) the pursuit of extensive economic strategies combining agriculture and pastoralism (Parsons et al. 1977), (b) the accretion of large, nucleated settlements, often situated in defensive positions (Arkush 2008; Fry and de La Vega 1995; Stanish et al. 1994), and in some cases, (c) additional settlement shifts which evince the prioritization of connections between the highlands and the coast (Julien 1992) rather than the intra-highland networks established under the influence of Wari and Tiwanaku.

Late Intermediate Period settlement on the Peruvian coast follows a somewhat different pattern. Due to the exigencies of collaborative irrigation agriculture within a circumscribed desert environment, centralization appears to occur more readily on the immediate coast, both in the Late Intermediate Period and earlier time periods (for example: Early Intermediate Period (c. 200 BCE – 600 CE) Moche state formation (Billman 2002)). The floodplains of coastal drainages provide ample space for extensive, irrigation systems, while narrow highland areas rely more on vertical intensification through terracing. Though political unification did occur in the highlands as conflict and site aggregation produced new levels of hierarchy, the regional context was often marked by territorial division at the local scale. In contrast, the *yungas* or coastal populations from the north coast Chimu (Mackey and Moore 2008), through the south-central coast Lima (Diaz and Vallejo 2004) and Cañete (Marcus 2008a) valleys, to south coast

Chincha (Morris and Santillana 2011) and possibly Ica (Menzel 1959) were complex, centralized polities long before contact with the Inca.

This cultural patterning which exists across vast areas, requires regional approaches fundamental to anthropological archaeology. The contextual nature of regional datasets facilitates comparison at various scales, as the aggregate data garnered from large-scale studies is not only (usually) quantitatively greater in size, but more importantly, it is of a qualitatively different nature (Stanish 2001). Understanding how single sites fit into regional networks prompts diachronic evaluation of settlement patterns within a region as well as synchronic comparison across regions within a culture area. At the largest scale, empirical evaluations of cultural processes within the context of entire civilizations allows for cross-cultural comparisons of social dynamics and the possibility for testing larger theories of social change.

Gordon Willey (1953) is credited with inaugurating the professional archaeological survey in the 1940s in Virú Valley, North Coast Peru, but the regional outlook is an older tradition, not limited to survey archaeology. Within that world, reconnaissance and survey (ideally, full-coverage) are the two methods associated with a regional approach. Excavation data, when placed within the context of survey data and data from other excavations, is a critical, often-overlooked component, given the biases inherent in surface studies (Stanish 2011). Historically oriented studies can also adopt a regional character. In this sense, chronicler Bernabe Cobo's (1990 [1653]:51-90) seventeenth century catalogue of *huaca*s along the *ceque* lines of Cusco was an early attempt to systematize a corpus of oral-historical data on a regional scale, work which modern researchers have continued (Bauer 1998).

For Inca archaeology, the importance of regional studies operates at nested scales. Certain questions concerning the genesis and early development of the Inca state can only be

answered through investigation of the Cusco heartland. For example, Covey's (2002) survey of the Vilconata Valley in the Urubamba drainage is the dataset upon which he builds a processual account of Inca expansion. He contrasts a heroic narrative (handed down through oral histories and Spanish chronicles; see: Julien 2000:93-108) centered on the likely-apocryphal emperor Pachacutec (whose defeat of the Chanka precipitated a rapid, regional ascension) with an archaeological record demonstrating the more typical empirical signatures of complex polity formation. According to these data, 1100 CE Cusco was already the center of a three-tiered site hierarchy and by 1300 CE expansion and consolidation yielded a polity with the archaeological signatures of a state. Far from a singular, decisive military victory, it appears that alliance building, also cited by local ethnohistory, was paramount as intergroup, elite marriage eroded ethnic distinctions and created numerous groups of intermediary elites known as Incas-by-privilege (see: Zuidema 1983).

From a production standpoint, the success of early Cusco may have resulted from the relative lack of middle and terminal Late Intermediate Period conflict in the immediate vicinity compared with neighboring regions. The observed prioritization of intensive agricultural infrastructure signals less investment in security or defense and a tendency toward local cooperation and political centralization (Bauer and Covey 2002). The developing Inca state may have also benefitted from conflict elsewhere as it could expand selectively into agriculturally productive buffer zones abandoned due to Late Intermediate Period site nucleation. In addressing the potential role of the Chanka, Brian Bauer and Lucas Kellet (2011) utilize survey data from the Andahuaylas region (what is believed to be the Chanka homeland) to discredit the ethnohistorical narrative in which the Inca decisively eliminate a rival state. While the data suggest regional site nucleation and at least two main centers with their own satellites, the lack of

a paramount center in the area and the marked economic distinction between local herder and agricultural communities is taken as evidence against the historical narrative. That said, as may have been the case for the Colla and Lupaqa (of the Titicaca Basin) and other highland groups, the fluidity of complex intermediate societies facilitates temporary unification and/or centralization at the regional scale in response to foreign aggression. This type of stochastic, ephemeral, secondary state formation may resist detection in the archaeological record and from this perspective, this narrative, and others like it, may contain a seed of truth.

Another vein of analysis, the provincial view, concerns the character of Inca settlement, policy, and economy within the various Andean regions which fell under the influence of the empire beginning in the fifteenth century CE. The scope of individual, provincial studies is typically demarcated where geographic and cultural boundaries correspond, as is the case for river valleys. Within the designated area of study, data from survey and strategic excavation are

Figure 2-7 Inca fortifications at Ollantaytambo near Cusco.

used to evaluate the impact of Inca administration based on changes in settlement, subsistence, and material culture. This requires an understanding of not only the Late Horizon occupation, but also the Late Intermediate Period situation as well. Given the goal of empirical generalization for the purposes of comparison, Inca activity in various regions must be understood against the backdrop of the local Late Intermediate Period social context while also considering the influence of diverse geography and environment.

Utilizing this first scale of generalization allows for a synthesis of Inca imperial strategy in general. Due to the great diversity of environments and cultures incorporated into the vast empire, the nature of the state administration has long been understood to be have been flexible. As discussed above, despite the documented variation in the forms of Inca imperialism, theorists have established workable (and testable) generalizations at this level of analysis. Terrence D'Altroy (1992) observes that Inca strategies in the provinces can be understood as operating along a continuum from territorial (direct) to hegemonic (indirect) rule, a model which has seen application outside of its generative context (Parker 2013). Alan Covey (2008b) grounds this spectrum in a typology of Inca administrative sites. Aside from the minor waystations along the road system, which the Inca called *tambo*, he distinguishes between:

> (a) new imperial centers established in areas with an absence of prior political centralization or a requirement for more intrusive rule and
>
> (b) imperial enclaves in areas where the Inca could rule through the existing local administrative apparatus with minimal intervention.

A combination of D'Altroy's investment/control spectrum and Covey's hypothesis that the presentation of Inca administrative architecture reflects certain socio-political goals in provincial

territory constitutes the prevailing theoretical synthesis within Inca studies. With a better understanding of the history and process of the expansion of the Inca state, it may be possible to compare this case to other cases of expansive pre-modern states and empires. In comparing, researchers may pose anthropological questions about cultural process and the relative importance of geography, inter-polity competition, and historical contingency within the context of Andean prehistory and beyond. For example, an understanding of provincial labor tax and the deep penetration of the Inca state into matters of population resettlement and subsistence, gleaned from regional studies in the Mantaro Valley (D'Altroy and Hastorf 2001) and the Titicaca Basin (Stanish 2000), highlights the alternative case of market economies. These require less direct control and allow for the collection of state taxes in the form of tribute-in-kind (Stanish 1997).

Models of Inca Imperialism in the Highlands and on the Coast

In developing models of Inca imperialism, a significant consideration is the geographic distinction between the highlands and the coast (Figure 2-8) due to distinct structures of production, population density, and territorial control in each area. Sustained interaction between highland and coastal peoples is a recurring theme in the record of various historical civilizations (Glatz and Casana 2016). In some cases, this interaction is posited as a causal factor in the development of political complexity (Haas and Creamer 2006), though the ceaseless transit of objects, people, and ideas between these ecological zones appears to pre-date even permanent settlement (Love 2007; Lindly 2005). The oppositional character of the highlands and coast is perhaps most famously espoused by Fernand Braudel in his landmark, cultural-ecological history, *The Mediterranean and the Mediterranean World in the Age of Phillip II* (1949). As

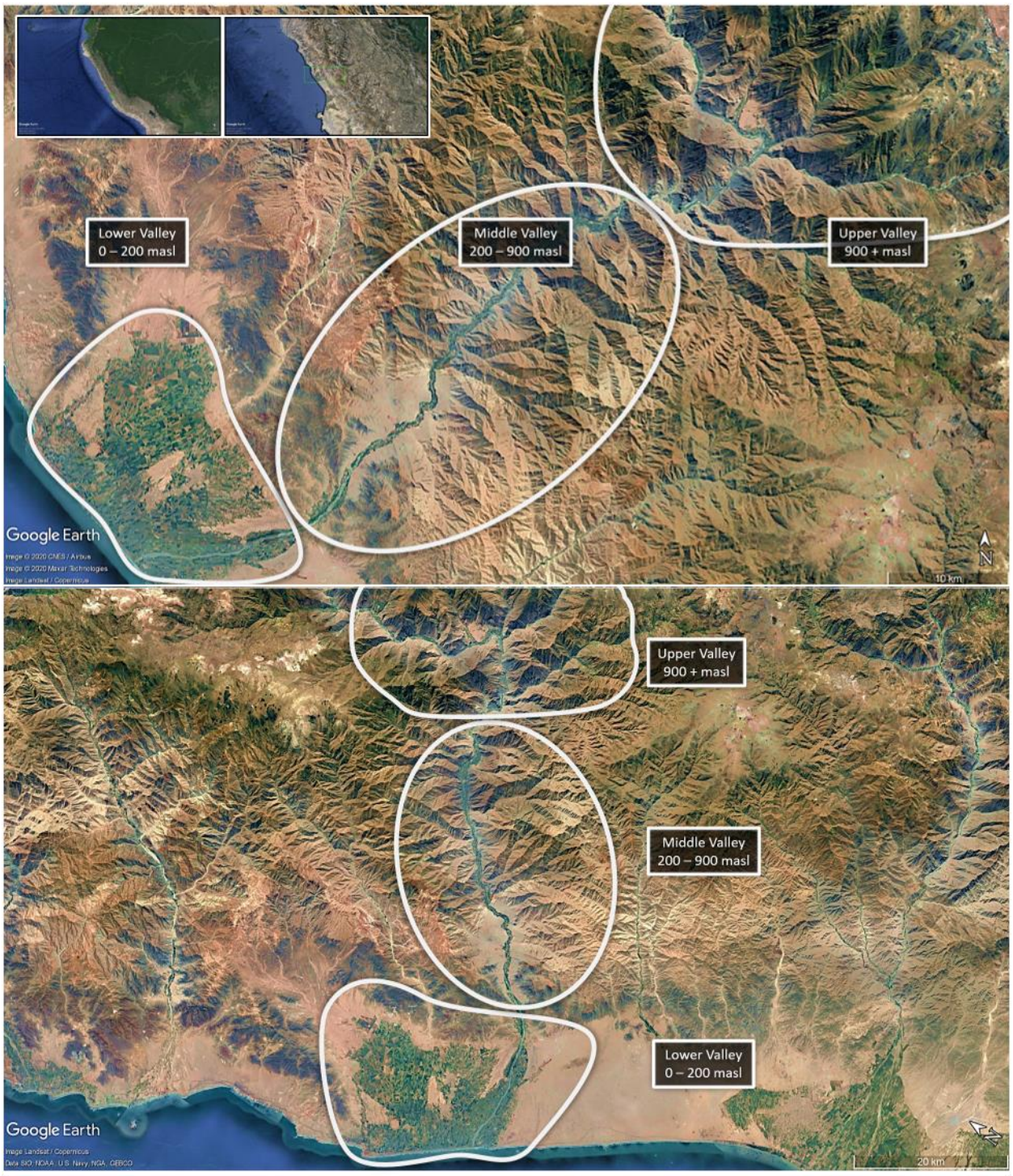

Figure 2-8 Two satellite views of Cañete showing the ecological zones from the immediate coast into the highlands

Braudel and others observe, from the perspective of the literate, urban lowlands, this geographic distinction was also a social distinction between the realm of civilization and the world outside of its control, notwithstanding the documented ebb flow of power held by each sphere at any given time (Shaw 1990). The Andes are an interesting departure from the Mediterranean model in that the climax cultures of each of the three civilizational horizons originated in the highlands and only afterward expanded their influence and power to the coast. But a closer look reveals that this is not a simple antithesis of the conventional paradigm. The earliest evidence of monumental corporate architectural projects (Haas et al. 2004), the fluorescence of ceramic traditions of unparalleled artistic and technical proficiency (Proulx 2000; Donnan 2004) and the emergence of the first state(s) (Billman 2002) all took place along the coast of Peru. Though neither side of the Andean cultural-geographical divide produced written opinions on the other, it seems clear that both have unique claims to Andean civilization.

Considering this transregional cultural-geographical structure, comprehensive theoretical frameworks are useful in clarifying the process of Inca imperialism outside of the Cusco area. As mentioned above, a prevailing view of Inca administrative practices is that they are best understood along a continuum from direct control (territorial imperialism) to indirect control (hegemonic imperialism) (D'Altroy 1992). This avoids the problem of trying to identify a singular mode of Inca imperialism, as it was famously fluid and contextual. From an economic perspective, Inca success can be understood as a function of expert management of provincial labor and storage (D'Altroy and Earle 1985), a quality necessary in a world with no markets or money. Rather than relying on markets to meet the demands of the populace or tribute to meet the demands of the state, the Inca made prodigious efforts to move, resettle, and organize subject populations to appropriate their labor for state and local purposes.

In the process of expansion, the Inca established administrative centers in distant territories to serve the interests of the state. Mary La Lone and Darrell La Lone (1987) distinguish between administrative centers proper and production/agricultural enclaves, as seen in the Cochabamba area in modern Bolivia, where intensive agriculture and large-scale storage were undertaken in the fertile *chuapiyunga* (coastal piedmont) zones. Covey (2008b) categorizes the administrative sites into three groups: (a) imperial enclaves in areas where there is a sufficient local administrative apparatus and good relations [e.g. La Centinela (Morris and Santillana 2011), Pachacamac (Díaz and Vallejo 2004), Chuquitoy Viejo (Conrad 1977)] (b) secondary centers, including *tambos*, usually located as minor nodes along the road system (Hylsop 1984) and (c) new administrative centers, typically established in areas where there is no prior political centralization [e.g. Huánuco Pampa (Morris et al. 2011), Pumpu (Matos 1994), Tambo Colorado (Engel 1957)] or in areas where it is in the interest of the state to reorganize the economy/settlement to consolidate control [e.g. Hatun Xauxa (D'Altroy and Hastorf 2001), Hatunqolla (Julien 1983), Yanque (Wernke 2006)].

Covey (2008b) believes that newly established imperial centers in areas with low population and political centralization were likely an attempt by state authorities to create a space for the periodic interface of the local population and its elites with the Inca in the form of ritualized congregation and inspection. A central (and quintessentially Andean) Inca tactic was the coopting of traditional political frameworks structured through reciprocal obligations owed by a paramount to lesser elites and by elites to the general populace. As Steven Wernke (2006) puts it, the Inca bureaucratized the *ayllu*-centric notions of reciprocity through the development of their decimal hierarchy. The unusually spacious central plaza at Huánuco Pampa, with its panoptic viewing platform and *ushnu*, (Morris et al. 2011) served a strategy of political control

through intermediary elites (Elson and Covey 2006) periodically feasted by the Inca (or his representatives) within the plaza, in ritualized repayment for debts incurred by appropriated labor.

Investment in territorial control was probably most intensive in highland areas with powerful Late Intermediate Period polities. It is important to note that the Inca were the first Andean state to exercise dominion over large swaths of territory outside of their core area (though the degree to which this prevailed is debatable). The Middle Horizon states, like Tiwanaku, established colonies in areas of strategic interest and exerted material influence within a broader sphere of civilization (Stanish 2002:191). But in this case, the manifestations of direct control, such as state architecture or infrastructure, are limited to select colonial contexts. The Inca, utilizing a road system, bureaucracy, and administrative centers, exerted political control and unprecedented penetration into the economic activity of incorporated areas. Coopting the principle of reciprocal obligation, as noted above, is an ideological means by which this was accomplished. Covey (2008b:825-827) notes that the large, open, central plaza architecture typical of Inca settlements attests to the degree to which an ethos of inclusiveness was communicated in these spaces. He contrasts this quality with the *audiencias* of the *ciudadelas* (palace/storage/burial platforms/workshops) at Chan Chan and concludes that the patios of the Chimor elite were a more intimate, restrictive gathering space, implying an alternative strategy of state control.

The Late Intermediate Period literature on areas such as Andahuaylas (Bauer and Kellet 2011) and the Titicaca Basin (Stanish 2000; Fry and de la Vega 2005; Arkush 2008) is intriguing as it relates to the ethnohistorical accounts of Inca conquest. Returning to the case of the Chanka, the chronicles relate that the emerging Inca state (Bauer and Covey 2002) arrived at an inevitable

showdown with a unified, state-level, Chanka polity. The momentum from this great Inca victory over a rival state fueled the imperial onslaught of the fifteenth century. In the case of the Colla and Lupaqa, there are passages in which these groups are said to have fought among themselves, and other instances in which the entire Titicaca Basin was unified against Inca aggression (Cieza 1976 [1553]:236-238). Although the work of Catherine Julien (1983), Stanish (1997), and others corroborates the narrative of an Inca/Lupaqa alliance and defeat of the Colla, certain ambiguities highlight a critical difference between political organization in the highlands and the coast.

In a fascinating passage, the sixteenth century chronicler, Pedro Sarmiento de Gamboa (1988 [1572]:47) describes the function of the military office – *cinchi*, basically a war captain appointed during times of conflict, and its role in the early conflicts in the Cusco Valley. While *cinchi* was supposed to be a temporary position, the frequent conflict during the Late Intermediate Period both increased the frequency of its use and the length of its tenure. Temporary powers granted during times of crisis which then become institutionalized is a classic anthropological scenario conjectured to factor in the initial development of political centralization (e.g. Carniero 1970:736). In the relatively isolated, circumscribed coastal valleys, centralization and valley-wide unification was achieved probably due to economic expediency. However, it is important to note that intervalley conflict and consolidation along the coast did arise during the Late Intermediate Period, notably in the case of Chimor, a conquest state (Mackey and Moore 2008) as well as the postulated influence of Chincha over neighboring Pisco to the south (Menzel 1959).

Warfare has become a hallmark of the Late Intermediate Period. It is important to state that this conflict intensified only in the latter half of the Late Intermediate Period, denying an immediate, causal connection to the crisis of collapsing Middle Horizon states centuries earlier

(Arkush and Tung 2013:42; Arkush 2008). The ubiquity of nucleated, defensive highland settlements in the Late Intermediate Period suggests a processual explanation based on geography, climate, and the increasing connectedness between highland farming and herding communities as well as between the highlands and the coast. Regions such as Andahuaylas and the Titicaca Basin, though lacking a centralized, regional polity, nevertheless presented the obstacle of independent, complex *señoríos* (chiefdoms) and the possibility of sporadic region-wide unification in response to aggression (Wachtel 1982:210).

Examining the highlands in more detail reveals that the Inca were often inclined to utilize direct, territorial methods of control, typically in the form of new administrative centers. The terminal century of the Late Intermediate Period was a dynamic era in the highlands as conflict (Arkush 2008) led to site nucleation, defensive positioning, and the pursuit of extensive economic strategies by more closely integrated and increasingly specialized agricultural and herding communities (Parsons et al. 1997). Although in some cases the establishment of administrative centers was a means of aggregating economic output and political/ritual interfacing in areas of low centralization and low population density (e.g. Huánuco Pampa; Morris et al. 2011) it was often the intent of the Inca to radically alter local settlement and production for state benefit. From the study of pottery assemblages at various sites in highland Ecuador, Tamara Bray (2008) argues that the nature of Inca incursion in the region (most dramatically visible in fortified military sites) is evident in an increase in locally made Cusco imitation wares as well as a decrease in non-Inca imports from adjacent regions. Bray's work is important as it demonstrates the degree to which the given narrative (i.e. Late Intermediate Period fragmentation followed by Late Horizon unification) may be incomplete. In this case,

Inca influence in the region appears to sever interregional connections, fostering dependence on the state and decreasing the potential for unified resistance (Bray 1992:230).

Extensive work in the Mantaro Valley, likewise, demonstrates the degree to which Inca imperialism affected local elite and domestic economies. The placement of state administration at Hatun Xauxa effectively moved the site of ritual feasting from the households of local elites to the main plaza of the new Inca installation (D'Altroy and Hastorf 1984). In the process, local elite wares were replaced with Inca polychrome plates and the use of silver as a sumptuary good was appropriated for state purposes. The state reorganized settlement, reducing site sizes and moving the population down from elevated defensive positions to the more fertile valley bottom. Botanical samples from the multitude of storehouses and domestic sites as well as the remains of agricultural infrastructure demonstrate the degree to which the state altered local agricultural practices to meet its demand for maize (Hastorf 1990). A similar pattern is evident in the Titicaca Basin where full-coverage surveys in Lupaqa (Stanish et al. 1997) and Colla (Frye and de la Vega 2005) territories demonstrate settlement pattern changes coincident with the Late Horizon transition, including a reduction in site size, the resettlement of populations to lower, less defensive, more agriculturally productive locations, and the establishment of Inca administrative centers such as Hatunqolla (Julien 1983) along the state road network. Like the Wanka, the Colla and Lupaqa were organized as powerful, complex societies at the end of the Late Intermediate Period. Inca pacification strategies in the region, as in other highland locations, were contingent upon promoting political and ethnic cleavages, severing interregional connections, and controlling populations though restrictions on movement, settlement, and economic activity. Methods combining elements of politics, concession, and domination were likely pursued in one

version or another as far north as highland Ecuador, a landscape of nucleated, defensive settlements controlled by groups with strong ethnic identities (Bray 2008).

As will be examined in detail in the following chapters, the Andean coast, though geographically and culturally distinct from the highlands, is not autonomous. The millennia span of Andean civilization is in many ways a history of highland and coast interaction. The nature of these highland-coast interactions during the Late Intermediate Period (Dulanto 2008) and how these relationships impacted Inca decisions in various regions has not been thoroughly explored. In a period that witnessed the fluorescence of novel forms of social organization and the erosion of traditional dichotomies, the middle valley, *chaupiyunga* areas of the south-central coast became the location of vibrant cultural and economic exchange (Santoro et al. 2010) as well as rapid political turnover in the wake of military campaigns and demographic transition. These ideas will be investigated in the next few chapters within the context of the south-central Peruvian coast and Cañete, in particular.

CHAPTER THREE

Cañete: Ethnohistory, Culture History, and Archaeology

Primary Study Area: Cañete/Lunahuaná, South-Central Coast, Peru

The Cañete drainage (Figure 3-1) is located on the south-central coast of Peru within a province of the same name. It is part of the Lima administrative region. One of a series of narrow river valleys which transect the foothills of the western Andean cordillera and terminate along the Peruvian Pacific coast, it lies north of the large valley of Chincha (and the tiny Topará *quebrada*) and south of the small Asia and Mala valleys. Cañete is both culturally and administratively affiliated with the Peruvian central coast[8] rather than the south coast[9], a distinction of convention which may warrant closer scrutiny (Menzel 1959:25).

The narrow stretch of land which extends more than 2,000 kilometers along the Peruvian coast is subject to an extreme, arid climate due in large part to the rain shadow of the immense Andes range. The coast is traditionally divided into two ecological zones, the *yunga*, or coast proper, and the *chaupiyunga*, or costal piedmont (Figure 3-2). In the *yunga* zone, dry farming is virtually impossible and cultivated zones are confined to the river valleys where irrigation canals can deliver water to fields. As the Cañete river maintains a constant flow throughout the year, this irrigation regime is very productive. As an illustration of this agricultural bounty, the sugar cane crop yielded one million dollars in 1860 alone, equivalent to twenty-seven million dollars today (Markham 1862:301).

[8] Central Coast: Santa (north) through Cañete (south)
[9] South Coast: Chincha (north) through Yauca (south)

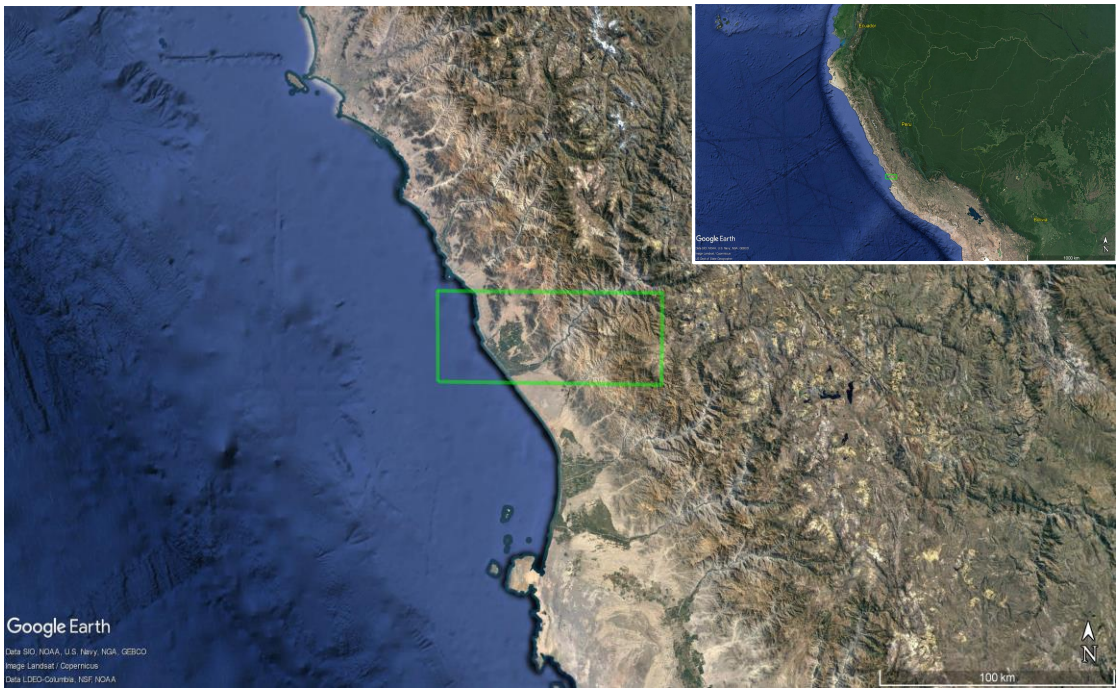

Figure 3-1 Study area: Lower and middle Cañete drainage outlined in green.

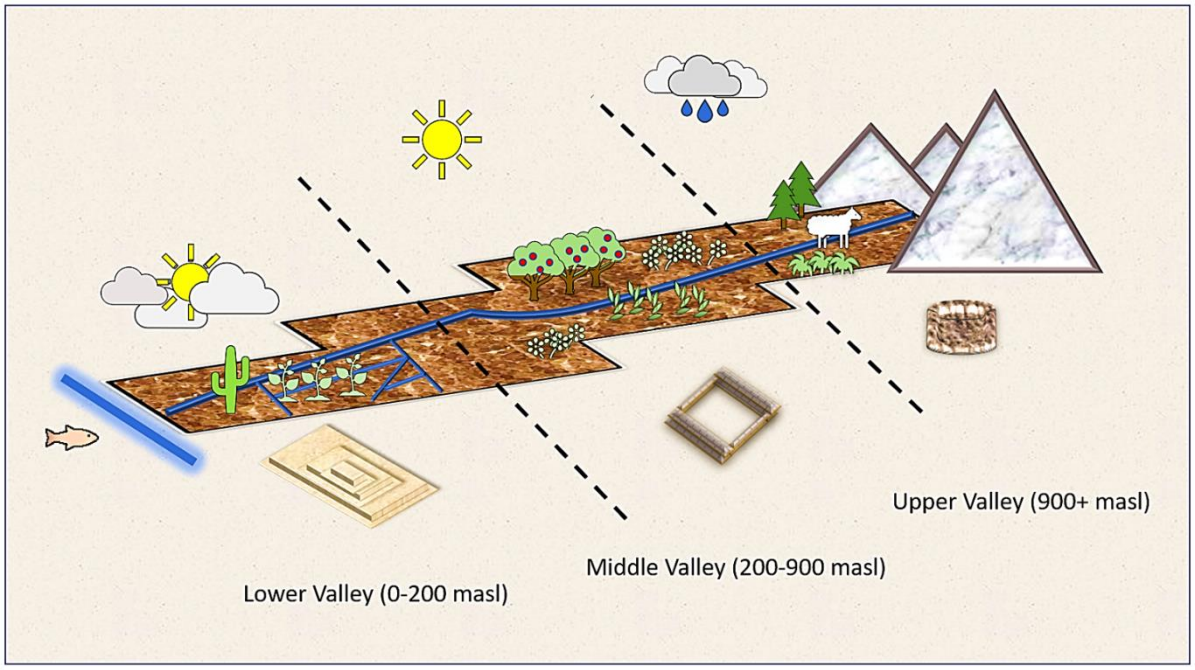

Figure 3-2 Image illustrating differences between climate, production, and architecture in lower, middle, and upper valley areas.

Moving away from the immediate coast into the middle valley, the relative decrease in aridity allows for the development of more water-intensive agricultural projects such as orchards and the cultivation of maize and coca. In the case of Cañete, this progression upriver involves a dramatic narrowing of the river valley fifteen kilometers inland and a steep increase in elevation at around fifty kilometers from the coast, heading into the foothills of the Andes. At this point, along the upper coastal valley areas, culture and identity exhibit a distinctly highland character.

Documentary Sources

The ethnohistorical record of Cañete is vivid, yet incomplete (Rostworowski 1989:79-127). Although Miguel de Estete (authoring a passage in the *Verdadera Relación de la Conquista de Peru* by Francisco Xerez, 1534) was perhaps the first to document the existence of a people and place called Huarco (Arana 2018) the available historical information about ancient Cañete and the Inca comes from three additional primary sources. The *Crónica del Perúi,* written by soldier and early eye-witness Pedro Cieza de León (between 1540 and 1550), is the oldest and most important source. *Comentarios Reales de los Incas* (1609) by "El Inca" Garcialso de la Vega and *La Historia del Nuevo Mundo* (1653) by the Jesuit missionary, Bernabé Cobo, are the other accounts commonly referenced on the topic. All three sources agree that:

(a) there existed a powerful polity called Huarco (often written, Guarco) located in the lower part of the valley now known as Cañete,

(b) the Incas acquired the valley to the south, Chincha, before initiating activity in Huarco, and

(c) the Huarco resisted conquest for some time but were eventually subdued through betrayal or deception.

Despite these fundamental agreements, the sources vary significantly on important components of the story. Cieza claims that Chincha submitted peacefully:

> En Chincha estaban aguardando si el Inca iba a su valle, puestos más de treinta mil hombres a punto de Guerra, y esperaban favores de los vecinos. Tupa Inca, como lo supo, les envoi mensajeros con grandes presentes para los señores y para los capitantes y principals, diciendo a los embajadores que de su parte les hiciesen grandes ofrecimientos y quél no quería guerra con ellos, sino paz y hermandad y otras coasa desta suerte. Los de Chincha oyeron lo que el Inca decía y recibiéronle sus presentes…dejaron los armas y recibieron a Tupac Inca que luego movió para Chincha. (Cieza 1967 [1553]: 199)

Garcilaso's account differs with this view:

> Estos indios de Chincha se jactan mucho en este tiempo, diciendo la mucha resistencia que hicieron a los Incas…Dicen también que tardaron los Incas muchos años en conquitarlos. Y que más los rindieron con las promesas, dádivas y presentes que no con las armas, hacienda valentía suya la mansedumbre de los Incas, cuya potencia en aquellos tiempos era ya tanta que si quisieran ganarlos por fuerza pudieran hacerlo con mucha facilidad. (Garcilaso 1991 [1609]:367-368)

As does the account of Cobo:

> Muchos valles de la costa se dieron de paz y otros fueron guerreados…los de Chincha tomaron las armas, que eran muchos, y pelearon muchas veces con las gente del Inca, de la cual quedaron vencidos. (Cobo 1956 [1653]:81)

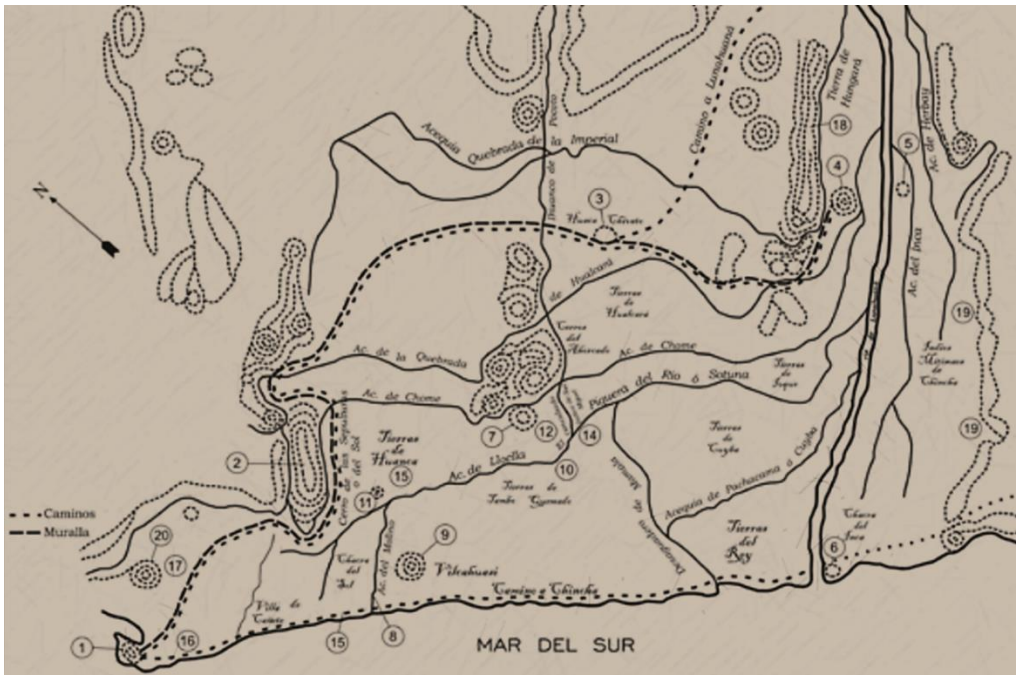

Figure 3-3 "Sketch of the Ancient Huarco Valley" following Larrabure y Unanue (1935) [1893]. A perimeter wall spans the breadth of the valley from Ungará (4) to Huarco (Cerro Azul) (1).

The latter two authors maintain that the Chincha were conquered only after military action like their neighbors in Cañete. It is interesting to note that the descriptions of Chincha conquest reference a multitude of attempts or several years of struggle.

According to Cieza, the conquest occurred during the period when Topa Inca was the Inca monarch (*Sapa Inca)*. Garcilaso reports that the conquest happened under the rule of Pachacutec, but the Inca's brother along with his son (Topa Inca) together led the armies. Cobo seems to suggest that there were two separate conquest events, the first led by Pachacutec and the second led by Topa Inca.

Cieza relates the generally accepted series of events including the initial resistance of Huarco and the retreat of the Inca from the summer heat:

> …entre unos y otros…se trabó la Guerra y pasaron grandes cosas entre ellos. Y como viniese el Verano y hiciesen grandes calores, adolesció la gente del Inca, que fue causa que la convino retirar; y así, con la más cordura que pudo, lo hizo…(Cieza 1967 [1553]:200)

He then describes the return of the Inca and the construction of a "New Cusco" as a base of operations:

> Y como viniese el otoño y fuese pasado el calor de estío, con la más gente que pudo juntar abajó a Los Llanos y envoi sus embajadores a los valles dellos, afeándolo su poca firmeza en presumir de se levanter contra él y amonestóles que estuviesen firmes en su Amistad; donde no, certificóles que la Guerra les haría cruel. Y como llegase al principio del valle del Guarco, en las haldas de una sierra, mandó a sus gentes fundar una ciudad a la cual puso por nombre Cuzco, como a su principal asiento, y la calles y collados y plazas tuvieron el nombre que las verdaderas.…(Cieza 1967 [1553]:201)

According to Cieza and others, "New Cusco" was constructed as a token of Inca presumption or resolve, though the precise symbolic and material significance of this architectural tableau is unclear (see discussion in Rostworowski 1989:104-107). He suggests that the war effort persisted for an additional three years:

> Y así, los unos por ser señores y los otros por no ser siervos, procuraban de salir con su intención; pero al fin, al cabo de los tres años, los del Guarco fueron enflaqueciendo y el Inca, que lo conoció, les envoi de nuevo embajadores…(Cieza 1967 [1553]:201)

The eventual Huarco defeat comes via surrender under the pretense of clemency, but the deceived Huarco are cruelly punished for their resistance:

> …los del Guarco, parensciéndoles que ya no podrían sustentarse muchos días y ya con las condiciones hechas por el Inca sería major gozar de tranquilidad y sosiego, concedieron en lo que el rey Inca quería; que no debieran, porque dejando el fuerte fueron los más principales a le hacer reverencia y, sin más pensar, mandó a sus gentes que los matasen a todos y ellos con gran crueldad los pusieron por obra y mataron a todos los principals y hombres más honrados dellos que allí estaban, y en los que no lo eran también se ejecutó la sentencia; y mataron tantos como hoy día lo cuentan los descendientes dellos y los grandes montones de huesos hay son testigos…(Cieza 1967 [1553]:202)

Afterward, the Inca construct the famous Fortress of Huarco on the inner coast and tear down "New Cusco" in a dual-symbolic gesture.

Garcilaso claims that this "New Cusco" was neither a planned nor permanent settlement, but simply the name given to the temporary military encampments.

> Dícelo de relación de los mismos yuncas, como él afirma, los cuales se la dieron aumentada por engrandecer las hazañas que en su defense hicieron, que no fueron pocas. Pero los cuatro años fueron los cuatro ejércitos que los Incas remudaron y la ciudad fue nombre que dieron al sitio donde estaban. (Garcilaso 1991 [1609]:391)

He explains what he identifies as an erroneous duration of four years total for the campaign originally related by Cieza. Instead, what transpired, was the requirement for four troop replacements throughout the campaign which lasted mere months instead.

Cieza mentions "Lunaguana" as the name of the river and valley which are today known as Cañete, but he does not mention Lunahuaná as a separate polity, or as an important player in

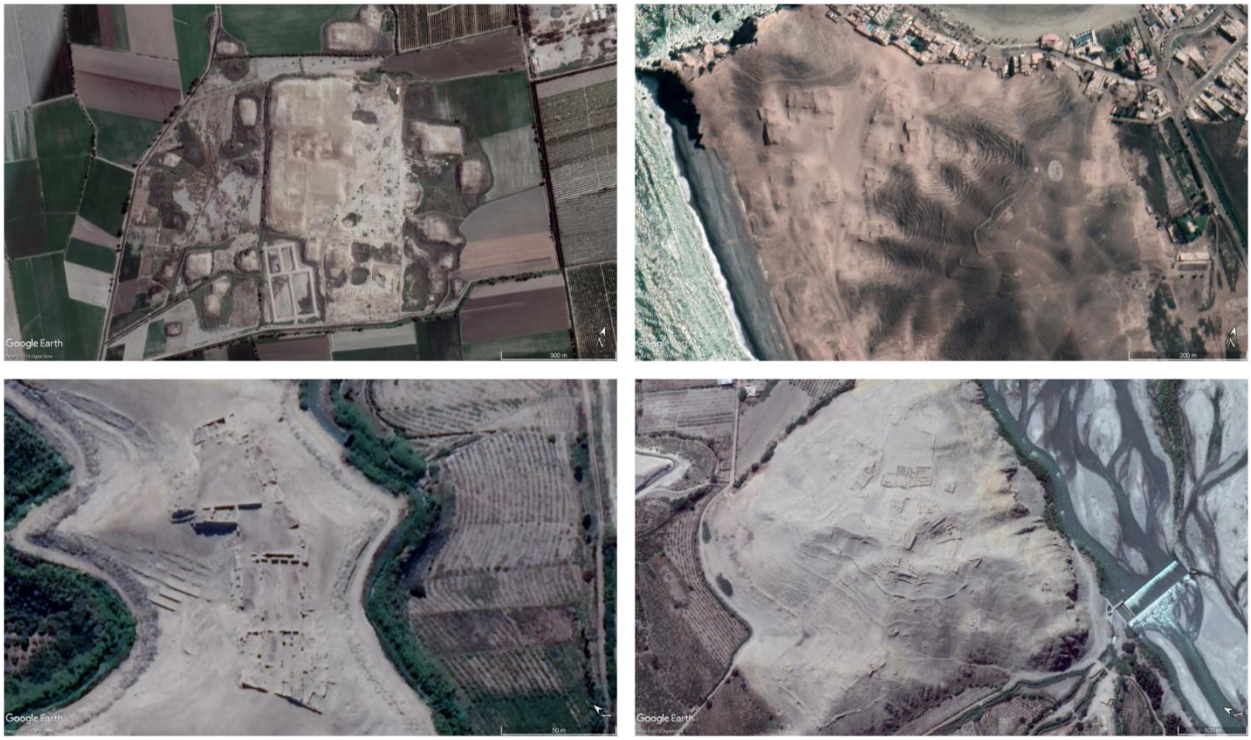

Figure 3-4 Important lower valley LIP/LH sites in Cañete. Vilcahuasi (upper left), Huarco (upper right), Cancharí (lower left), and Ungará (lower right).

the events he relates (Cieza (1946 [1553]:378). Garcilaso identifies two separate political entities:

> En aquellos tiempos fue muy poblado aquel valle Runahuánac – y otro que está al norte de él, llamado Huarcu, el cual tuvo más de 30 mil vecinos. (Garcilaso 1991 [1609]:390)

As does Cobo:

> No anduvieron meno Valientes en su defense los del Huarco y Lunaguaná que los de Chincha, sus vecinos, porque mantuvieron la guerra con notable esfuerzo y constancia muchos meses, en los cuales pasaron cosas notables entre los unos y otros. (Cobo 1956 [1653]:81)

According to Garcilaso, Huarco and Lunahuaná, along with two valleys to the north, Mala and Chilca, comprised a military alliance headed by a leader named Chuquimancu who assembled his forces in Cañete, believing himself capable of withstanding the Inca assault in the valley's coastal fortresses (Garcilaso 1991 [1609]:390-392). In his narration, Garcilaso is quick to dismiss Chuquimancu as a regional sovereign and views the "king" as a presumptuous and vocal leader of an ad-hoc military alliance, resisting Inca incursion. In this version, betrayal occurs at the hands of the Lunahuaná who, fearing military defeat would lead to their lands being taken by their rivals in Chincha, relayed vital military secrets to the Inca, giving the invaders the upper hand over Chuquimancu. Garcilaso characteristically portrays the Inca as merciful in victory and does not mention the Fortress of Huarco.

Figure 3-5 Landscape of Lunahuaná. View west downriver.

Cobo references Huarco-based conquests on separate occasions in his writing. He briefly addresses the conquest of Chincha followed by the conquest of Huarco and Lunahuaná, all three which are said to have offered a valiant defense of their territory. These conquests are part of a larger costal campaign undertaken by Pachacutec. In a later section, Cobo devotes a bit more attention to an incident which occurred during the travels of Topa Inca and the Inca *coya* (queen) as part of an inspection of the imperial provinces.

> Llegado el visitador al Guarco, la señora dél, que era viuda, se puso a impedirle la visita y que empandronase sus vasallos, diciendo que no había de consentir que el Inca señorease su estado. (Cobo 1956 [1653]:87)

When the Inca official (named by Cobo as Apu-Achache, the Inca's brother) is rebuffed by the rebellious leader of the Huarco, he informs the royal couple of what has happened. Due in part to the fact that the Huarco ruler is also a woman, the *coya* decides to deal with the dissent herself. She crafts a ruse by which the Huarco believe the Inca have decided to withdraw, leaving them to govern themselves.

> Tomó a su cago la *Goya* [sic] este negocio y depachó al visitador, dándole parte del camino donde pensaba guiarlo, y mandándole que dijesen a aquella cacica, cómo él tenia aviso del Inca y de la *Coya* que querían reservar toda aquella provincial para ella, y que en albricas le pidiese le mandase hacer una fiesta solemne en la mar.
>
> La viuda, creyendo ser verdad la nueva que le dió el visitador, concedió lo que le pedía y mandó para cierto día que le señaló el mismo visitador, que todos los del pueblo saliesen a la mar en sus balsas a festejarle… (Cobo 1956 [1653]: 87).

Figure 3-6 Inca ashlar masonry atop Cerro Centinela, the rocky promontory above the site of Huarco (Cerro Azul).

As the people of Huarco celebrate out to sea on balsa rafts, an Inca detachment led by two captains, takes the opportunity to occupy their territory, eventually capturing their leader, bringing her in bondage to the *coya.* It is interesting to note that Cobo says that this adventure was part of a provincial tour which lasted four years in total. These reprisals would not have been unprecedented as the rebellion and defeat of the Collas (a powerful Titicaca Basin faction) after an initial conquest is attested by some chroniclers (Cieza 1967 [1553]:181-185). Although the existence of women in positions of political leadership is a common theme in the Andean world (Rostworowski 1999b:292-296), this case may be an outcome of the first Huarco conquest, given the documented Inca practice of executing men from rebellious groups, sparing only women and children (Rostworowski 1989:81).

Friar Cristóbal de Castro and Diego de Ortega Morejón [1558] (cited in Rostworowski 1989:81) state that the Huarco were the only people on the south-central coast to resist the Inca,

while Miguel Cabello de Valboa (1951) [1586]:338-339) explains that the name "Huarco" is of Quechua origin and refers to the counter-weights the Inca used to hang their captured enemies. In a similar vein, "Lunahuaná" is said to be derived from "*Runahuanac*" or "the punished people," though here the meaning may also indicate that the turbulent river punishes the unwary. This is the case in Chincha where one of the primary rivers is called "Matagente" (Garcilaso 1991 [1609]:389).

Cieza believed that the Huarco were not new to conflict and indeed had long been at odds with their neighbors (1976 [1553]:338). This suggestion finds support in the architectural remains of the Huarco polity; some of the most impressive are fortresses or defensible sites. As noted above, the chronicles make frequent reference to a Fortress of Huarco. Cieza (1976 [1553]:339-340), marveling at the fine construction, declared it the most beautiful and ostentatious citadel in Peru. He describes waves crashing up against its walls and a grand staircase leading down to the sea. In 1556, just after the founding of the Spanish settlement of Cañete, Viceroy Hurtado de Mendoza attempted to prohibit the local populace from robbing cut stone blocks from the buildings for reuse in new construction projects (Rostworowski 1989:85). His order was largely ignored. Indeed, later officials explicitly supported the removal of cut stones from the Inca structures to be used in the Spanish city San Luis in Cañete and as far north as Callao near Lima (Villar 1935:274).

María Rostworowski (1989:84) identifies the modern town of Cerro Azul as lying adjacent to the chronicled Fortress of Huarco. This is also the location of Huarco, a monumental Late Intermediate Period stepped platform complex adjacent to extensive domestic terracing (Marcus 1987). Today, all that remains of Inca construction at this site complex are a few sections of fine ashlar masonry (Figure 3-6), typically only reserved for select, important sites on

the coast, and an adobe structure with twelve rooms (Marcus 2017). A less plausible candidate for the Fortress of Huarco is the site known as Hervae (Larrabure y Unanue 1874:68-71) or Hervay, at the mouth of the Cañete river, near the modern town of Herbay Bajo. Built in part with plastered, painted adobes, this palatial Inca compound reportedly showcased an elaborate entry ramp and a stunning view of the sea (Markham 1880:84). Ephraim Squier (1877:83-84) sketched a plan of the same site which he styled "Hervai" during his travels along the coast of Peru. Markham (1864:259), who also visited and made multiple drawings of the ruins, argues that Cieza was describing Hervay when he spoke of a grand citadel upon a hill overlooking the coast. The fact that only faint traces of the site seem to have survived to the present makes the identification difficult, but the images he produced are compelling, depicting large structures positioned as specified by Cieza (Figure 3-7).

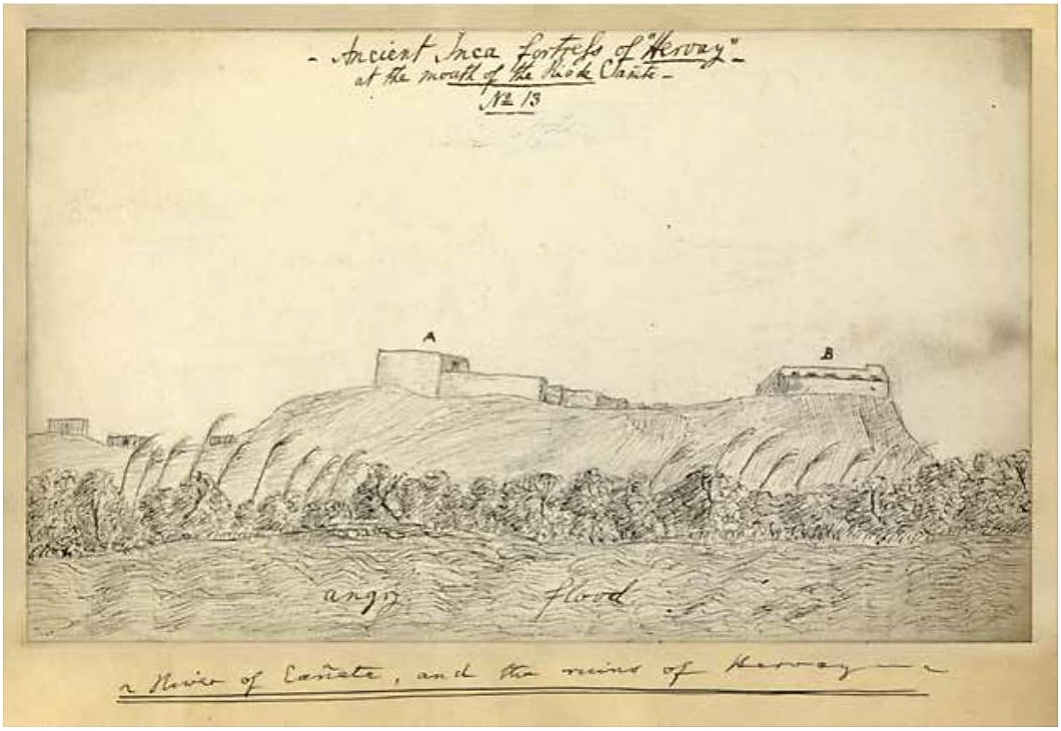

Figure 3-7 "Ancient Inca Fortress of Hervay at the mouth of the Río de Cañete." After Markham (1852-1853). He depicts a complex with two sectors, one of which sits on a promontory above the sea.

Figure 3-8 A view to the east atop the Fortress of Ungará, lower valley Cañete.

Paralleling these fortifications along the coast, Ungará, a massive hilltop fort, twenty kilometers to the southeast of Huarco, was the principal point of defense on the interior (Figure 3-8). Ernst Middendorf (1973) [1893]) visited Ungará more than a century ago and acknowledged it as the most important ancient fortress in the valley. Manuel Eugenio Larrabure y Unanue (1941) [1893], a contemporaneous, late nineteenth century visitor to the region who is credited with producing the most detailed map of ancient ruins in the lower valley, writes of the extensive walls, towers, and enormous storage vessels he witnessed at Ungará. On the opposite side of the river, across from the primary complex, a smaller site called Hacienda Palo secured the southern flank. In his map, Larrabure y Unanue indicates that a defensive wall once surrounded a large portion of the lower valley linking Ungará with sites further downriver.

Other prominent sites in the lower valley include:

(a) Cancharí (Figure 3-9) (Larrabure y Unanue 1874:59-63; Serrudo and Coben 2018) a fortified, palatial ruin located on a hilltop between the two primary canals in the valley – San Miguel (west) and Maria Angola (east), with Inca-period architectural modifications,

(b) Cerro de Oro (Kroeber 1937; Ruales 2010; Fernandini 2018) a vast Middle Horizon cemetery with early structures assembled from distinctive conical adobes along with Inca cemeteries, and

(c) Vilcahuasi (or, Los Huacones) (Williams and Merino 1974a; Areche 2019) a sprawling complex of earthen platform structures, sunken courts, and ritual deposits with an imperial Inca occupation.

Larrabure y Unanue (1941) [1893] confirms the prior existence of a Sun Temple among other Inca additions at Vilcahuasi and indicates that agricultural land to the north of the site may have

Figure 3-9 View northwest of Cancharí, lower valley Cañete. Monumental tapia architecture set atop a natural coastal bluff.

Figure 3-10 Ancient wall at the Late Horizon site, Cruz Blanca. The trapezoidal window is a diagnostically Inca feature.

been reserved for use by the state religious cult. Incahuasi (Hyslop 1985; Chu 2018) is the primary Inca site situated in the middle valley area believed to have been controlled by the Lunahuaná polity. It is the main setting of the chronicled events regarding the war between the Inca and the Huarco as the putative location of Topa Inca's "New Cusco". Larrabure y Unanue (1941 [1893]:295) mentions Cruz Blanca, a Late Horizon site nestled in a hillside between the modern towns of Pacarán and Zúñiga, as the most beautiful in the area. Showcasing several large plazas, tall stone columns, and an orthogonal layout (Díaz 2017), Cruz Blanca (Figure 3-10) sits high above the valley bottom, providing a panoramic view of the local landscape (Ramírez 2015). Other important sites in the middle valley such as Huaca Daris (Figure 3-11) and Cantagallo seem to be (at least in part) Inca constructions with trapezoidal niches and open, banked plazas. Smaller sites such as Cerro Manzanilla (Figure 3-12), which feature rectilinear adobe construction are, likewise, diagnostic of Inca presence.

Figure 3-11 Huaca Daris near Pacarán in the Lunahuaná valley. Trapezoidal niches line the inner wall of an open plaza.

Figure 3-12 Adobe architecture with trapezoidal niches seen at the Inca administrative site, Cerro Manzanilla, Lunahuaná.

Archaeological Research

Despite this rich history, the abundant remnants of ancient settlement, and the tantalizing clues left by travelers and chroniclers, Cañete has until recently received minimal archaeological attention, especially outside of the immediate coastal area. The first structured, scientific, archaeological investigation at Cañete was undertaken by Pedro Villar Córdova as part of a general inventory of pre-Hispanic sites in the Lima region of Peru. His report, published in 1935, grouped the sites he visited into three general categories based on architecture:

(a) pyramidal pre-Inca architecture on the coast,

(b) pre-Inca stone and mud mortar structures and burial cists in the middle and upper valley, and

(c) Inca architecture on the coast and Incahuasi (Villar 1935:257-276).

Figure 3-13 A typical oblong, mostly-subterranean, stone-lined late period tomb seen in Lunahuaná. These can be contrasted with the rectilinear, above-ground tradition seen in middle valley Chincha.

He conjectured that the builders of the pre-Inca structures were ethnic Aymaras who invaded the coast from the sierras in the very remote past. In turn, these invaders were subject to new waves of incursion from the adjacent highlands, this time from upland Yauyos people. In Villar's reckoning, the defensive posture of fortified sites such as Ungará and Cancharí, was a natural response to relentless aggressions from these pre-Inca tribes (Villar 1935:259).

Alfred Kroeber's excavations at Cerro de Oro and Cerro Azul mark the second foray into a professional study of prehistory in the valley. Through his investigation of burials and grave goods, Kroeber would establish a rough, two-period typology of Middle and Late Cañete to arrange his finds (Kroeber 1937). Middle Cañete, exemplified by the Cerro de Oro material, is characterized by fronto-occipital cranial deformation of buried individuals, as well as conical adobes, a paucity of metals, and Late Nasca influence on textiles and[10] ceramics. He worked out that this style was contemporary with, yet distinct from, the Coastal Tiwanaku (i.e. Wari) style. Analyzing the material from Cerro Azul led Kroeber to his Late Cañete period. He believed the pottery and textile styles from this phase were examples of the same south coast tradition seen in the Late Intermediate Period in Chincha. He mapped the primary structures and precincts of Cerro Azul, a site which he identified as a ceremonial center rather than an urban area.

In 1959, Louis Stumer completed the first archaeological survey of the valley. He identified eighteen large complexes, 110 sites in total, and noted the chronological sequence of construction techniques, from conical abodes, to rammed earth (*tapia*), to rectangular adobes visible in the lower valley (Stumer 1971). A few years later, Dwight Wallace (1963) discovered Early Horizon ceramics at sites in Cañete which he placed within the broader Paracas tradition of

[10] *Tapia* (or, *tapial*) is a construction technique that utilizes large, earthen blocks. These blocks are formed by placing a mixture of soil and stabilizing additives into a wooden formwork and then compacting (ramming) it until compressed to suitable density. *Adobes,* in contrast, are smaller, and less dense. The smaller size of *adobe* bricks allows for portability, whereas *tapia* is generally constructed *in situ.*

Figure 3-14 La Toma, an Inca settlement near the lower end of Lunahuaná. John Hyslop (1985) notes its likely role in controlling access into the middle valley from the coast. Note the remnants of red paint on the walls of the standing structure.

the south coast. Dorothy Menzel (1971) followed up with a comprehensive study of the ceramics found in Cañete and neighboring valleys to the south. She corroborates Kroeber's insights regarding the Middle Cañete ceramics from Cerro de Oro, noting their unique character despite evident stylistic affinity with the valleys of Ica and Nasca. She also points out commonalities in vessel shape and vessel decoration seen in Late Intermediate Period ceramics from Cañete and Chincha (Kroeber's Late Cañete). Reduced, black vessels are abundant within elite grave assemblages in both valleys, while large jars with pointed bottoms are more common in Cañete. In contrast, Chincha shows evidence of interaction with Ica that is absent further north by this time. Menzel highlights an abrupt stylistic juncture at the Late Horizon, the period of Inca incursion into the valley. While Chincha and Ica exhibit local developments and hybridization of

styles after contact with the Inca, she sees no evidence of an indigenous Late Horizon style in Cañete (Menzel 1971:79).

In 1974 Carlos Williams and Manuel Merino published a general catalog of archaeological sites in the irrigated portions of the valley as part of a national cultural heritage preservation project (Williams and Merino 1974a). Their methodology utilized aerial photographs to identify the location of sites which were then reconnoitered, cataloged, sketched, and dated based upon architecture and surface artifacts. Their project identified 163 archaeological sites within an estimated 70,000 ha survey area. Their survey report provides an important snapshot of ancient settlement in the valley at a time before the expansion of agriculture, tourism, and urban development accelerated the destruction of archaeological sites.

John Hyslop's (1985) more targeted work at Incahuasi attempted to understand the function of the settlement within a historical and regional context. The project was modeled on the successful activity patterns study at Huánuco Pampa, an important Inca administrative center in the central highlands (Morris et al. 2011). The one square kilometer site was divided up into eight sectors for analysis. Five of these areas appear to have been utilized for storage, goods processing, and food preparation. The final three include an elite residence, a ritual plaza, and what may have been an *acllawasi*, a residence for chosen women, dedicated in labor and service to the state religion. Hyslop concluded that Incahuasi was principally a garrison, which functioned both as a primary node in a defensive site network and as a warehouse for provisioning an army. Regarding the first purpose, Hyslop references two satellite sites: La Toma (Figure 3-14) and Escalón, located downriver from Incahuasi. Together they served as an effective chokepoint, monitoring access upstream and into the middle valley. As for the second purpose, it appears the Inca army would not have been housed within the site, nor is there strong

Figure 3-15 A portion of the extensive andenes (stone-lined agricultural terraces) near the Inca settlement, Cerro Suero.

evidence for specialized production zones. As mentioned before, space was primarily reserved for the preparation and storage of food, the caching of weapons and clothing for soldiers, and the housing of select officials and nobility.

Recent work at Incahuasi (Chu 2017; Urton and Chu 2015) corroborates many of these insights and articulates a more complete vision of the sophisticated Inca administrative apparatus. Evidence includes knotted cord *quipus* (accounting devices based on a decimal system) discovered *in situ* with the agricultural products believed to be represented in the records. Importantly, the complex sequence of construction at the site challenges the ethnohistorical narrative of a short occupation followed by abandonment. Alejandro Chu (2018) argues convincingly that differences in architectural layout between certain sectors (such as the Colcawasi and Palacio sectors) may reflect broader categories of things being stored rather than

Figure 3-16 View northwest from the valley rim toward the Inca settlement, Cantagallo.

storage areas versus living quarters. In particular, the extent and openness of Colcawasi is effective for the storage of bulk stapes, while the restricted access of the Palacio sequesters goods and objects related to status and wealth (Chu 2018:42)

Incahuasi lies on a portion of the Inca royal road system (*Qpaq Ñan*) connecting two primary north-south arteries – one along the spine of the cordillera and the other along the coast. The important highland Inca centers of Xauxa (to the northeast) and Vilcashuamán (via Huaytará) (to the southeast) are accessible from the coast via this route (Gonzáles and Pozzi-Escot 2002). Although the Inca road system varies in both construction investment and technique, Hyslop (1984) highlights a particularly well-preserved section of the road about five kilometers down and across the river from Incahuasi, near the town of Caltopa. which follows the same route as the modern highway. This portion of road is directly associated with La Toma,

mentioned above, which, aside from monitoring the road, may have served as a way station or *tambo*. Proyecto Qhapaq Ñan, under the direction of the Peruvian Ministerio de Cultura, is focusing increasing attention on Lunahuaná in the interest of site preservation as well as archaeological research. Articles published in a recent volume (Casaverde 2015; Ramírez 2015) are some of the only detailed descriptions of major Inca sites and storage complexes upriver from Incahuasi.

As a useful counterpoint to the ongoing work in Lunahuaná, Joyce Marcus' investigations at Cerro Azul, the heart of Huarco civilization, provides a glimpse at the nature of pre-Inca economic specialization on the coast and the complexity of exchange relations with neighbors in the middle valley (Marcus 1987). The Huarco site features a core precinct of colossal *tapia* structures arranged around a plaza, all in ruin, slowly eroding into the sand of the beach below. Above, upon a rocky promontory, sits the modern lighthouse and what remains of a

Figure 3-17 Portions of Inca roads in Lunahuaná.

portion of an Inca structure, possibly an *ushnu*, built after the conquest (Marcus 2017). Marcus demonstrates that in its heyday, the community at Cerro Azul managed a thriving marine economy that included the procurement, storage, and processing of fish for local use as well as for transport inland to Lunahuaná (Marcus 1987). There, fish would have been exchanged for inland products such as camelid meat (Marcus et al. 1999). Marcus organizes the ceramics from Cerro Azul into four Later Intermediate Period types: Camacho Reddish Brown (a utilitarian ware), Camacho Black (a burnished serving ware often found in burials), Pingüino Buff (stylistically related to neighboring south coast valleys), and Trambollo Burnished Brown (a fine, thin-walled bowl related stylistically to earlier periods) (Marcus 2008a).

More recently, Guido Casaverde Ríos and Segisfredo López Vargas (2011) published the results of their own targeted survey along an offshoot of the primary Inca road in the valley discussed above. The route of interest, connecting the lower end of Lunahuaná to the *quebrada*

Figure 3-18 Inca colcas above the site of San Marcos near Pacarán in Lunahuaná. These field stone and mud mortar storage structures measure approximately five meters on each side.

Topará is the likely path used to connect the Inca army garrisoned at Incahuasi with allies and supplies located to the south in Chincha. The survey was successful in identifying complexes of *colcas*[11], a type of Inca storage structure, often placed along roads for strategic provisioning (Figure 3-18).

As discussed throughout this section, the Cañete-Lunahuaná area has received less archaeological attention compared to the Lima valleys to the north and (to some degree) Chincha to the south. Fortunately, the recent work spearheaded by *Proyecto Qhapaq Ñan, Proyecto de Investigación Arqueológica Cañete, Proyecto Arqueológico Incahuasi*, and others provides a larger body of comparative data gathered through contemporary methodology and a more sophisticated theoretical outlook. One recent study, in which Giancarlo Marcone Flores and Rodrigo Areche Espinoloa (2015) utilize the Cañete survey data collected by Williams and Merino (1974a) to test the extent to which the archaeological evidence supports the ethnohistorical model, is worth a more detailed presentation due to the relevance of its methodology and the hypotheses it presents. Leaving aside for the moment any potential critiques of the original dataset, the interpretations provided by Marcone and Areche are a useful introduction to some of the important issues at the heart of this dissertation. From the outset, the version of the ethnohistorical consensus which the authors provide is somewhat incomplete (Marcone and Areche 2015:51-52) though is it a version which is commonly presented. The alleged contrast between the bellicose Huarco and the peaceful Lunahuaná is unsupported given that Cieza (whom they cite) does not go into any detail about Lunahuaná or its inhabitants.

[11] The term *colca* (*qullqa*. *qollca*, etc.) refers to storage buildings located along Inca state roadways which held agricultural products (potatoes, maize, quinoa, beans, etc.) as well as other goods. Although circular forms are common in other areas, the *colcas* found on the hillsides of Lunahuaná are rectilinear and exist as units within larger rows or complexes.

Figure 3-19 Satellite image of Cerro del Padre, a large Late Intermediate Period site near the town of Lunahuaná.

Likewise, the paralleled distinction between the Inca strategy of peaceful control for Lunahuaná and military conquest for Huarco is not explicitly provided by the written sources, nor is it easily implied from the same.

As the authors frame it, there are two historical issues which are central to developing a better understanding of Inca activity in the area. These are:

(a) the existence of two independent polities (Huarco and Lunahuaná)

and

(b) whether or not the seat of Huarco political power was located at Cerro Azul.

In addressing the first question, the authors argue that the settlement pattern revealed through the survey data does not support the hypothesis of two separate polities in the lower and middle valley. Instead, they contend that the site-size distribution for each survey area presents as two

samples from the same statistical universe, rather than two independent patterns. The primary justification for this conclusion is the fact that the two survey areas show significantly different mean site size values and the sites from the lower valley feature much greater variance in size (Marcone and Areche 2015:53-59).

There are a few problems with both the data and this interpretation. While the *Inventario, Catastro y Delimitación del Patrimonio Arqueológico del Valle de Cañete* (Williams and Merino 1974a) stands as an invaluable archive of settlement data and *the* starting point for any serious archaeological investigation of Cañete, there are limitations to the report. For instance, several Late Intermediate Period sites, including Juan Croso and Cerro del Padre (Figure 3-19), were unable to be reconnoitered and thus dated or assigned a site size. Some sites with components or occupations from multiple, relevant periods such as Patapampa (Figure 3-20) and Cantagallo are often classified as one or the other. This creates the potential for both overestimation and underestimation of site sizes. As an example, the authors themselves point out that only a fraction of one of the largest sites surveyed, the Middle Horizon necropolis Cerro del Oro, dates to the relevant later periods.

More importantly, there are two main issues with the interpretation Marcone and Areche provide for the data. First, the assumption that a handful of very large centers on the immediate coast along with a significantly smaller average site size in the *chaupiyunga* is evidence of a single, valley-wide site hierarchy, ignores the very different topographical and architectural contexts in each area. Indeed, the authors themselves note (citing a study by Engel (1987)), there are two distinct architectural traditions in coastal Cañete which largely map onto the lower and middle valley areas. As discussed previously, the construction of large complexes with ramps and plazas built from *tapia* and *adobe* is characteristic of architecture on the immediate coast

Figure 3-20 Inca colca compounds on a hillside above the site of Patapampa in Lunahuaná.

while the *chaupiyunga* zone features fieldstone structures built on terraced hillsides or within the mouths of *quebradas*. As such, there remains an unexamined relationship between topography, building material, site layout, and site size. Further, it may be the case that a less powerful, less populous, or more peripheral polity may exhibit smaller average site sizes net of any area specific variables.

The second contention is more fundamental. If the hypothesis the authors are testing can be stated as: there are two independent site hierarchies, one located in the lower valley and one in the *chaupiyunga*, then the null hypothesis is not: there is a single, inclusive hierarchy. It would be better presented as: either no hierarchies and/or a single hierarchy in one area and not in the other. If there is a presumption that sites below a certain size are not suitable candidates for centralization of any kind, then the much smaller apex sites in the middle valley can just as well be interpreted as an area absent political centralization. The contention that the lower valley

exercised political control over the middle valley is a claim that must be demonstrated through the data, not assumed based on the relative population or prestige of one area versus the other.

The second piece of recent research that presents some useful ideas is an analysis of ceramics from El Huarco (Cerro Azul) done by Geraldine Huertas Sánchez (2016). As with the first study, the author provides a concise list of scenarios in the form of competing hypothetical socio-political structures for the area of interest during the Late Horizon. To paraphrase (Huertas 2016:3) these are:

(a) military conquest and direct control of a unified Huarco polity/elite by the Inca,
(b) incorporation and indirect control by Huarco as one part of a multi-valley confederation/economic and religious interaction sphere,
(c) Inca control of Huarco that is oriented around the local reorganizations of the ritual landscape and connections between sacred sites in the valley and neighboring valleys (e.g. Pachacamac). Indirect political control but direct investment in architecture,
(d) no Inca intervention; all observed changes local.

The fourth proposal can be dismissed outright. Huertas, for her part, views the ceramic evidence at Cerro Azul as indicative of some combination of (b) and (c) given the almost complete absence of Inca ceramics and the small number of non-local specimens exhibiting Chincha and Yschma characteristics. This may be the case, but the issue is that evidence collected from excavations at Cerro Azul may not be useful for characterizing Inca activity in Cañete. The technical and artistic excellence preserved in the remnants of fine ashlar masonry atop Cerro Centinela may be the remnants of a targeted or symbolic project, not indicative of the intensity of Inca activity at the settlement after the Huarco conquest. Indeed, recent work at the nearby center, Vilcahuasi (Los Huacones), reveals, in contrast, the signature of concerted administrative

investment, most notably in the form of floor-embedded counting devices (*yupana*) and several *quipus* (Areche 2019).

Rommel Ángeles Falcón (2010) who has contributed one of the most thorough overviews of Inca imperial administration on the central coast, arrives at an interpretation which accords with (c) above. He argues that some of the most prominent Inca architecture in the region is associated with the state religion and the sun cult. The conquest is described as primarily religious: the imposition of the Inca religion through a calculated synchronization with the prevailing local tradition centered at Pachacamac (Ángeles 2010:45-46). While aspects of the ideological motivations prioritized by Ángeles are undeniable, the variable degrees of intensity of Inca investment seen in architecture and artifacts, particularly in the middle valley areas suggests that the reality is more complex. It is likely that elements of each of the first three scenarios were relevant considerations for the Inca state in its approach to Huarco and Cañete and the best way to see the complete picture is to analyze evidence at and between sites from an area and regional perspective. Archaeological survey of the middle valley area within Lunahuaná in comparison with survey data from the neighboring Chincha middle valley is a first step in this process.

CHAPTER FOUR

Archaeological Reconnaissance: Cañete (and Chincha)

Introduction

This chapter builds upon prior area studies and provides novel data through targeted reconnaissance within the irrigated portions of the middle valley of Cañete and Chincha. As presented in previous chapters, these midlands functioned as the historical junction between highland and coastal cultures and polities. For the Late Intermediate Period, in both valleys, the immediate coast is characterized architecturally by immense, multi-tiered *tapia* compounds which served as spaces for public ritual, elite residence, and centers of regional governance. Domestic architecture, given its ephemeral nature and the intensity of modern agriculture in the area, is less identifiable on the immediate coast, but the remains of extensive domestic terracing are still visible on the low knolls surrounding sites such as Huarco (Cerro Azul) in Cañete (Marcus 1987). In the middle valleys, there are no stepped *tapia* structures (though *tapia* is used in select instances). The architecture is almost exclusively field stone with mud mortar and plaster. Some structures utilize adobe, but this is rare and likely, significant where present.

Middle Valley Cañete (Lunahuaná)

Within the middle valley area, Lunahuaná, site reconnaissance allowed for the identification of more than thirty small Inca administrative sites, twenty-two isolated or separated Inca *colca* (agricultural storage structure) sites, seven large Inca centers, and dozens of

Figure 4-1 Landscape of Lunahuaná.

small and medium sized villages, cemeteries, and terracing dating to the Late Intermediate Period and Late Horizon (Figure 4-3). The survey area presents three zones of analysis (Table 4-1; Table 4-2). Moving up the drainage, the first (Zone 3) stretches from the lower end of the middle valley (at 200 masl), near the Quebrada Concón complex, upriver to Incahuasi (385 masl) and the surrounding landscape. Incahuasi stands out as the largest Inca installation in Cañete and the only large administrative site in Zone 3.

	Zone 1	Zone 2	Zone 3
Large Inca Centers	4	2	1
Small Inca Administrative Sites	4	13	13
Isolated Colca/Storage Sites	9	7	7

Table 4-1 Settlement zones within Cañete middle valley and the types of Inca sites found in each.

Site	Zone	Elevation	Period
Concón (Quebrada Concón)	3	196	LIP/Inca
Escalón	3	317	Inca
La Toma	3	313	Inca
Arcas	3	352	Inca
Incahuasi	3	385	Inca
Cerro Pascua	2	499	LIP
Cerro del Padre	2	469	LIP
Patapampa	2	560	LIP/Inca
Uchupampa	2	558	LIP/Inca
Cerro Suero	2	553	LIP/Inca
Cerro Manzanilla	2	556	Inca
Contagallo	2	582	LIP/Inca
Higuerón	2	611	Inca
Cerro Riverón	2	607	Inca
Daris	1	706	Inca
San Marcos	1	721	Inca
Huajil	1	747	Inca
Cruz Blanca	1	865	Inca
Yapana Huancapuquio	1	857	Inca
Quebrada Picamaran	1	853	LIP
Larpa	1	905	Inca
Machuranga	1	899	LIP

Table 4-2 Select important sites in Cañete middle valley with zone, elevation, and cultural period.

The second zone (Figure 4-4) encompasses the area in the immediate vicinity of modern Lunahuaná, upriver to the outskirts of the Pacarán district. A natural division between the first two zones is roughly three-kilometer stretch of the valley where there are no Inca sites. Within this area, there are a handful of medium to large Late Intermediate Period settlements, two of which, Cerro del Padre and Cerro Pascua (Figure 4-5), are defensively positioned on hilltops. It is possible that one or both sites served as a refuge or redoubt during wartime for the Late Intermediate Period population in Lunahuaná. Although there is more evidence of substantial pre-Inca settlement in this zone, the Inca site profile of Zone 2 resembles the catalog of sites from the area surrounding Incahuasi (Zone 3).

The division between Zone 2 and the final middle valley zone, Zone 1, occurs near Huanaco *quebrada*, where the river begins to change direction, eventually heading due east after Pacarán. Zone 1 includes sites within vicinity of the modern towns, Pacarán and Zúñiga up to 900 masl and the end of the survey area. This upper section of the middle valley holds the best examples of planned Inca public and residential architecture at larger sites such as Huajil and Cruz Blanca and smaller settlements such as Yapana Huancapuquio.

What follows is a brief overview of four prominent and characteristic sites in each of the latter two zones. These sites provide good illustrations of the architecture and layout of Inca settlements within the middle valley of Cañete and throughout the larger region. These administrative centers are characteristic architectural manifestations of a mode of Inca imperialism – territorial imperialism– which is defined and discussed in Chapter 5.

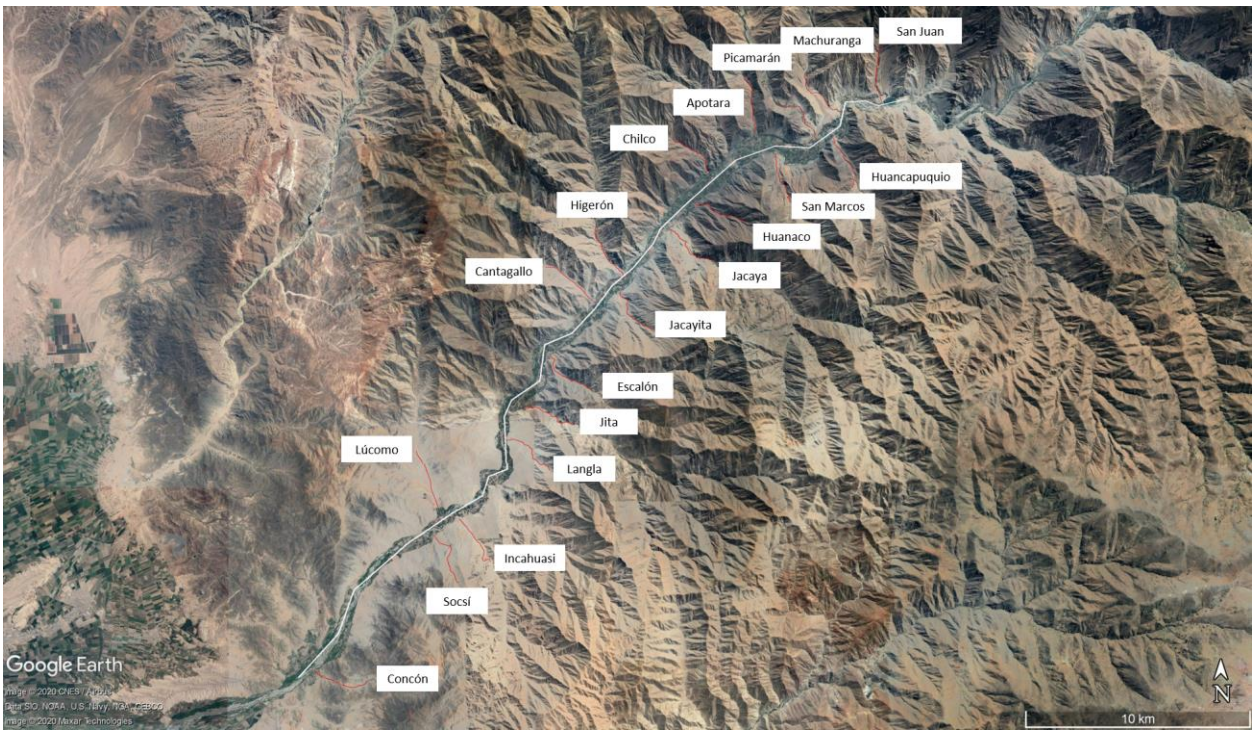

Figure 4-2 Major quebradas in the middle Cañete valley.

Figure 4-3 Major sites with Late Intermediate Period occupations in Zone 2 of the survey.

Figure 4-4 Massive curtain wall surrounding the peak of Cerro Pascua. A modern cellular tower corroborates the favorable vantage.

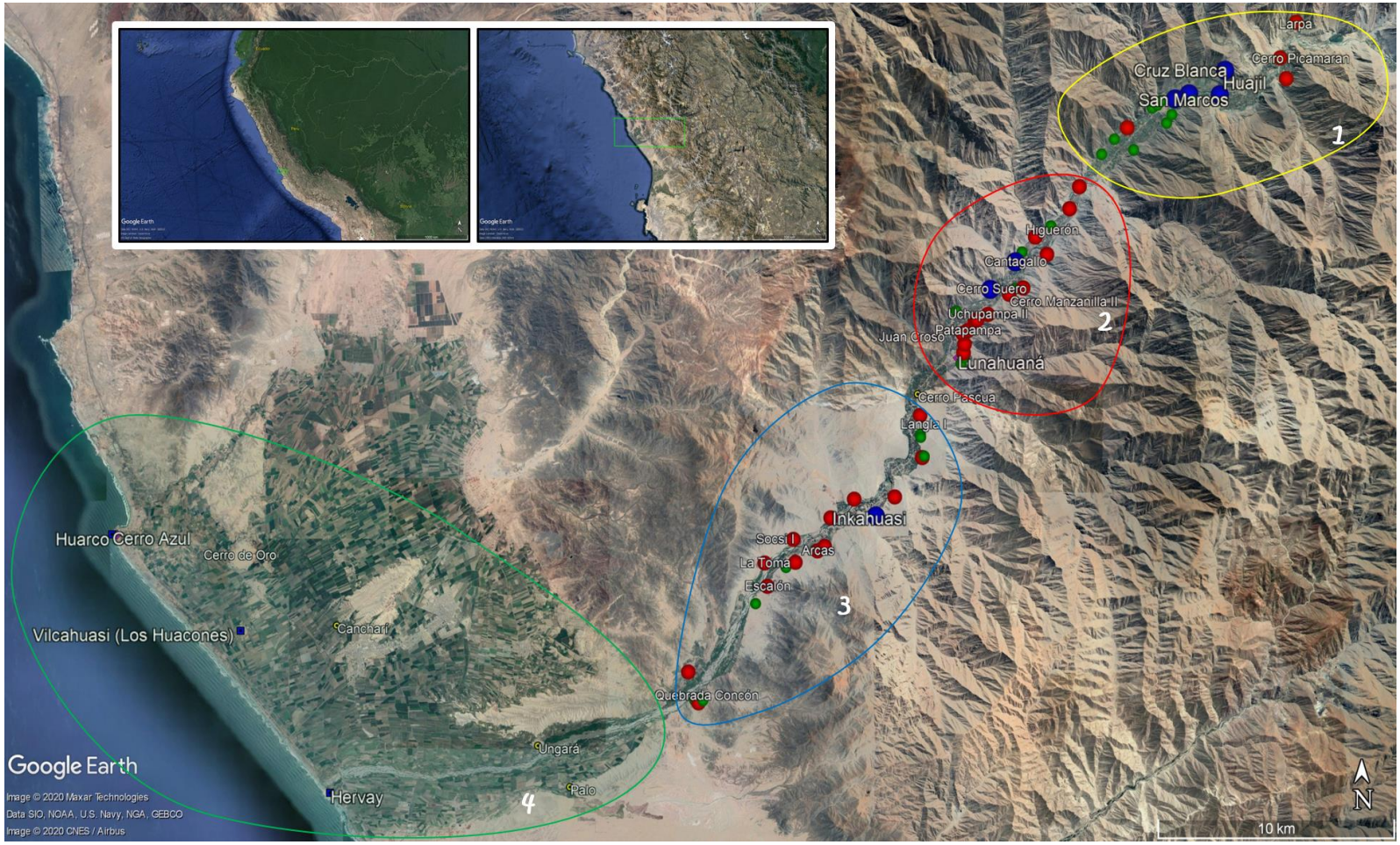

Figure 4-5 Inca sites in the middle valley Cañete (Lunahuaná) survey area (200 masl – 900 masl). Small green dots are colca sites. Medium red dots are minor Inca administrative sites. Large blue dots are major Inca centers. The black lines demarcate the three settlement zones. (Survey data collected as part of Proyecto Arqueológico de Cañete directed by Dr. Larry Coben and Lic. Eberth Serrudo.)

Cerro Suero (26-K 13K04) Size: 8 ha Elevation: 553 Zone: 2

Figure 4-6 Plan of the main Inca plazas and surrounding structures at Cerro Suero.

Cerro Suero is a large site located on the right side of the valley (when facing downriver) approximately 1.5 km downriver from *quebrada* Cantagallo. It stretches across the steep slopes of two small *quebradas.* It is a large settlement; the central set of structures covering around 8 ha. Associated with the primary sector are an extensive series of domestic terraces to the immediate northeast, a cemetery to the west, and a group of stone-lined agricultural terraces or, *andenes*, in the southwestern *quebrada*. Although the primary construction material is fieldstone with mud mortar and plaster, there are structures in which rectangular adobes are utilized. Near to the edge of the modern agricultural fields, there is a small sector of structures associated with a row of *colcas*. At the opposite end, a separate Inca area features a large plaza backed by a wall (~3 m tall) with a row of rectangular niches. Additional structures throughout the site feature interior rectangular niches and windows. The cemetery is badly looted; a large collection of

ceramic vessels and the skeletal remains of dozens of individuals have been placed with a makeshift wooden structure by officials with the cultural ministry.

Figure 4-7 Cerro Suero: architecture and recovered artifacts.

Figure 4-8 Cerro Suero: architecture and view of surrounding landscape.

Cantagallo (26-K 13K02) Size: 6 ha Elevation: 582 Zone: 2

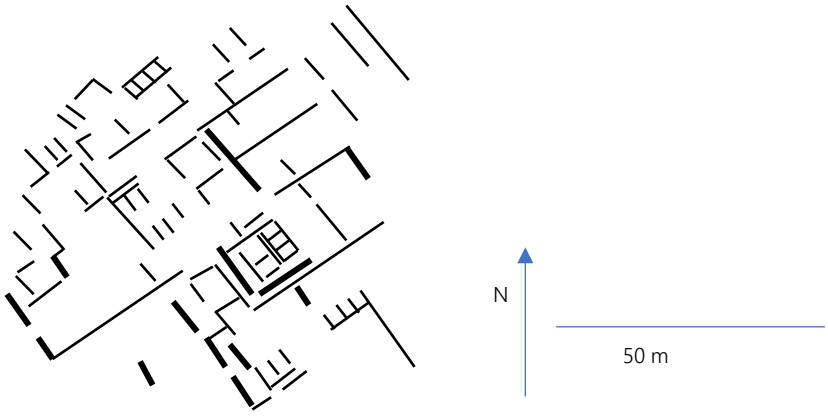

Figure 4-9 Plan of the main Inca sector at Cantagallo.

Cantagallo is another large site located upriver from Cerro Suero in a *quebrada* of the same name. The architecture at the site is distinctive due to the use of dark-colored andesite stones from the surrounding hillsides. Compared to Cerro Suero the settlement is better persevered and displays a more planned layout. Of note is a distinctively Inca compound on a

Figure 4-10 Cantagallo: grinding stones and view up quebrada Cantagallo.

Figure 4-11 Cantagallo: architecture and surrounding landscape.

Figure 4-12 Satellite image of Cantagallo showing definite Inca sector (circled in black) and the remainder of intact structures (circled in blue).

hillslope on the northeastern end of the site, featuring adobes and trapezoidal niches. On the southwestern edge of the *quebrada* there is an area of relict agricultural terracing. Unfortunately, this area appears to have been washed out by one or more *huaycos* (mudslide/flashfloods) over the centuries. The location of the site provides a clear view of Cerro Picamarán, a prominent feature of the Lunahuaná landscape, located about 13 km upriver near Pacarán.

Huajil (26-K 11N07) Size: 3 ha Elevation: 747 Zone: 1

Huajil is a site complex located in the quebrada San Marcos between the modern towns of Pacarán and Zúñiga. There are at least two sectors of planned Inca architecture in addition to tombs and terracing. The interiors of some structures have been reused in more recent eras for animal corrals. The primary sector features a 40 m x 30 m plaza (currently in use as a soccer field) which has a raised platform along the southwest and northwest sides and a wall with trapezoidal niches. This long southwestern wall faces across the river toward Cruz Blanca perched on the slopes of Cerro Picamarán.

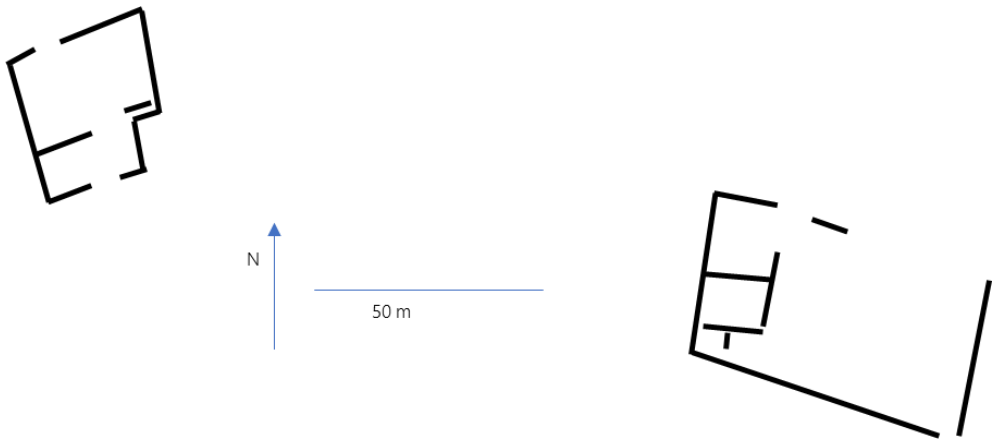

Figure 4-13 Plan of two Inca sectors at Huajil.

Figure 4-14 Huajil: architecture and surrounding landscape.

Cruz Blanca (26-K 11M02) Size: 6 ha Elevation: 865 Zone: 1

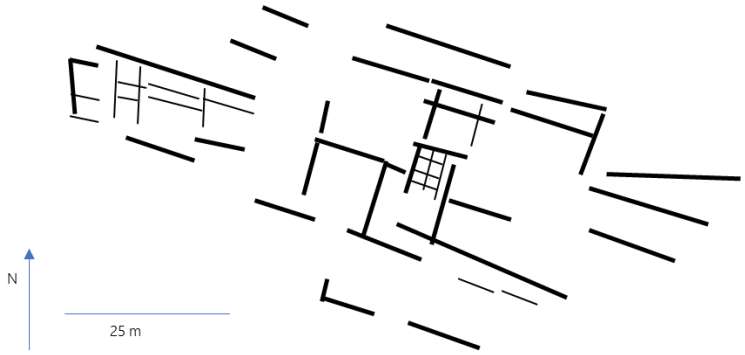

Figure 4-15 Plan of the main Inca plazas at Cruz Blanca.

Cruz Blanca is another large Late Horizon site located in the Pacarán-Zúñiga area at the upper end of middle valley Cañete. Located directly across the river from Huajil, the most notable aspect of the site are its colonnades, one of which is relatively well-preserved. The rectilinear, stone and plaster columns are set at equal distances on a raised platform along the end of a walled plaza. The walls of this plaza as well as many of the other walls feature trapezoidal niches or windows. Unlike Huajil, the site layout at Cruz Blanca is more complex and indicative of prior occupation in the Late Intermediate Period. As is the case for Cerro Suero and Cantagallo, the site has areas which appear to be dedicated to storage, living quarters, and administrative activities.

Figure 4-16 Cruz Blanca: architecture and surrounding landscape.

Figure 4-17 Cruz Blanca: architecture and surrounding landscape.

(Comparative Case) Middle Valley Chincha + Topará

In Chincha, survey of the middle valley from 200 – 500 masl (Figure 4-21) revealed dozens of looted cemeteries featuring rectilinear, semi-subterranean and above-ground *chullpa* burial towers, a traditionally highland form of mortuary architecture (Stanish 2012; Bongers et al. 2012). While these tombs date to both the Late Intermediate Period and the Late Horizon, further study is needed to establish a secure chronology. Associated with the cemeteries are a handful of domestic sites, some with public architecture, and some which are positioned defensively in a manner reminiscent of fortified, Late Intermediate Period sites in the highlands. Three sites, UC-058 (Culebrilla), UC-059, and San Juanito (UC-053) (Engel 2010) sit at elevated positions above the valley floor. UC-058, presents a massive perimeter wall.

Figure 4-18 Huancor I a large LIP/LH site in the upper part of the Chincha middle valley.

Despite a paucity of non-funerary architecture, there are a few general trends which can be extracted from the data. Local groups utilized *tapia* in mortuary construction below 300 masl, but upriver from this point it is only used at two additional sites. There is a similar trend in the prevalence of circular mortuary and domestic architecture. Rectilinear forms dominate at the lower elevations, closer to the coast, while round structures become more prevalent further upriver. At the upper end of the survey area, Huancor I (Figure 4-31), is notable due to the density of its settlement and its proximity to one of the more interesting cemeteries in the survey area. The Huancor site cluster is best known for its rock art, much of which predates the Late Intermediate Period.

The absence of very many large sites, or Inca sites in the Chincha middle valley is even more striking when compared to the Late Horizon settlement pattern in the tiny *quebrada* Topará to the north. Despite the small size and population of the drainage, there are several large Late

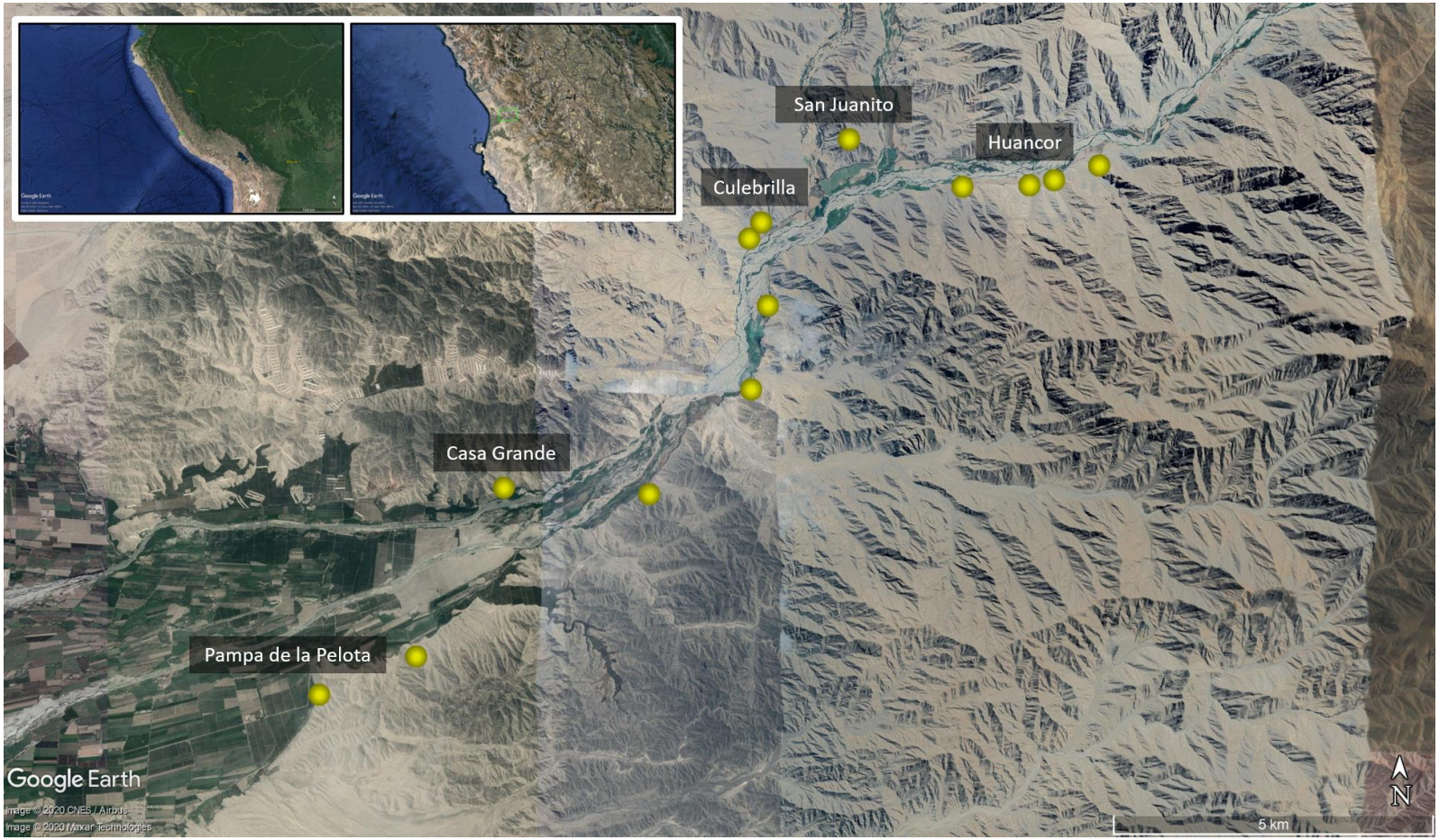

Figure 4-19 Sites in the Chincha middle valley which feature non-domestic, non-funerary architecture. Larger sites are named.

Horizon sites such as Pampa la Capilla and Casablanca (Figure 4-33) which are in the middle valley area, near the opening to a route which leads north through the foothills into

The absence of very many large sites, or Inca sites in the Chincha middle valley is even more striking when compared to the Late Horizon settlement pattern in the tiny *quebrada* Topará to the north. Despite the small size and population of the drainage, there are several large Late Horizon sites such as Pampa la Capilla and Casablanca (Figure 4-33) which are located in the middle valley area, near the opening to a route which leads north through the foothills into Cañete (Casaverde and López 2011). Further upriver, there are several more unidentified sites visible in satellite imagery (Figure 4-34) with locations and architectural layouts like the known Inca sites in Lunahuaná.

Figure 4-20 Casablanca, a large, late period site located in the Topará quebrada between Chincha and Cañete.

Synthesis

By comparing the settlement patterns in the middle valley of Cañete and Chincha, certain ideas become clearer. According to the ethnohistorical record outlined above, Chincha submitted to Inca power relatively peacefully and came to enjoy prominence among coastal provinces (Rostworowski 1970; Sandweiss and Reid 2016). The Huarco of Cañete, in contrast, attempted to resist assimilation through war, which led to conquest and destruction. At the time prior to Inca conquest, Cañete is said to have been divided into two complex polities: Huarco on the coast and Lunahuaná in the middle valley. There is no record of a similar political distinction applied to the same two topographical zones of Chincha. It is possible that the prevalence of highland style burial towers from the late periods in Chincha represents a longer and more gradual process of integration with the peoples of the sierras than is suggested by a narrative of contact followed by top-down, diplomatic engagement. While it is true that the eventual establishment of an Inca palace at La Centinela solidified the status of Chincha as a favored client polity, it may also be true that this less painful transition of power was facilitated by prior centuries of political and cultural engagement.

Considering the overwhelming Inca presence in Lunahuaná compared to middle valley Chincha a few hypotheses can be considered:

(a) The absence of large sites in middle valley Chincha is due to the character of the Chincha/Inca relationship

(b) The absence of large sites in middle valley Chincha was itself a factor in the eventual Chincha/Inca relationship

(c) Some combination of (a) and (b)

Figure 4-21 Satellite images show two unidentified sites in the middle valley are of Topará. The architectural layout is reminiscent of the small Inca administrative sites in Cañete.

The absence of large Inca sites in the middle valley of Chincha may well be credited to a policy of less heavy-handed imperialism on the part of the Inca state. If the density and distribution of Inca objects and architecture is evidence of the kind of relationship that existed between the Inca and local people and leadership, then this has the potential to explain the settlement patterns from the Late Horizon. In addition, something about the process of conquest may be interpreted from the degree of material investment made in the area and which projects are prioritized.

Figure 4-22 Satellite image showing lower and middle valley areas of Topará and Cañete.

Perhaps less apparent is the significance of the relatively sparse middle valley settlement from before the arrival of the Inca and how this might factor as a strategic consideration. When Chincha is placed in context with other valleys on the south-central coast (including Cañete) it will become clear that middle valley political centralization as well as strength and distance of potential allies from the upper valley of each drainage were important variables weighed by Inca decision-makers in their pursuit of diverse interests in the region. The following two chapters will explore this regional context and attempt to make connections between variations in physical geography and socio-political structure and the way in which variable archaeological signatures of Inca presence map onto a set of Inca imperial strategies.

CHAPTER FIVE

South-Central Peruvian Coast; Regional Model

Introduction

The following chapters will make use of a variety of archaeological and documentary sources in conjunction with original analysis to model settlement along the south-central Peruvian coast region at the time of Inca arrival. This will help to develop a more precise visualization of the cultural and political landscape that confronted the advancing highland empire, the strategies pursued by the Inca state, and the materialization of this process in architecture and site layout. This chapter provides an overview of pre-Inca polities and cultural groups within each river valley and the important Late Intermediate Period and Inca settlements

Figure 5-1 Geography of the regional study area outlined in red. Extends roughly from Chancay (north) to Pisco (south). The western slopes of the Cordillera Occidental and the Pacific Ocean bound the east and west.

Figure 5-2 Geography of the regional study area. Extends roughly from Chancay (north) to Pisco (south). The western slopes of the Cordillera Occidental and the Pacific Ocean bound the east and west.

in these drainages. The archaeological data are animated by a rich ethnohistorical record which allows insight into the territory, social organization, motivations, of each local group and the nature of their relationships with their neighbors. Following this review, a modal, multi-dimensional model of Inca imperialism proposed as an explanation for the architectural layout and location of each of the important Inca administrative facilities in the context of the complex political and cultural landscape. Chapter 6 will apply the model on a close, site-by-site and valley-by-valley basis in pursuit of unifying themes or insights.

Cañete in Context: Regional Overview

The regions of the Peruvian coast are defined by geography, culture history, and modern political boundaries. This project defines the south-central coast as the area between Punta

Salinas north of Chancay and the Paracas Peninsula just south of Pisco (Figure 5-1). This roughly corresponds to what the nineteenth century naturalist, Clements Markham, labeled as the fourth section of the Peruvian coast, where the distance between the mountains and the sea narrows, and the river valleys become more numerous and closer together (Figure 5-2) (Markham 1880:14). The Pacific Ocean bounds the west. Depending upon the valley, settlements as far east as Laraos, more than one hundred kilometers inland into the highlands of Yauyos (3,500 masl) are included due to cultural and geographic continuity. Each river valley is further divided into lower (0-200 masl), middle (200-900 masl), and upper (900+ masl) regions, based on the principle that changes in elevation and the ecological zones which result from these differences are more determinative than arbitrary fixed distances from the coast.

The ethnohistorical categories *curacazgo* and *señorío*[9] (Rostworowski 1999b) provide useful descriptive categories for the political structures of local Late Intermediate Period groups. Here, the term *curacazgo* will substitute for a simple intermediate polity, or chiefdom (Marcus 2008b:258; Flannery 2004:7), a ranked, centralized polity that unifies the territory of several villages within its district. A *señorío* is the equivalent of a complex or paramount chiefdom (Wright 1984), a centralized, regional polity which incorporates the territory of multiple *curacazgos.* The *señorío*, in consequence, may be qualitatively distinct from the *curacazgo* in

[9] "*Curacazgo*" is derived from the Quechua term "*kuraka,"*a hereditary leader of a lineage group (*ayllu*) under Inca rule. "*Señorío*" from the Spanish "*señor*" (lord) originally described a Spanish feudal estate. These terms were adopted in Peru during the Spanish colonial period to describe political elements within the Inca administrative system. Acknowledging important distinctions between local political structure and the transformations of this structure under imperial subordination, it is likely that, at the very least, the scale of these administrative hierarchies reflects a more fundamental, pre-Inca reality. While in some cases Inca administration was highly disruptive of the existing political order, in many other contexts the state inserted itself above the local hierarchy with moderate to minimal changes. These ideas will be discussed further in Chapter 6.

terms of stratification, specialization, and the architectural elaboration of the political center (Earle 1987:288-291).

A dynamic, diachronic perspective is critical when using these categories and it is important to consider how these large, complex societies may have participated in sophisticated contacts at a regional scale. Some Late Intermediate Period coastal polities may have exhibited only brief and tenuous periods of centralization, cycling between unification and dissolution (Flannery 1999). Frequent interaction may have even driven higher-order organization (Redmond and Spencer 2012), especially in the case of interactions with expansive states. A broad overview of terminal Late Intermediate Period and Inca settlement patterns within the study region provides important generalizations.

At the southern reach lay the "kingdom" of Chincha, a prominent Late Intermediate Period polity, which ruled the lower portion of the eponymous valley. A relative wealth of historical testimony from the valley (Carlos 1978), particularly the Spanish colonial administrative documents known as *La Relación*[10] and *Aviso*[11], provide insight into the importance of Chincha for the Inca both as an epicenter of political and ritual power, but also as the base of operations for an indigenous regional network of seafaring trade (Rostworowski 1970). The paramount authority of the Chincha *señorío* was headquartered at the La Centinela complex (Wallace 1998), the presumed capital of the preeminent *curacazgo* in the valley (Figure 5-4). Chincha also controlled the lower valley of Pisco, to its immediate south, though it is not clear what sort of political organization prevailed within Pisco prior to Chincha rule (Menzel

[10] *Relación y declaración del modo que este valle de Chincha y su comarcanos se governavan antes que oviese yngas y despues que los vuo hasta que los crisitanos entraron en esta tierra* (1558)
[11] *Aviso de el modo que havia en el govierno de los indios en tiempo del Inga y como se repartian las tierras y tributos* (c. 1570)

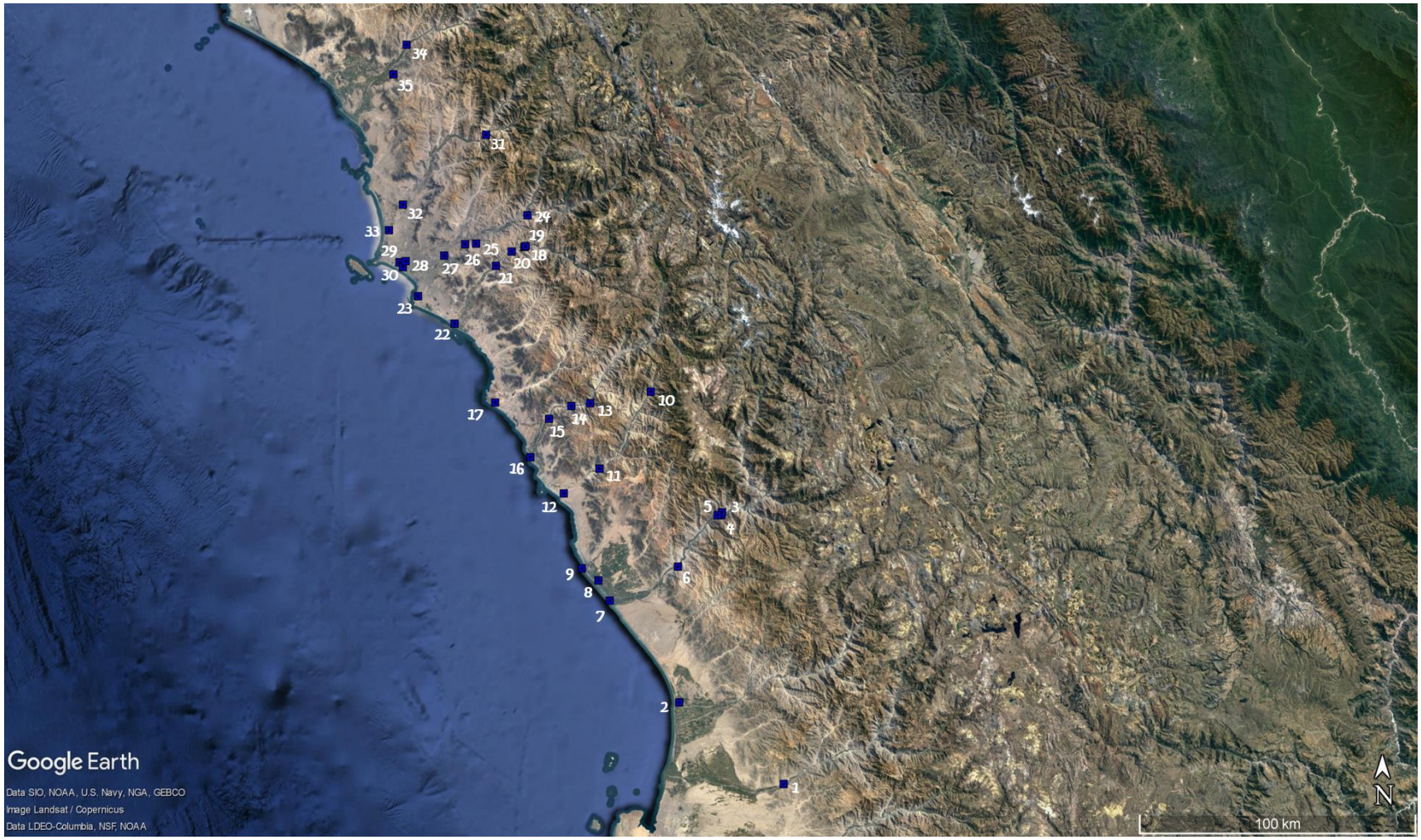

Figure 5-3 Primary Inca centers: (1) Tambo Colorado (2) La Centinela (3) Cruz Blanca (4) Huajil (5) San Marcos (6) Incahuasi (7) Herbay Bajo (8) Vilcahuasi (9) Cerro Azul (10) Pueblo Viejo de Omas (11) Uquira (12) Paredones (13) Cochahuasi (14) La Vuelta (15) Piedra Angosta (16) El Salitre (17) Bandurria (18) Avillay (19) Nieve Nieve (20) Chontay (21) Huaycán de Cieneguilla (22) Pachacamac (23) Puruchuco (24) San Juan de Pariachi (25) Huaycán de Cieneguilla (26) Mama (27) Armatambo (28) La Magdalena (29) Maranga (30) Huaca Mateo Salado (31) Quivi Vieja (32) Tambo Inca (33) Palacio Oquendo (34) Lumbra (35) Pisquillo Chico

Figure 5-4 Satellite image of the La Centinela complex in the lower valley of Chincha. The Inca administrative sector is located at the southwestern corner of the site.

1959:127). In Chincha and Pisco Inca archaeological presence manifests at select locations in a quite different way. The small sector of Inca architecture emplaced within the La Centinela complex (Morris and Santillana 2007) can be interpreted as a kind of embassy revealing a gentler negotiation of power with local leadership than in other cases (Morris 1988).

In Pisco, Inca architecture is largely confined to two middle valley sites: Lima la Vieja and Tambo Colorado (the latter located around ten kilometers further upriver) neither of which are associated with pre-Inca administrative architecture (Menzel 1959:127-128). Tambo Colorado (Figure 5-5) stands out due to its size, preservation, and renown as a premier example of planned Inca architecture on the coast (Engel 1957; Protzen and Morris 2004).

The middle valley of Chincha, compared with the middle areas of similarly large valleys to the north, is sparsely populated and economically marginal. Both appear to have been true in

the past. As in Pisco, there is an absence of evidence pointing to a regional polity centered in this *chaupiyunga* zone. Instead, it appears that a handful of villages existed in relative autonomy. The settlement data suggest a preoccupation with boundaries and defense; fortified, hilltop sites, conspicuous mortuary monuments, and intravalley buffer zones are present (Nigra et al. 2014). As discussed in the previous chapter, the architecture located more distant from the coast appears more heavily influenced by highland construction techniques.

Between the valleys of Chincha and Cañete runs the small *quebrada* Topará. Its utilization by the Inca state and its allies as a conduit between the lands of Huarco and Chincha is evidenced by an Inca road and storage system leading directly from Topará to the military installation, Incahuasi in Lunahuaná (Figure 5-6) (Casaverde and López 2011). One site, Pampa la Capilla (Figure 3-6) (Casaverde and López 2011:120-123), positioned at 450 masl in the middle valley of Topará, is intriguing due to its architectural layout. Located at the foot of a

Figure 5-5 Satellite image of Tambo Colorado in the middle valley of Pisco. Note the immense, trapezoidal central plaza.

hillside with extensive terracing, the remains of the primary structure reveal an orthogonal compound, divided into ten rectangular rooms of various sizes. This architectural manifestation is unusual, but not unique in the region. At the lower end of the middle valley in Chincha, two sites: Casa Grande (or Quebrada I) and Pampa de la Pelota (Lumbreras 2001:69; Engel 2010:122) exhibit a similar spatial layout (Figure 5-7). It is possible that these three sites, located at a considerable distance from the Chincha *señorío* center, represent a yet undefined form of administrative architecture, perhaps developed during the Inca period.

Huarco, like Chincha, was the seat of a powerful *señorío* with political influence reaching possibly as far north as Chilca (Garcilaso 1991 [1609]:390). Immense *tapia*[12] complexes in the

Figure 5-6 Satellite image of Incahuasi, the Inca garrison located at the lower end of Lunahuaná. The two eastern sectors exhibit architecture related to the processing and storage of agricultural products. The western sector appears to combine residential and ritual function.

[12] *Tapia* (or, *tapial*) is a construction technique that utilizes large, earthen blocks. These blocks are formed by placing a mixture of soil and stabilizing additives into a wooden formwork and then compacting (ramming) it until compressed to suitable density. *Adobes,* in contrast, are smaller, and less dense. The smaller size of *adobe* bricks allows for portability, whereas *tapia* is generally constructed *in situ.*

Figure 5-7 Pampa la Capilla (Topará) left and Casa Grande (Chincha) right. Possible examples of Chincha administrative architecture.

lower valley, including Cancharí, Vilcahuasi, and Ungará, are interpreted as the relict centers of the constituent *curacazgos* of Huarco, probably subordinate to the paramount authority based at Huarco (Cerro the Azul). At the time of the Inca conflict, sources identify Huarco as the leader of a confederacy which united the Cañete polities (Huarco and Lunahuaná) with the lower valleys of Asia and Chilca along with the lower and middle valley of Mala (Aldana 2008:187). Though the great extent such an alliance is improbable, direct control could be possible in neighboring, lower valley Asia, where Late Intermediate Period developments on the immediate coast were unremarkable and perhaps even throttled by the emergence of Huarco in Cañete (Engel 2010:242). In contrast, the archaeological data from Mala (Coello 1998; Taira 2015; Tantaleán and Pinedo 2004) point to greater movement toward local centrality and autonomy. Considering the distance between the two valleys, the relationship between Huarco and Mala should more closely resemble an alliance than territorial control. The small Chilca drainage

Figure 5-8 Ruined structures at the site of Escalón in Lunahuaná. Note the presence of three construction techniques: (a) field stone and mud mortar (b) adobe (c) tapia.

shows less evidence of a local, hierarchical settlement system, but it is far away. Any connection with Cañete would likely be mediated through the political authority in Mala.

When evaluating territorial control by local, pre-Inca polities, one important factor is the architecture utilized by different groups. Since architecture is not portable it is more useful than other categories of material culture for establishing political boundaries. The Inca use of adobe on the Peruvian coast is a good example of a signature technique, but structures made by local groups such as *pirámides con rampas* in the Yschma area, map better onto areas of political control and influence than does the wider-spread pottery tradition of the same group (Vallejo 2009). *Tapia* construction, in general, is a useful indicator of group affiliation since it ranges from Chincha to Chillón (as an indigenous tradition) and into Chancay (after introduction in the Late Horizon). Despite this broad utilization along the coast, the technique does not exhibit much penetration into the middle areas of each coastal valley, and it is absent in the upper valleys. Given the fact that various groups including Chincha, Huarco, Yschma, and Collique used *tapia*

in the pursuit of their unique architectural forms, the broad utilization of the technique by Late Intermediate Period coastal groups is perhaps best explained as the proliferation of a useful technological solution within a similar environmental context. Along the wide, flat coastal floodplains, mud and space are abundant, thus there is opportunity to erect monumental, rammed earth complexes. The middle and upper valleys of the same drainages provide far less construction space. Settlements are perched on hillslopes or confined to the mouths of dry *quebradas* away from the cultivated land and the course of the river itself. Here, the rocky hillsides provide easy access to suitable, abundant fieldstones (granite, andesite, limestone, conglomerate, etc.) for use as construction material. In most cases it can be joined with mud mortar and plastered using far less earth required than to build with *tapia* and without the need for wooden molds or additional labor used in the ramming process.

Figure 5-9 The highest elevation of tapia architecture in each valley

Net other considerations, there are spatial and material incentives towards building larger structures with mud along the coast and more modestly with stones deeper in the river valleys. Deviations from this standard as in the case of Inca adobe, should be considered meaningful due to the implied, added expense (labor and materials for molding the bricks). In the Inca case, there is a concerted attempt to differentiate certain structures from others for political or ideological reasons (Ogburn 2008). For local groups, the existence of *tapia* architecture in the middle valley is likely a cultural signifier of the people building with this material and it may have even been chosen deliberately to signal this group identity. The highest elevation (masl) of tapia architecture in drainages where there is a middle valley polity ($M = 257$, $SD = 138.53$) is significantly lower than the highest elevation of tapia architecture in drainages where there is no middle valley polity (plus Asia) ($M = 685.25$, $SD = 213.99$), $t(5) = 2.99$, $p < .05$). This can be interpreted as evidence for expansion into the middle valley by lower valley groups in the absence of strong resistance, or, in the case of Mala and Asia, groups headquartered in the middle valley with distinct cultural valence.

Returning to the regional overview, a complicating aspect of the late period settlement patterns in Lunahuaná (discussed in depth in the previous chapter) is the pervasiveness of Inca architecture. Most of the largest settlements in the valley exhibit Inca architectural features. Incahuasi, Huajil, and (probably) Cruz Blanca are planned Inca centers. Large sites, such as Cantagallo and Cerro Suero, reveal provisional Inca sectors, though further study is required to establish complete architectural layouts. While these sites are candidates for primary local political centers, it also may be the case that, like the *señorío* centers in Asia and Mala which are located beside and/or partially within modern towns of the same name (Coayllo and Calango) the original Lunahuaná has been built over. This is a common enough occurrence. As an example,

Figure 5-10 Satellite image of the Inca center, Uquira in the Asia middle valley. The site is located three kilometers upriver from Coayllo, the paramount center of the local middle valley polity.

Mama, the site of a local shrine and later Inca administrative center in the upper reaches of the Rímac middle valley, today lies beneath a busy Lima suburb. The largest Inca *colcas* found in Cañete sit perched above the town on a hillside. The modern town of Pacarán, fifteen kilometers upriver from Lunahuaná may have also been a local *curacazgo* center of the same name.

As mentioned above, the Asia drainage to the north of Cañete exhibits limited evidence for lower valley centralization during the Late Intermediate Period. Huaca Malena (Angéles and Pozzi-Escot 2004) the most important local settlement on the coast, seems to have reached its apogee in the Middle Horizon, exhibiting fewer material connections with regional cultures in later centuries. Ethnohistorical sources identify the Coayllo as the rulers of a middle valley polity, likely centered near the modern town, Coayllo, extending through the middle valley and possibly to the coast (Angéles and Pozzi-Escot 2004). The Coayllo and the Huarco are reported

to have maintained an uneasy relationship. Due to the threat of conflict, the lower valley of Asia may have served as a buffer zone between the two groups for much of the Late Intermediate Period. Coyallo is an interesting in that its center of the same name, is located at the lower end of the middle valley. Coayllo is built near an access point to the *lomas* of Asia, coastal bluffs where seasonal fog moistens hundreds of square kilometers of verdant land in the otherwise barren desert. Access to *lomas* was an important consideration for interregional Andean trade as highland pack animals could be pastured in these places (Kalicki 2014) The primary Inca site in the middle valley, Uquira (Figure 5-10) sits only three kilometers away. Emily Baca (2004:424) identifies Uquira, along with Paredones and Pueblo Viejo as the primary centers with planned Inca architectural layouts, though several less distinguished settlements feature Inca diagnostic components.

Figure 5-11 Satellite image of El Salitre (Sulcavilca), situated atop a promontory overlooking Playa Los Totoritas, Mala. A local center, Cerro Salazar, is located on another cliff, one kilometer to the south , on the other end of the beach.

Antonio Coello (1998:45) highlights La Muralla, a site group at the upper reach of Coayllo land, associated with a large curtain wall made from *tapia*. It lies more than forty kilometers inland, near the modern town of Omas. Only a kilometer to the northwest, another hilltop site, similarly fortified, suggests either an opposing installation on the far end of a small buffer area or two important nodes in an allied defensive network. The Coayllo were eager allies to the Inca in their conquest of Huarco and were rewarded with territory and production rights in Cañete (Rostworowski 1989:90-91). Emily Baca (2004:424) identifies Paredones, Uquira, and Pueblo Viejo as the primary centers with planned Inca architectural layouts, though several less distinguished settlements feature Inca diagnostic components.

North of Asia is the valley of Mala, larger and more verdant than its neighbor. The Mala of the lower valley and the Calango of the middle valley were the preeminent groups at the time of Inca arrival. Sites in Mala present an abundance of Puerto Viejo ceramics, named after a Late Intermediate Period type site in Chilca (Berríos 2008), which are also found in Asia and Cañete. There are no *pirámides con rampas* in the valley (Tantaleán and Pinedo 2004), which is cited as evidence for political independence from the Yschma sphere (Díaz 2008) centered at Lurín to the north. The two important sites with Inca architecture on the immediate coast are El Salitre (Figure 5-11), located adjacent to a local center, Cerro Salazar, and Ollería, a hillside featuring extensive terracing and adobe architecture (Williams and Merino 1974b:33). Late Intermediate Period fieldstone architecture in the middle valley exhibits features such as camelid long bones integrated into the mud mortar of fieldstone walls (Tantaleán and Pinedo 2004:145; Taira 2015:35) and giant ceramic storage jars embedded in the ground. These features are present in middle valley Asia (Angéles and Pozzi-Escot 2004:877) and Cañete

Figure 5-12 Satellite image of Cochahuasi, an Inca administrative center in middle valley Mala.

Large portions of the middle valley Calango polity were annexed by Inca allies from the highlands after a failed attempt at rebellion (Rostworowski 1989:29). Documentary sources indicate that this conflict between coastal and highland people dates to centuries before. The *yunga* Calango people are said to have once controlled a settlement called Callaguaya in the upper valley of Mala (Mejía and Raymondi 2015:120-121), but war drove them back down to the middle valley. Piedra Angosta, La Vuelta, and Cochahuasi (Figure 5-12), Inca administrative centers in the area, exhibiting planned layouts and functional sectorization (Tantaleán and Pinedo 2004).

The valleys of Lurín and Rímac offer compelling architectural evidence for the long process of Andean civilization. During the Late Intermediate Period, these local developments culminated in political centralization and the strong regional influence of the Yschma *señorío* centered at Pachacamac in Lurín. The larger, densely populated Rímac lower valley was divided

Figure 5-13 Pirámides con rampas at Pachacamac.

into a handful of *curacazgos* governed from the major architectural complexes in the area (Cornejo 1999:33). The architectural hallmark of immediate coast Yschma are *pirámides con rampas*, (Figure 5-13) which take the form of two-tiered platform structures (with ramps on either side) featuring a large patio upon the first tier and a smaller (in some cases covered) patio on the second tier (Villacorta 2004). Principal centers, like Pachacamac, as well as Armatambo (Diaz and Vallejo 2002), Puruchuco (Villacorta 2003) La Magdalena (Figure 5-15), and Maranga in Rímac, feature this architectural type, with at least fifteen at Pachacamac alone. Pachacamac enjoyed renown as the site of an ancient oracle, greatly venerated by coastal people, and enhanced after Inca assimilation (Rostworowski 2002). It appears the Inca incorporation of the lower Lima valleys was a joint project and the Late Horizon settlement patterns reflect this. Inca presence is evinced by modifications of the already existing *pirámides con rampa* complexes with additions including modular *canchas*, trapezoidal windows and niches, and double-jamb doorways, as well as the appending of Inca sectors (Figure 5-14). Luis Villacorta (2004) argues

convincingly that the effectiveness of the local administration as mediated through *pirámides con rampas*, was understood and thus left relatively intact by the Inca state, which pursued a hegemonic style of rule in the area.

For the most part, middle valley Lurín does not appear to have undergone independent political unification prior to the Inca, though the individual villages or small *curacazgos* closer to the coast were likely under the influence of the coastal Yschma (Cornejo 1999:31). The administrative centers of Huaycán de Cieneguilla (Figure 5-16) (Marcone 2004) and Nieve Nieve (Figure 5-17) (Paredes 2013) are the primary Inca sites in the middle valley, the latter presenting a planned, diagnostically Inca layout (Feltham 2009). The *señorío* or *curacazgo* of Sisicaya, a productive, coca producing area in the upper reaches of the middle valley, was inhabited by coastal populations, and managed to some degree by the Yschma polity (Feltham 1983). During Inca incorporation of the region, much of the Lurín middle valley fell under the

Figure 5-14 Satellite image showing a sector of Inca architecture at Pachacamac, lower valley Lurín.

control of *serrano* invaders. In Rímac, the Huarochirí Picoy *señorío* (centered at Surco) controlled land to the south of the river in the higher reaches of middle valley. The upper valley was home to the Yaucha *señorío.* The Chacalla, another highland Yauyos group, held the northern bank down to slightly beyond the river fork near the site of Mama (present-day Ricardo Palma) (Cornejo 1999:13). Legends refer to a *serrano* conqueror, Tutayquiri, who won these lands for Yauyos people in the pre-Inca past, expelling coastal populations and demonstrating the superiority of the highland *huaca*, Pariacaca over the *yunga* deity housed at Mama (Rostworowski 2002:208-212). As was the case in the middle valley of Lurín, shortly after Inca conquest, Yschma allies ceded large areas of middle valley land to the advancing Yauyos populations. The presence of *tapia* architecture at middle valley sites such as Ñaña (550 masl), suggests an earlier history of substantial, direct influence from the immediate coast Yschma and its allies.

Figure 5-15 Satellite image of La Magdalena, lower valley Rímac. Indicated is a clear view of the components of pirámide con rampa architecture.

Figure 5-16 Satellite image of Huaycán de Cieneguilla, a major Inca center in middle valley Lurín.

At the time of Inca conquest, the lower and middle valley of Chillón were host to at least three independent polities: Collique, Guancayo, and Quivi (Tácunan 2012; Rostworowski 1989:45-47). Documentary sources describe the conflict between these *yunga* groups and the highland Canta for control of valuable coca lands in the middle valley (Dillehay 1977). Just before Inca arrival, the *yungas* lost control of Quivi, but the strong influence of coastal groups in the *chaupiyunga* is evident in the *tapia* architecture visible in Late Intermediate Period centers deep into the middle valley (Cornejo 1999). Public architecture in the lower valley is both monumental and *tapia*, but of distinct form from the Yschma *pirámide con rampa* or the Chancay *montículos piramidales tronco-cónicos* to the north (Alvino 2013; Dulanto 2008:767-769). Notable examples include the walled, hilltop center of Collique located near the ruined perimeter fortification, Muralla Tungasuca, and Con Con, a sanctuary associated with the coastal deity of the same name (Rostworowski 1989:167).

Figure 5-17 Satellite imagery showing Nieve Nieve the planned Inca settlement at the upper end of middle valley Lurín. Note the orthogonal grid and apparent absence of earlier structures.

Figure 5-18 Satellite image shows an Inca installation at Puruchuco located on border between lower and middle valley, Rímac.

Tambo Inca (Figure 5-19), located near the local center, Collique, (Figure 5-20) and Quivi Vieja (1100 masl), placed strategically at the confluence of the two tributaries of the Chillón river, are the two primary Inca centers at the lower and upper reaches of the middle valley, respectively (Silva 1996:287-291). Surface collections from the Collique site yield abundant Inca ceramics, suggesting that the leadership installed after conquest and mass deportations was dependent on the state. In addition, Oquendo, an extensive, walled complex in lower valley Chillón, was reutilized by the Inca, conspicuously at the *tapia* compound known as Palacio Oquendo (Cornejo 1999:124-125). Middle valley Huancayo Alto and Huanchipuquio are notable given the prominence of their storage architecture (Dillehay 1977). The Late Intermediate Period Guancayo center of Trapiche presents surface ceramics from neighboring Chancay in abundance (Cornejo 1999:217). Jorge Alvino (2013:58) proposes (post-Inca)

Figure 5-19 Satellite image of Tambo Inca, the principal Inca center in lower valley Chillón. The site is positioned directly across the river from Collique, the fortified, paramount center of the indigenous local polity.

Figure 5-20 Satellite image of Collique, the fortified, hilltop settlement which served as the political center of the Collique polity.

Figure 5-21 Satellite imagery shows Pisquillo Chico, a vast local center in middle valley Chancay, shared by Inca administration in the area.

political control from Chancay at Trapiche, due to its relative proximity to the primate Late Intermediate Period center, Pisquillo Chico (Figure 5-21).

Tertius Gaudens: An Inca Imperial Strategy

Before moving directly to the proposed model of Inca imperialism, it is useful to provide some context concerning an observed method by which the Inca exploited the fractured, and often contentious, Late Intermediate Period political landscape to their own ends. *Tertius gaudens* or, "the rejoicing third," is a strategic orientation first articulated by Georg Simmel (1950) [1917] in his discussion of triad dynamics. In contrast to the more familiar *divide et impera* ("divide and conquer") the subject actor – the *tertius* – does not actively foment discord between the other two parties. Instead, existing conflict between two parties is exploited by the third. This allows the third party to broker deals or provide decisive aid to one side or the other (Obstfeld et al. 2014). Although the classic arrangement involves a triad of individuals, modeled "unitary actors" can be groups of people if the collective is understood to be pursuing a joint strategy among other unitary agents (Posner et al. 2009:3). Simmel highlights what he calls the essential formulation, the classic version of which involves competition between two for the favor of a third due to existing, mutual hostility between the pair (1950 [1917]:155).

There are documented examples of the Inca employing variations of this strategy. A notable highland case is the Inca annexation of the Aymara-speaking, circum-Titicaca region known as Callao (Stanish 2000; Stanish 1997). At the time of the first Inca forays into the area, two powerful *señoríos,* the Colla led by a lord named Zapana and the Lupaqa led by a lord named Cari, were embroiled in a bloody contest for regional supremacy. As Cieza relates, the

arrival of the Inca, under the rule of Viracocha, upset the established détente and prompted the Colla to launch a resolute, total assault against an enemy they feared would ally with the newcomers, ensuring their annihilation (Cieza 1967 [1553]:144-146). The Lupaqa, met the challenge and defeated their rivals in a colossal pitched battle at Puarcacolla, which claimed the lives of 30,000 and thwarted further Colla ambitions.

Cobo provides a somewhat different version in which the Inca, under the rule of Pachacutec, but led into battle by his son, Topa Inca, are the ones who do battle with the Colla:

> Murieron muchismos *collas* en ambas batallas; los que escaparon se pusieron en manos del Inca. El cacique de la nación de los *Lupacas* que residía en Chucuito y no era menos poderso que el *Colla*, tomó mas sano consejo, porque recibió de paz al Inca y puso en sus manos su estado; al cual hizo mucha honra el Inca, y para mostrarle más favor, se detuvo algunos días en Chucuito (Cobo 1956 [1653]:82).

In this version, despite the comparable strength of the rival groups, the Lupaqa choose diplomacy over war. In the aftermath, the Inca and the Lupaqa leaders solidified a client/vassal relationship through the idiom and accompanying rituals of reciprocity. The Colla did not fare so well. An inferior status as provincial subjects is supported by the construction of a new administrative center near the Colla capital at Hatunqolla (Julien 1983). There is also evidence that Lupaqa territory and political authority expanded at the expense of neighboring groups (Stanish 2000). Even afterward, when the Lupaqa participated in the pan-Titicaca rebellion that Topa Inca put down, the Colla seemed to have borne the brunt of the reprisals. The Lupaqa lord Cari was even granted the dubious privilege of being brought in bondage back to Cusco for punishment, rather than being executed on the spot (Cieza 1967 [1553]: 182).

The Inca state employed *tertius gaudens* on the south-central Peruvian coast in its encounter with two complementary conflicts: (a) competition between the large polities situated along the immediate coast and (b) competition within each drainage between coastal and highland groups for access or control of territory within the middle valley. Simmel (1950 [1917]:162) remarks on the advantages of perspective held by the relatively dispassionate third party. Situated above the fray, removed from conflict, allows for clarity in evaluating available opportunities. It seems this psychological outlook is a useful framing device for the organizational capabilities of the Cusco state in areas far from home. What follows is a detailed, spatial examination of the infrastructural advantage enjoyed by the Inca and the deployment of these resources through a strategy of coordinated regional control. At the same time, it will be made clear that local polities, limited in their capacity to mount unified resistance, were logistically outflanked and at a structural disadvantage in their scope of influence.

Toward a Comprehensive Model

The primary structural factors influencing Inca strategy on the south-central coast were geographical and macro-sociological. The vertical Andean landscape and separate drainages created natural divisions between the inhabitants of the immediate coast and the middle valley in each valley. The overall population and political centralization of each area were in large part determined by the potential for agricultural production. The other important factor was the pressure applied from highland or adjacent coastal groups.

Inca political maneuvering can only be understood against this backdrop. To review the regional context (Figure 5-22), the Chincha managed a productive coastal economy but appears

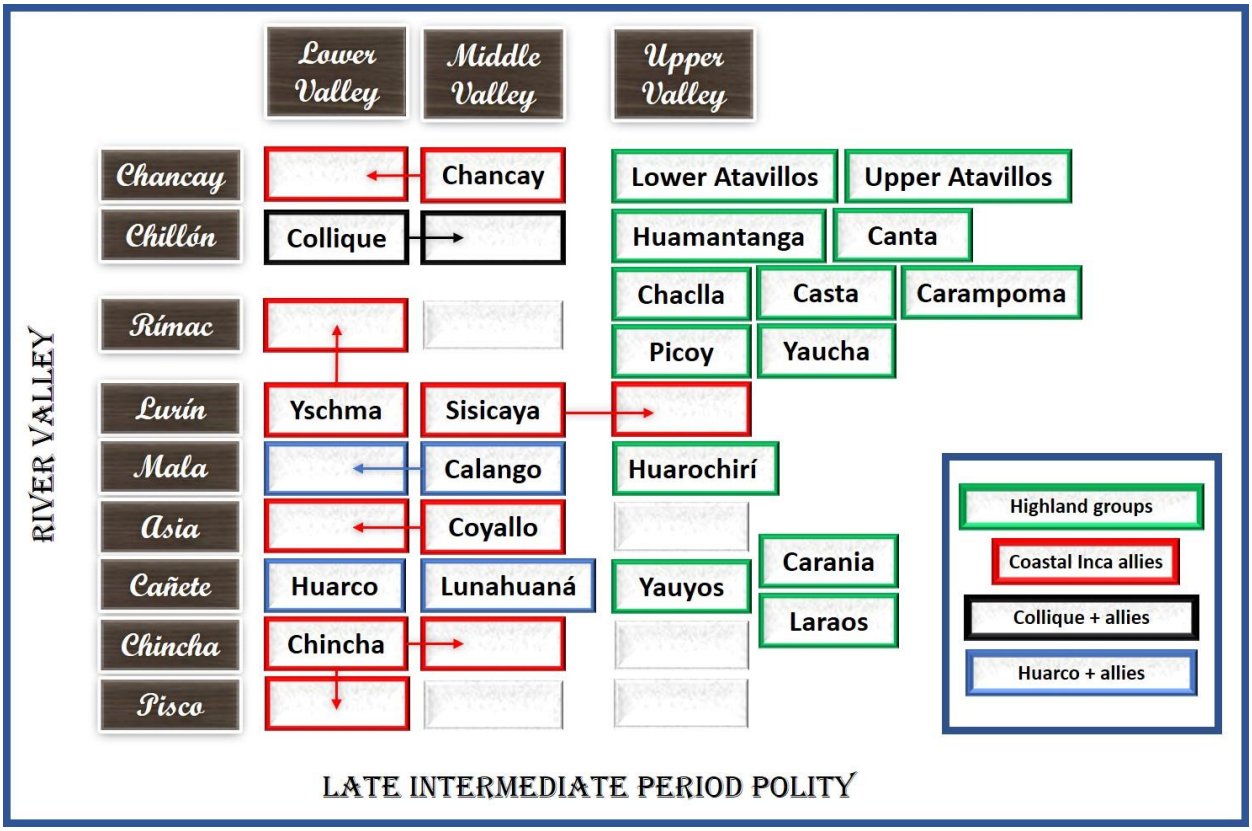

Figure 5-22 Schematic depiction of regional territory in the Late Intermediate Period. Inca allies are shown in red; Huarco and its allies are blue. Highland groups are shown in green. The allies of Collique, shown in black, would also include the minor, middle polities, Guancayo and Quivi, not shown for the sake of simplicity.

to have pursued little political expansion up the valley. Influence in the lower valley of neighboring Pisco seems to have been a primary avenue for broadening its sphere of political control, though its commercial and cultural influence may have had greater reach even before the arrival of the Inca. Lowland agricultural areas within Cañete and the buffer zone, Topará, would have been an attractive prize for the Chincha elite if circumstances allowed for expansion. Huarco and Lunahuaná maintained political independence but provide evidence for complementary economic interaction (Marcus 1987). A similar interchange between the immediate coast and the middle valleys appears to be the case for Collique, Guancayo, and Quivi in Chillón (Rostworowski 1989).

At the time of Inca conquest, the middle valley areas of the south-central coast were acceding to the advance of highland migrants from Yauyos and Canta. This pressure was most acute in the populous, northern (*Hanan*, upper) Yauyos sphere, where *serrano* peoples intermittently controlled territory in the middle valleys of Mala, Lurín, Rímac, and Chillón (Spalding 1984). The Coayllo in Asia and the *señorío* of Lunahuaná either did not face the same level of pressure or managed to hold territory due to the benefits of unification or sufficient distance from highland population and political centers. The middle valley of Chincha does not have evidence for Late Intermediate Period centralization and it may be the case that some of the local villages further upland were inhabited by highland peoples.

The development and expansion of the Inca state was, likely, a manifestation of a similar, multiregional, Andean process (Bauer and Covey 2002). Nevertheless, in the provincial context, representatives of the state could position themselves in a manner to resolve the dilemma facing coastal populations. Conflict, prompted by population movements, was disruptive for the *chaupiyunga* agricultural economy. Losing territory in the wake of this conflict was worse. Considering the situation, the Yschma political authority made a sensible decision to submit to the Inca peacefully and thereby retain limited access to middle valley production under the purview of the state. Despite this deal, shortly afterward, most of the area fell under the control of the Inca's Yauyos allies (Rostworowski 1989:55-58).

In contrast, the Collique of Chillón, due the defensive posture of their primary center and the recent history of *yungas* allies losing important territory, opted to resist, ultimately resulting in a great loss of life, territory, and political autonomy. As an addendum to these settlement data, ceramic studies provide corroborative evidence in the continuity of local certain Late Intermediate Period traditions. While Chincha and Yschma styles developed, hybridized, and

proliferated during the Late Horizon (Menzel 1959; Vallejo 2009) the distinctive ceramics of Huarco (Menzel 1971:79) and Collique faded into obscurity.

One result of these events was a clearer delineation between coastal and highland populations. The *chaupiyunga*, territory previously controlled and utilized by groups with both coastal and highland affinities, came to be dominated by highland groups. Coastal groups were pushed back to the coast proper or were eliminated as regional players all together. A particularly dramatic consequence of this regional process is evident today in genetic markers of extant populations which support a model of demographic replacement of coastal people by highlanders (Fehren-Schmitz et al. 2011). At any rate, once this sharp political and cultural boundary was established, the Inca could place the state administrative apparatus as the functional link between the two.

At the regional scale, Inca administration of the south-central coast reveals three primary modes of control which transcend the standard indirect versus direct continuum (Figure 5-23). The viceregal mode is best demonstrated by Inca administrative architecture emplaced among and borrowing canons from the local paramount center. Inca installations at La Centinela (Wallace 1998) and Pachacamac (Eeckhout 2004) are classic cases. Integration with the Chancay architectural tradition at Pisquillo Chico (Alvino 2013) and the various *pirámides con rampa* centers in Rímac provide further examples of this mode of control. While control is direct in the sense that state activities are centered at the local seat of power, it is indirect in its reliance on existing structures of governance. Michael Mann (1986:113) distinguishes two types of state power: despotic and infrastructural. Despotic power approaches what David Graeber (2011:8-9) considers sovereignty, or the ability of the state to act with impunity. Infrastructural power is the ability of the state to influence the activities of dispersed, diverse groups and institutions within

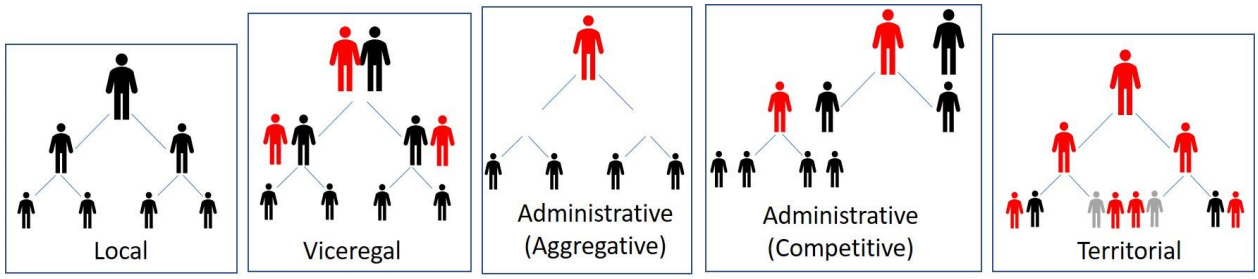

Figure 5-23 Schematic representation of the various administrative regimes utilized by the Inca state and the local administration which preceded it. Local leadership at each level is depicted in black, Inca administrators are shown in red, and resettled mitma populations are gray. The descending hierarchy depicts señorío, curacazgo, and village-level control.

its territory. Through viceregal control, the Inca forwent despotic power and coopted local infrastructural power, facilitating penetration into local affairs. Although this imperial strategy results in scant architectural evidence of Inca presence outside of primary governing settlements, the much wider distribution of Cusco style and hybrid ceramics evinces the role of state coordination in local production and distribution.

The second mode is administration proper, both competitive and aggregative. In the competitive mode, rather than occupying existing primary and secondary centers, the state develops its own installations (often through the reuse of minor settlements) effectively bypassing the local administration. The Inca thereby enjoy concentrated despotic power at the nodes linking a dispersed state apparatus along the length of the subject valley. Control is indirect as it purposely circumvents local centers just as it is direct in its local self-sufficiency. The placement of new administrative complexes within the existing networks of governance served to destabilize local power structures as the activities traditionally carried out at paramount centers were moved to state facilities (this process is described in detail for the upper Mantaro Valley in D'Altroy 2001). The aggregative administrative strategy, demonstrated at grand installations like Huánuco Pampa and Tambo Colorado, as well as smaller sites placed at

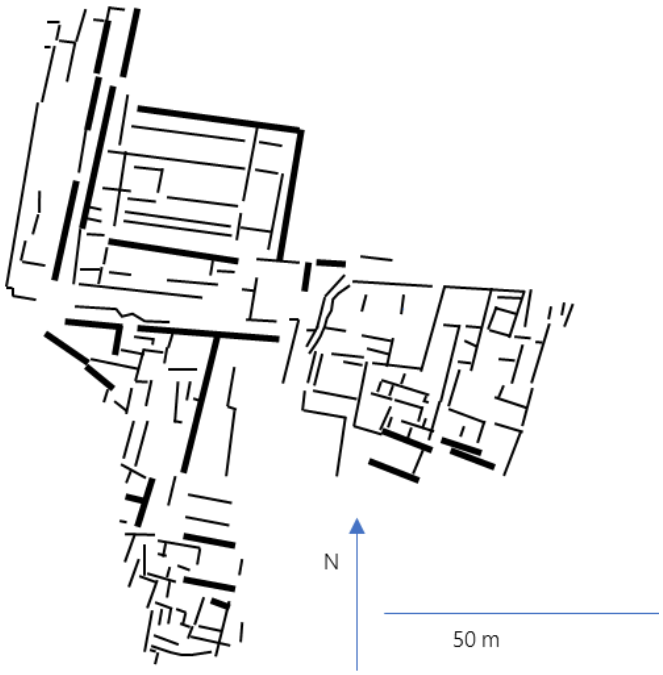

Figure 5-24 Inca administrative sector at Maranga, lower valley Rímac [secondary viceregal]

strategic locations (such as Piedra Angosta in Mala and Bandurria in Chilca (Campos 2010; Pareja 2012:557)), interfaces village level populations with higher-order state authority. The control is direct as it establishes the state as the unchallenged power in the vicinity. It is indirect in its dominion over strategically important, yet economically and politically peripheral areas.

The final mode of control, territorial, is the most direct. The expropriation of large areas of productive land for state and perhaps individual elite purposes (Gyarmati 2015), was an action reserved for polities subdued through military conquest. Quivi (Silva 1998:55-57), Guancayo (Silva 1996: 288-294) Collique (Tácunan 2012:19-20), Huarco, Lunahuaná (Rostworowski 1989:108-109), and Sisicaya (Feltham 2009; Marcone and López-Hurtado 2002:389) are hypothesized to be examples of this type of imperial domination. The involuntary movement of populations out of their homelands to be replaced with other deportees or opportunistic migrants from allied groups is one result of these policies. Further evidence can be seen in state

investment in production. Extensive Inca storage complexes are present at select sites in the upper middle valleys of Lima but are not well-documented elsewhere (Cornejo 1999). Lunahuaná appears to be somewhat exceptional due to the abundance of Inca *colca* complexes. In addition, there are dozens of administrative or residential structures with Inca architectural features in Lunahuaná and Guancayo, whereas these structures tend to be restricted to major Inca installations (and *señorío* and *curacazgo* centers) in other valleys.

Working with this typology, it may be possible to predict the spatial layout and architectural signature of Inca settlement structured through each mode as well as placement on the landscape relative to other settlements or important geographic features. Viceregal control is the most idiosyncratic given that the state incorporates local architectural canons within existing administrative facilities. This also makes it the most apparent, since the Inca precincts of known local centers are made to stand out from the conventional architecture, incorporating vivid indicators of Cusco derivation.

Figure 5-25 Nieve Nieve, middle valley Lurín [intensive territorial]

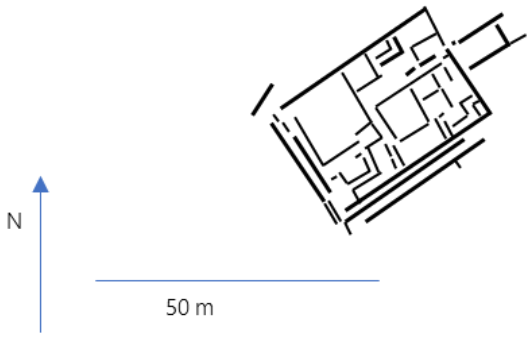

Figure 5-26 Inca compound at Puruchuco, middle valley Rímac [secondary viceregal]

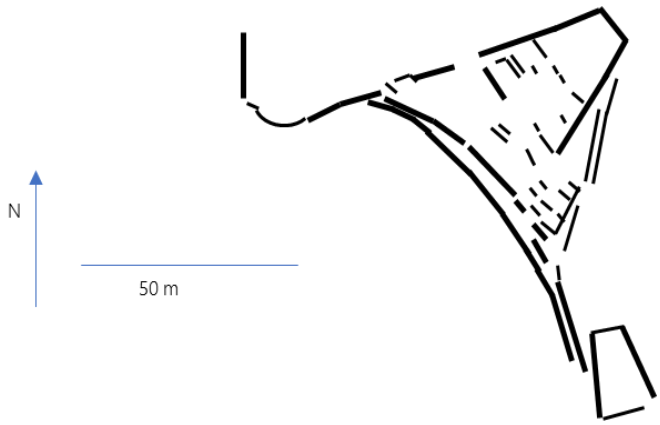

Figure 5-27 Palacio Oquendo, lower valley Chillón [intensive territorial]

Examining the two administrative modes (competitive and aggregative) provides novel insights. Competitive administrative sites will be located near local centers. Given the density of prior occupation in the area or the desire of the state to integrate itself into the local politics, sites of Inca administration will often be built within existing settlements. This can appear like what is seen in the viceregal mode where eclectic architectural amalgamations can result in Inca features throughout the site and one or more sectors that are more clearly Inca in their architecture and

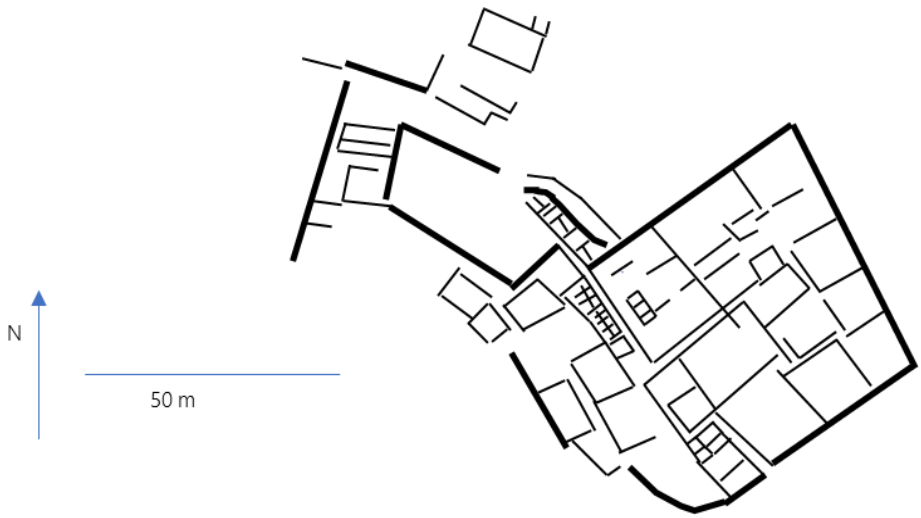

Figure 3-28 Huaycán de Pariachi, middle valley Rímac [secondary viceregal]

layout. The difference is, of course, the placement of the administrative facility within what was previously a minor site, not the paramount or district center. Also, due to the relative penetration of the Inca into the local economy in the viceregal case, artifactual evidence of Cusco presence (ex. hybrid local-Inca ceramics) may be less apparent or more restricted in the competitive administrative case, despite a more diffuse Inca architectural signature.

Aggregative administrative sites stand out as relatively isolated settlements with a planned, diagnostically Inca layout. At the level of construction materials and architectural features, there may not be a great difference between the Inca sector of the competitive administrative site and the aggregative administrative site. The primary distinction is location.

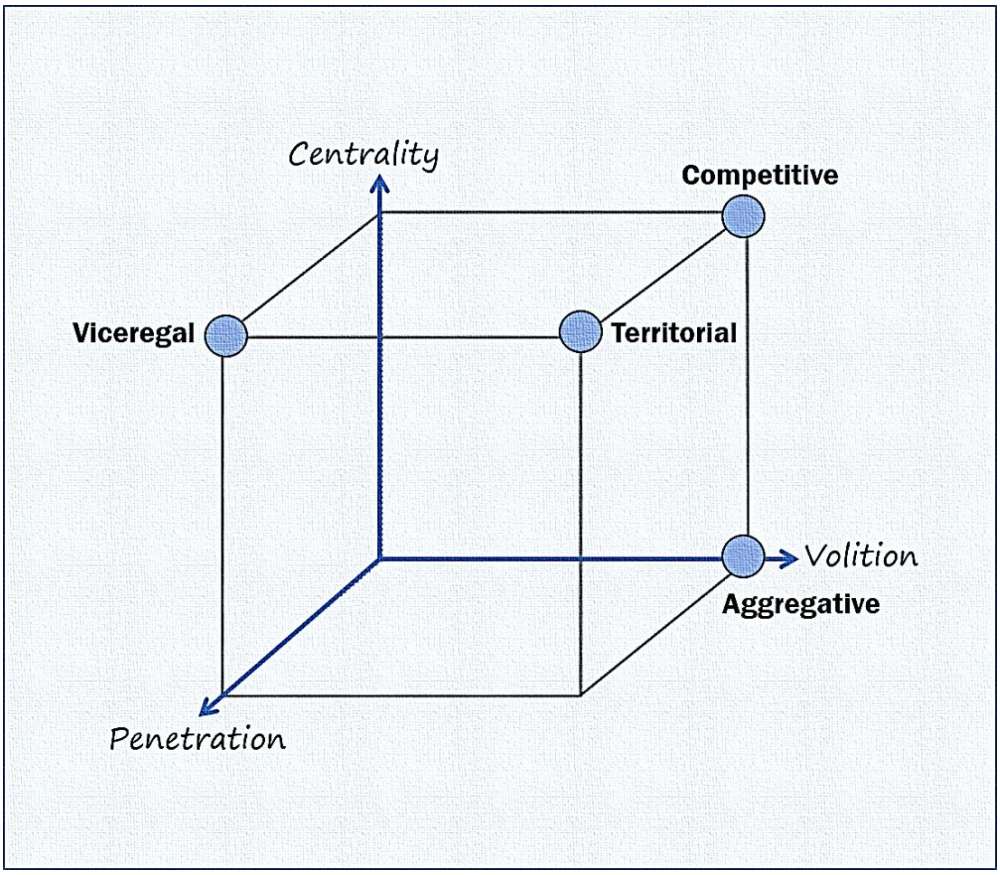

Figure 5-29 Visualizing the ideal modes of Inca imperial control along three dimensions.

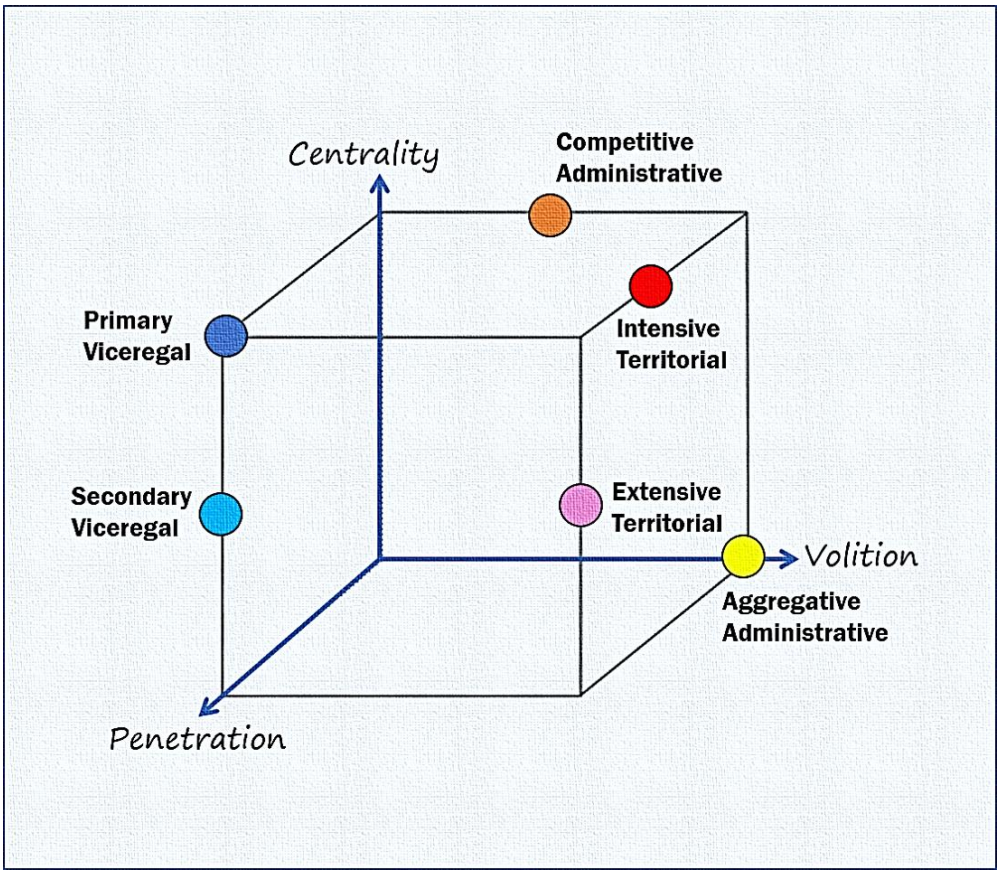

Figure 5-30 Observed administrative modes in study area.

Not only are the aggregative sites not typically built within the layout of an existing settlement, they are also located away from local centers, in the interstitial areas of strategic importance.

Territorial control results in deep penetration within the activities of subject provinces at the apex down to the village level. Unlike viceregal control, Inca presence at the *señorío* or *curacazgo* centers is minimal and, in some cases, it appears symbolic as opposed to functional. In this way, there is more of a resemblance to competitive administration in the context of preeminent local centers. In fact, it may be the case that competitive administration and territorial control are on either end of a processual continuum, involving an increasing exercise of power (specifically, penetration into lower-level control) from a diachronic perspective. That said, the primary difference will be seen in the layout and functional implication of larger sites and the

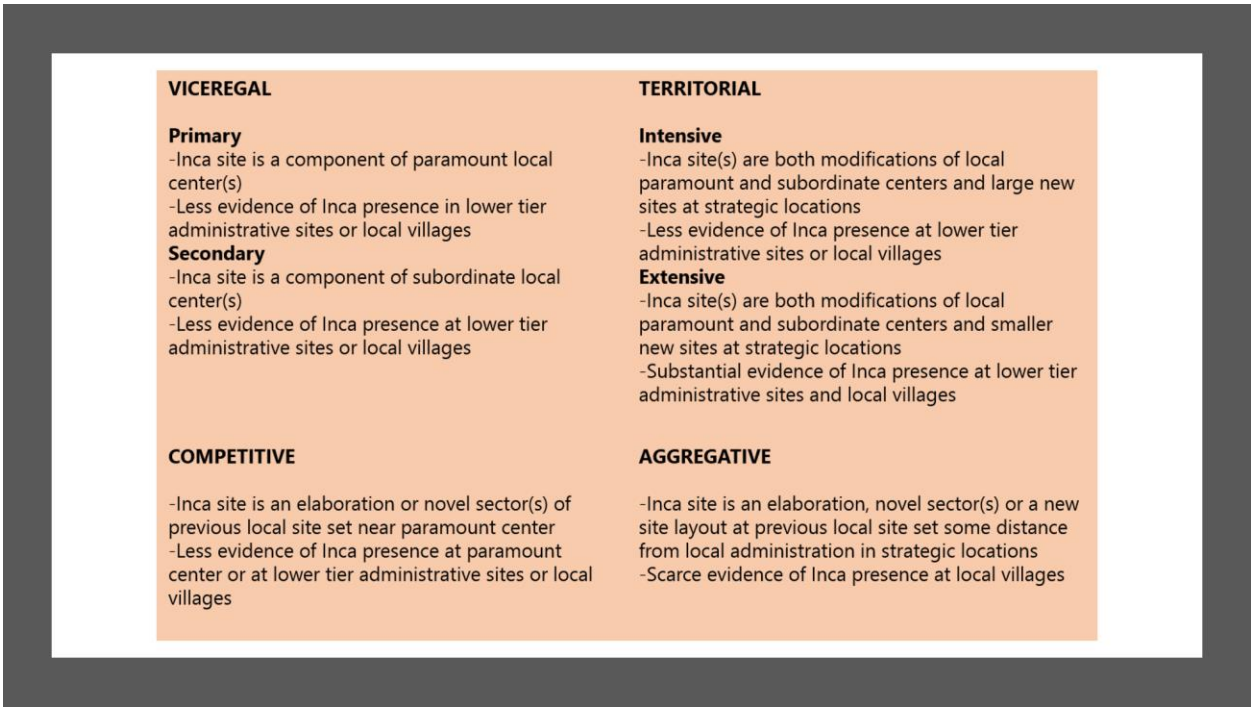

Figure 5-31 Archaeological signatures of each mode of Inca control.

degree of presence at smaller settlements. While competitive administrative sites exhibit planned Inca sectors, major Inca territorial installations display planning at the scale of entire sites. This targeted investment at territorial centers is paralleled by a diffuse investment at many subsidiary settlements. A primary, economic goal of this strategy was direct control of local agricultural production as evidenced by the abundance of state storage facilities and intensification infrastructure including canals and stone-lined terracing. Huancayo Alto in Chillón; Nieve Nieve, Avillay, Chamaiyanca, and Antapucro in Lurín, and Incahuasi, Lunahuaná, Patapampa, Higuerón, Pacarán, and San Marcos (among others) in Lunahuaná are associated with industrial-scale preparation, storage, and distribution of agricultural products.

As a companion case, Wachtel (1982) details events within the Cochabamba area of modern Bolivia, where after conquest, the Inca state launched an unprecedented production operation within the valley, replacing indigenous deportees with tens of thousands of *mitmaq*

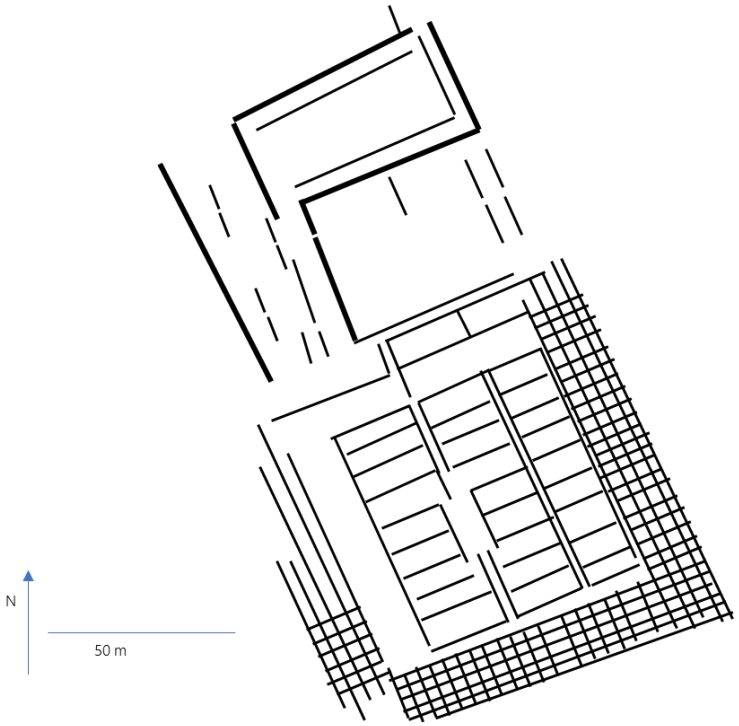

Figure 5-32 Storage sector (Colcawasi) at Incahuasi, middle valley Cañete [intensive territorial]

(forcibly resettled) laborers. The harvested maize was stored locally and ultimately aggregated at the Inca installation at nearby Paria (Gyamati 2015), from where it could be moved to provincial capitals or the widening military front. It is estimated that ninety percent of the agricultural yield was expropriated directly by the state in this manner (Wachtel 1982:214-215). While the relative quantity of economic output directly claimed by the Inca in each case certainly varied, what resulted from military conquest and territorial imperialism in Cochabamba (as well as along the south-central coast) was a high level of control. This gave the Inca the power to pursue basic resource extraction as a complement to the collaborative, competitive, and centripetal strategies in place elsewhere.

Utilizing the insights gained from an overview of local polities and important Inca administrative sites in the region, the final chapter will attempt to explain the spatial distribution

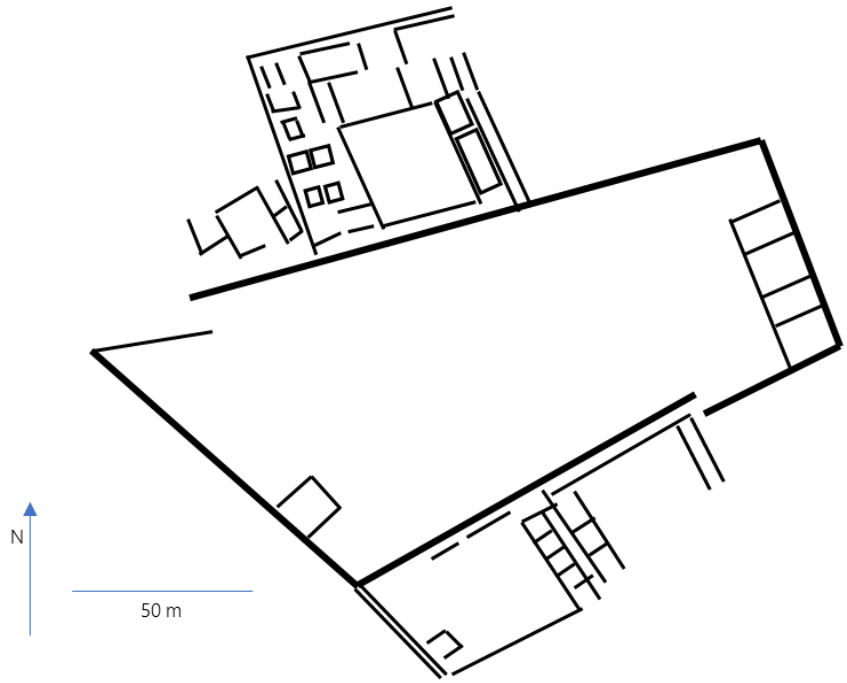

Figure 5-33 Tambo Colorado, middle valley Pisco [aggregative administrative]

of imperial installations in the context of important local settlements and the modeled extent of political control claimed by various lower, middle, and upper valley groups. It will be demonstrated that state administrators built and occupied selectively at the seats of governance of allied groups while developing distributed networks of large, medium, and small settlements in places where control was established following conflict. In certain areas, located near the practical boundaries of political control by local groups, the Inca established new imperial settlements to centralize local production and to facilitate the movement of people and resources within the region and beyond.

Perhaps most revealingly, a reexamination of the regional sociopolitical landscape at the end of the Late Intermediate Period provides insight into the factors which led to quite different experiences of Inca imperialism in areas as close as neighboring valleys. The general Inca

strategy, *tertius gaudens*, exploited local conflict and territoriality among and between coastal and adjacent highland polities. The characterization highland groups and their relationship to the Inca successes along the south-central coast is an underexplored topic, especially at an intervalley scale. One of the benefits of the more precise spatial modeling explored in the following chapter is the recognition of that the availability or absence of allies from the upper valley areas was a key factor determining how the Inca pursued their objectives. These historical and structural factors led to discernable patterns in settlement and architecture visible today.

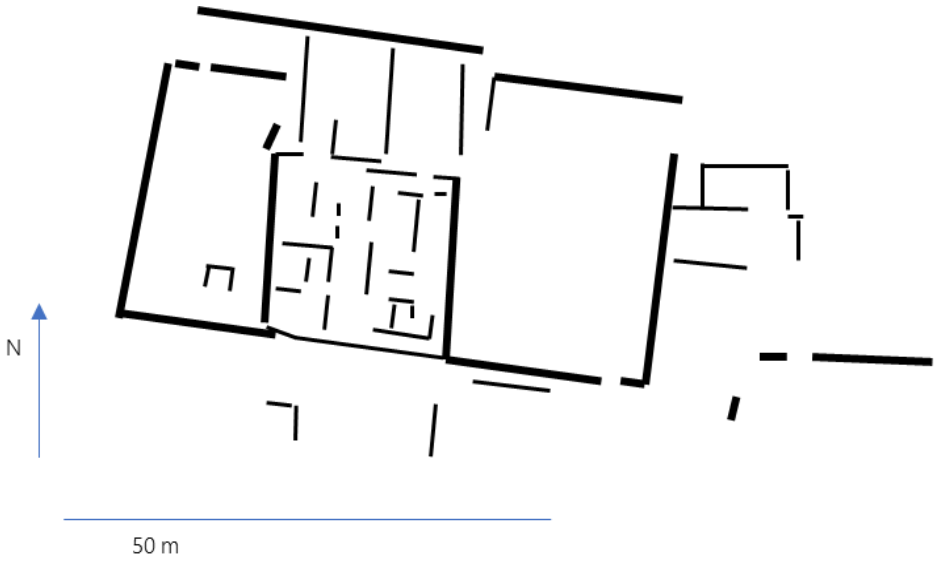

Figure 5-34 Inca "embassy" at Huaca La Centinela, lower valley Chincha [primary viceregal]

CHAPTER SIX

Spatial Model of Pre-Inca Polities; Inca Administration in Context

Modeling Late Intermediate Period Territories

A better understanding of the socio-political landscape of the south-central coast at the time of Inca conquest requires a more precise delineation of territorial boundaries. Extant models lean heavily on ethnohistorical sources and lack the precision necessary to evaluate the significance of the Inca administrative network as an instrument of imperial control overlaying existing pre-Inca polities. Indeed, the contours of this imperial schema are often uncritically presented as a reproduction of the political partitioning which preceded it. Historical documents are one line of evidence which should be evaluated in comparison with both (a) archaeological data and (b) anthropological theory on the organizing principles and structural capabilities of certain complex polities.

Regarding the theoretical outlook, data from diverse regional contexts provide a template for the organizing principles of the societies in question. Charles Spencer (2010) as a component of his model of state formation, proposes thirty kilometers (roughly, half a day's walk) as the theoretical upper bound on the territorial radius of a non-state, ranked polity. In the absence of internal, bureaucratic specialization, administrative authority emanates exclusively from the apex center limiting direct political control at the regional scale (Earle 1987:289). The hypothesis predicts that sufficiently large political entities incur structural instability, tending to fission and to reassemble hierarchies at the local scale (Marcus 2008:257). The ability to exercise effective control over populations and production at a distance is thus believed to be a fundamental

qualitative difference between states and non-state polities. As discussed in Chapter 1, this control can be further distinguished between what was defined as:

> (a) colonial control, predicated primarily upon resource extraction at select, emplaced enclaves and
>
> (b) imperial control characterized by provincial administration and the elaboration of state infrastructure for economic reorganization and integration at an interregional scale.

Drawing a circular perimeter of thirty kilometers around each *señorío* center and establishing a provisional territorial boundary is the basic procedure. However, this is only the roughest approximation due to variations in available paths of travel, uneven terrain, and cases where adjacent territories lie close together. To deal with the first issue, sensible paths (typically

Figure 6-1 Paths (red) radiating out from each Late Intermediate Period señorío center indicated with purple diamonds. Yellow markers show the modeled limit of a half day of travel based on distance and terrain.

along visible modern or ancient roads) are traced on Google Earth, at various directions outward from each center, terminating at thirty kilometers. To model a more accurate travel time across variable terrain, Tobler's hiking function, developed using empirical data by Waldo Tobler (1993) is used to apply a cost function. **Walking velocity** (**W**) is calculated as: $\mathbf{W = 6^{-3.5|s + 0.05|}}$ where (**s**) is the **slope** of the terrain. The equation produces a walking speed of five kilometers per hour on level terrain, which equals thirty kilometers in twelve hours or half a day. Each thirty-kilometer path is then divided into six, five-kilometer segments to follow the changes in elevation at a practical resolution. For each leg of the journey, (**W**) is calculated, and then converted to a **pace** value; **p = 5/W**. The pace value from each five-kilometer segment is summed as a **net pace** value **np** = $\sum[p_5, p_{10}, p_{15}, p_{20}, p_{25}, p_{30}]$. Lastly, this value is used to determine the **final distance**; **d** = $\frac{6}{np}$ (30) along each trajectory (Figure 6-1) [see Appendix A for full calculations].

The points for each final distance are then used to outline a rough territorial polygon for each polity. Where overlap occurs, judgment is used to delineate borders based on natural geographic divisions, or when applicable, where ethnohistorical sources suggest the boundaries lay. The model of *señorío* territories which results from the procedure (Figure 6-2) corresponds in broad strokes with the current understanding of the polities based on geography and ethnohistory. While some areas overlap, especially in the upper valley areas, there is no case in which thirty kilometers from the primary center is an insufficient distance to define the conjectured territorial boundaries. The data therefore confirm predictions based upon a hypothesized *maximum* polity size (note: the issue of *minimum* or *typical* radii is not pertinent). Adjusting for delays dependent on changes in elevation would, in general, predict smaller average territory sizes further into the mountainous terrain of the Andes, an effect which appears

Figure 6-2 Modeled Late Intermediate Period territorial holdings showing major polities in the study region at the time of Inca arrival. Sectors are drawn at a radius of thirty kilometers from each señorío center. Where overlap occurs, ethnohistorical and archeological data clarify the more precise borders. Ica (far south) is included to demonstrate the wide expanse beyond Chincha at one end of the region.

to be more pronounced in the steep upper valleys than in the more gradual slopes of the middle and lower valleys (Table 6-1; Figure 6-3; Figure 6-4).

To be clear, to avoid circular reasoning, evaluating this model should proceed in two steps. First, does the rough outline of territorial control based on: (a) natural divisions in the landscape and (b) the information provided in ethnohistorical sources provide political divisions at a scale suggested by the anthropological hypothesis outlined above? If so, then, do the specific outcomes of the modeling procedure help to clarify: (a) contexts where the documentary record is ambiguous or incomplete and (b) the way in which political boundaries structured the Inca administrative settlement pattern?

The results of the procedure provide evidence against pre-Inca state formation in the region. This is not simply a problem of description. The research fundamentally hinges on the distinct capabilities of state and non-state polities. Late Intermediate Period polities in the region appear to have had limited ability to communicate and to coordinate activity beyond a certain distance. The constraints of direct political control are outlined above, but the formation of political alliances also seems restricted in most cases to adjacent territories. Alliances uniting Huarco-Lunahuaná, Yschma-Sisicaya, and Colique-Guancayo/Quivi are all lower valley-middle valley examples. Lateral alliances between lower valley zones primarily occur within the control area of the primary polity (Chincha-Pisco; Yschma-Rímac) rather than between abutting coastal powers. In fact, buffer zones (Topará, lower Asia, Chilca) of low population and minimal complexity exist at the boundaries of each, except for between Yschma and Collique (itself separated from Chancay by the less populated Ancon region).

Therefore, the significant inter-polity relationships were between the immediate coast and the middle valley. These alliances need not have been between equals, as the asymmetric

Polity	Location	Area (km²)	Center Elevation (m)
Carania	Upper	118	3891
Upper Atavillos	Upper	121	3614
Casta	Upper	147	3183
Canta	Upper	149	3727
Picoy	Upper	155	2021
Lower Atavillos	Upper	175	3360
Yauyos	Upper	178	3559
Laraos	Upper	190	3077
Chaclla	Upper	236	3550
Huamatanga	Upper	242	3638
Huarochirí	Upper	306	3472
Carampoma	Upper	372	3388
Yaucha	Upper	439	3214
Sisicaya	Middle	463	1085
Lunahuaná	Middle	667	504
Huarco	Lower	714	16
Coayllo	Middle	723	309
Yschma	Lower	833	29
Collique	Lower	895	212
Chancay	Middle	932	365
Calango	Middle	935	355
Chincha	Lower	992	24

Table 6-1 Location of Late Intermediate Period polities, their modeled area of control, and the elevation of their center.

imposition of military and ideological power has greater potential reach than direct political control. Organized raids (or the threat of raiding), tribute, and ritual obeisance all may have played a role in maintaining relationships between the coast and midlands. Mutualistic coordination through sustained economic interaction is further supported by material and documentary evidence (Marcus 1987; Rostworowski 1989:63-64). These processes, extended over a long period of time, may render moot the question of discrete highland versus coastal identities within each middle valley area prior to Inca control. Throughout the region, intravalley interaction spheres became places where archaeological investigation reveals the material signatures of marked cultural diversity. To this point, the Andean model of vertical archipelagoes, specialization, and resource complementarity first proposed by John Murra seems untenable in this regional context (Santoro et al. 2010) as in others (Stanish 1989). As discussed previously, it is unlikely that pre-state polities located on the immediate coast could administer

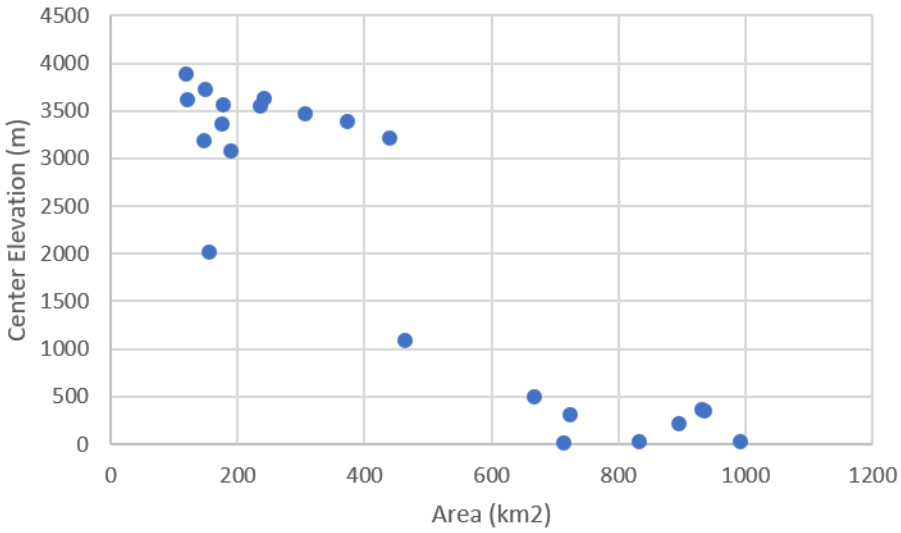

Figure 6-3 Plot of Late Intermediate polities showing the relationship between polity size and elevation. [r(42) = -.92, p < .001]]

production enclaves in the *chaupiyunga* zone, in some cases more than sixty kilometers away. Where these types of systems are mentioned in ethnohistorical and colonial documents, they are probably a product of later facilitation by the Inca state. The sharp distinction between *yunga* and *serrano* would therefore appear to be a later development as well, prompted by the incursions of the Yauyos and Canta, and solidified by the Inca, who benefitted from the compartmentalization of coastal power and influence.

The barriers to distant control outlined above are relevant in distinguishing between the political and cultural spheres discussed in this study. The local political hierarchies that characterize the Late Intermediate societies on the south-central coast exhibited certain structural properties. Internally, these polities demonstrate weak, fluid hierarchies among their constituent seats of elite power. While apex groups (elites among elites) may emerge at certain powerful population centers, the relationship among various elites and their factions is more of a first among equals. Within this group there will be a strong, common cultural tradition as shown in

architecture and other material culture. Economic and political co-dependence may manifest in shared production infrastructure (such as terracing and canals) and the mutual reliance on defensive networks spanning the territory of multiple villages. This is the scale at which "ethnic" groups are typically identified in the ethnohistorical records that exist. Appellations such as "The Chincha" or "The Coayllo" or "The Calango" refer to certain, though not necessarily discrete, groups of people who live in proximity and exist at some level in mutual dependence. These groupings happen to map well onto what can be modeled as territory controlled by local, complex polities, so these named groups can also be conceived of as political entities.

Confusion arises when considering the much greater extent of shared ideas materialized in ceramics, textiles, architecture, etc. For example, the extent of the Yschma ceramic style exceeds the realm of the Yschma polity by a considerable extent, just as Puerto Viejo ceramics sprawl across at least three coastal valleys and as many independent polities. Similarly, *tapia* architecture extends from Lima south beyond Chincha, even though there is significant variety of architectural forms built by different groups using the same technique. The physical movement of portable objects between groups of people as well as the adoption of production techniques and artistic canons by disparate groups is evidence of economic and ideological exchange, but not necessarily political expansion or population migration. The regions within which this cultural interchange is particularly intense are discernable and to some degree bounded. The ethnohistorical category, *macroetnia* (Rostworowski 1999b:284-285), while perhaps lacking in precision, is a useful approach to supra-political organization mediated by ideological, cultural, and material exchange.

It cannot be stressed enough how important it is to not conflate these two categories. Given the organizational structure of polities arranged as loose, local hierarchies, there are limits

to the pursuit of coordinated ventures outside of the core area. This becomes clear when considering the activities of more highly centralized, regional polities. It is no coincidence that within the Andes, the first evidence of discrete economic intensification overseen by non-local groups, emerges from regional (Moche) and interregional (Wari and Tiwanaku) polities. As explained in the first chapter, the transformation of the core territory from a ranked confederacy of local seats of power to a landscape of state capital and its replications at sub-capital centers, is formational process of ancient states with archaeological support in the Andes. The expansion of the Inca into the south-central coast via a network of large and small administrative centers is a continuation of this organizational strategy on a much grander scale

Ritual Landscape

Before discussing each area in greater detail, it will be useful to briefly review some important pre-Inca and Inca period religious sites and their role in the process of Inca control in the region. As mentioned in Chapter 3, the control and elaboration of influential coastal shrines is often proposed as the primary aim of Inca state administration (Eeckhout and López Hurtado 2018; Ángeles 2010; Campos 2010). Proponents of this view can point to the abundant documentary and material evidence which highlights great investment in not only the architecture and economy of oracular and pilgrimage destinations but also the overland routes providing connections between these places and into the highlands.

In his *Relación del Origen, Descendencia, Politica y Gobierno de los Incas* (1563), Spanish judge and colonial administrator, Hernando de Santillán provides important insight into the organization of these sacred sites. According to his report, the *huaca* – or sacred feature of

Figure 6-4 Map showing important religious sites in the study area.

the landscape (MacCormack 2004) – revered at Pachacamac, was associated with four "children": one in Chincha, one in Mala, one located in the highlands of Andahuaylas, and one which was kept in the possession of Topa Inca, himself (Eeckhout and López-Hurtado 2018:190). Moreover, an even wider catalog of *huacas* in the region attained status as consorts of the primary deity based in Lurín. Inca assimilation of the local religious tradition at Yschma/Pachacamac (Eeckhout 2004:496) and Chinchaycamac/La Centinela in Chincha (Morris and Santillana 2007:144) coincided with the construction of new spaces, *intiwasi* (sun temples) dedicated to the state religion and its associated textile and *chicha* (maize beer) production at *acllawasi* (houses of chosen women). Though less studied, the hilltop Inca ruins at El Salitre, overlooking the Mala coast, are identified as the documented Sulcavilca shrine. As at Pachacamac and La Centinela, Inca monumental architectural modifications at El Saltire utilize adobe and share features with other coastal shrines dedicated to the state religion (Campos

2010). Given this information, it is reasonable to consider whether Inca construction at Cerro Azul represents another instance of strategic co-opting of sacred sites along the coast.

This outline, while illuminating, requires further development and contextualization within the broader region (Figure 6-5). While the local shrines on the immediate coast were of great strategic importance, settlements such as Mama in upper valley Rímac (Rostworowski 2002:208-212) and Calango in middle valley Mala (Rostworowski 1989:29) were focal points of conflict involving the ascendance of highland *huacas*. associated with Pariacaca, and the expulsion of coastal people from strategic settlements between the sierra and the coast. In both cases, the Inca, rather than assimilating or enhancing the local religious organization, facilitated its expulsion at the hands of highland peoples with their own sacred agenda. A similar complication involves the coastal deity, Con (or, Kon), identified as a boneless, jointless figure who bears mythic responsibility for both the aridity of the coastal plain and the rivers which allow for life to flourish there (Steele and Allen 2004:140-141). The antiquity and breadth of Con along the Peruvian coast is considerable, but despite these deep roots, the cult of Pachacamac eventually prevailed and supplanted the older deity. This process may well have been underway at the time the Inca state made the decision to promote the tradition based at Yschma. The existence of ruins associated with Con at just two valleys in the study area – Chillón and Cañete (Rostworowski 1989:170) – is perhaps coincidental, or an indication that variations in the prominence of ideological regimes within each coastal valley was another point of cleavage that the Inca made efforts to exploit.

Chancay and Collique

Collique and Chancay parallel the developments seen in Cañete and Chincha at the opposite end of the study region. Chancay and Chincha each serve as intermediaries between the south-central coast and the areas to the north and to the south with which they share a closer cultural affinity. The Inca allied with the political authority in each of these valleys and utilized this strategic position to outflank their besieged neighbors. The primary Inca settlement in middle valley Chancay is Pisquillo Chico. Along with its impressive size, it is noteworthy for the viceregal control exercised through embedded Inca architecture. These rectilinear compounds are constructed in *tapia*, an introduced technique (van Dalen 2011:91). This administrative strategy can also be seen at important sites in the middle valley, such as Lumbra (van Dalen 2012). In general, Inca presence was selective, minimally intrusive, and perhaps welcome by Chancay and nearby valleys to the north, as Inca activities in the region successfully thwarted the expansive ambitions of the north coast Chimor state (van Dalen 2011). The upper valley of Chancay was home to the Atavillos polity, centered at sites such as Chiprac, Rupac, Añay, and Puchuni (Antezana et al. 2008; Marussi 1979). Though not as directly impactful on the study region, populous highland groups like the Atavillos and the Canta, both located to the north of the densely settled *Hanan* Yauyos sphere, provided resistance to intra-highland migration from the south, redirecting itinerant populations into the middle valleys of the coastal drainages. Lower valley Chillón (Figure 6-8) was consolidated within the Collique polity, which exerted power and influence deep into the middle valley, the realm of Guancayo and Quivi. The Collique paramount center (also named Collique) perched defensively atop an extension of the coastal ridge, recalls the hilltop fortress, Ungará in Cañete. Both are formidable, walled settlements located within the lower valley to middle valley transition area. This combination of

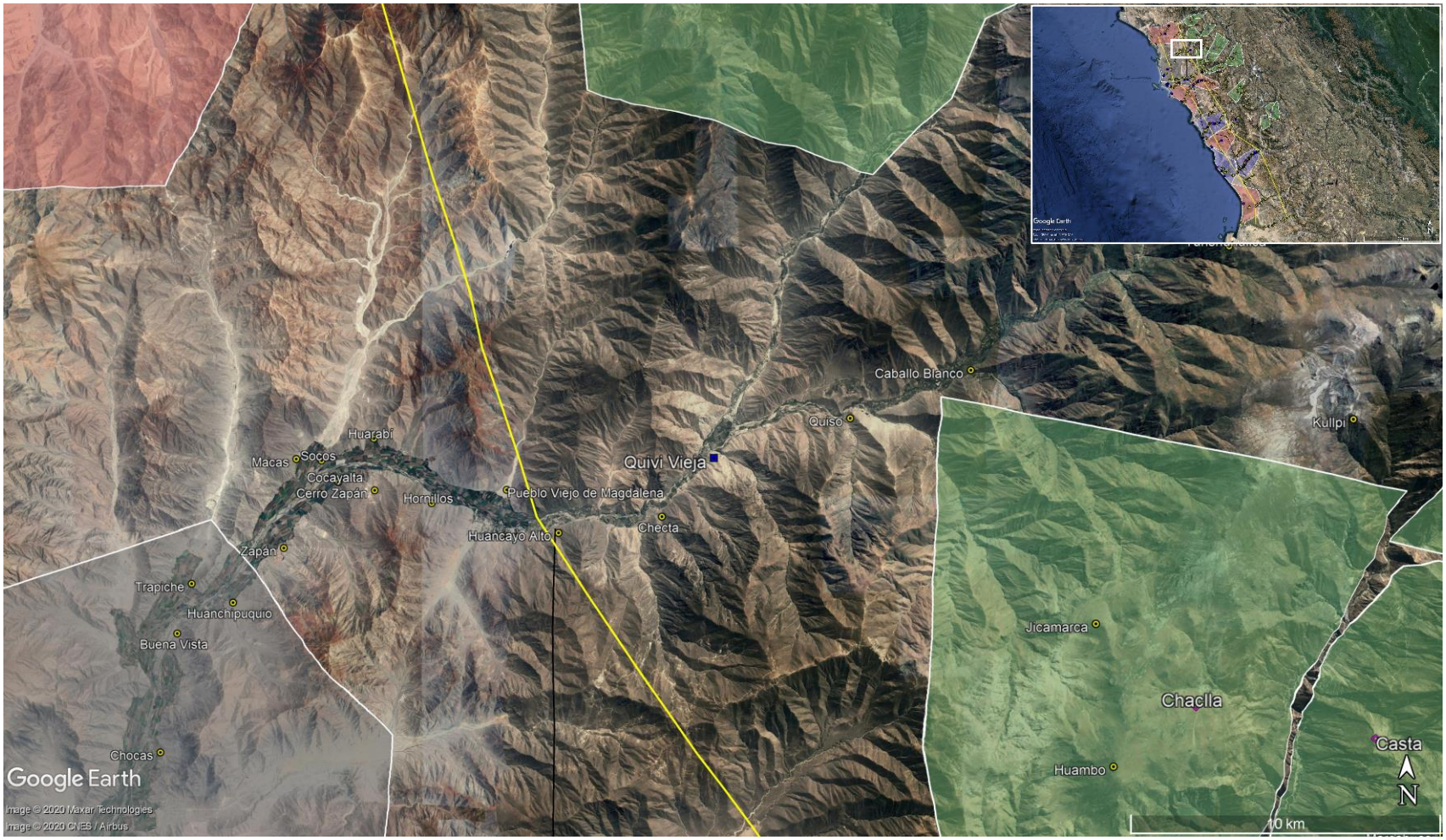

Figure 6-6 Territory in middle and upper valley Chillón. Shown are parts of Chancay (red), Collique (black) and highland polities (green). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

fortification and strategic positioning made these settlements ideal locations for chiefly centers. The preeminence of Collique as the *señorío* center within Chillón stands in opposition to Ungará, understood to have been subordinate to Huarco within Cañete. The proximity of lower valley Chillón to the population centers of coastal Rímac may explain this difference. Intervalley conflict in this area may have stymied the development of political hierarchy. Oquendo, the prominent Late Intermediate Period complex in coastal adjacent Chillón, is located more than ten kilometers away from the nearest Rímac center, exhibiting the remnants of extensive fortification features. This posture of withdrawal, in part, explains why Collique is the lower valley *señorío* center located the furthest from the coast as well as the valley where *tapia* architecture is found at the highest elevations in the study area. Unlike Chincha, Huarco, and Yschma, the modeled extent of Collique territory approaches the lower reaches of the upper valley.

The Inca took advantage of the strategic location and native fortifications at Oquendo, constructing an aggregative administrative center in the interstice between the power centers of Rímac and Chillón, along the coastal road connecting these adjacent valleys. Tambo Inca, located four kilometers across the river from Collique, is the other primary Inca settlement in lower Chillón. These two sites along with Puente Inca (Silva 1996:288) or, Cerro Respiro, (located beside Huaca Respiro, a Late Intermediate Period *curacazgo* center reutilized as Chancay cemetery) display planned Inca architecture (Taira 2011; Raymondi and Mejía 2014).

Lower valley Collique and the site of Tambo Inca illustrate the way in which competitive and territorial imperialism are located along a continuum of increased penetration into local affairs. Along with the ethnohistorical documentation, an indication of territorial imperialism may be discerned from modern settlements in the area. In the middle valley areas where the Inca established competitive and territorial control, there is a resurrection of pre-Inca centers

(Sisicaya, Asia, Mala, and Lunahuaná) beginning in the Spanish Colonial period, evincing the persistence of local political structure in these cases. If the ethnohistory is accurate, the Inca decimated, exiled, and replaced the native populations of Huarco and Collique (Rostworowski 1989). There appears to be a more concerted effort to actively dismantle the Late Intermediate Period political hierarchy and there are strong indications that lower level administration and production were subcontracted to allies such as Chancay and Chincha. The modern urbanization of Comas in Chillón is located almost three kilometers away from ancient Collique. In Cañete, the first Spanish town, San Luis and the modern district capital, San Vicente, are separate from Huarco and present-day Cerro Azul. The contrasting history in the middle valleys of Sisicaya and Lunahuaná is perhaps indicative of territorial control which was more production focused and less about eliminating the potential for future resistance.

Middle valley Chillón (Figure 6-7) was controlled by the Guancayo, centered at Huancayo Alto (Rostworowski 1989:45-55). The area was a political subdivision of the larger Collique polity. From approximately 300-1000 masl there are no large Inca centers or sites with substantial planned Inca sectors (Silva 1996). Instead, each Guancayo *curacazgo* center, including Magdalena, Checta, Zapán, Huanchipuquio, Macas, Huarabí, and Trapiche, exhibit more subtle indicators of Inca presence such as Cusco style ceramics, architectural modification and techniques, and cemeteries (Cornejo 1999). Chancay presence in this section of the valley is significant as well, in the form of ceramics at Trapiche, Macas, and Huanchipuquio. Huancayo Alto and Huanchipuquio both show evidence of public storage complexes utilized during the Inca period (Dillehay 1977:402).

Tom Dillehay and Patricia Netherly (1998:22) make an explicit connection between the Chillón *chaupiqunga* and the productive areas of Cochabamba in present-day Bolivia, as both

areas were annexed by the Inca state and restructured in pursuit of agricultural surplus. Inca presence in the Guancayo area maps on to what might be termed, extensive territorial control. There is an absence of large, novel sites like Tambo Inca. Instead, Inca presence is suggested by moderate architectural and material influence at many different sites. The abundance of Chancay material associated with this Late Horizon occupation indicates that administrative tasks may have been managed in conjunction with Inca allies from the neighboring valley. Lower valley Chillón, in contrast, exhibits intensive territorial control. Inca presence is selective, seen at important local centers and new administrative sites. Contrasting the signatures of viceregal control seen elsewhere, Inca modifications at the primate center, Collique, are less monumental and less syncretic with established architecture. Indications of direct control include Inca pottery and a group of circular storage structures (Silva 1996:289).

Upriver from Huancayo Alto, no sites show evidence of *tapia* architecture. The site of Checta, just four kilometers up the valley, was described by ethnohistorians as an ancient political or cultural boundary point, where today rock art is visible on the surrounding hillsides (Silva 1996:291). The documentary record for this lower part of the Chillón upper valley is quite detailed (Rostworowski 1989; Silva 1998). Before the arrival of the Inca, the Quivi *curacazgo* maintained close ties with the coastal center, Collique. As evidenced in drainages throughout the region, this relationship enabled the powerful, lower valley *señoríos* to exercise some measure of access, if not control, over the productive *chaupiyunga* economy. This connection was disrupted when encroaching Canta populations managed to seize control of the area, subjecting Quivi to highland vassalage. The characteristic, fortified sites of the Guancayo sphere can be interpreted as a response to this aggression. Inca assistance only strengthened this control, prompting an uprising which unified Quivi and Collique against the Cusco state and its *serrano* allies. As

indicated earlier, this did not end well for either rebellious group. The Inca response included territorial seizure of much of the middle and lower valleys of Chillón and the eradication of indigenous political authority at Collique and Quivi. Large portions of this conquered territory were ceded to favored groups such as the Chancay and the Chaclla, who worked the land under the auspices of the Inca state. The Chaclla, originally concentrated at Checta, eventually replaced their Canta rivals as the primary intermediary authority within the Quivi area.

Quivi and surrounding settlements display an aggregative administrative settlement system that suggests movement toward extensive territorial control. Inca Quivi stands out in the area. Upriver, the nearest moderately-sized Inca settlement is Caballo Blanco (Casaverde 2015b), a fortified administrative site, almost ten kilometers distant. Though Quivi is the dominant site in the lower stretch of upper valley Chillón, local villages reveal the impact of state agricultural intensification projects in the form of terracing (Silva 1996). Cornejo (1999) believes that at least five of these lower-tier sites were established after the Inca seized control.

Rímac and Lurín

As discussed previously, the lower valleys of Lurín and Rímac (Figure 6-8; Figure 6-9) were controlled by the Yschma *señorío* centered at Pachacamac. The Inca state viceregal control at the Pachacamac complex was seated at Tauri Chumpi, a small palace built as a variation on the *pirámide con rampa* style of local Lima centers (Isbell 2004:197-199). The relative preeminence of Pachacamac within the local political hierarchy of lower valley Lurín contrasts with the competitive landscape of lower valley Rímac. This aspect, along with the short distance between Rímac and Chillón, resulted in comparatively less internal and external political pressure in Lurín and a resulting regional advantage for Pachacamac. As was the case at

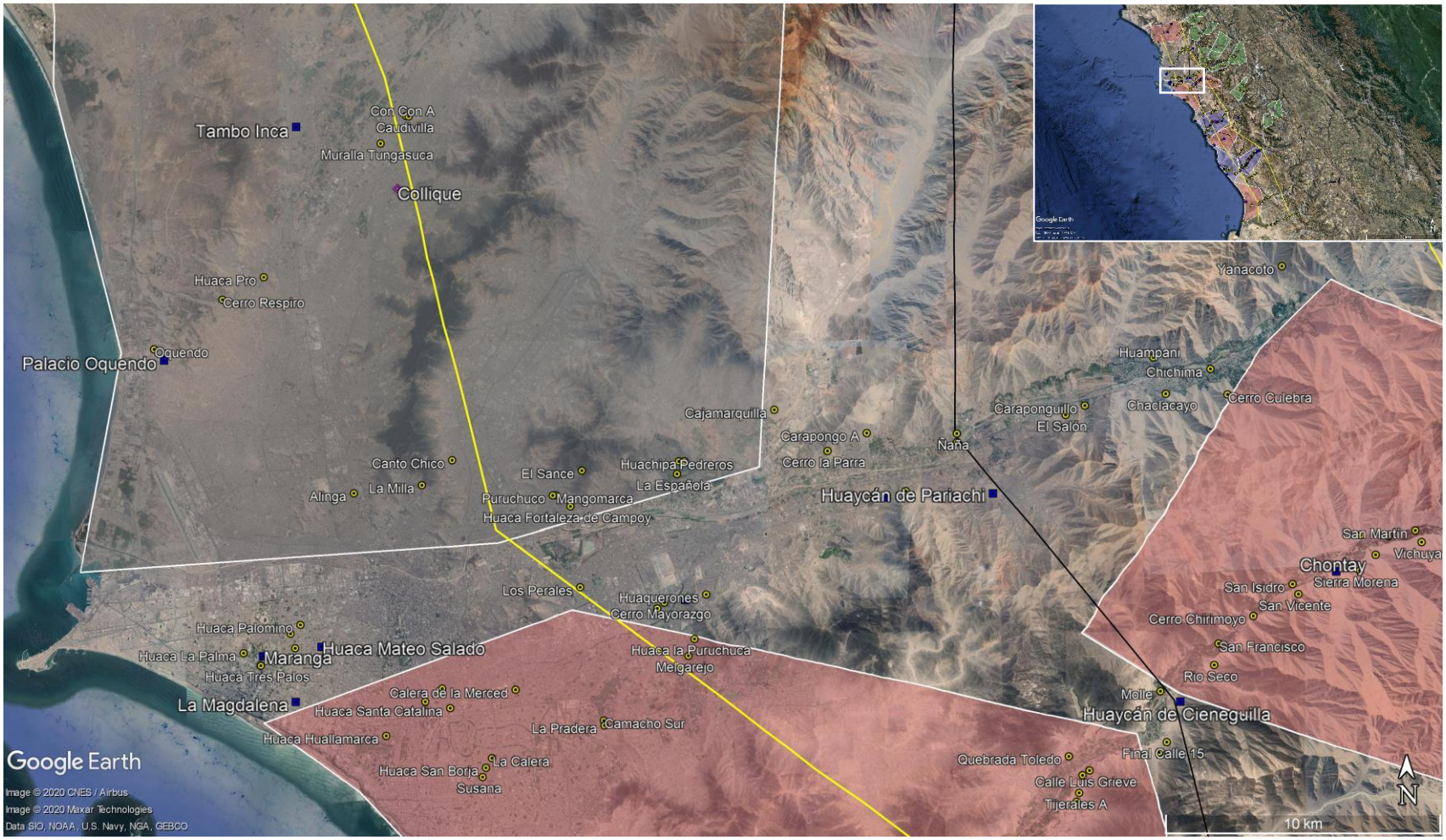

Figure 6-7 Lower valley Chillón and Rímac along with a portion of middle valley Rímac and Lurín. Shown are parts of Collique (black), Yschma (red), and Sisicaya (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

Pachacamac, the Inca established viceregal control at the primary lower valley complexes in Rímac: Maranga, La Magdelena, and Huaca Mateo Salado (Cornejo 1999). Like Pachacamac, these were local political centers featuring *pirámide con rampa* architecture. The degree to which the political authority of pre-Inca Lurín exercised direct political control over Rímac is debatable. Certainly, the density of powerful, Late Intermediate Period centers on the Rímac coast, as well as the Inca decision to administer each independently, suggests a degree of intravalley autonomy. The location of the centers (aside from Armatambo) at such a great distance from Pachacamac casts doubt on the effectiveness of intervalley direct control from Lurín. In fact, all Inca administrative sites (aside from Pachacamac) within the Yschma sphere are located on the periphery of the modeled territory, lending credence to suggestions that strong political unification of Rímac and Lurín was only achieved after Inca reorganization.

The three primary Inca centers in the lower section of middle valley Rímac are Puruchuco (Villacorta 2004), San Juan de Pariachi, and Huaycán de Pariachi (Villacorta 2003). The Inca palace at Puruchuco is part of a much larger archaeological complex, Puruchuco-Huaquerones (Cornejo 1999:178), which features domestic occupation and ceremonial architecture from earlier periods. Each of these three sites exhibits the *pirámide con rampa* administrative/ceremonial canon from the immediate coast, with subtle variations. The middle valley upriver from the Pariachi settlements was territory controlled by the Picoy and Chaclla, highland Huarochirí Yauyos groups. There are no large Inca sites from around 500 to 1,500 masl. This stretch of the river and the surrounding landscape contains small local settlements, but no major centers; according to Villacorta (2003:153). there are no Late Intermediate Period or Late Horizon sites with monumental architecture between Huampaní and Mama. This area appears to have been a buffer zone at the nexus of four polities: highland Chaclla and Picoy and

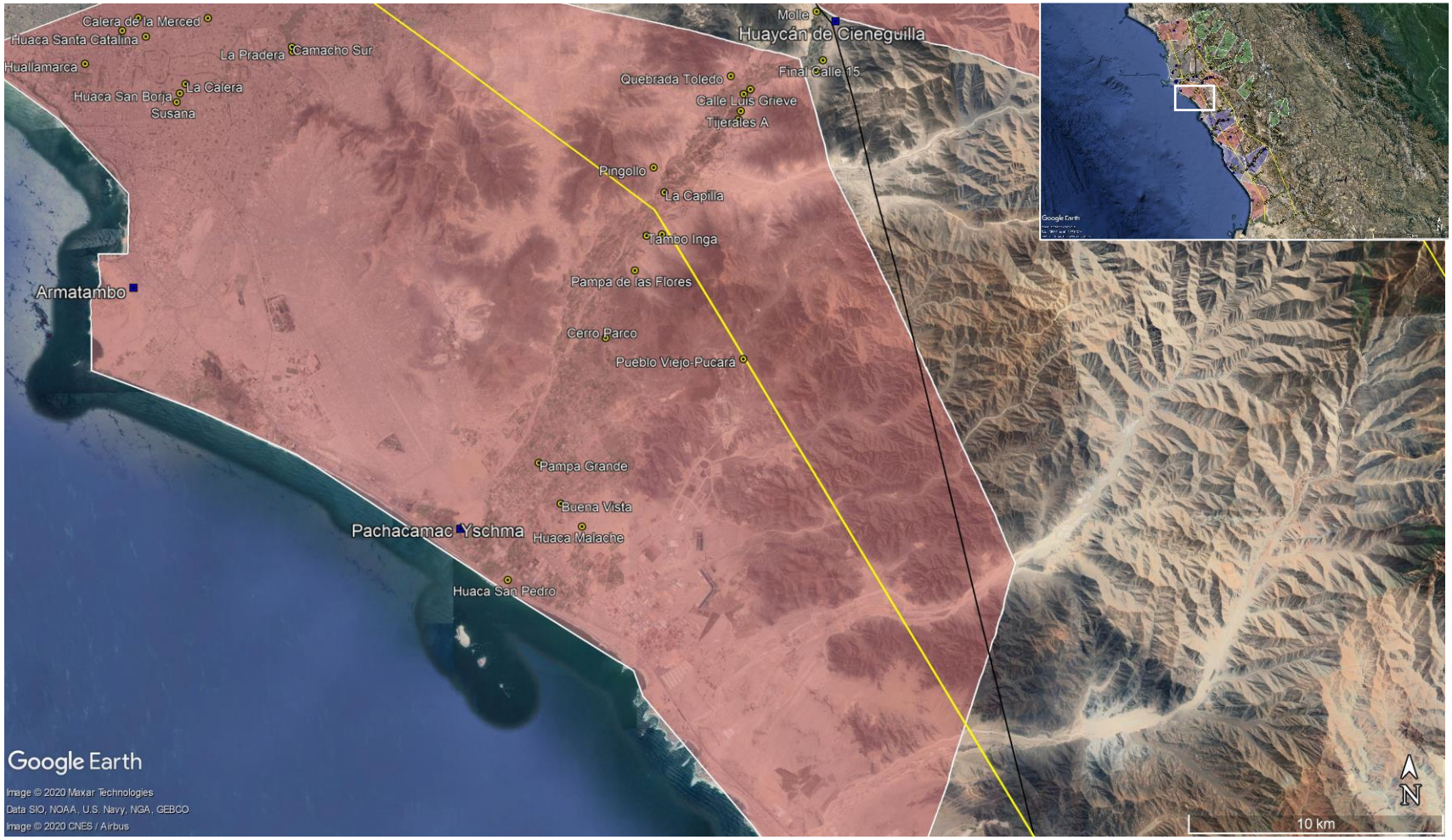

Figure 6-8 Lower valley Lurín. Shown are parts of Yschma and Sisicaya (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

coastal Yschma and Collique. The Inca did not dedicate major resources to this area and instead placed an aggregative administrative center at the upper end of the middle valley. This settlement, Mama, was the site of an important coastal shrine, positioned strategically at the confluence of the Chaclla and Santa Eulalia rivers (Rostworowski 1989:74). Karen Spalding (1984:98-101) emphasizes the political and symbolic value of the shrine for the Inca regional agenda and outlines key sectors visited by Max Uhle in the early twentieth century, two of which Miguel Cornejo (1999:141) identifies as Inca *colca* compounds. Despite this social context and the economic primacy of coca production in the surrounding district (ceded by the *yungas* to highland groups prior to Inca arrival) information about the center itself is scarce due to the dense urban sprawl of present-day Ricardo Palma.

Middle valley Lurín presents an alternative case (Figure 6-10) (Bueno 2012; Marcone 2004). Major local centers in the middle valley include Panquilma, Tijerales, Río Seco, and Huaycán de Cieneguilla, all which exhibit *pirámide con rampa* architecture in a style somewhat distinct from major coastal centers in Lurín, such as Pachacamac and Pampa de las Flores (Marcone and López-Hurtado 2002:388). *Cenefas*, design motifs carved in relief on plaster walls, are a signature architectural feature seen at the middle valley centers. Among this group, Huaycán de Cieneguilla is the only center to exhibit monumental Inca architecture (Marcone 2004:728). Located within the administrative sphere of the Yschma señorío, Huaycán de Cieneguilla was the political center of the preeminent *curacazgo* in the Cieneguilla district. In this case, the Inca adopted a secondary viceregal strategy of control at a second-tier Yschma center.

Upriver from Río Seco, pyramidal architecture disappears, and construction techniques no longer closely resemble that of the coast. This transition corresponds to the limits of the

modeled Yschma territorial control. The upper middle valley area of Lurín, like that of neighboring valleys, is a productive agricultural zone, particularly for non-staple products such as fruits, cotton, and coca. Throughout the Late Intermediate Period, highland and coastal groups competed for access to this territory, known as Sisicaya, after the *señorío* or *curacazgo* center of the same name (Cornejo 1999:170-173). The area is densely settled. Jane Feltham (2009) registered sixty-nine Late Intermediate Period sites between Molle and Sisicaya. Though the *yungas* controlled this territory in the pre-Inca past, and maintained a demographic presence (if not political independence) in the area through colonial times (Feltham 1983), evidence suggests that a significant quantity of the land was forfeited to highlanders benefitting from the aid of the Inca state (Marcone and López-Hurtado 2002:389). To this end, the Inca founded Nieve Nieve (Paredes 2013) a planned settlement centered on an orthogonal grid with cardinal orientation. The site is classically Inca, though not wholly pristine, built atop the faint vestiges of prior settlement (Feltham 2009:93).

An overview of Inca settlement within the Sisicaya area reveals elements of intensive territorial control. Present are planned, rectilinear settlements such as Nieve Nieve and Chontay, as well as the agglutinated Inca sectors of local settlements at Avillay and Chamaiyanca (Cornejo 1999; Bueno 2012:22). Inca state storage compounds are reported at Nieve Nieve, Avillay, Chamaiyanca, and Antapucro. Like Mama in Rímac, ancient Siscaya is mostly covered by the modern town of the same name, though the remnants of agricultural terracing are still visible (Feltham 1983:237). The impact of state administration can be discerned materially through changes in local ceramic production coincident with these Late Horizon occupations (Feltham 2009:96-97).

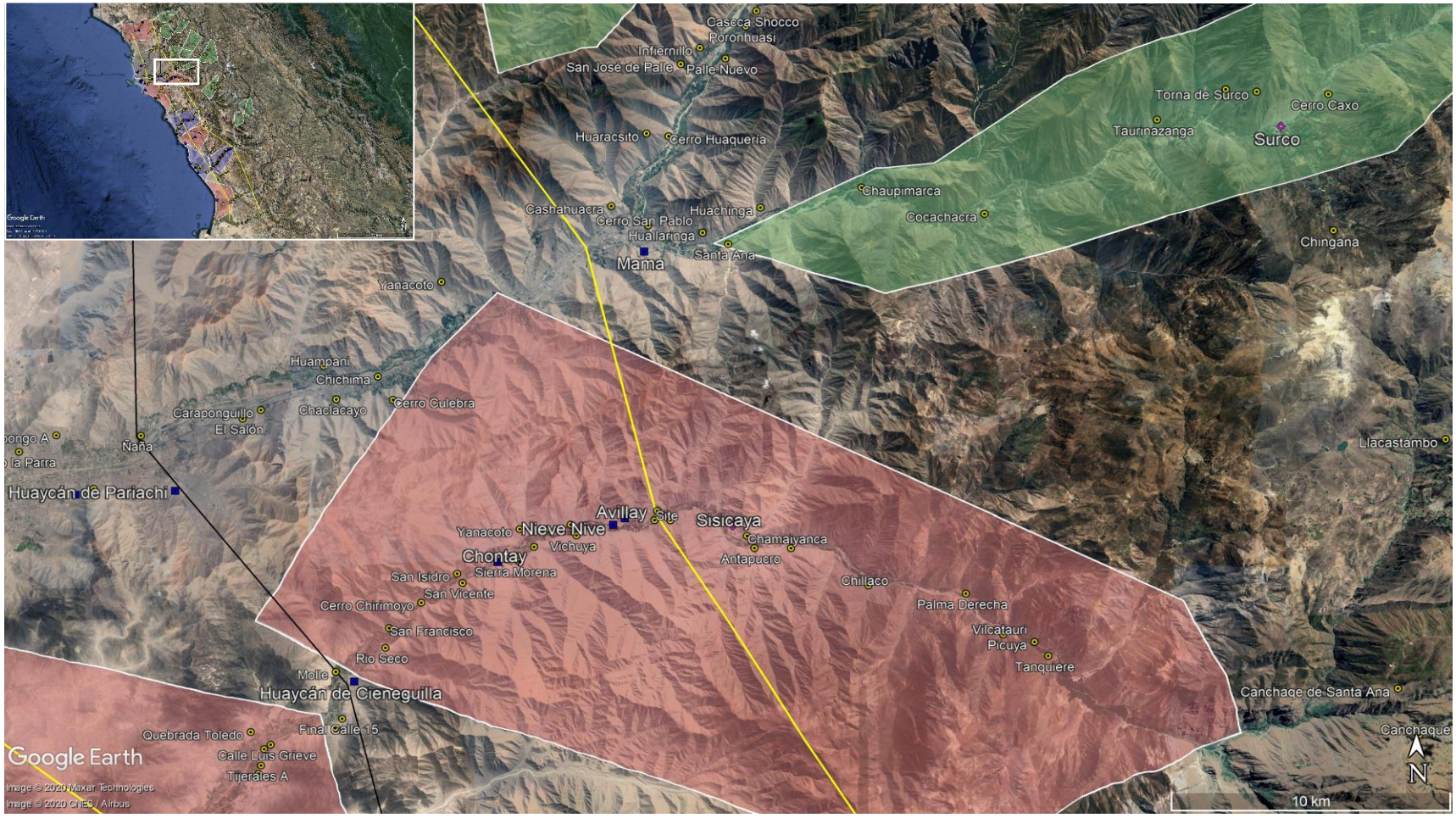

Figure 6-9 Middle valley and upper valley territory in Rímac and Lurín. Shown are parts of Yschma (red), Sisicaya (red) and highland polities (green). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

Mala and Asia

Mala and Asia (Figure 6-11) are the two small valleys sandwiched between the political spheres of Yschma and Huarco. The lower and middle valleys of each drainage provide evidence for aggregative and competitive administrative strategies. On the immediate coast, the pre-Inca, platform complexes of Cerro Salazar (Mala) and Huaca Malena (Asia) lie no more than three kilometers from the Inca centers El Salitre (Peralta 2013) and Paredones (Ángeles and Pozzi-Escot 2004). As discussed earlier, Huaca Malena declined throughout the Late Intermediate Period and the people of lower valley Asia were possibly governed by that time from Huarco in lower valley Cañete. The Mala of the eponymous lower valley controlled a centralized, but ultimately, minor polity. It appears that in the absence of great regional significance, the lower valleys centers of these drainages were not directly co-opted through viceregal control, but instead were passively bypassed and diminished through competition with novel state administration.

The settlement history of the middle valleys within each drainage suggests greater social dynamism. Mala ascends gradually relative to the size of its fertile coastal plain. At approximately seventeen kilometers from the shoreline, the elevation just reaches 200 masl, though the valley is quite narrow at this point. This area presents several small, Late Intermediate Period settlements with no obvious settlement hierarchy (Engel 2010). Piedra Angosta, one of three major Inca centers in the Mala middle valley, lies in between this area and an area of dense settlement higher up the valley. A medium-sized, planned complex, it features funerary, storage, residential, and administrative sectors as well as a primary, central plaza (Tantaleán and Pinedo 2004). Due to its location and the local settlement context, Piedra Angosta appears to be an aggregative administrative site.

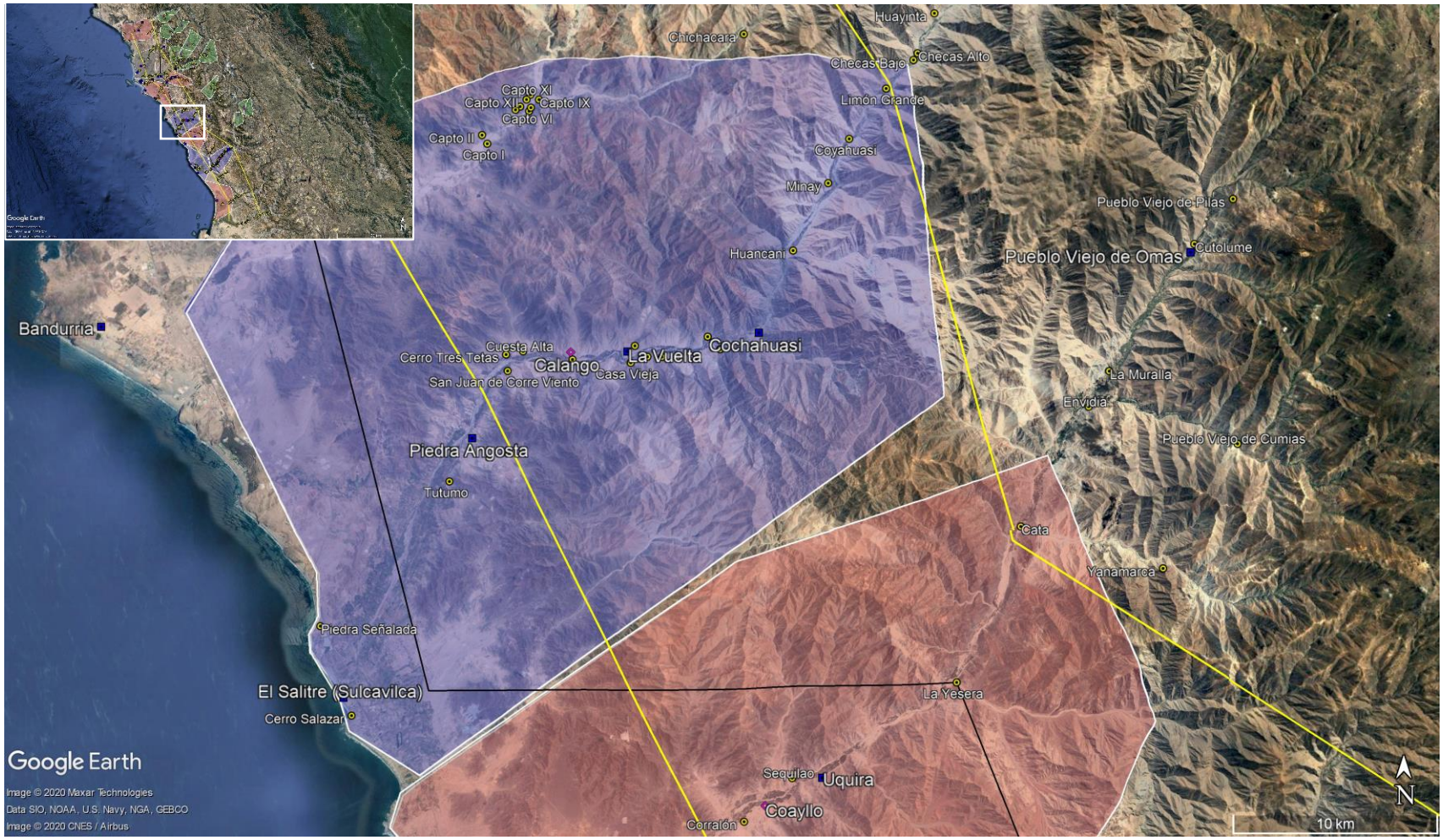

Figure 6-10 Lower and middle valley territory in Chilca, Mala, and Asia. Shown are parts of Mala (blue) and Coayllo (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

Just above 200 masl the Mala river redirects forty-five degrees westward from the previous northwest heading. This section of the valley shows dense settlement at larger sites, including the local center, Calango, situated above the modern town of the same name. Just three kilometers upriver, is the thirty-hectare Inca administrative site, La Vuelta. This important, late period settlement is well-preserved, exhibiting open spaces surrounded by complexes of monumental and quotidian architecture built from adobe and fieldstone (Tantaleán and Pinedo 2004). La Vuelta is best understood as a competitive administrative unit placed within the same political sphere as the local center, Calango. Like Mama in Rímac, Calango was the center of a decisive conflict between coastal and highland groups, the latter guided to victory by a powerful montane *huaca*. (Rostworowski 1989).

Cochahuasi, the third primary Inca center in middle valley Mala, sits at approximately 500 masl in the mouth of a dry *quebrada* providing access into the valley from the southeast. The site, built around a central, trapezoidal compound, functioned as an elite residence and center of administration (Tantaleán 2011). Upriver from Cochahuasi, the valley heads north-northwest narrowing as it climbs more steeply. This upper zone of the middle valley displays a different pattern of settlement. Adobe architecture in conjunction with Inca pottery are present at sites such as Huancani and Minay (Taira 2015). Other late period sites are positioned defensively. One of these, Checas Alto, presents Puerto Viejo, Inca, and Yschma surface ceramics. As seen at sites on border areas between the middle and upper valley in other drainages, petroglyphs are present at Checas and Minay. Johnny Taira (2015:39) identifies a bird motif in this rock art which resembles similar figures painted on the walls of the Yschma ruins of Pachacamac.

The lower reaches of the upper Mala valley are within thirty kilometers of the center of the Huarochirí homeland. Colonial documents describe the conquest of this area by the Inca and

their highland allies after a failed regional rebellion against early attempts at imperial governance (Rostworowski 1989:29). As such, the upper stretch of the Mala middle valley displays the vestiges of Inca territorial control in the wake of conquest assisted by highland allies. In the absence of major administrative centralization in the area, the territorial control is extensive, facilitated in large part by Huarochirí colonizers. The material and documentary evidence suggest the rise of Inca influence within middle valley Mala coincided with diminished connections to polities along the immediate coast.

The Coayllo polity, centered at the modern town of the same name, ruled the middle valley of Asia up until and through the Late Horizon. Within the same two-kilometer radius sit Sequilao (upriver) and Corralón (downriver) significant Late Intermediate Period settlements (Angéles and Pozzi-Escot 2004:877). The primary Inca administrative site in the drainage, Uquira, is in the same area. Within this context, Uquira functions as a competitive administrative unit centrally placed to influence local politics and economy. As discussed earlier, the Coayllo allied with the Inca during the initial period of regional consolidation. Under the authority of the state, populations from the Asia drainage relocated to lower valley Cañete, displacing conquered Huarco communities (Rostworowski 1989:90-91).

Unlike the middle valley polities to the north, the proposed territory of Coayllo would not have overlapped with the adjacent highland holdings of Huarochirí or Yauyos to the northeast. The area beyond the upland extent of Coayllo appears to have been a buffer zone, not densely settled by Late Intermediate Period groups from the highlands or the coastal drainages. Pueblo Viejo de Omas, which is in part, a planned Inca settlement (Baca 2004:424; Cornejo 2013), lies in this upper valley area. Pueblo Viejo functioned as an Inca aggregative administrative site placed strategically in the interstice between Yauyos, Huarochirí, Calango, and Coayllo.

Cañete and Chincha

Archaeological investigation of the sub-region comprising Cañete (Figure 6-12), Topará, and Chincha (Figure 6-13) confirmed the insights of previous researchers, provided novel data, and prompted an attempt to model Inca control at a regional scale. According to ethnohistorical sources, at the end of the Late Intermediate Period, the Huarco polity controlled lower valley Cañete and possibly the lower end of the middle valley, slightly downriver from Incahuasi (Rostworowski 1989:99). Favio Ramírez (2015:72-73) approaches the topic of Huarco territoriality through a discussion of a wall which, according the map sketched by Larrabure y Unanue, once encircled the polity. Ramírez correctly reasons that this wall, if it existed, was a defensive feature and not the materialization of a firm political boundary. Yet, based on the evidence of Huarco style ceramic finds in Lunahuaná, he dismisses the ethnohistorical account of an independent middle valley polity, suggesting that the inhabitants of the area were communities from the immediate coast, utilizing the *chaupiyunga* as in pursuit of a complementary, vertical economic strategy (Ramírez 2015:79).

Contrary to this position, it appears that the weight of material, documentary, and geospatial evidence supports the longstanding hypothesis of an independent Lunahuaná polity. Archaeological indicators of interaction can be taken at face value: these are the physical manifestation of a pattern of economic and cultural interchange seen between independent lower and middle valley polities throughout the study region. The model of archipelago colonizers lacks direct evidence and requires an assumption that targeted areas were not already settled by dense, organized populations. The vigor with which Inca highland allies annexed new lands in the wake of middle valley conquests suggests a regional context of competitive territoriality where free access was effectively denied by local control hierarchies in each area.

Like Sisicaya in middle valley Lurín and Huancayo in middle valley Chillón, territorial conquest in the area was prompted by local resistance to Inca authority, though actual administration came to be structured around the economic pursuit of *chaupiyunga* production. Significant in this regard would have been coca, traces of which are still detectable within *colcas* in Lunahuaná (Díaz 2015:77). As discussed for middle valley Asia, the modeled territory of Lunahuaná does not overlap with the territories controlled by Huarochirí or Yauyos. The distance between these highland centers and Cañete presented a logistical barrier for the Inca, diminishing the impact of direct assistance during periods of conflict. As such, Inca strategy in the drainage both during and following conquest, depended less upon highland allies than in the valleys to the north.

One local phenomenon that stands out is the abundance of *colcas* in middle valley Cañete. Two, potentially complementary hypotheses may explain the high incidence of Inca state storage architecture. The first privileges the impact of conquest. Facing a unified Huarco and Lunahuaná, in the absence of effective highland support, the Inca military required an extensive provisioning apparatus. The establishment of Incahuasi was the focal point of this strategy, which restructured the economy of vanquished Lunahuaná in service of the Huarco war effort. The multitude of *colcas* and minor administrative sites would have been constructed primarily in pursuit of this goal. A second hypothesis places agricultural production after conquest at the center. In this version, remote highland allies were too distant to seize and control productive territory, preventing the state from indirectly managing agricultural surplus through local, allied groups. In this scenario, the vast storage system and numerous administrative outposts represent direct investment in the processing and storage of local produce and a degree of micro-management not seen elsewhere in the region.

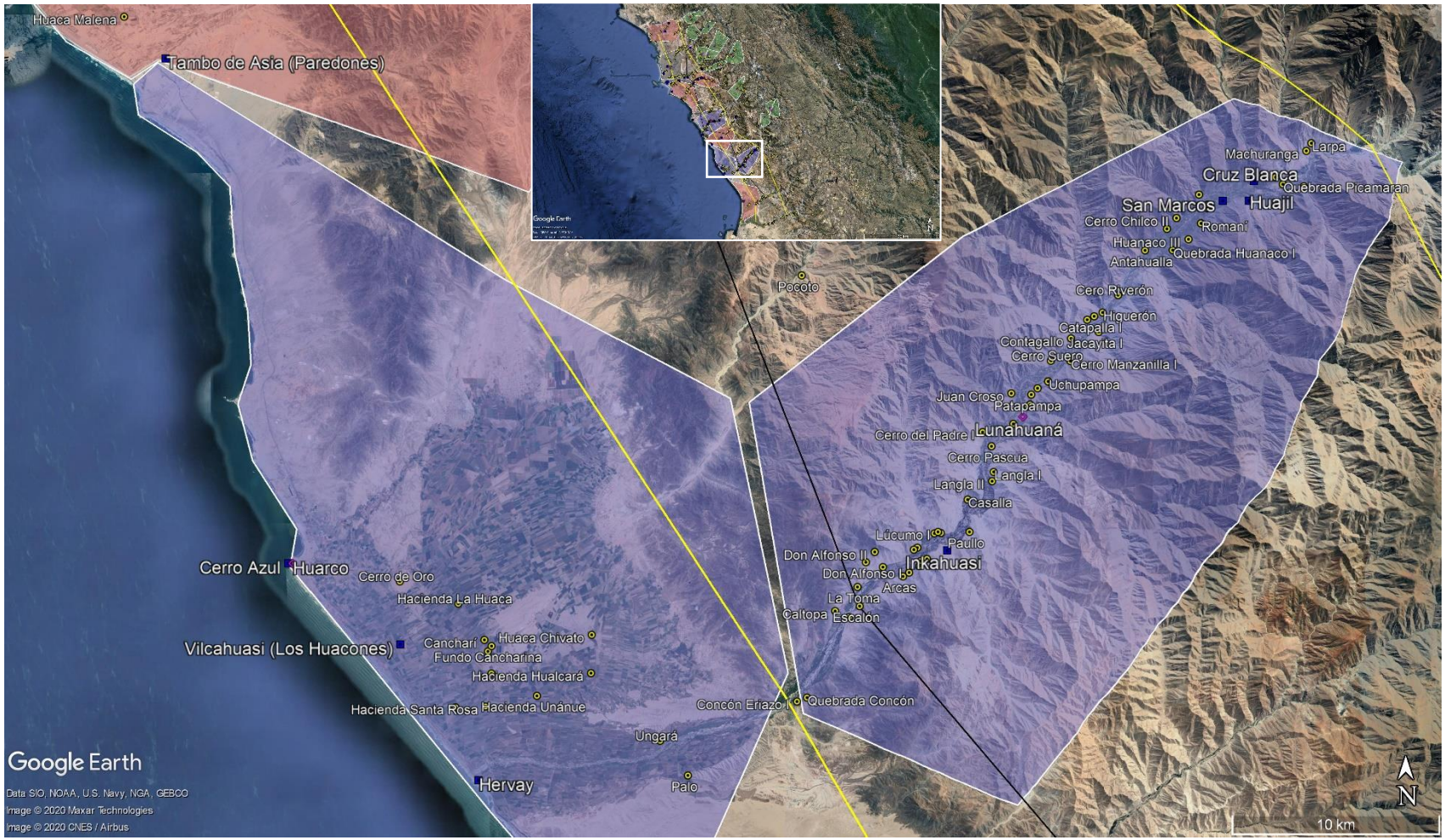

Figure 6-11 Lower and middle valley territory in Cañete. Shown are Huarco and Lunahuaná (blue) and part of Coayllo (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

Absent close *serrano* allies, the Inca summoned the aid of the neighboring *señoríos*, Chincha and Coayllo. After conquest, Lunahuaná may have been managed in part from an adjacent valley, just as the Inca invested the Chancay political authority based at Pisquillo Chico with some measure of control over Guancayo in middle valley Chillón. To this point carvings reminiscent of Chincha motifs found at San Marcos (Casaverde 2015a:119) are presented as evidence of Inca-mediated Chincha influence within Lunahuaná. This is intriguing, but it is not clear whether coastal motifs from Chincha and Cañete can be easily distinguished given the small sample of artwork that has undergone intentional, comparative analysis. It is also important

Highland Center	Latitude	Distance to 900 msl (km)
Rupac	8747631	16.6
Huamatanga	8727864	18.9
Chaclla	8700829	14.3
Surco	8685863	26.6
Chuicoto	8655253	29.1
Ñawpawasi	8621169	36.9

Table 6-2 Relationship between latitude and the distance to the upper/middle valley transition from a selection of upper valley (highland) centers. [r(10) = -.90, p < .001]

to keep in mind that evidence of cultural exchange does not necessarily imply political control. San Marcos is located at the upper end of the middle valley in the Pacarán district where Inca architecture and settlement patterns suggest a concentrated exertion of power rather than the diffuse, mediated control seen in other parts of the Cañete valley.

Inca constructions at Cerro Azul and Vilcahuasi as well as the novel administrative sites, Hervay and Incahuasi, were established in the interest of intensive territorial control of the Cañete lower valley extending up into the lower end of the middle valley. The main stretch of middle valley Lunahuaná appears to have been administered in an extensive territorial manner.

There is an abundance of small administrative and *colca* sites evincing Inca presence, but no major, planned centers. Cerro Suero and Cantagallo are impressive settlements with architectural signatures of Inca modification, but at this point it is not clear to what degree these are major state installations rather than the partial reutilization of important *curacazgo* centers. The distinction becomes clear near the upper reaches of the middle valley near the modern town of Pacarán. Here, the primary Inca settlements are grander and suggest more deliberate planning. Cruz Blanca, Huajil, San Marcos, and Daris comprise a cluster of dense, intensive territorial control at the upper edge of the middle valley. In this area there are few small administrative and isolated *colca* sites.

The important role played by Chincha (Figure 6-13) in facilitating Inca imperial consolidation along the Peruvian coast is well-documented (Menzel and Rowe 1966; Rostworowski 1970; Sandweiss and Reid 2016). The prestige of this alliance is reflected in the provincial designation, Chinchaysuyu, denoting the quarter of Tawantinsuyu corresponding to all Andean territory north of the valley. In its local context, the Chincha polity accommodated Inca viceregal administration within its primary center, La Centinela, and provided direct aid during the conquest of Huarco and its allies. The presence of Chincha ceramics at Inca administrative sites in Lunahuaná suggests prolonged involvement beyond initial conflict, continuing into the period of imperial consolidation.

An intriguing avenue of future research is the impact of Inca arrival on the development of local polities which would eventually become allies of the state. The documented power and influence of Chincha during the Late Horizon may have been, in part, the result of secondary state formation, driven by political engagement with the Inca. Evidence of this would be visible in the development of novel administrative capabilities. The location of sites Pampa la Capilla

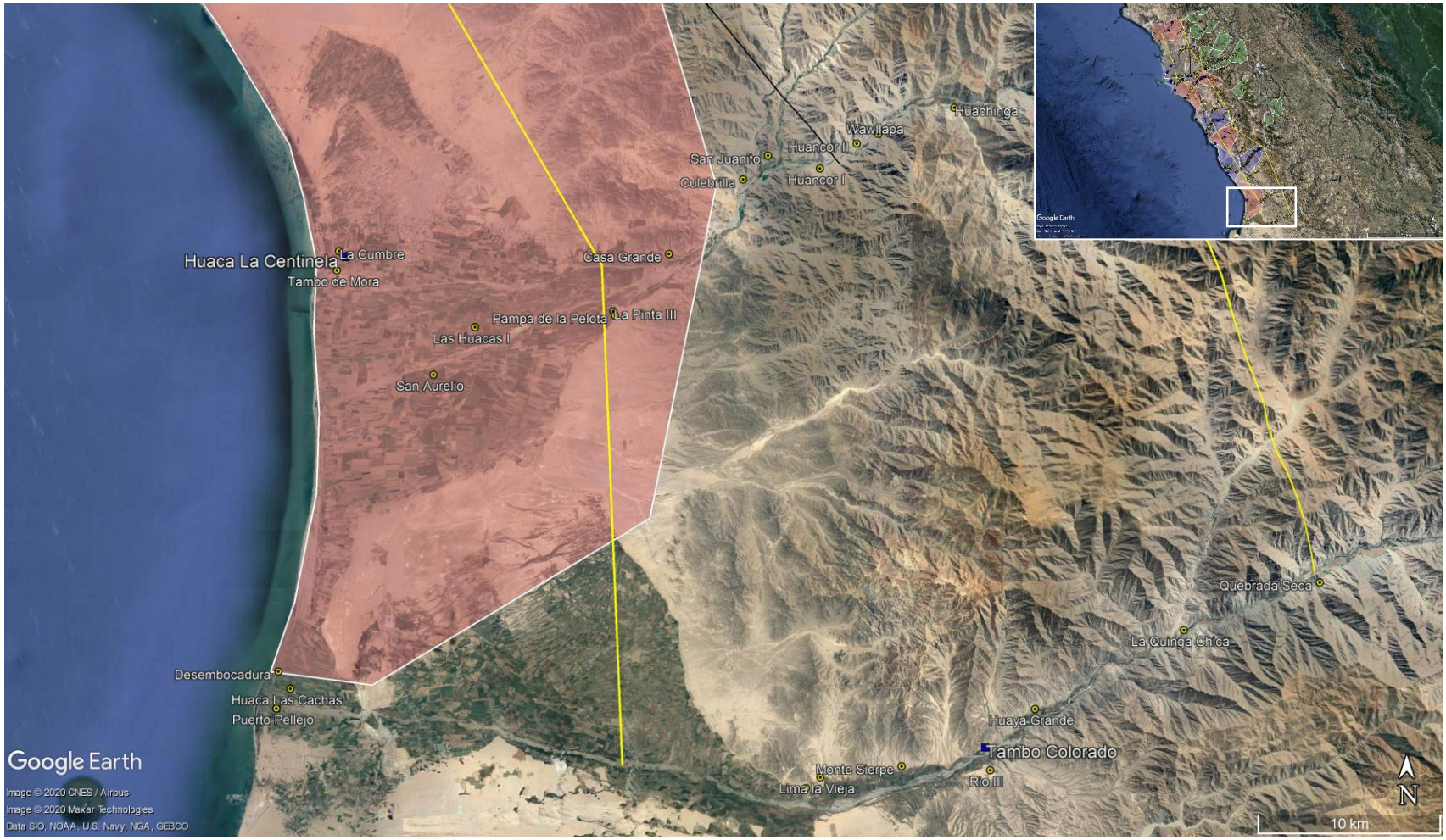

Figure 6-12 Lower and middle valley territory in Chincha and Pisco. Shown is part of Chincha (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

and Casa Grande at the periphery of Chincha territory may attest to this. Artwork found on rock outcroppings at Huancor corresponds with the modeled boundary of pre-Inca Chincha control within its middle valley. Even more so than within the upper valley of Cañete, this upland area of the Chincha drainage did not seem to have been under the control of a unifying highland or middle valley polity. Instead, the decentralized villages which run the length of the middle valley exhibit an interesting blend of highland and coastal architecture. It is perhaps the case that the marginal productivity of the Chincha middle valley proved unable to support large populations and centralized polities.

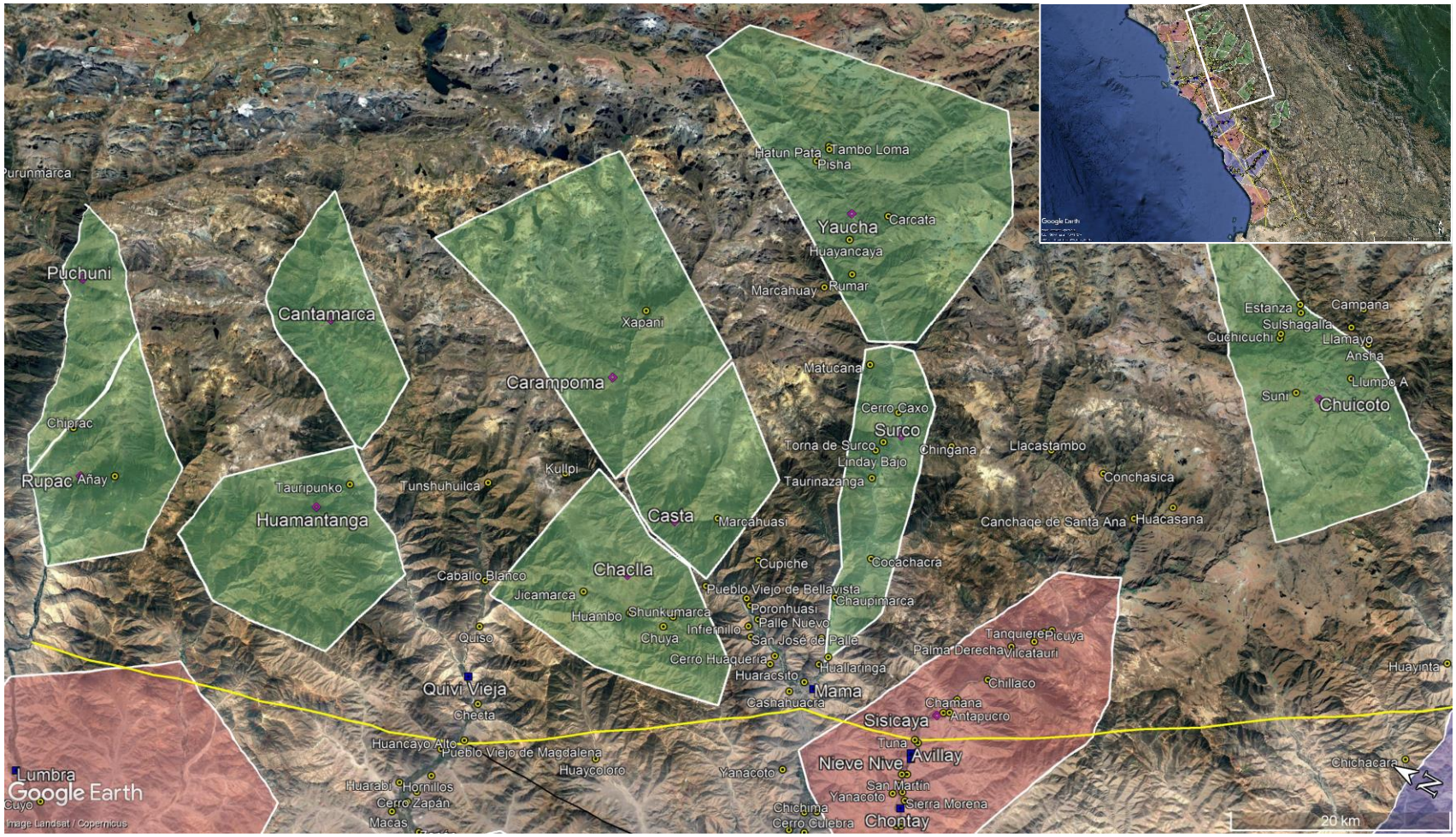

Figure 6-13 Atavillos and Hanan Yauyos highland polities. Shown are Upper Atavillos, Lower Atavillos, Huamantanga, Canta, Chaclla, Casta, Carampoma, Picoy, and Yaucha (green) as well as parts of Chancay and Sisicaya (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the

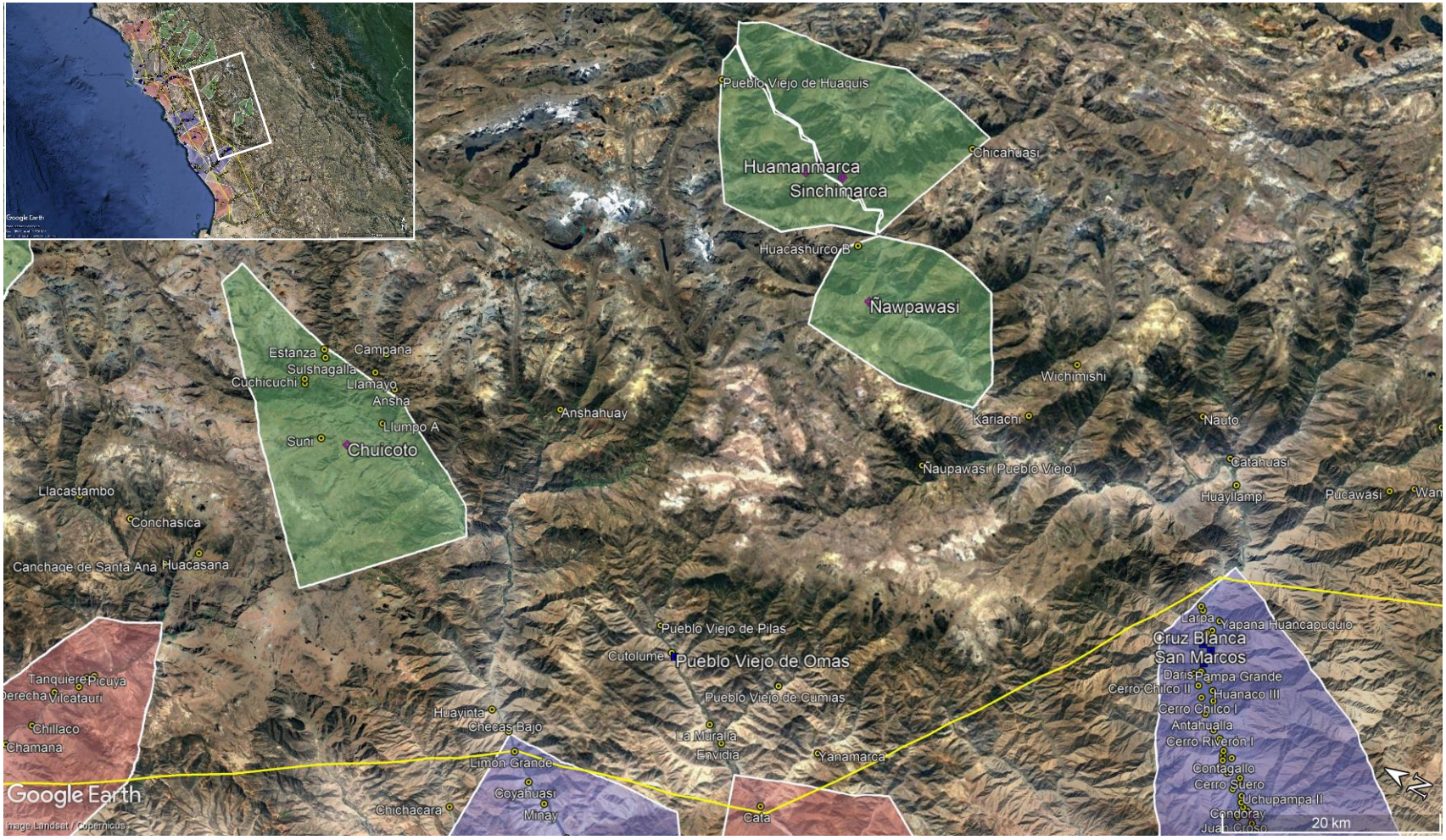

Figure 6-14 Hurin Yauyos highland polities. Shown are Huarochirí, Yauyos, Carania, and Laroas (green) as well as parts of Coayllo (red), Lunahuaná (blue), and Chincha (red). Blue squares are major Inca centers. Purple diamonds are Late Intermediate Period centers. Minor Late Intermediate Period and Late Horizon sites are indicated as yellow circles. The yellow lines indicate the limits of the middle valley zone (200 masl – 900 masl). The black line shows the upper reach of tapia architecture.

CHAPTER SEVEN

Discussion and Conclusions

Research Origins

This project began with archaeological surveys of the middle valley areas of Chincha and Cañete. The contrast between the Late Intermediate Period and Late Horizon settlement patterns in each valley was initially puzzling. Local ethnohistorical and archaeological sources, while illuminating, tend to be biased toward the immediate coast. The task was to figure out the relationship between the distinct histories of Inca assimilation for Huarco and Chincha and the clear difference between an extensive and complex Inca occupation in Lunahuaná and the near absence of Inca presence (and dense settlement in general) in the Chincha middle valley.

A close study of the settlement data from middle valley Cañete reveals important variations in Inca occupation. Some sites appear to be planned Inca settlements. Other sites show a mixture of Inca and local features. Throughout the length of this part of the valley, state infrastructure, including roads and isolated storage compounds, signal a deep material investment in the area. Despite this complexity, patterns do emerge at the scale of the entire middle valley. While there is a strong element of territorial control throughout, the upper and lower portions feature both larger, planned Inca settlements and a greater number of isolated *colca* groups. The center portion of the middle valley, the heart of Lunahuaná, reveals a different kind of Inca interaction. Here, there are several important sites dating from pre-Inca periods

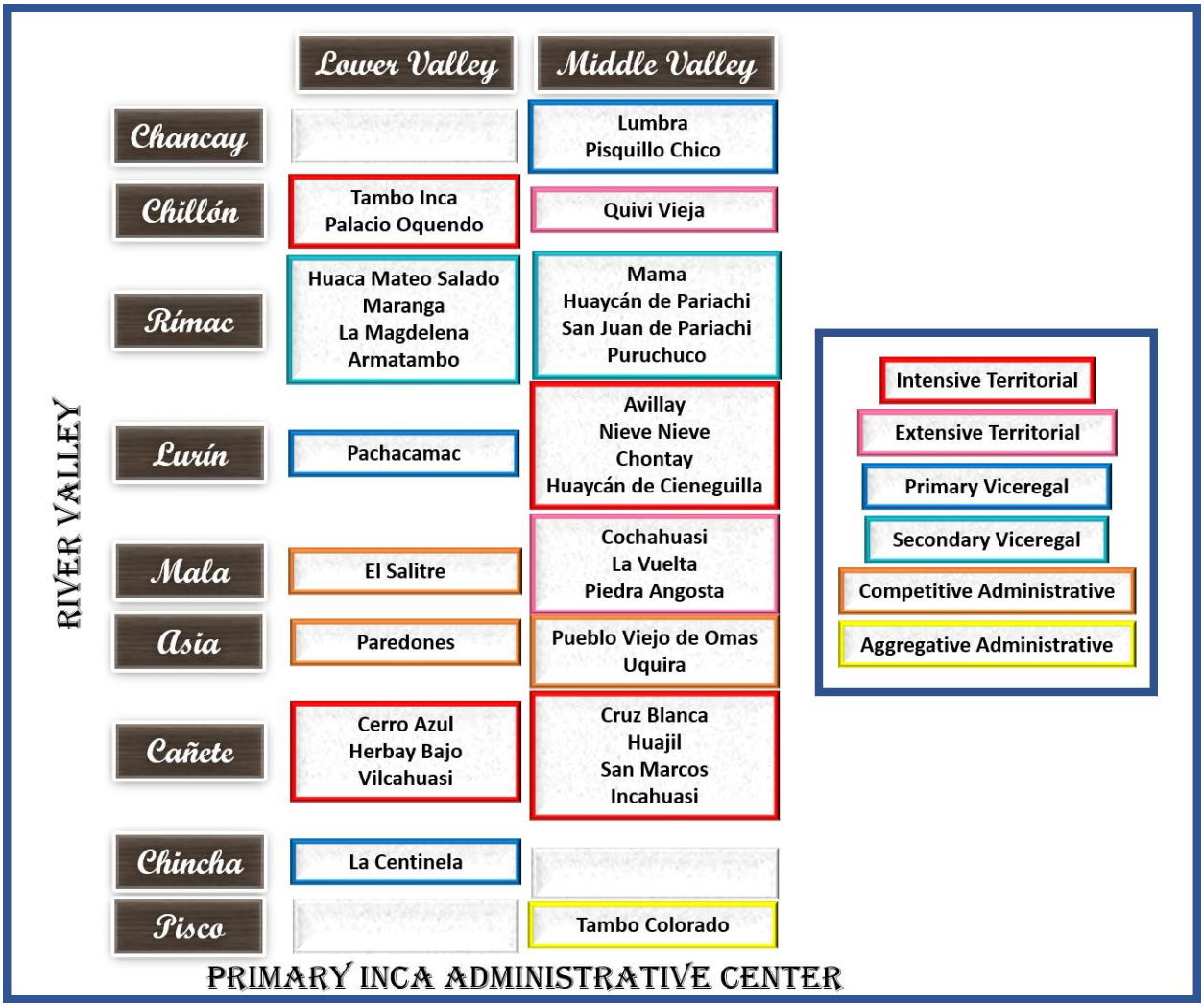

Figure 7-1 Prevailing modes of Inca imperialism within the lower and middle portions of each valley with major Inca centers.

which feature Inca architectural modifications and, in some cases, clear Inca sectors. Throughout the area, surface ceramics reveal the influence of the state impact on production and economy including the presence of Inca ceramics and vast tracts of terracing in service of agricultural intensification.

Despite the prominent, if restricted, Inca presence at the lower valley Chincha center, La Centinela, the middle Chincha valley shows an almost complete absence of Inca architecture and artifacts. In general, there are very few large settlements dating to the Inca period the prior Late

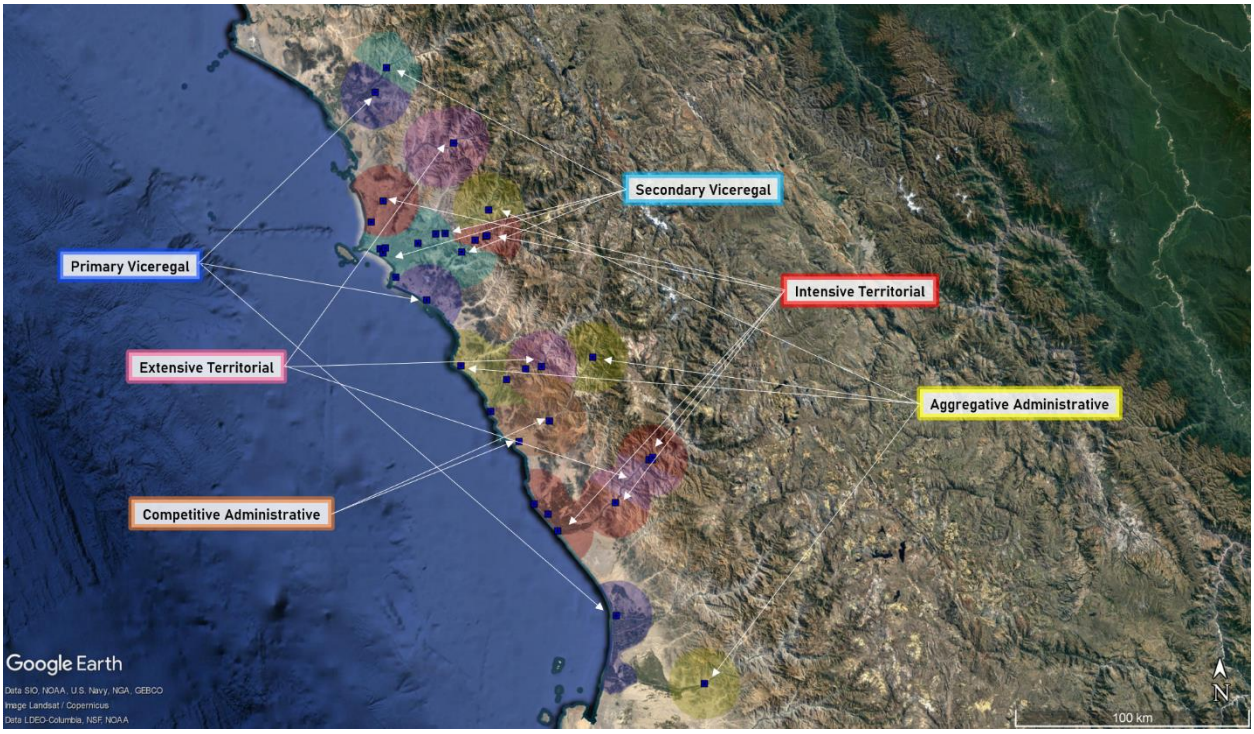

Figure 7-2 Map of south-central Peruvian coast showing mosaic of Inca control and major Inca centers.

Intermediate Period. Small domestic settlements are often positioned defensively and group mortuary monuments, many of which are exhibit a highland architectural style, are a conspicuous feature on the landscape.

Findings

Regional ethnohistorical and archaeological data provide compelling evidence that the contrast between Inca settlement and administration in Cañete and Chincha, though striking, is explicable as a variation of a more general set of imperial strategies pursued throughout the study area. From this broader perspective, diverse manifestations of Inca influence and control seen in architecture and artifacts, challenge the utility of viewing the process of Inca conquest and control along a single dimension of variable intensity. Instead, the archaeological data and documentary sources indicate that the Inca state pursued certain goals, to varying degrees of

success, within the bounds of a flexible yet structured set of political, economic, martial, and ideological strategies. The aim of Inca imperialism in the region might be distilled as three complementary objectives:

(a) volition; the ability to pursue independent, unimpeded action

(b) penetration; the ability to exercise control and influence at all levels of society

(c) centrality; the ability to establish presence at local epicenters of economic, political, or ideological activity

The materialization of these objectives is visible in features such as new construction (volition), widespread architectural modifications or changes in artifact assemblages (penetration), and the emplacement of Inca administrative facilities at the epicenters of local political authority (centrality). When viewed through this lens, tension arises, as the nature of imperial administration appears to preclude the possibility of realizing all three at once. While high levels of control, influence, and focality are definitive aspects of state control within core territory, the Inca state was forced to balance its priorities in areas distant from Cusco. Even the territorial control (the high intensity end of the traditional continuum) is subject to negotiation and compromise between (a) more targeted approaches which limit the proliferation of power and influence and (b) more diffuse regimes of control which are not as effective at concentrating resources at existing hubs of political and economic influence.

Within the three-dimensional space of these imperial goals, modalities emerge. Regularity in the presentation of Inca architecture and artifacts in relation to similar socio-political and geographic contexts allow for categorization:

(a) Viceregal and secondary viceregal control where Inca presence is focused at the original seats of political power which are left intact in the interest of providing more pervasive influence through existing hierarchical structures with the disadvantage of having less autonomy in action.

(b) Competitive administrative control where Inca presence is situated near local centers of power with the goal of gradually eclipsing the local authority. Moderate volition is preserved due to the relative autonomy from the local power center, but penetration is limited due to the absence of direct partnership with the local center and fewer peripheral outposts.

(c) Intensive and extensive territorial control where conquest by the Inca state or its allies allows for high levels of volition. Differences arise in the degree to which power is exercised in a concentrated, less diffuse manner (intensive) or with greater proliferation but less focus (extensive).

(d) Aggregative administrative control where power is exercised at new Inca facilities removed from local centers of power, precluding high levels of penetration into existing networks politics and economy, but allowing the volition to reroute and restructure local activity through strategic location.

Although there are clear structural factors which influence the manifestation of Inca imperialism in each area (Figure 7-3), the reality is much more complex due to the contingencies of local politics, history, and religious/cultural affiliation. The availability and proximity of highland allies was a critical factor in Inca strategic orientation, especially in cases where the state pursued direct or indirect military conquest. This is an interesting example where macro-regional process (terminal Late Intermediate Period highland migrations into coastal valleys) can

be interpreted within the context of specific historical cases of individual highland groups advancing upon the middle and upper valley territories of coastal polities (in many cases with the assistance or encouragement of an expansionist highland state). This is a fascinating vein of inquiry for Inca research which has been somewhat neglected due to the regional scope of synthetic studies (with some exceptions highlighted in Chapter 2) being typically confined to areas within an ecological zone rather than areas inclusive of more than one.

Broader Implications and Future Research

While this research focuses on a single region of the Peruvian coast, there is no reason to suppose that the insights gained from this study should not be applicable, at least in part, to other regions which fell under Inca provincial control. As discussed in previous chapters, there are parallel manifestations of both broader strategic outlooks (*tertius gaudens* in the Titicaca Basin) as well as specific administrative modalities (aggregative administration at Huánuco Pampa) in parts of the empire as far removed as the central and southern highlands. It seems reasonable to suggest that a closer look at neighboring regions such as the Peruvian south or north-central coast may reveal further examples of the administrative types deployed in the south-central coast as well as, perhaps, novel modalities specific to each region..

From a methodological standpoint, this research shows the importance of establishing, with some precision, the putative territorial structure of pre-Inca polities before attempting to interpret the Inca administrative system which succeeded it. Utilizing a combination of documentary sources and anthropological theory in pursuit of more accurate modeling renders intelligible Inca decision-making and provides some clarification as to whether pre-Inca and Inca

territoriality was coterminous. More broadly, this dissertation should make clear the importance of regional syntheses in generating novel hypotheses concerning processes or systems that are patterned at large scales. The disparate material signatures of Inca control in Cañete and Chincha caution against attempting to understand Inca imperialism with reference to a single or even a handful of case studies. It is only at the regional scale that connections emerge between distant valleys such as Chillón and Cañete and Lurín and Chincha which allow for further investigation of the essential characteristics in operation in each of these provisional types of administration.

As a final note, any regional study can only be as successful as the local data which support it. Although Lunahuaná and Cañete in general have received less archaeological attention than nearby areas, this appears to be changing both in the context of new excavation projects at important sites and reassessments of datasets gathered in previous decades. While this is encouraging, there is still much to be done. Studies which more closely examine colonial era documents in the interest of reconstructing more remote political and cultural realities can provide important clues as to the identity and political organization of pre-Inca Lunahuaná. A good, recent example is Carlos Campos' (2015) identification of the *huaca*, Muyllucamac,[13] atop Cerro Escalón, near the town of Lunahuaná.

For archaeology in particular, of critical importance will be studies which can clearly establish: (a) the local architectural and ceramic styles of Late Intermediate Period Lunahuaná and (b) how this is different from the Late Intermediate Period pottery tradition from lower valley Cañete and the architecture and material culture from neighboring middle valley areas such as Asia and Chincha. Without these guidelines in place, it will be impossible to resolve

[13] Listed by the sixteenth century Spanish cleric and extirpator of indigenous idols, Cristóbal de Albornoz, as the *pacarina* (sacred place of origin) of the Lunahuaná people.

(with material evidence alone) central questions concerning the identity of middle valley peoples and important distinctions between economic and cultural spheres of interaction and areas of political control.

APPENDIX A: Polity Generation

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
5	19	11	8	0.0016	0.0016	5.009	0.998	0.998		
10	11	24	13	0.0026	0.0026	4.991	1.002	2.000		
15	24	67	43	0.0086	0.0086	4.887	1.023	3.023		
20	67	136	69	0.0138	0.0138	4.799	1.042	4.065		
25	136	360	224	0.0448	0.0448	4.305	1.161	5.226		
30	360	262	98	0.0196	0.0196	4.703	1.063	6.289	**28.619**	HuarcoLM
5	19	6	13	0.0026	0.0026	4.991	1.002	1.002		
10	6	6	0	0.0000	0.0000	5.037	0.993	1.994		
15	6	11	5	0.0010	0.0010	5.019	0.996	2.991		
20	11	157	146	0.0292	0.0292	4.547	1.100	4.090		
25	157	168	11	0.0022	0.0022	4.998	1.000	5.091		
30	168	145	23	0.0046	0.0046	4.956	1.009	6.099	**29.511**	HuarcoChincha
5	19	11	8	0.0016	0.0016	5.009	0.998	0.998		
10	11	49	38	0.0076	0.0076	4.905	1.019	2.018		
15	49	113	64	0.0128	0.0128	4.816	1.038	3.056		
20	113	209	96	0.0192	0.0192	4.709	1.062	4.118		
25	209	331	122	0.0244	0.0244	4.624	1.081	5.199		
30	331	487	156	0.0312	0.0312	4.516	1.107	6.306	**28.543**	HuarcoPocoto
5	19	4	15	0.0030	0.0030	4.984	1.003	1.003		
10	4	71	67	0.0134	0.0134	4.806	1.040	2.044		
15	71	151	80	0.0160	0.0160	4.762	1.050	3.093		
20	151	235	84	0.0168	0.0168	4.749	1.053	4.146		
25	235	167	68	0.0136	0.0136	4.803	1.041	5.187		
30	167	271	104	0.0208	0.0208	4.683	1.068	6.255	**28.777**	HuarcoNE
5	19	6	13	0.0026	0.0026	4.991	1.002	1.002		
10	6	76	70	0.0140	0.0140	4.796	1.043	2.044		
15	76	85	9	0.0018	0.0018	5.005	0.999	3.043		
20	85	91	6	0.0012	0.0012	5.016	0.997	4.040		
25	91	50	41	0.0082	0.0082	4.894	1.022	5.062		
30	50	34	16	0.0032	0.0032	4.981	1.004	6.066	**29.675**	HuarcoAsia
5	479	404	75	0.0150	0.0150	4.779	1.046	1.046		
10	404	338	66	0.0132	0.0132	4.809	1.040	2.086		
15	338	272	66	0.0132	0.0132	4.809	1.040	3.126		
20	272	256	16	0.0032	0.0032	4.981	1.004	4.129		
25	256	301	45	0.0090	0.0090	4.881	1.024	5.154		
30	301	151	150	0.0300	0.0300	4.535	1.103	6.257	**28.770**	LunahuanaHuarco
5	479	397	82	0.0164	0.0164	4.756	1.051	1.051		
10	397	449	52	0.0104	0.0104	4.857	1.030	2.081		
15	449	810	361	0.0722	0.0723	3.910	1.279	3.360		
20	810	1469	659	0.1318	0.1326	3.167	1.579	4.938		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
25	1469	800	669	0.1338	0.1346	3.144	1.590	6.528		
30	800	552	248	0.0496	0.0496	4.233	1.181	7.710	**23.348**	LunahuanaTopara
5	479	540	61	0.0122	0.0122	4.826	1.036	1.036		
10	540	610	70	0.0140	0.0140	4.796	1.043	2.079		
15	610	684	74	0.0148	0.0148	4.782	1.045	3.124		
20	684	820	136	0.0272	0.0272	4.579	1.092	4.216		
25	820	897	77	0.0154	0.0154	4.772	1.048	5.264		
30	897	958	61	0.0122	0.0122	4.826	1.036	6.300	**28.573**	LunahuanaYauyos
5	479	540	61	0.0122	0.0122	4.826	1.036	1.036		
10	540	731	191	0.0382	0.0382	4.406	1.135	2.171		
15	731	1304	573	0.1146	0.1151	3.367	1.485	3.656		
20	1304	2380	1076	0.2152	0.2186	2.344	2.133	5.789		
25	2380	1284	1096	0.2192	0.2228	2.309	2.165	7.954		
30	1284	819	465	0.0930	0.0933	3.634	1.376	9.330	**19.292**	LunahuanaAsia
5	479	875	396	0.0792	0.0794	3.815	1.311	1.311		
10	875	1912	1037	0.2074	0.2104	2.412	2.073	3.384		
15	1912	2334	422	0.0844	0.0846	3.746	1.335	4.719		
20	2334	2668	334	0.0668	0.0669	3.985	1.255	5.973		
25	2668	2960	292	0.0584	0.0585	4.105	1.218	7.191		
30	2960	3211	251	0.0502	0.0502	4.225	1.184	8.375	**21.492**	LunahuanaTopara
5	479	540	61	0.0122	0.0122	4.826	1.036	1.036		
10	540	610	70	0.0140	0.0140	4.796	1.043	2.079		
15	610	684	74	0.0148	0.0148	4.782	1.045	3.124		
20	684	840	156	0.0312	0.0312	4.516	1.107	4.231		
25	840	1248	408	0.0816	0.0818	3.783	1.322	5.553		
30	1248	1711	463	0.0926	0.0929	3.639	1.374	6.927	**25.985**	LunahuanaYauyos2
5	28	20	8	0.0016	0.0016	5.009	0.998	0.998		
10	20	7	13	0.0026	0.0026	4.991	1.002	2.000		
15	7	13	6	0.0012	0.0012	5.016	0.997	2.997		
20	13	75	62	0.0124	0.0124	4.823	1.037	4.034		
25	75	132	57	0.0114	0.0114	4.840	1.033	5.067		
30	132	182	50	0.0100	0.0100	4.863	1.028	6.095	**29.533**	ChinchaHuarco
5	28	20	8	0.0016	0.0016	5.009	0.998	0.998		
10	20	7	13	0.0026	0.0026	4.991	1.002	2.000		
15	7	13	6	0.0012	0.0012	5.016	0.997	2.997		
20	13	141	128	0.0256	0.0256	4.605	1.086	4.083		
25	141	208	67	0.0134	0.0134	4.806	1.040	5.123		
30	208	309	101	0.0202	0.0202	4.693	1.065	6.189	**29.086**	ChinchaHuarco2
5	28	70	42	0.0084	0.0084	4.891	1.022	1.022		
10	70	135	65	0.0130	0.0130	4.813	1.039	2.061		
15	135	245	110	0.0220	0.0220	4.663	1.072	3.133		
20	245	399	154	0.0308	0.0308	4.522	1.106	4.239		
25	399	578	179	0.0358	0.0358	4.443	1.125	5.364		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
30	578	800	222	0.0444	0.0444	4.311	1.160	6.524	**27.590**	ChinchaNE
5	28	70	42	0.0084	0.0084	4.891	1.022	1.022		
10	70	113	43	0.0086	0.0086	4.887	1.023	2.045		
15	113	255	142	0.0284	0.0284	4.560	1.096	3.142		
20	255	458	203	0.0406	0.0406	4.369	1.144	4.286		
25	458	730	272	0.0544	0.0545	4.163	1.201	5.487		
30	730	443	287	0.0574	0.0575	4.119	1.214	6.701	**26.861**	ChinchaNE2
5	28	61	33	0.0066	0.0066	4.922	1.016	1.016		
10	61	51	10	0.0020	0.0020	5.002	1.000	2.016		
15	51	50	1	0.0002	0.0002	5.033	0.993	3.009		
20	50	79	29	0.0058	0.0058	4.936	1.013	4.022		
25	79	75	4	0.0008	0.0008	5.023	0.995	5.018		
30	75	99	24	0.0048	0.0048	4.953	1.010	6.027	**29.865**	ChinchaPisco
5	28	60	32	0.0064	0.0064	4.925	1.015	1.015		
10	60	75	15	0.0030	0.0030	4.984	1.003	2.018		
15	75	120	45	0.0090	0.0090	4.881	1.024	3.043		
20	120	206	86	0.0172	0.0172	4.742	1.054	4.097		
25	206	271	65	0.0130	0.0130	4.813	1.039	5.136		
30	271	360	89	0.0178	0.0178	4.732	1.057	6.193	**29.067**	ChinchaPiscoN
5	293	177	116	0.0232	0.0232	4.644	1.077	1.077		
10	177	271	94	0.0188	0.0188	4.716	1.060	2.137		
15	271	517	246	0.0492	0.0492	4.239	1.179	3.316		
20	517	651	134	0.0268	0.0268	4.586	1.090	4.407		
25	651	468	183	0.0366	0.0366	4.431	1.128	5.535		
30	468	327	141	0.0282	0.0282	4.563	1.096	6.631	**27.146**	CoyalloHuarco
5	293	177	116	0.0232	0.0232	4.644	1.077	1.077		
10	177	109	68	0.0136	0.0136	4.803	1.041	2.118		
15	109	47	62	0.0124	0.0124	4.823	1.037	3.155		
20	47	5	42	0.0084	0.0084	4.891	1.022	4.177		
25	5	20	15	0.0030	0.0030	4.984	1.003	5.180		
30	20	105	85	0.0170	0.0170	4.746	1.054	6.234	**28.876**	CoyalloHuarco2
5	293	177	116	0.0232	0.0232	4.644	1.077	1.077		
10	177	109	68	0.0136	0.0136	4.803	1.041	2.118		
15	109	47	62	0.0124	0.0124	4.823	1.037	3.155		
20	47	12	35	0.0070	0.0070	4.915	1.017	4.172		
25	12	29	17	0.0034	0.0034	4.977	1.005	5.176		
30	29	4	25	0.0050	0.0050	4.949	1.010	6.187	**29.095**	CoaylloSouth1
5	293	365	72	0.0144	0.0144	4.789	1.044	1.044		
10	365	498	133	0.0266	0.0266	4.589	1.090	2.134		
15	498	660	162	0.0324	0.0324	4.497	1.112	3.246		
20	660	805	145	0.0290	0.0290	4.550	1.099	4.344		
25	805	1031	226	0.0452	0.0452	4.299	1.163	5.507		
30	1031	1266	235	0.0470	0.0470	4.272	1.170	6.678	**26.955**	CoyalloN

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
5	293	365	72	0.0144	0.0144	4.789	1.044	1.044		
10	365	498	133	0.0266	0.0266	4.589	1.090	2.134		
15	498	696	198	0.0396	0.0396	4.385	1.140	3.274		
20	696	993	297	0.0594	0.0595	4.090	1.222	4.496		
25	993	1356	363	0.0726	0.0727	3.905	1.280	5.777		
30	1356	1812	456	0.0912	0.0915	3.657	1.367	7.144	**25.196**	CoaylloN2
5	293	385	92	0.0184	0.0184	4.723	1.059	1.059		
10	385	738	353	0.0706	0.0707	3.932	1.271	2.330		
15	738	1359	621	0.1242	0.1248	3.254	1.537	3.867		
20	1359	1273	86	0.0172	0.0172	4.742	1.054	4.921		
25	1273	862	411	0.0822	0.0824	3.775	1.324	6.246		
30	862	573	289	0.0578	0.0579	4.113	1.216	7.461	**24.125**	CoaylloCalango
5	18	15	3	0.0006	0.0006	5.026	0.995	0.995		
10	15	5	10	0.0020	0.0020	5.002	1.000	1.994		
15	5	20	15	0.0030	0.0030	4.984	1.003	2.998		
20	20	28	8	0.0016	0.0016	5.009	0.998	3.996		
25	28	119	91	0.0182	0.0182	4.726	1.058	5.054		
30	119	72	47	0.0094	0.0094	4.874	1.026	6.080	**29.606**	MalaCoayllo
5	18	15	3	0.0006	0.0006	5.026	0.995	0.995		
10	15	5	10	0.0020	0.0020	5.002	1.000	1.994		
15	5	25	20	0.0040	0.0040	4.967	1.007	3.001		
20	25	95	70	0.0140	0.0140	4.796	1.043	4.044		
25	95	185	90	0.0180	0.0180	4.729	1.057	5.101		
30	185	462	277	0.0554	0.0555	4.148	1.205	6.306	**28.543**	MalaCoayllo2
5	18	12	6	0.0012	0.0012	5.016	0.997	0.997		
10	12	70	58	0.0116	0.0116	4.836	1.034	2.031		
15	70	40	30	0.0060	0.0060	4.932	1.014	3.044		
20	40	2	38	0.0076	0.0076	4.905	1.019	4.064		
25	2	25	23	0.0046	0.0046	4.956	1.009	5.073		
30	25	34	9	0.0018	0.0018	5.005	0.999	6.072	**29.645**	MalaChilca
5	18	40	22	0.0044	0.0044	4.960	1.008	1.008		
10	40	77	37	0.0074	0.0074	4.908	1.019	2.027		
15	77	163	86	0.0172	0.0172	4.742	1.054	3.081		
20	163	238	75	0.0150	0.0150	4.779	1.046	4.127		
25	238	318	80	0.0160	0.0160	4.762	1.050	5.177		
30	318	410	92	0.0184	0.0184	4.723	1.059	6.236	**28.865**	MalaCalango
5	18	15	3	0.0006	0.0006	5.026	0.995	0.995		
10	15	5	10	0.0020	0.0020	5.002	1.000	1.994		
15	5	25	20	0.0040	0.0040	4.967	1.007	3.001		
20	25	95	70	0.0140	0.0140	4.796	1.043	4.044		
25	95	193	98	0.0196	0.0196	4.703	1.063	5.107		
30	193	306	113	0.0226	0.0226	4.654	1.074	6.181	**29.120**	MalaCoayllo3
5	403	234	169	0.0338	0.0338	4.475	1.117	1.117		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path	
10	234	164	70	0.0140	0.0140	4.796	1.043	2.160			
15	164	75	89	0.0178	0.0178	4.732	1.057	3.217			
20	75	35	40	0.0080	0.0080	4.898	1.021	4.237			
25	35	0	35	0.0070	0.0070	4.915	1.017	5.255			
30	0	17	17	0.0034	0.0034	4.977	1.005	6.259	**28.757**	CalangoMala	
5	403	234	169	0.0338	0.0338	4.475	1.117	1.117			
10	234	164	70	0.0140	0.0140	4.796	1.043	2.160			
15	164	75	89	0.0178	0.0178	4.732	1.057	3.217			
20	75	35	40	0.0080	0.0080	4.898	1.021	4.237			
25	35	25	10	0.0020	0.0020	5.002	1.000	5.237			
30	25	52	27	0.0054	0.0054	4.942	1.012	6.249	**28.806**	CalangoMala2	
5	403	469	66	0.0132	0.0132	4.809	1.040	1.040			
10	469	636	167	0.0334	0.0334	4.481	1.116	2.156			
15	636	224	412	0.0824	0.0826	3.772	1.325	3.481			
20	224	132	92	0.0184	0.0184	4.723	1.059	4.540			
25	132	63	69	0.0138	0.0138	4.799	1.042	5.582			
30	63	30	33	0.0066	0.0066	4.922	1.016	6.597	**27.283**	CalangoChilca	
5	403	466	63	0.0126	0.0126	4.819	1.037	1.037			
10	466	655	189	0.0378	0.0378	4.412	1.133	2.171			
15	655	239	416	0.0832	0.0834	3.762	1.329	3.500			
20	239	369	130	0.0260	0.0260	4.599	1.087	4.587			
25	369	534	165	0.0330	0.0330	4.487	1.114	5.701			
30	534	743	209	0.0418	0.0418	4.351	1.149	6.851	**26.275**	CalangoChilca2	
5	403	386	17	0.0034	0.0034	4.977	1.005	1.005			
10	386	475	89	0.0178	0.0178	4.732	1.057	2.061			
15	475	581	106	0.0212	0.0212	4.676	1.069	3.130			
20	581	703	122	0.0244	0.0244	4.624	1.081	4.212			
25	703	912	209	0.0418	0.0418	4.351	1.149	5.361			
30	912	1050	138	0.0276	0.0276	4.573	1.093	6.454	**27.889**	UpperCalango	
5	403	387	16	0.0032	0.0032	4.981	1.004	1.004			
10	387	478	91	0.0182	0.0182	4.726	1.058	2.062			
15	478	972	494	0.0988	0.0991	3.560	1.404	3.466			
20	972	1681	709	0.1418	0.1428	3.056	1.636	5.102			
25	1681	1709	28	0.0056	0.0056	4.939	1.012	6.115			
30	1709	1186	523	0.1046	0.1050	3.488	1.434	7.548	**23.847**	UpperCalango2	
5	403	466	63	0.0126	0.0126	4.819	1.037	1.037			
10	466	655	189	0.0378	0.0378	4.412	1.133	2.171			
15	655	239	416	0.0832	0.0834	3.762	1.329	3.500			
20	239	126	113	0.0226	0.0226	4.654	1.074	4.574			
25	126	276	150	0.0300	0.0300	4.535	1.103	5.677			
30	276	313	37	0.0074	0.0074	4.908	1.019	6.696	**26.883**	CalangoChilca3	cool
5	52	11	41	0.0082	0.0082	4.894	1.022	1.022			
10	11	29	18	0.0036	0.0036	4.974	1.005	2.027			

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
15	29	40	11	0.0022	0.0022	4.998	1.000	3.027		
20	40	33	7	0.0014	0.0014	5.012	0.998	4.025		
25	33	92	59	0.0118	0.0118	4.833	1.035	5.059		
30	92	93	1	0.0002	0.0002	5.033	0.993	6.053	**29.738**	YschmaChilca
5	52	11	41	0.0082	0.0082	4.894	1.022	1.022		
10	11	29	18	0.0036	0.0036	4.974	1.005	2.027		
15	29	107	78	0.0156	0.0156	4.769	1.048	3.075		
20	107	226	119	0.0238	0.0238	4.634	1.079	4.154		
25	226	382	156	0.0312	0.0312	4.516	1.107	5.262		
30	382	563	181	0.0362	0.0362	4.437	1.127	6.388	**28.176**	YschmaChilca2
5	52	11	41	0.0082	0.0082	4.894	1.022	1.022		
10	11	29	18	0.0036	0.0036	4.974	1.005	2.027		
15	29	38	9	0.0018	0.0018	5.005	0.999	3.026		
20	38	32	6	0.0012	0.0012	5.016	0.997	4.023		
25	32	144	112	0.0224	0.0224	4.657	1.074	5.096		
30	144	275	131	0.0262	0.0262	4.595	1.088	6.185	**29.105**	YschmaChilca3
5	52	38	14	0.0028	0.0028	4.988	1.002	1.002		
10	38	107	69	0.0138	0.0138	4.799	1.042	2.044		
15	107	161	54	0.0108	0.0108	4.850	1.031	3.075		
20	161	225	64	0.0128	0.0128	4.816	1.038	4.113		
25	225	280	55	0.0110	0.0110	4.847	1.032	5.145		
30	280	377	97	0.0194	0.0194	4.706	1.062	6.208	**28.997**	YschmaMid
5	52	38	14	0.0028	0.0028	4.988	1.002	1.002		
10	38	107	69	0.0138	0.0138	4.799	1.042	2.044		
15	107	161	54	0.0108	0.0108	4.850	1.031	3.075		
20	161	225	64	0.0128	0.0128	4.816	1.038	4.113		
25	225	372	147	0.0294	0.0294	4.544	1.100	5.214		
30	372	619	247	0.0494	0.0494	4.236	1.180	6.394	**28.151**	YschmaMid2
5	52	38	14	0.0028	0.0028	4.988	1.002	1.002		
10	38	107	69	0.0138	0.0138	4.799	1.042	2.044		
15	107	172	65	0.0130	0.0130	4.813	1.039	3.083		
20	172	320	148	0.0296	0.0296	4.541	1.101	4.184		
25	320	437	117	0.0234	0.0234	4.641	1.077	5.262		
30	437	645	208	0.0416	0.0416	4.354	1.148	6.410	**28.080**	YschmaMid3
5	52	8	44	0.0088	0.0088	4.884	1.024	1.024		
10	8	6	2	0.0004	0.0004	5.030	0.994	2.018		
15	6	25	19	0.0038	0.0038	4.970	1.006	3.024		
20	25	32	7	0.0014	0.0014	5.012	0.998	4.021		
25	32	20	12	0.0024	0.0024	4.995	1.001	5.023		
30	20	9	11	0.0022	0.0022	4.998	1.000	6.023	**29.886**	YschmaRimac
5	52	8	44	0.0088	0.0088	4.884	1.024	1.024		
10	8	6	2	0.0004	0.0004	5.030	0.994	2.018		
15	6	75	69	0.0138	0.0138	4.799	1.042	3.060		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
20	75	116	41	0.0082	0.0082	4.894	1.022	4.081		
25	116	188	72	0.0144	0.0144	4.789	1.044	5.125		
30	188	244	56	0.0112	0.0112	4.843	1.032	6.158	**29.232**	YschmaRimac2
5	236	580	344	0.0688	0.0689	3.957	1.263	1.263		
10	580	538	42	0.0084	0.0084	4.891	1.022	2.286		
15	538	657	119	0.0238	0.0238	4.634	1.079	3.365		
20	657	687	30	0.0060	0.0060	4.932	1.014	4.379		
25	687	349	338	0.0676	0.0677	3.974	1.258	5.637		
30	349	395	46	0.0092	0.0092	4.877	1.025	6.662	**27.019**	ColliqueRimac
5	236	108	128	0.0256	0.0256	4.605	1.086	1.086		
10	108	60	48	0.0096	0.0096	4.870	1.027	2.112		
15	60	112	52	0.0104	0.0104	4.857	1.030	3.142		
20	112	179	67	0.0134	0.0134	4.806	1.040	4.182		
25	179	244	65	0.0130	0.0130	4.813	1.039	5.221		
30	244	189	55	0.0110	0.0110	4.847	1.032	6.253	**28.787**	ColliqueRimac2
5	236	108	128	0.0256	0.0256	4.605	1.086	1.086		
10	108	60	48	0.0096	0.0096	4.870	1.027	2.112		
15	60	72	12	0.0024	0.0024	4.995	1.001	3.113		
20	72	76	4	0.0008	0.0008	5.023	0.995	4.109		
25	76	23	53	0.0106	0.0106	4.853	1.030	5.139		
30	23	4	19	0.0038	0.0038	4.970	1.006	6.145	**29.291**	CollliqueSouth
5	236	108	128	0.0256	0.0256	4.605	1.086	1.086		
10	108	60	48	0.0096	0.0096	4.870	1.027	2.112		
15	60	72	12	0.0024	0.0024	4.995	1.001	3.113		
20	72	76	4	0.0008	0.0008	5.023	0.995	4.109		
25	76	9	67	0.0134	0.0134	4.806	1.040	5.149		
30	9	16	7	0.0014	0.0014	5.012	0.998	6.147	**29.283**	ColliqueSouth2
5	236	115	121	0.0242	0.0242	4.628	1.080	1.080		
10	115	150	35	0.0070	0.0070	4.915	1.017	2.098		
15	150	190	40	0.0080	0.0080	4.898	1.021	3.119		
20	190	213	23	0.0046	0.0046	4.956	1.009	4.128		
25	213	56	157	0.0314	0.0314	4.512	1.108	5.236		
30	56	52	4	0.0008	0.0008	5.023	0.995	6.231	**28.888**	ColliqueChancay
5	236	256	20	0.0040	0.0040	4.967	1.007	1.007		
10	256	306	50	0.0100	0.0100	4.863	1.028	2.035		
15	306	400	94	0.0188	0.0188	4.716	1.060	3.095		
20	400	470	70	0.0140	0.0140	4.796	1.043	4.138		
25	470	549	79	0.0158	0.0158	4.766	1.049	5.187		
30	549	684	135	0.0270	0.0270	4.582	1.091	6.278	**28.672**	ColliqueNorth
5	236	256	20	0.0040	0.0040	4.967	1.007	1.007		
10	256	306	50	0.0100	0.0100	4.863	1.028	2.035		
15	306	400	94	0.0188	0.0188	4.716	1.060	3.095		
20	400	563	163	0.0326	0.0326	4.493	1.113	4.208		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path	
25	563	858	295	0.0590	0.0591	4.096	1.221	5.428			
30	858	1222	364	0.0728	0.0729	3.902	1.281	6.710	**26.826**	ColliqueNorth2	
5	365	441	76	0.0152	0.0152	4.776	1.047	1.047			
10	441	560	119	0.0238	0.0238	4.634	1.079	2.126			
15	560	743	183	0.0366	0.0366	4.431	1.128	3.254			
20	743	972	229	0.0458	0.0458	4.290	1.165	4.420			
25	972	1315	343	0.0686	0.0687	3.960	1.263	5.682			
30	1315	1246	69	0.0138	0.0138	4.799	1.042	6.724	**26.769**	ChancayHuancayo	
5	365	440	75	0.0150	0.0150	4.779	1.046	1.046			
10	440	560	120	0.0240	0.0240	4.631	1.080	2.126			
15	560	757	197	0.0394	0.0394	4.388	1.140	3.265			
20	757	947	190	0.0380	0.0380	4.409	1.134	4.399			
25	947	1244	297	0.0594	0.0595	4.090	1.222	5.622			
30	1244	1579	335	0.0670	0.0671	3.982	1.255	6.877	**26.173**	ChancayHuancayo2	
5	365	321	44	0.0088	0.0088	4.884	1.024	1.024			
10	321	414	93	0.0186	0.0186	4.719	1.059	2.083			
15	414	461	47	0.0094	0.0094	4.874	1.026	3.109			
20	461	566	105	0.0210	0.0210	4.680	1.068	4.178			
25	566	663	97	0.0194	0.0194	4.706	1.062	5.240			
30	663	797	134	0.0268	0.0268	4.586	1.090	6.330	**28.434**	ChancayNorth	
5	365	286	79	0.0158	0.0158	4.766	1.049	1.049			
10	286	232	54	0.0108	0.0108	4.850	1.031	2.080			
15	232	244	12	0.0024	0.0024	4.995	1.001	3.081			
20	244	329	85	0.0170	0.0170	4.746	1.054	4.135			
25	329	392	63	0.0126	0.0126	4.819	1.037	5.172			
30	392	545	153	0.0306	0.0306	4.525	1.105	6.277	**28.675**	ChancayNW	
5	365	286	79	0.0158	0.0158	4.766	1.049	1.049			
10	286	234	52	0.0104	0.0104	4.857	1.030	2.079			
15	234	165	69	0.0138	0.0138	4.799	1.042	3.120			
20	165	139	26	0.0052	0.0052	4.946	1.011	4.131			
25	139	199	60	0.0120	0.0120	4.830	1.035	5.167			
30	199	186	13	0.0026	0.0026	4.991	1.002	6.168	**29.181**	ChancayNW2	Geog
5	365	286	79	0.0158	0.0158	4.766	1.049	1.049			
10	286	233	53	0.0106	0.0106	4.853	1.030	2.079			
15	233	156	77	0.0154	0.0154	4.772	1.048	3.127			
20	156	96	60	0.0120	0.0120	4.830	1.035	4.162			
25	96	35	61	0.0122	0.0122	4.826	1.036	5.198			
30	35	28	7	0.0014	0.0014	5.012	0.998	6.196	**29.051**	ChancayCoast	
5	365	287	78	0.0156	0.0156	4.769	1.048	1.048			
10	287	233	54	0.0108	0.0108	4.850	1.031	2.079			
15	233	156	77	0.0154	0.0154	4.772	1.048	3.127			
20	156	96	60	0.0120	0.0120	4.830	1.035	4.162			
25	96	51	45	0.0090	0.0090	4.881	1.024	5.187			

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
30	51	37	14	0.0028	0.0028	4.988	1.002	6.189	**29.082**	ChancayCoast2
5	1045	865	180	0.0360	0.0360	4.440	1.126	1.126		
10	865	689	176	0.0352	0.0352	4.453	1.123	2.249		
15	689	538	151	0.0302	0.0302	4.531	1.103	3.352		
20	538	398	140	0.0280	0.0280	4.566	1.095	4.447		
25	398	300	98	0.0196	0.0196	4.703	1.063	5.511		
30	300	226	74	0.0148	0.0148	4.782	1.045	6.556	**27.456**	SisicayaLurin
5	1045	867	178	0.0356	0.0356	4.446	1.124	1.124		
10	867	817	50	0.0100	0.0100	4.863	1.028	2.153		
15	817	1450	633	0.1266	0.1273	3.226	1.550	3.702		
20	1450	1040	410	0.0820	0.0822	3.778	1.324	5.026		
25	1040	709	331	0.0662	0.0663	3.994	1.252	6.278		
30	709	616	93	0.0186	0.0186	4.719	1.059	7.337	**24.532**	SisicayaLurin2
5	1045	865	180	0.0360	0.0360	4.440	1.126	1.126		
10	865	691	174	0.0348	0.0348	4.459	1.121	2.247		
15	691	536	155	0.0310	0.0310	4.519	1.107	3.354		
20	536	395	141	0.0282	0.0282	4.563	1.096	4.450		
25	395	962	567	0.1134	0.1139	3.381	1.479	5.929		
30	962	1140	178	0.0356	0.0356	4.446	1.124	7.053	**25.521**	SisicayaLurin3
5	1045	1155	110	0.0220	0.0220	4.663	1.072	1.072		
10	1155	1307	152	0.0304	0.0304	4.528	1.104	2.176		
15	1307	1500	193	0.0386	0.0386	4.400	1.136	3.313		
20	1500	1806	306	0.0612	0.0613	4.065	1.230	4.543		
25	1806	2241	435	0.0870	0.0872	3.712	1.347	5.890		
30	2241	2622	381	0.0762	0.0763	3.856	1.297	7.187	**25.046**	SisicayaUpper
5	1045	1155	110	0.0220	0.0220	4.663	1.072	1.072		
10	1155	1307	152	0.0304	0.0304	4.528	1.104	2.176		
15	1307	1500	193	0.0386	0.0386	4.400	1.136	3.313		
20	1500	1668	168	0.0336	0.0336	4.478	1.117	4.429		
25	1668	1842	174	0.0348	0.0348	4.459	1.121	5.551		
30	1842	2345	503	0.1006	0.1009	3.538	1.413	6.964	**25.847**	SiscayaUpper2
5	1045	1154	109	0.0218	0.0218	4.667	1.071	1.071		
10	1154	1440	286	0.0572	0.0573	4.122	1.213	2.284		
15	1440	2092	652	0.1304	0.1311	3.183	1.571	3.855		
20	2092	2851	759	0.1518	0.1530	2.949	1.696	5.551		
25	2851	3082	231	0.0462	0.0462	4.284	1.167	6.718		
30	3082	3219	137	0.0274	0.0274	4.576	1.093	7.811	**23.045**	SisicayaUpper3
5	3528	3835	307	0.0614	0.0615	4.062	1.231	1.231		
10	3835	3484	351	0.0702	0.0703	3.938	1.270	2.501		
15	3484	3016	468	0.0936	0.0939	3.626	1.379	3.880		
20	3016	2171	845	0.1690	0.1706	2.772	1.804	5.683		
25	2171	1496	675	0.1350	0.1358	3.131	1.597	7.280		
30	1496	1264	232	0.0464	0.0464	4.281	1.168	8.448	**21.307**	ChacllaChillon

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
5	3528	3833	305	0.0610	0.0611	4.067	1.229	1.229		
10	3833	3532	301	0.0602	0.0603	4.079	1.226	2.455		
15	3532	3343	189	0.0378	0.0378	4.412	1.133	3.588		
20	3343	3318	25	0.0050	0.0050	4.949	1.010	4.599		
25	3318	2989	329	0.0658	0.0659	3.999	1.250	5.849		
30	2989	2608	381	0.0762	0.0763	3.856	1.297	7.146	**25.190**	ChacllaChillon2
5	3528	3560	32	0.0064	0.0064	4.925	1.015	1.015		
10	3560	3150	410	0.0820	0.0822	3.778	1.324	2.339		
15	3150	2586	564	0.1128	0.1133	3.388	1.476	3.814		
20	2586	1967	619	0.1238	0.1244	3.258	1.535	5.349		
25	1967	1550	417	0.0834	0.0836	3.759	1.330	6.679		
30	1550	1235	315	0.0630	0.0631	4.039	1.238	7.917	**22.736**	ChacllaRimac
5	3528	3054	474	0.0948	0.0951	3.611	1.385	1.385		
10	3054	2576	478	0.0956	0.0959	3.601	1.389	2.773		
15	2576	2222	354	0.0708	0.0709	3.930	1.272	4.046		
20	2222	1850	372	0.0744	0.0745	3.880	1.289	5.334		
25	1850	2087	237	0.0474	0.0474	4.266	1.172	6.506		
30	2087	2449	362	0.0724	0.0725	3.908	1.280	7.786	**23.119**	ChacllaEast
5	3528	3054	474	0.0948	0.0951	3.611	1.385	1.385		
10	3054	2576	478	0.0956	0.0959	3.601	1.389	2.773		
15	2576	2369	207	0.0414	0.0414	4.357	1.148	3.921		
20	2369	2828	459	0.0918	0.0921	3.649	1.370	5.291		
25	2828	3091	263	0.0526	0.0526	4.189	1.194	6.485		
30	3091	3192	101	0.0202	0.0202	4.693	1.065	7.550	**23.841**	ChacllaEast2
5	3528	3055	473	0.0946	0.0949	3.613	1.384	1.384		
10	3055	2579	476	0.0952	0.0955	3.606	1.387	2.770		
15	2579	2281	298	0.0596	0.0597	4.087	1.223	3.994		
20	2281	2541	260	0.0520	0.0520	4.198	1.191	5.185		
25	2541	2760	219	0.0438	0.0438	4.320	1.157	6.342		
30	2760	3140	380	0.0760	0.0761	3.858	1.296	7.638	**23.567**	ChacllaEast3
5	2024	1814	210	0.0420	0.0420	4.348	1.150	1.150		
10	1814	1576	238	0.0476	0.0476	4.263	1.173	2.323		
15	1576	1418	158	0.0316	0.0316	4.509	1.109	3.432		
20	1418	1243	175	0.0350	0.0350	4.456	1.122	4.554		
25	1243	1094	149	0.0298	0.0298	4.538	1.102	5.656		
30	1094	945	149	0.0298	0.0298	4.538	1.102	6.758	**26.637**	PicoySisicaya
5	2024	1814	210	0.0420	0.0420	4.348	1.150	1.150		
10	1814	1576	238	0.0476	0.0476	4.263	1.173	2.323		
15	1576	1435	141	0.0282	0.0282	4.563	1.096	3.419		
20	1435	1836	401	0.0802	0.0804	3.802	1.315	4.734		
25	1836	2172	336	0.0672	0.0673	3.980	1.256	5.990		
30	2172	2523	351	0.0702	0.0703	3.938	1.270	7.260	**24.794**	PicoySisicaya2
5	2024	1814	210	0.0420	0.0420	4.348	1.150	1.150		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
10	1814	1576	238	0.0476	0.0476	4.263	1.173	2.323		
15	1576	1435	141	0.0282	0.0282	4.563	1.096	3.419		
20	1435	1836	401	0.0802	0.0804	3.802	1.315	4.734		
25	1836	1517	319	0.0638	0.0639	4.028	1.241	5.975		
30	1517	1906	389	0.0778	0.0780	3.834	1.304	7.279	**24.728**	PicoySisicaya3
5	2024	2247	223	0.0446	0.0446	4.308	1.161	1.161		
10	2247	2419	172	0.0344	0.0344	4.465	1.120	2.280		
15	2419	2625	206	0.0412	0.0412	4.360	1.147	3.427		
20	2625	2830	205	0.0410	0.0410	4.363	1.146	4.573		
25	2830	3040	210	0.0420	0.0420	4.348	1.150	5.723		
30	3040	3306	266	0.0532	0.0533	4.180	1.196	6.919	**26.015**	PicoyYaucha
5	3143	3410	267	0.0534	0.0535	4.177	1.197	1.197		
10	3410	3687	277	0.0554	0.0555	4.148	1.205	2.402		
15	3687	4036	349	0.0698	0.0699	3.943	1.268	3.670		
20	4036	3897	139	0.0278	0.0278	4.570	1.094	4.764		
25	3897	3729	168	0.0336	0.0336	4.478	1.117	5.881		
30	3729	3697	32	0.0064	0.0064	4.925	1.015	6.896	**26.101**	HuarochiriSisicaya
5	3143	2820	323	0.0646	0.0647	4.016	1.245	1.245		
10	2820	2576	244	0.0488	0.0488	4.245	1.178	2.423		
15	2576	2240	336	0.0672	0.0673	3.980	1.256	3.679		
20	2240	1890	350	0.0700	0.0701	3.941	1.269	4.948		
25	1890	1782	108	0.0216	0.0216	4.670	1.071	6.019		
30	1782	1576	206	0.0412	0.0412	4.360	1.147	7.165	**25.121**	HuarochiriSouth
5	3143	2826	317	0.0634	0.0635	4.033	1.240	1.240		
10	2826	2649	177	0.0354	0.0354	4.450	1.124	2.363		
15	2649	3017	368	0.0736	0.0737	3.891	1.285	3.648		
20	3017	3298	281	0.0562	0.0563	4.137	1.209	4.857		
25	3298	3604	306	0.0612	0.0613	4.065	1.230	6.087		
30	3604	4070	466	0.0932	0.0935	3.631	1.377	7.464	**24.115**	HuarochiriNorth
5	3143	2832	311	0.0622	0.0623	4.050	1.234	1.234		
10	2832	2648	184	0.0368	0.0368	4.428	1.129	2.364		
15	2648	3485	837	0.1674	0.1690	2.788	1.793	4.157		
20	3485	3394	91	0.0182	0.0182	4.726	1.058	5.215		
25	3394	3471	77	0.0154	0.0154	4.772	1.048	6.263		
30	3471	4049	578	0.1156	0.1161	3.355	1.490	7.753	**23.216**	HuarochiriEast
5	3143	3142	1	0.0002	0.0002	5.033	0.993	0.993		
10	3142	3716	574	0.1148	0.1153	3.364	1.486	2.480		
15	3716	4059	343	0.0686	0.0687	3.960	1.263	3.742		
20	4059	4317	258	0.0516	0.0516	4.204	1.189	4.932		
25	4317	4620	303	0.0606	0.0607	4.073	1.228	6.159		
30	4620	4607	13	0.0026	0.0026	4.991	1.002	7.161	**25.136**	HuarochiriNorth2
5	2883	2485	398	0.0796	0.0798	3.810	1.312	1.312		
10	2485	2211	274	0.0548	0.0549	4.157	1.203	2.515		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
15	2211	2160	51	0.0102	0.0102	4.860	1.029	3.544		
20	2160	2092	68	0.0136	0.0136	4.803	1.041	4.585		
25	2092	1826	266	0.0532	0.0533	4.180	1.196	5.781		
30	1826	1729	97	0.0194	0.0194	4.706	1.062	6.844	**26.302**	YauyosLunahuana
5	2883	2863	20	0.0040	0.0040	4.967	1.007	1.007		
10	2863	2529	334	0.0668	0.0669	3.985	1.255	2.261		
15	2529	2575	46	0.0092	0.0092	4.877	1.025	3.287		
20	2575	2706	131	0.0262	0.0262	4.595	1.088	4.375		
25	2706	2951	245	0.0490	0.0490	4.242	1.179	5.553		
30	2951	2914	37	0.0074	0.0074	4.908	1.019	6.572	**27.389**	YauyosNorth
5	2883	2857	26	0.0052	0.0052	4.946	1.011	1.011		
10	2857	2533	324	0.0648	0.0649	4.013	1.246	2.257		
15	2533	2560	27	0.0054	0.0054	4.942	1.012	3.268		
20	2560	2801	241	0.0482	0.0482	4.254	1.175	4.444		
25	2801	3179	378	0.0756	0.0757	3.864	1.294	5.738		
30	3179	3382	203	0.0406	0.0406	4.369	1.144	6.882	**26.155**	YauyosNorth2
5	2883	2487	396	0.0792	0.0794	3.815	1.311	1.311		
10	2487	2211	276	0.0552	0.0553	4.151	1.205	2.515		
15	2211	2155	56	0.0112	0.0112	4.843	1.032	3.547		
20	2155	2455	300	0.0600	0.0601	4.082	1.225	4.772		
25	2455	2895	440	0.0880	0.0882	3.699	1.352	6.124		
30	2895	3827	932	0.1864	0.1886	2.603	1.921	8.045	**22.374**	YauyosLunahuana2
5	3623	2647	976	0.1952	0.1977	2.521	1.983	1.983		
10	2647	1735	912	0.1824	0.1845	2.641	1.893	3.876		
15	1735	1332	403	0.0806	0.0808	3.796	1.317	5.193		
20	1332	1171	161	0.0322	0.0322	4.500	1.111	6.305		
25	1171	1023	148	0.0296	0.0296	4.541	1.101	7.406		
30	1023	891	132	0.0264	0.0264	4.592	1.089	8.494	**21.190**	AtavillosSouth
5	3623	2649	974	0.1948	0.1973	2.525	1.980	1.980		
10	2649	1690	959	0.1918	0.1942	2.553	1.959	3.939		
15	1690	1673	17	0.0034	0.0034	4.977	1.005	4.944		
20	1673	2112	439	0.0878	0.0880	3.701	1.351	6.295		
25	2112	2411	299	0.0598	0.0599	4.085	1.224	7.519		
30	2411	2431	20	0.0040	0.0040	4.967	1.007	8.525	**21.113**	AtavillosSouth2
5	3623	2870	753	0.1506	0.1517	2.961	1.688	1.688		
10	2870	3135	265	0.0530	0.0530	4.183	1.195	2.884		
15	3135	3483	348	0.0696	0.0697	3.946	1.267	4.151		
20	3483	2376	1107	0.2214	0.2251	2.291	2.183	6.333		
25	2376	1959	417	0.0834	0.0836	3.759	1.330	7.663		
30	1959	2182	223	0.0446	0.0446	4.308	1.161	8.824	**20.399**	AtavillosWest
5	3623	2656	967	0.1934	0.1958	2.538	1.970	1.970		
10	2656	2867	211	0.0422	0.0422	4.345	1.151	3.121		
15	2867	3093	226	0.0452	0.0452	4.299	1.163	4.284		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
20	3093	3411	318	0.0636	0.0637	4.030	1.241	5.525		
25	3411	3771	360	0.0720	0.0721	3.913	1.278	6.802		
30	3771	3660	111	0.0222	0.0222	4.660	1.073	7.875	**22.856**	AtavillosNorth
5	3623	2647	976	0.1952	0.1977	2.521	1.983	1.983		
10	2647	1691	956	0.1912	0.1936	2.558	1.955	3.938		
15	1691	1530	161	0.0322	0.0322	4.500	1.111	5.049		
20	1530	1806	276	0.0552	0.0553	4.151	1.205	6.253		
25	1806	2096	290	0.0580	0.0581	4.110	1.216	7.470		
30	2096	2442	346	0.0692	0.0693	3.952	1.265	8.735	**20.607**	AtavillosLast
5	3735	3417	318	0.0636	0.0637	4.030	1.241	1.241		
10	3417	3317	100	0.0200	0.0200	4.696	1.065	2.305		
15	3317	3349	32	0.0064	0.0064	4.925	1.015	3.320		
20	3349	3587	238	0.0476	0.0476	4.263	1.173	4.493		
25	3587	3826	239	0.0478	0.0478	4.260	1.174	5.667		
30	3826	4090	264	0.0528	0.0528	4.186	1.194	6.861	**26.234**	CantaSouth
5	3735	3405	330	0.0660	0.0661	3.997	1.251	1.251		
10	3405	3104	301	0.0602	0.0603	4.079	1.226	2.477		
15	3104	2495	609	0.1218	0.1224	3.282	1.524	4.001		
20	2495	2865	370	0.0740	0.0741	3.886	1.287	5.287		
25	2865	3711	846	0.1692	0.1708	2.770	1.805	7.092		
30	3711	3963	252	0.0504	0.0504	4.222	1.184	8.277	**21.747**	CantaSouth2
5	3735	3420	315	0.0630	0.0631	4.039	1.238	1.238		
10	3420	3131	289	0.0578	0.0579	4.113	1.216	2.454		
15	3131	2518	613	0.1226	0.1232	3.272	1.528	3.981		
20	2518	2262	256	0.0512	0.0512	4.210	1.188	5.169		
25	2262	1998	264	0.0528	0.0528	4.186	1.194	6.364		
30	1998	1720	278	0.0556	0.0557	4.145	1.206	7.570	**23.779**	CantaChillon
5	3735	3410	325	0.0650	0.0651	4.011	1.247	1.247		
10	3410	3119	291	0.0582	0.0583	4.108	1.217	2.464		
15	3119	2967	152	0.0304	0.0304	4.528	1.104	3.568		
20	2967	3537	570	0.1140	0.1145	3.374	1.482	5.050		
25	3537	3784	247	0.0494	0.0494	4.236	1.180	6.230		
30	3784	4018	234	0.0468	0.0468	4.275	1.170	7.400	**24.324**	CantaBase
5	3164	2937	227	0.0454	0.0454	4.296	1.164	1.164		
10	2937	2767	170	0.0340	0.0340	4.471	1.118	2.282		
15	2767	2504	263	0.0526	0.0526	4.189	1.194	3.476		
20	2504	2378	126	0.0252	0.0252	4.611	1.084	4.560		
25	2378	2152	226	0.0452	0.0452	4.299	1.163	5.723		
30	2152	1950	202	0.0404	0.0404	4.372	1.144	6.866	**26.215**	YauchaPicoy
5	3164	3477	313	0.0626	0.0627	4.045	1.236	1.236		
10	3477	3736	259	0.0518	0.0518	4.201	1.190	2.426		
15	3736	4003	267	0.0534	0.0535	4.177	1.197	3.623		
20	4003	4239	236	0.0472	0.0472	4.269	1.171	4.795		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
25	4239	4497	258	0.0516	0.0516	4.204	1.189	5.984		
30	4497	4754	257	0.0514	0.0514	4.207	1.189	7.172	**25.096**	YauchaEast
5	3164	3484	320	0.0640	0.0641	4.025	1.242	1.242		
10	3484	3723	239	0.0478	0.0478	4.260	1.174	2.416		
15	3723	3992	269	0.0538	0.0539	4.172	1.199	3.615		
20	3992	4270	278	0.0556	0.0557	4.145	1.206	4.821		
25	4270	4483	213	0.0426	0.0426	4.339	1.152	5.973		
30	4483	4734	251	0.0502	0.0502	4.225	1.184	7.157	**25.151**	YauchaNorth
5	3164	3490	326	0.0652	0.0653	4.008	1.248	1.248		
10	3490	3683	193	0.0386	0.0386	4.400	1.136	2.384		
15	3683	3970	287	0.0574	0.0575	4.119	1.214	3.598		
20	3970	4181	211	0.0422	0.0422	4.345	1.151	4.749		
25	4181	4272	91	0.0182	0.0182	4.726	1.058	5.807		
30	4272	4436	164	0.0328	0.0328	4.490	1.114	6.920	**26.011**	YauchaNorth2
5	2023	2205	182	0.0364	0.0364	4.434	1.128	1.128		
10	2205	2411	206	0.0412	0.0412	4.360	1.147	2.274		
15	2411	2609	198	0.0396	0.0396	4.385	1.140	3.415		
20	2609	2863	254	0.0508	0.0508	4.216	1.186	4.601		
25	2863	3006	143	0.0286	0.0286	4.557	1.097	5.698		
30	3006	3205	199	0.0398	0.0398	4.381	1.141	6.839	**26.319**	PicoyYaucha
5	2023	1859	164	0.0328	0.0328	4.490	1.114	1.114		
10	1859	1628	231	0.0462	0.0462	4.284	1.167	2.281		
15	1628	1398	230	0.0460	0.0460	4.287	1.166	3.447		
20	1398	1239	159	0.0318	0.0318	4.506	1.110	4.556		
25	1239	1089	150	0.0300	0.0300	4.535	1.103	5.659		
30	1089	942	147	0.0294	0.0294	4.544	1.100	6.759	**26.630**	PicoyRimac
5	2023	1862	161	0.0322	0.0322	4.500	1.111	1.111		
10	1862	1655	207	0.0414	0.0414	4.357	1.148	2.259		
15	1655	1401	254	0.0508	0.0508	4.216	1.186	3.445		
20	1401	1239	162	0.0324	0.0324	4.497	1.112	4.557		
25	1239	1572	333	0.0666	0.0667	3.988	1.254	5.810		
30	1572	1942	370	0.0740	0.0741	3.886	1.287	7.097	**25.362**	PicoyRimac2
5	2023	1814	209	0.0418	0.0418	4.351	1.149	1.149		
10	1814	1592	222	0.0444	0.0444	4.311	1.160	2.309		
15	1592	1423	169	0.0338	0.0338	4.475	1.117	3.426		
20	1423	1816	393	0.0786	0.0788	3.823	1.308	4.734		
25	1816	2151	335	0.0670	0.0671	3.982	1.255	5.990		
30	2151	2519	368	0.0736	0.0737	3.891	1.285	7.275	**24.744**	PicoyRimac3
5	3177	2840	337	0.0674	0.0675	3.977	1.257	1.257		
10	2840	2311	529	0.1058	0.1062	3.473	1.440	2.697		
15	2311	2136	175	0.0350	0.0350	4.456	1.122	3.819		
20	2136	1803	333	0.0666	0.0667	3.988	1.254	5.073		
25	1803	1640	163	0.0326	0.0326	4.493	1.113	6.185		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
30	1640	1360	280	0.0560	0.0561	4.139	1.208	7.393	**24.346**	CastaSouth
5	3177	2817	360	0.0720	0.0721	3.913	1.278	1.278		
10	2817	2302	515	0.1030	0.1034	3.508	1.425	2.703		
15	2302	2592	290	0.0580	0.0581	4.110	1.216	3.920		
20	2592	3087	495	0.0990	0.0993	3.558	1.405	5.325		
25	3087	3517	430	0.0860	0.0862	3.725	1.342	6.667		
30	3517	3792	275	0.0550	0.0551	4.154	1.204	7.871	**22.869**	CastaChaclla
5	3117	2864	253	0.0506	0.0506	4.219	1.185	1.185		
10	2864	2321	543	0.1086	0.1090	3.439	1.454	2.639		
15	2321	2337	16	0.0032	0.0032	4.981	1.004	3.643		
20	2337	2617	280	0.0560	0.0561	4.139	1.208	4.851		
25	2617	2892	275	0.0550	0.0551	4.154	1.204	6.055		
30	2892	3186	294	0.0588	0.0589	4.099	1.220	7.274	**24.744**	CastaNorth2
5	3412	3302	110	0.0220	0.0220	4.663	1.072	1.072		
10	3302	3627	325	0.0650	0.0651	4.011	1.247	2.319		
15	3627	3900	273	0.0546	0.0547	4.160	1.202	3.521		
20	3900	4142	242	0.0484	0.0484	4.251	1.176	4.697		
25	4142	4368	226	0.0452	0.0452	4.299	1.163	5.860		
30	4368	4527	159	0.0318	0.0318	4.506	1.110	6.970	**25.827**	CarapomaEast
5	3601	2980	621	0.1242	0.1248	3.254	1.537	1.537		
10	2980	2578	402	0.0804	0.0806	3.799	1.316	2.853		
15	2578	2938	360	0.0720	0.0721	3.913	1.278	4.131		
20	2938	3440	502	0.1004	0.1007	3.540	1.412	5.543		
25	3440	3795	355	0.0710	0.0711	3.927	1.273	6.816		
30	3795	4141	346	0.0692	0.0693	3.952	1.265	8.081	**22.273**	Puchuni NE
5	3641	3351	290	0.0580	0.0581	4.110	1.216	1.216		
10	3351	3440	89	0.0178	0.0178	4.732	1.057	2.273		
15	3440	3360	80	0.0160	0.0160	4.762	1.050	3.323		
20	3360	3244	116	0.0232	0.0232	4.644	1.077	4.400		
25	3244	3123	121	0.0242	0.0242	4.628	1.080	5.480		
30	3123	3346	223	0.0446	0.0446	4.308	1.161	6.641	**27.106**	Huamatanga NE
5	3641	3341	300	0.0600	0.0601	4.082	1.225	1.225		
10	3341	3132	209	0.0418	0.0418	4.351	1.149	2.374		
15	3132	2663	469	0.0938	0.0941	3.624	1.380	3.754		
20	2663	2415	248	0.0496	0.0496	4.233	1.181	4.935		
25	2415	1750	665	0.1330	0.1338	3.153	1.586	6.521		
30	1750	1271	479	0.0958	0.0961	3.598	1.390	7.910	**22.755**	HuamatangaSW
5	3487	2466	1021	0.2042	0.2071	2.440	2.049	2.049		
10	2466	2293	173	0.0346	0.0346	4.462	1.121	3.170		
15	2293	1819	474	0.0948	0.0951	3.611	1.385	4.555		
20	1819	1444	375	0.0750	0.0751	3.872	1.291	5.846		
25	1444	1579	135	0.0270	0.0270	4.582	1.091	6.937		
30	1579	1817	238	0.0476	0.0476	4.263	1.173	8.110	**22.195**	RupacNE

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
5	3487	2460	1027	0.2054	0.2083	2.429	2.058	2.058		
10	2460	2295	165	0.0330	0.0330	4.487	1.114	3.173		
15	2295	1822	473	0.0946	0.0949	3.613	1.384	4.556		
20	1822	1443	379	0.0758	0.0759	3.861	1.295	5.851		
25	1443	1246	197	0.0394	0.0394	4.388	1.140	6.991		
30	1246	1115	131	0.0262	0.0262	4.595	1.088	8.079	**22.280**	RupacSW
5	3487	2426	1061	0.2122	0.2154	2.370	2.110	2.110		
10	2426	2016	410	0.0820	0.0822	3.778	1.324	3.434		
15	2016	1537	479	0.0958	0.0961	3.598	1.390	4.823		
20	1537	1185	352	0.0704	0.0705	3.935	1.271	6.094		
25	1185	1055	130	0.0260	0.0260	4.599	1.087	7.181		
30	1055	920	135	0.0270	0.0270	4.582	1.091	8.272	**21.759**	RupacW
5	3487	2419	1068	0.2136	0.2169	2.357	2.121	2.121		
10	2419	2128	291	0.0582	0.0583	4.108	1.217	3.338		
15	2128	2251	123	0.0246	0.0246	4.621	1.082	4.420		
20	2251	2411	160	0.0320	0.0320	4.503	1.110	5.531		
25	2411	2757	346	0.0692	0.0693	3.952	1.265	6.796		
30	2757	2979	222	0.0444	0.0444	4.311	1.160	7.956	**22.626**	RupacS
5	3487	2421	1066	0.2132	0.2165	2.361	2.118	2.118		
10	2421	2127	294	0.0588	0.0589	4.099	1.220	3.338		
15	2127	2275	148	0.0296	0.0296	4.541	1.101	4.439		
20	2275	2710	435	0.0870	0.0872	3.712	1.347	5.786		
25	2710	3302	592	0.1184	0.1190	3.321	1.505	7.291		
30	3302	3741	439	0.0878	0.0880	3.701	1.351	8.642	**20.828**	RupacSE
5	3912	3877	35	0.0070	0.0070	4.915	1.017	1.017		
10	3877	3352	525	0.1050	0.1054	3.483	1.436	2.453		
15	3352	2608	744	0.1488	0.1499	2.980	1.678	4.130		
20	2608	2485	123	0.0246	0.0246	4.621	1.082	5.212		
25	2485	2324	161	0.0322	0.0322	4.500	1.111	6.324		
30	2324	2269	55	0.0110	0.0110	4.847	1.032	7.355	**24.472**	HuamanmarcaS
5	3912	3742	170	0.0340	0.0340	4.471	1.118	1.118		
10	3742	3938	196	0.0392	0.0392	4.391	1.139	2.257		
15	3938	3315	623	0.1246	0.1252	3.249	1.539	3.796		
20	3315	3043	272	0.0544	0.0545	4.163	1.201	4.997		
25	3043	3223	180	0.0360	0.0360	4.440	1.126	6.123		
30	3223	3387	164	0.0328	0.0328	4.490	1.114	7.237	**24.874**	HuamanmarcaNLeft
5	3559	2529	1030	0.2060	0.2090	2.424	2.063	2.063		
10	2529	2235	294	0.0588	0.0589	4.099	1.220	3.283		
15	2235	2151	84	0.0168	0.0168	4.749	1.053	4.335		
20	2151	2001	150	0.0300	0.0300	4.535	1.103	5.438		
25	2001	1865	136	0.0272	0.0272	4.579	1.092	6.530		
30	1865	1737	128	0.0256	0.0256	4.605	1.086	7.616	**23.635**	NawpahuasiS
5	3075	2654	421	0.0842	0.0844	3.749	1.334	1.334		

Kilometer	Start	End	Difference	Slope	Degrees	Value (W)	Pace (5/W)	Net Pace	Distance	Path
10	2654	2919	265	0.0530	0.0530	4.183	1.195	2.529		
15	2919	3282	363	0.0726	0.0727	3.905	1.280	3.810		
20	3282	3522	240	0.0480	0.0480	4.257	1.174	4.984		
25	3522	3782	260	0.0520	0.0520	4.198	1.191	6.175		
30	3782	3894	112	0.0224	0.0224	4.657	1.074	7.249	**24.832**	ShincamarcaS

APPENDIX B: Site List

Name	x (latitude °)	y (longitude °)	elevation (masl)
Achucaya	-76.69752466	-12.02763462	774
Alinga	-77.05134518	-12.01389880	100
Alto Socsi	-76.18816786	-13.02883789	354
Añay	-76.79006495	-11.34818075	3164
Ancon	-77.16732768	-11.76934549	18
Ansha	-76.18265190	-12.17322787	3338
Anshahuay	-76.12896768	-12.29803711	3720
Antahualla	-76.08274292	-12.88560664	661
Antapucro	-76.62290872	-12.03386387	1070
Arcas	-76.19653783	-13.03598691	352
Armatambo	-77.02287707	-12.17673875	49
Avillay	-76.66909317	-12.02325897	888
Ayacoto B	-75.74536682	-12.22872039	3818
Balconcillo	-77.02079061	-12.08028995	143
Balconcillo de la Palma	-76.65849994	-12.02398198	901
Bandurria	-76.77174480	-12.51047525	35
Bellavista	-76.94596369	-12.05273186	292
Bodega I	-76.13516155	-13.18081127	608
Bodega II	-76.13756553	-13.18190361	591
Bodega III	-76.14561789	-13.18334143	543
Buena Vista	-76.96795710	-11.73104935	547
Buena Vista	-76.86671945	-12.25406373	46
Caballo Blanco	-76.71667592	-11.64894194	1839
Cajamarquilla	-76.90566386	-11.98564437	402
Calango	-76.54893111	-12.52283357	404
Calera de la Merced	-76.99521609	-12.08058309	184
Calle Luis Grieve	-76.79755212	-12.10678006	300
Caltopa	-76.22873391	-13.05202827	298
Caltopa II	-76.22218224	-13.05489812	281
Camacho Sur	-76.96456214	-12.09090635	210
Campana	-76.16042991	-12.15421729	3864
Canchaqe de Santa Ana	-76.40463270	-12.07976377	3232
Canchaque	-76.39660524	-12.09597829	3185
Cancharí	-76.39578179	-13.06585338	63
Cantamarca	-76.58879286	-11.43825628	3736
Canto Chico	-77.01698755	-12.00265222	219
Capto I	-76.58800354	-12.42692731	406
Capto II	-76.59034374	-12.42304449	424
Capto IX	-76.56349213	-12.40700104	546
Capto VI	-76.56726658	-12.41068566	500
Capto VII	-76.56814072	-12.41228973	504
Capto XI	-76.56747039	-12.40478135	530
Capto XII	-76.56933208	-12.40696731	521
Capto XIII	-76.57234022	-12.41015005	503
Capto XIV	-76.57447404	-12.41169255	499

Name	x (latitude °)	y (longitude °)	elevation (masl)
Carampoma	-76.51604115	-11.65768110	3415
Carapongo A	-76.87405225	-11.99346842	475
Caraponguillo	-76.80001482	-11.98425506	674
Carcata	-76.28736229	-11.78511383	3688
Casablanca	-76.15088133	-13.19804554	479
Casa Grande	-75.99858738	-13.44925399	301
Casa Vieja	-76.52047144	-12.52753416	375
Casablanca	-76.14448386	-12.96546660	472
Casalla	-76.16612599	-13.00037745	397
Cascca Shocco	-76.62243601	-11.84180992	1538
Cashahuacra	-76.67381002	-11.91081108	1225
Casta	-76.59484703	-11.75902195	3176
Cata	-76.33828321	-12.60212194	951
Catahuasi	-75.88455724	-12.79546246	1320
Catapalla I	-76.10658843	-12.91589462	628
Catapalla II	-76.10993204	-12.91749882	593
Caudivilla	-77.03181915	-11.88628667	197
Cerro Azul	-76.48958039	-13.03024590	16
Cerro Caxo	-76.42378497	-11.87268555	2199
Cerro Chilco I	-76.07244351	-12.87570353	681
Cerro Chilco II	-76.06812835	-12.87081168	771
Cerro Chirimoyo	-76.74257630	-12.05443047	523
Cerro Colorado	-76.51265209	-12.52471254	446
Cerro Culebra	-76.75200446	-11.98056813	996
Cerro Cuncacucho	-76.84336960	-11.99646520	618
Cerro de Oro	-76.43605137	-13.03861188	102
Cerro del Padre I	-76.15909445	-12.96925346	469
Cerro del Padre II	-76.16333342	-12.97484904	471
Cerro Huaquería	-76.65346366	-11.88579100	1228
Cerro la Parra	-76.88744385	-11.99947970	529
Cerro los Cuellanos	-76.50586216	-12.52484106	448
Cerro Mal Paso	-76.09145300	-12.90788100	619
Cerro Manzanilla I	-76.11761146	-12.93652495	552
Cerro Manzanilla II	-76.11962817	-12.93815276	556
Cerro Mayorazgo	-76.94354346	-12.05075123	289
Cerro Millay Grande	-76.54801084	-12.52589440	334
Cerro Parco	-76.85024279	-12.19486194	156
Cerro Pascua	-76.15478255	-12.97578220	499
Cerro Picamaran	-76.02223438	-12.85233300	1015
Cerro Respiro	-77.09710951	-11.94804397	75
Cerro Riverón	-76.09531051	-12.90614140	607
Cerro Salazar	-76.65307403	-12.69019562	25
Cerro San Pablo	-76.66078045	-11.91774948	1204
Cerro Suero	-76.12692974	-12.93635829	553
Cerro Totoral	-76.47851352	-12.52131345	453
Cerro Tres Tetas	-76.57932741	-12.52362403	310
Cerro Yanaxaa	-76.51853029	-12.51973444	490
Cerro Zapán	-76.90389145	-11.68596302	809

Name	x (latitude °)	y (longitude °)	elevation (masl)
Cervasi	-76.79994212	-12.10840971	296
Chaclacayo	-76.77277524	-11.98035196	675
Chaclla	-76.65248776	-11.74758361	3527
Chamaiyanca	-76.62557339	-12.02950011	1067
Chamana	-76.60996835	-12.03383937	1113
Chaupimarca	-76.58525322	-11.90453390	1331
Checas Alto	-76.38676105	-12.38740364	1120
Checas Bajo	-76.38864393	-12.39040457	996
Checta	-76.81225960	-11.69374930	1145
Chicahuasi	-75.77249454	-12.48203173	3630
Chichacara	-76.46749126	-12.37910531	1324
Chichima	-76.75781116	-11.97211181	677
Chillaco	-76.58256695	-12.04704108	1239
Chingana	-76.42714603	-11.92224872	3421
Chiprac	-76.77141419	-11.30059939	3626
Chocas	-76.97373707	-11.76861004	461
Chontay	-76.71487330	-12.03941575	681
Chuicoto	-76.24301490	-12.16173342	3464
Chunchumalca	-76.21512011	-12.10816040	3688
Chuspa	-76.12526326	-13.18123462	643
Chuya	-76.67454510	-11.79349565	3434
Coayllo	-76.45742546	-12.73131742	293
Cocachacra	-76.54191353	-11.91398643	1443
Cocayalta	-76.91571388	-11.68344382	737
Cochahuasi	-76.46032608	-12.51382796	535
Collique	-77.03591191	-11.91092241	235
Con Con A	-77.03271738	-11.88613559	196
Conchasica	-76.38505889	-12.03906930	3668
Concón Eriazo I	-76.24675211	-13.09412613	234
Condoray	-76.13326419	-12.94903368	544
Contagallo	-76.11737135	-12.92606530	582
Corralón	-76.46716417	-12.73855004	256
Corralones I	-76.11612435	-13.17007271	722
Corralones II	-76.11394235	-13.16701728	715
Coyahuasi	-76.41819126	-12.42553731	809
Cruz Blanca	-76.03217444	-12.85392157	865
Cuchicuchi	-76.21181423	-12.10652027	3735
Cuesta Alta	-76.57129520	-12.52217046	290
Culebrilla	-75.95911163	-13.41081032	448
Cupiche	-76.58823778	-11.83339731	3201
Cutolume	-76.26079307	-12.47478497	1907
Cuyo	-77.07028231	-11.41871683	483
Daris	-76.05326555	-12.86457900	706
Desembocadura	-76.20827320	-13.66649139	7
Don Alfonso I	-76.21431112	-13.02930437	459
Don Alfonso II	-76.21033143	-13.02436859	720
El Arca	-76.18524940	-13.02785675	371
El Salitre (Sulcavilca)	-76.65698924	-12.68201759	17

Name	x (latitude °)	y (longitude °)	elevation (masl)
El Salón	-76.80651688	-11.98739483	601
El Sance	-76.97196088	-12.00612766	415
Envidia	-76.30765910	-12.54765765	1308
Escalón	-76.21704840	-13.04978713	317
Estanza	-76.18244972	-12.10866318	3560
Final Calle 15	-76.77141850	-12.09698674	388
Fundo Cancharina	-76.39237661	-13.06871039	48
Fundo Don Pepe	-76.40963570	-13.09725613	10
Gloria Grande	-76.86066135	-12.01291023	502
Hacienda Hualcará	-76.34487865	-13.08122074	81
Hacienda La Huaca	-76.40823693	-13.04902527	49
Hacienda Lúcumo	-76.18972455	-13.02270100	357
Hacienda Moltaván	-76.39250359	-13.08148358	32
Hacienda Santa Rosa	-76.39535673	-13.09685465	17
Hacienda Unánue	-76.37075047	-13.09185170	39
Hatun Pata	-76.26384444	-11.71724510	3920
Hatunmarka	-75.56617337	-11.75564797	3762
Hervay	-76.39880666	-13.13123393	2
Higuerón	-76.10261754	-12.91415741	611
Hornillos	-76.88543807	-11.68985418	875
Huaca Chivato	-76.34454249	-13.06342191	91
Huaca Corpus	-77.07377531	-12.06183308	84
Huaca Fortaleza de Campoy	-76.97594218	-12.01824721	277
Huaca Huallamarca	-77.04046615	-12.09659554	103
Huaca La Centinela	-76.17194307	-13.45033263	29
Huaca La Palma	-77.09030075	-12.06849692	56
Huaca la Puruchuca	-76.93312600	-12.06303485	286
Huaca Las Cachas	-76.20179192	-13.67550911	15
Huaca Malache	-76.85896495	-12.26225135	27
Huaca Malena	-76.56779142	-12.77586792	36
Huaca Mateo Salado	-77.06300117	-12.06627845	99
Huaca Pachas	-76.39410584	-13.07120521	36
Huaca Palomino	-77.07032689	-12.05880392	90
Huaca Pro	-77.08259486	-11.94045163	116
Huaca San Borja	-77.00565510	-12.10728829	137
Huaca San Pedro	-76.88614945	-12.28140858	4
Huaca Santa Catalina	-77.01803987	-12.08699818	142
Huaca Tres Palos	-77.08429131	-12.07275362	69
Huacasana	-76.38112626	-12.10155256	3497
Huacashurco B	-75.88873188	-12.44091209	3777
Huachinga	-76.62090279	-11.91156331	1327
Huachinga	-75.84710798	-13.37412275	703
Huachipa	-76.93658029	-12.00294924	360
Huajil	-76.03384152	-12.86273045	747
Huallaringa	-76.64134522	-11.92057542	1268
Huamanmarca	-75.85834664	-12.37465857	3887
Huamantanga	-76.72990898	-11.50273368	3637
Huambo	-76.67740710	-11.76463230	4218

Name	x (latitude °)	y (longitude °)	elevation (masl)
Huampani	-76.77705736	-11.96825724	707
Huanaco III	-76.06262200	-12.88061685	804
Huancani	-76.44431894	-12.47626996	664
Huancayo Alto	-76.84504379	-11.69898438	1034
Huanchipuquio	-76.94985725	-11.72129538	594
Huancor I	-75.91824004	-13.40521205	494
Huancor II	-75.89871444	-13.39244348	543
Huaquerones	-76.92909662	-12.04792307	334
Huarabí	-76.90393696	-11.66979199	817
Huaracsito	-76.66108048	-11.88552933	1664
Huarco	-76.48765518	-13.03053720	22
Huaya Grande	-75.80379469	-13.68470549	606
Huayancaya	-76.32020527	-11.76765834	3658
Huaycán de Cieneguilla	-76.76695649	-12.08332051	424
Huaycán de Pariachi	-76.83100776	-12.01365742	552
Huaycoloro	-76.80267688	-11.80019713	1501
Huayinta	-76.37912898	-12.36960147	1177
Huayllampi	-75.90127637	-12.81145220	1088
Huaytará	-75.35422794	-13.60501958	2719
Infiernillo	-76.64232639	-11.85457743	1399
Inkahuasi	-76.17576992	-13.02384957	385
Jacaya I	-76.07744724	-12.89287965	715
Jacayita I	-76.10448189	-12.92312750	600
Jicamarca	-76.68162698	-11.72371069	3755
Jita	-76.15063849	-12.97475179	521
Juan Croso	-76.14551654	-12.95139410	493
Kariachi	-75.94042245	-12.62955987	3560
Kullpi	-76.60349064	-11.66372490	4073
La Calera	-77.00353625	-12.10396849	141
La Capilla	-76.82878238	-12.14305774	228
La Cumbre	-76.17547541	-13.44734177	44
La Española	-76.93909931	-12.00726129	322
La Luz	-77.07221537	-12.06676132	85
La Magdalena	-77.07212691	-12.08510892	72
La Milla	-77.02754504	-12.01115313	311
La Molina	-77.03913463	-11.83707517	258
La Muralla	-76.29840321	-12.53159167	1428
La Pinta III	-76.02834674	-13.47887930	210
La Pradera	-76.96432644	-12.09258917	264
La Quinga Chica	-75.72511700	-13.64358304	768
La Toma	-76.21812980	-13.04087682	313
La Vuelta	-76.52210632	-12.52231779	398
La Yesera	-76.36768574	-12.67353867	662
Laderas de Socsi	-76.19367061	-13.03417387	348
Langla I	-76.15377703	-12.98763046	475
Langla II	-76.15449744	-12.99190369	486
Larpa	-76.00524432	-12.83663918	905
Las Huacas I	-76.10245596	-13.48706334	100

Name	x (latitude °)	y (longitude °)	elevation (masl)
Lauri	-77.26827828	-11.51182588	120
Lima la Vieja	-75.91782425	-13.72041964	436
Limatambo	-77.02672986	-12.08482906	130
Limón Grande	-76.40118268	-12.40302421	972
Linday Bajo	-76.46069015	-11.87184633	2532
Llacastambo	-76.38919964	-11.99397062	3507
Llamayo	-76.17827253	-12.15336427	3797
Llumpo A	-76.21311668	-12.17707394	2875
Los Perales	-76.97265289	-12.04563885	257
Lúcumo I	-76.17998065	-13.01539522	397
Lúcumo II	-76.17861859	-13.01593482	382
Lúcumo III	-76.18165284	-13.01609280	392
Lumbra	-77.05685437	-11.38855996	580
Lunahuaná	-76.14021094	-12.96241137	479
Macas	-76.92891780	-11.67619576	727
Machuranga	-76.00740501	-12.84009382	899
Mama	-76.66218669	-11.92707944	1002
Mangomarca	-76.98101968	-12.01447840	243
Maranga	-77.08346714	-12.06948810	66
Marcahuasi	-76.57414700	-11.78777686	3943
Marcahuay	-76.36435009	-11.76925872	3491
Matucana	-76.40147567	-11.83241094	3627
Melgarejo	-76.93522413	-12.06875075	266
Minay	-76.42798717	-12.44570048	758
Molle	-76.77371606	-12.07987251	412
Monte Sierpe	-75.87457316	-13.71460443	493
Muralla Tungasuca	-77.04162392	-11.89539871	179
Ñaña	-76.84336862	-11.99361789	543
Ñaupawasi (Pueblo Viejo)	-76.02037595	-12.57395810	3724
Nauto	-75.86878516	-12.75253864	3486
Ñawpawasi	-75.92486770	-12.47117215	3567
Nieve Nive	-76.67335105	-12.02571041	857
Nigancho	-76.08411144	-12.88666786	660
Ollería	-76.64603400	-12.62453000	112
Omas Colcas	-76.26603081	-12.47343141	2080
Oquendo	-77.12116954	-11.96487232	18
Pacarán	-76.05343787	-12.86612439	701
Pachacamac	-76.90349049	-12.26310283	56
Palacio Oquendo	-77.11764695	-11.96869477	47
Palle Nuevo	-76.63332774	-11.85847153	1376
Palma Derecha	-76.54825061	-12.04980119	1343
Palo	-76.29867387	-13.12856756	175
Pampa de la Pelota	-76.02739552	-13.48111634	213
Pampa de las Flores	-76.83956587	-12.17081772	221
Pampa Grande	-76.87474996	-12.23947460	760
Pampa Grande	-76.05761473	-12.86008599	46
Pampa la Capilla	-76.15868105	-13.19861611	458
Panquilma	-76.77394009	-12.10049599	390

Name	x (latitude °)	y (longitude °)	elevation (masl)
Patapampa	-76.13619957	-12.95195927	560
Paullo	-76.16522765	-13.01531724	426
Pedreros	-76.93847209	-12.00300844	356
Peña de la Cruz I	-76.13677340	-12.95653158	581
Peña de la Cruz II	-76.13775446	-12.95739525	531
Picuya	-76.52427342	-12.06684793	1472
Piedra Angosta	-76.59538080	-12.56206606	249
Piedra Señalada	-76.66781206	-12.64883834	18
Pingollo	-76.83270880	-12.13419157	284
Pisha	-76.27748673	-11.71316108	4011
Pisquillo Chico	-77.10058643	-11.48054785	365
Pocoto	-76.24487919	-12.89734136	785
Poronhuasi	-76.62615646	-11.84706803	1461
Pucawasi	-75.84494481	-12.91516284	3439
Puchuni	-76.66067712	-11.24642965	3605
Pueblo Viejo de Bellavista	-76.62988796	-11.80767685	1734
Pueblo Viejo de Cumias	-76.24062049	-12.56428600	1835
Pueblo Viejo de Huaquis	-75.82495070	-12.27843414	3725
Pueblo Viejo de Magdalena	-76.86162931	-11.68572513	924
Pueblo Viejo de Omas	-76.26250389	-12.47848381	1882
Pueblo Viejo de Pilas	-76.24499520	-12.45541987	2497
Pueblo Viejo-Pucará	-76.80009702	-12.20247053	462
Puerto Chancay	-77.27174431	-11.58720432	24
Puerto Pellejo	-76.20931496	-13.68584188	10
Puruchuco	-76.98203945	-12.01456155	310
Purunmarca	-76.61561493	-11.14489934	3958
Quebrada Conchas	-76.48432359	-12.51556799	466
Quebrada Concón	-76.24204811	-13.09224123	235
Quebrada Golondrina	-76.82967450	-12.15799340	245
Quebrada Huanaco I	-76.06987729	-12.88555103	729
Quebrada Picamaran	-76.01831185	-12.85535908	853
Quebrada Seca	-75.65404394	-13.61866242	1012
Quebrada Socsi	-76.18880608	-13.03118561	355
Quebrada Toledo	-76.80463925	-12.10205176	323
Quiso	-76.75352302	-11.66349967	1548
Quivi Vieja	-76.79597091	-11.67567593	1176
Rio III	-75.82742060	-13.71656183	553
Rio Seco	-76.75560813	-12.07094179	479
Romaní	-76.05653621	-12.87320943	736
Rumar	-76.34390093	-11.78336978	3604
Rupac	-76.80479656	-11.32359357	3415
San Aurelio	-76.12478078	-13.51179033	68
San Francisco	-76.75425448	-12.06370399	523
San Isidro	-76.72949381	-12.04372777	593
San Jerónimo	-76.16261982	-13.00773448	438
San Jerónimo II	-76.15421328	-13.00024080	430
San José de Palle	-76.64907096	-11.86050464	1375
San Juan de Corre Viento	-76.57866471	-12.53114912	263

Name	x (latitude °)	y (longitude °)	elevation (masl)
San Juan de Pariachi	-76.86716816	-12.01509043	479
San Juanito	-75.94585662	-13.39860032	594
San Marcos	-76.04607954	-12.86279947	721
San Marcos colcas	-76.04593258	-12.86514179	752
San Martín	-76.68855879	-12.02570928	810
San Vicente	-76.72749466	-12.04705768	606
Santa Ana	-76.63230779	-11.92446997	1079
Santa Rosa	-76.70172382	-12.03384646	764
Sequilao	-76.44454104	-12.71813495	358
Shunkumarca	-76.66365283	-11.79641620	3511
Sierra Morena	-76.70701938	-12.03912945	700
Sinchimarca	-75.84552185	-12.40242223	3078
Sisicaya	-76.63075981	-12.02605275	1045
Socos	-76.92098641	-11.67668363	786
Socsi I	-76.20607007	-13.03169349	317
Sulshagalla	-76.18809898	-12.11249978	3606
Suni	-76.24780914	-12.14141406	3666
Surco	-76.43991750	-11.88404049	2025
Susana	-77.00681763	-12.11045230	125
Tacaraca	-75.71335558	-14.13025540	392
Tambo Amarillo	-76.19137945	-13.02362461	346
Tambo Colorado	-75.83010702	-13.70468151	515
Tambo de Asia (Paredones)	-76.54788718	-12.79538497	41
Tambo de Mora	-76.17661447	-13.45740777	22
Tambo de Olivo	-76.15775937	-13.21595875	391
Tambo Inca	-77.07111162	-11.88950791	159
Tambo Inga	-76.83528183	-12.15844434	202
Tambo Loma	-76.26159008	-11.71579936	4035
Tanquiere	-76.51949733	-12.07180106	1486
Tarmatampu	-75.68509174	-11.47621982	3634
Taurinazanga	-76.48236625	-11.88112677	1869
Tauripunko	-76.70078457	-11.51575107	3039
Tigre I	-76.13238108	-13.17609512	614
Tijerales A	-76.80102930	-12.11437758	302
Tijerales B	-76.80185770	-12.11736417	303
Torna de Surco	-76.45162151	-11.87364696	2970
Trapiche	-76.96305817	-11.71533768	607
Tuna	-76.65753315	-12.02057064	947
Tunanmarka	-75.59708473	-11.72213454	3882
Tunshuhuilca	-76.64203537	-11.61312636	3674
Tutumo	-76.60632675	-12.58200572	202
Uchupampa	-76.12827233	-12.94589996	558
Ungará	-76.31195471	-13.11254373	185
Uquira	-76.43044114	-12.71787693	390
Vichuya	-76.68640641	-12.02957322	830
Vilcahuasi (Los Huacones)	-76.43599948	-13.06794734	15
Vilcatauri	-76.53518930	-12.06424761	1418
Vuelta de Ananá	-75.92550858	-13.72602348	407

Name	x (latitude °)	y (longitude °)	elevation (masl)
Wamaní	-75.83288869	-12.93198332	3420
Waqlamarka	-75.57155023	-11.78616682	3647
Wawllapa	-75.88725355	-13.38742981	567
Wichimishi	-75.88440314	-12.64188578	3857
Wiñacancha	-75.77751265	-12.92536361	3480
Wiraqocha Perqa	-75.37999399	-13.54829649	3817
Xapani	-76.45396864	-11.65474688	3894
Yanacoto	-76.73416568	-11.93809639	1165
Yanacoto	-76.70673354	-12.02730730	826
Yanamarca	-76.27416903	-12.62039054	1774
Yapana Huancapuquio	-76.00830791	-12.85623857	857
Yaucha	-76.30043430	-11.75868070	3164
Yschma	-76.90349049	-12.26310283	56
Zapán	-76.93333360	-11.70408841	679

APPENDIX C: Examples of Surface Ceramics from Lunahuaná

Archaeological sites in the Lunahuaná area present abundant late period surface ceramics. A portion of these were photographed, recorded, and drawn, but not collected in the interest of site preservation. The most frequently encountered diagnostic sherds are distinctive cambered rims, previously identified in Late Intermediate Period and Late Horizon contexts at Cerro Azul by Marcus (2008:28-29), but also described (in a related Chincha form) by Menzel (1966), as *complex* rims. This rim type is almost always utilized in domestic vessels, utilitarian wares of the style which Marcus called Camacho Reddish Brown. True to their name, the examples range from red to brown, with a handful of very dark, almost black examples (Camacho Black). These rim sherds generally are remnants of *ollas* (cooking pots), though the flared mouths of thin-necked jars are also represented.

Decorated ceramics comprise the second, broad diagnostic group. Inca sherds are generally polychromatic (black, red, or white on orange or cream) many with a surface treatment indicative of closed, storage vessels (jars) though some exhibit a polished orange (or cream) slip with simple bands of black or deep garnet paint. The shape of many of this latter group of painted sherds show that the designs would have decorated the inside of serving plates or bowls. Similar in appearance, if not quality, are another large group which feature this more limited color palette. The decorative black bands are present, but the surface treatments and paste quality are inferior. It is likely that these sherds are the remains of closed storage vessels.

Though surface sampling was not systematic, unsurprisingly, the catalogued, diagnostic ceramics were commonly found at looted cemeteries, though the sheer number of Inca administrative sites allowed for a similar number of finds at these sites. The small sample from

isolated *colca* sites is equally a function of their small area and their utilization as places of storage rather than production and consumption. Domestic sites were often poorly preserved and diffuse artifactually. The exclusion of non-diagnostics from consideration biases the collection toward public spaces (cemeteries, plazas) where decorated finewares were used.

The type of ceramic found at each site category is a more useful indicator. For example, Inca ceramics are the most abundant type found at cemeteries. Cemeteries are also the type of site where Inca ceramics are most likely found. One cemetery, Juan Croso, presents a particularly rich sample of surface finewares, many of which are Inca. The location of the site, just across the river from the modern town of Lunahuaná, is perhaps significant. The large sample of utilitarian wares (cambered rim sherds) found at cemeteries suggests interesting diversity within and between mortuary assemblages.

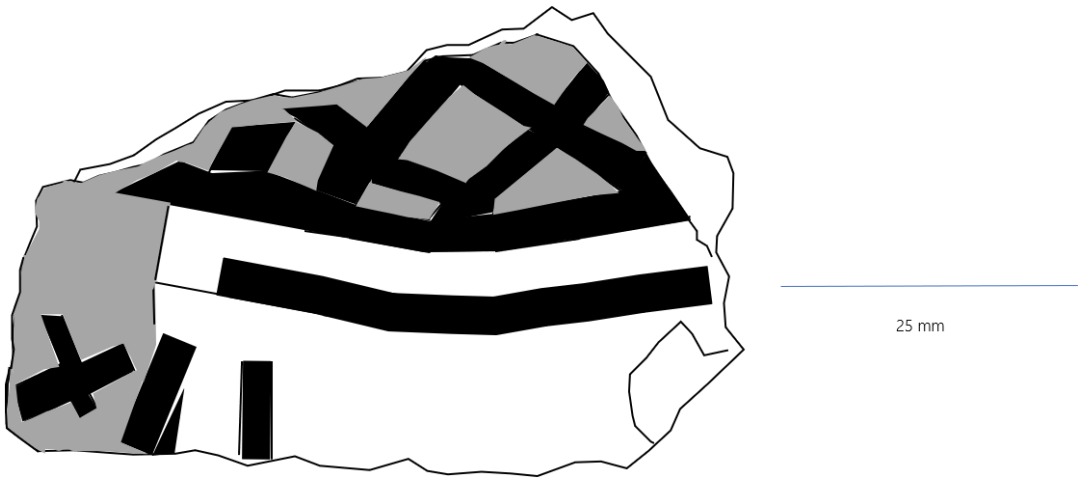

Figure C-1 Inca polychrome sherd; jar.

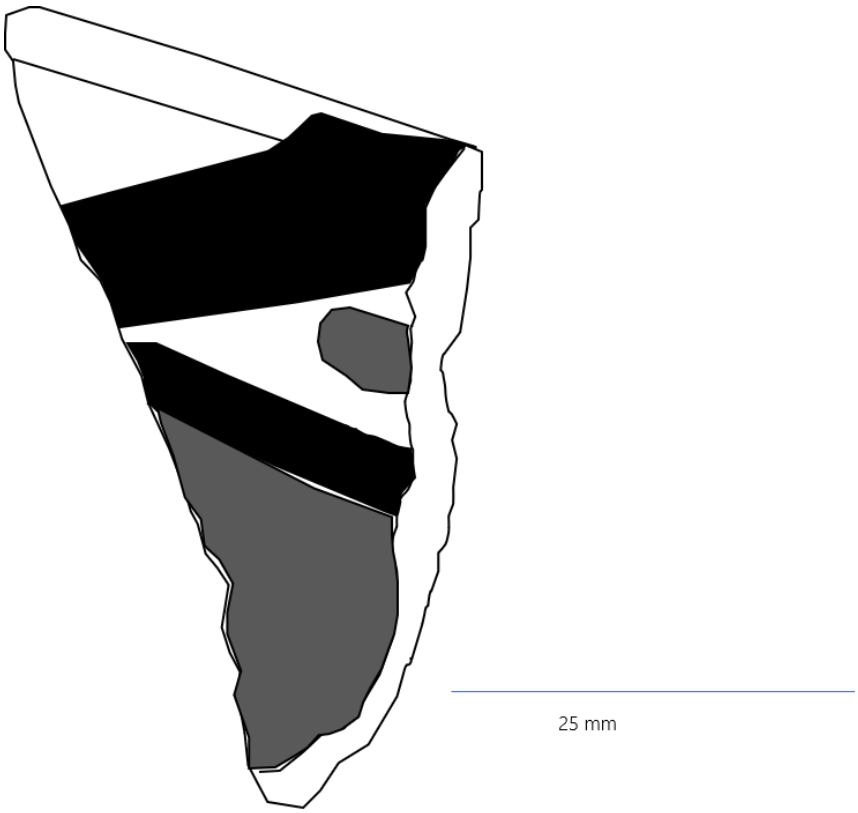

Figure C-2 Finely polished polychrome sherd; Inca plate.

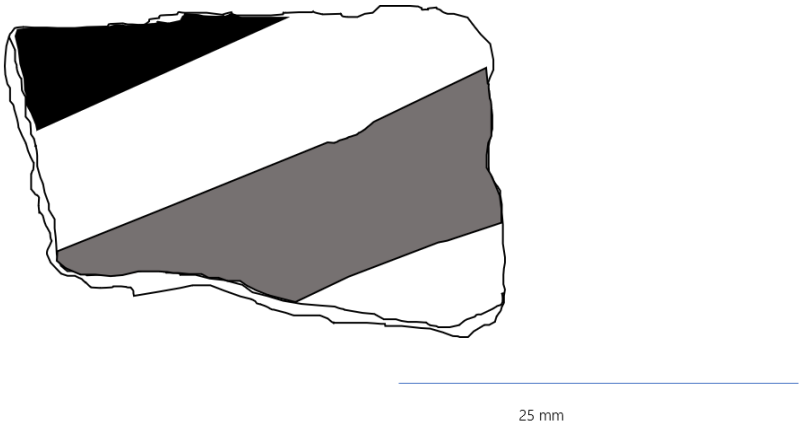

Figure C-3 Decorated body sherd; black and red bands on cream.

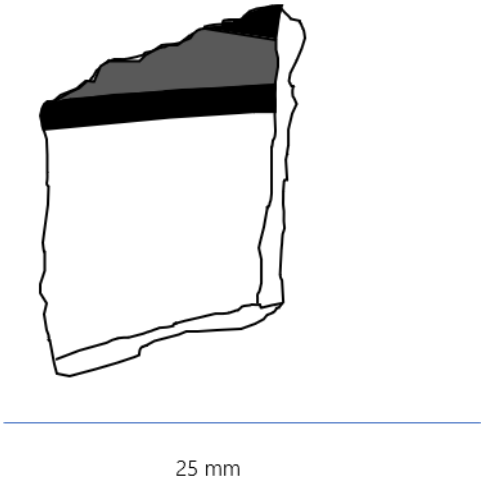

Figure C-4 Finely polished polychrome sherd; red and black on cream. Inca plate.

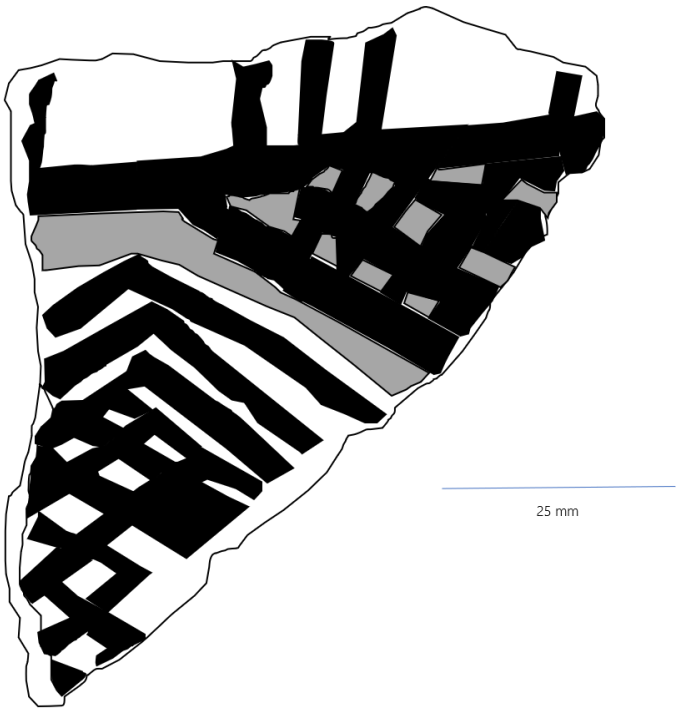

Figure C-5 Polychrome sherd. Inca jar.

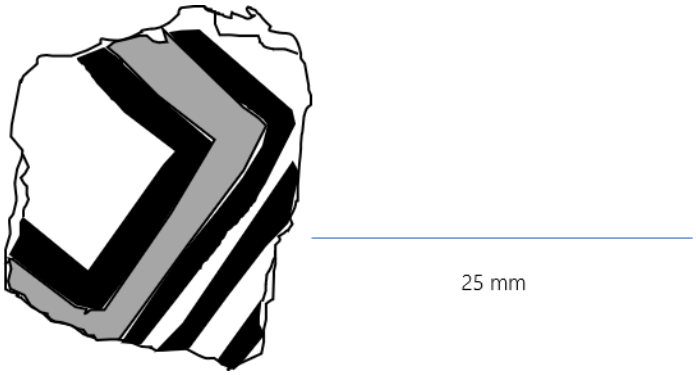

Figure C-6 Inca polychrome sherd; jar.

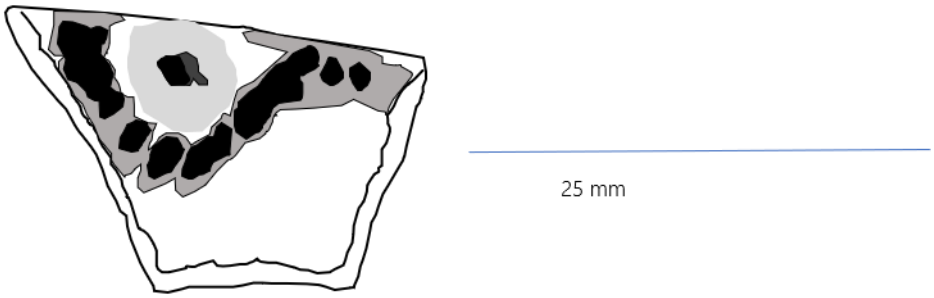

Figure C-7 Decorated sherd; black and red on orange. Possibly Yschma style.

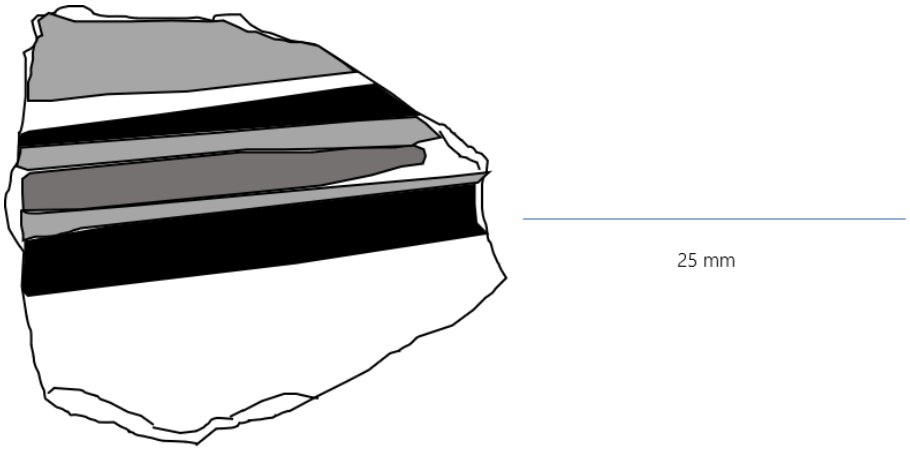

Figure C-8 Polychrome sherd, local style, black, red, orange, on buff

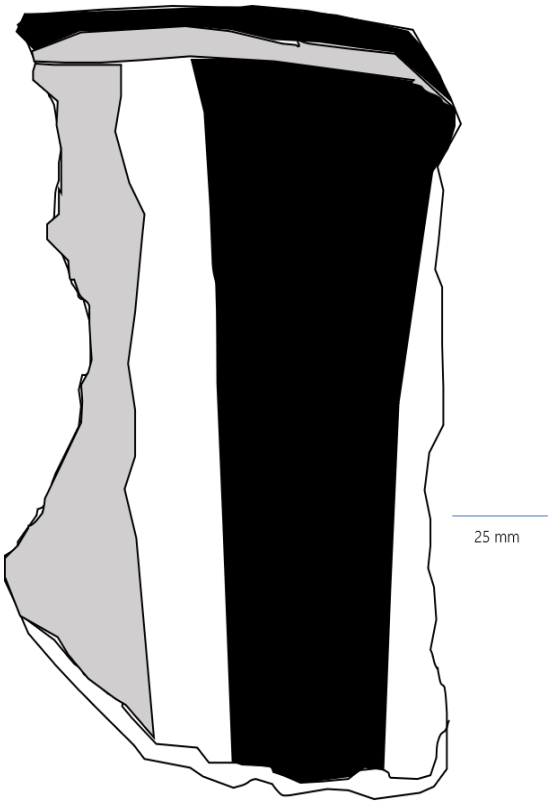

Figure C-9 Large polychrome sherd; plate; possibly Pingüino Buff.

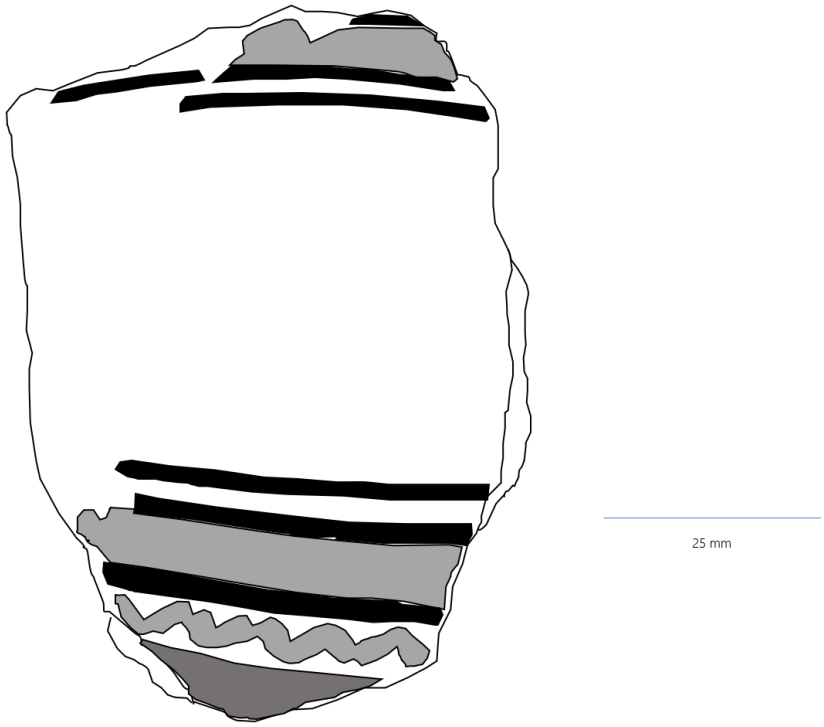

Figure C-10 Polychrome sherd; red and black on orange; jar. Inca or Inca-Chincha.

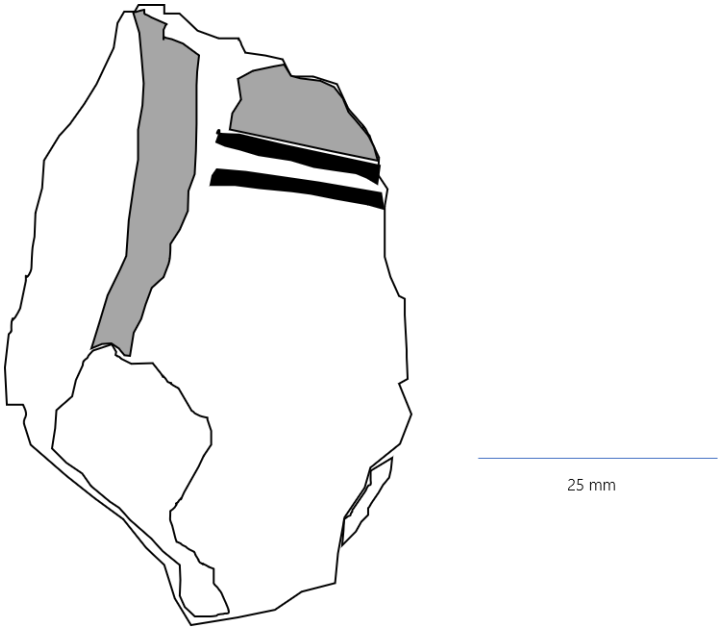

Figure C-11 Polychrome sherd; red and black on orange; jar. Inca/Inca-Chincha.

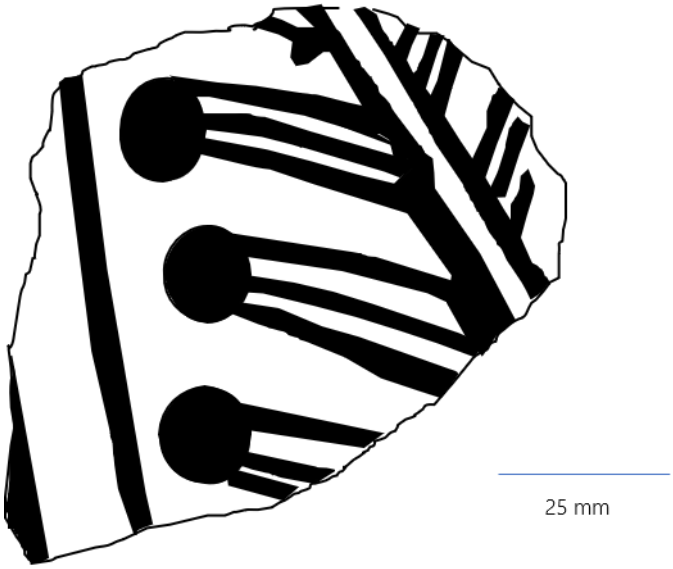

Figure C-12 Inca urpu or aryballos sherd.

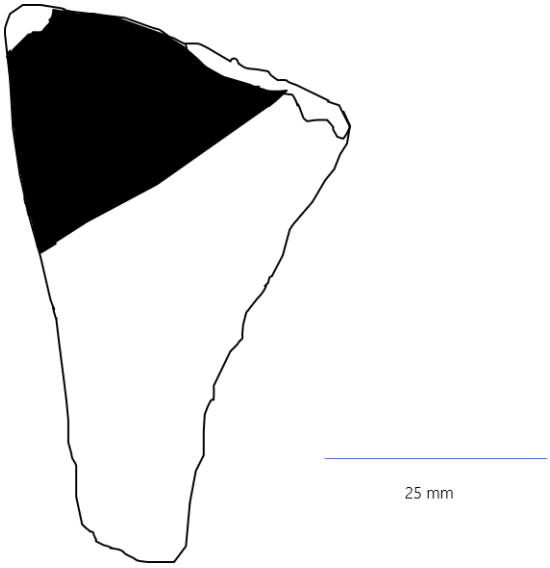

Figure C-13 Finely polished sherd; black on orange slip. Inca plate.

REFERENCES

Acosta, José de

1987 [1590] *Historia Natural y Moral de las Indias*. Madrid: Historia 16.

Aldana Rivera, Susana

2008 Cañete del Perú, ¿Para la Defensa del Reino? Un Caso de Burocracia Y Negociación Política, Siglo XVI. *Andes*, 19: 183-210.

Alvino Loli, Jorge C.

2013 Arquitectura Chancay. Conjuntos de Edificios con Rampa Central. *Investigaciones Sociales*, 17(30):155-178.

Ángeles Falcón, Rommel

2010 Algunos Aspectos de la Occupación Inca en la Costa Central: de Paramonga a Cañete. *Inka Llaqta*, 1: 23-53.

Ángeles Falcón, Rommel and Denise Pozzi-Escot

2004 Del Horizonte Medio Al Horizonte Tardío en la Costa Sur Central: El Caso del Valle de Asia. *Bulletin de l'Institut Français d'Études Andines*, 33(3): 861-886.

Antezana Ruíz, Diana, M. D. Bejarano, G. C. Ampuero, and A. N. Carrillo.

2008 Recientes Resultados de la Investigación en el Sitio Arqeuológico Puchuni, Atavillos Alto, Valle de Chancay. *Cien Des*, 9: 21-31.

Areche Espinola, Rodrigo

2019 Las Primeras Evidencias Arqueológicas de Huacones-Vilcahuasi, Cañete, Peru. *Actas del V Congreso Nacional de Arqueologia*, 1: 187-197.

Areshian, Gregory E.

2013 Variability and Complexity in Multidisciplinary and Interdisciplinary Studies of Empires. In *Empires and Diversity: On the Crossroads of Archaeology, Anthropology, and History*. ed. by Gregory E. Areshian. Los Angeles: Cotsen Institute of Archaeology Press: 1-20.

Arkush, Elizabeth

2008 War, Chronology, and Causality in the Titicaca Basin. *Latin American Antiquity*, 19(4): 339-373.

2011 *Hillforts of the Ancient Andes: Colla Warfare, Society, and Landscape*. Gainesville: University of Florida Press.

Arkush, Elizabeth and Tiffany A. Tung

2013 Patterns of War in the Andes from the Archaic to the Late Horizon: Insights from Settlement Patterns and Cranial Trauma. *Journal of Archaeological Research*, 21(4): 307-369.

Baca Marroquín, Emily

2004 Excavaciones en el Sitio de Uquira, Valle de Asia. *Boletín de Aqueología PUCP*, 8: 409-428.

Bauer, Brian and Alan Covey

2002 Processes of State Formation in the Inca Heartland (Cuzco, Peru). *American Anthropologist*, 104: 846-864.

Bauer, Brian and Lucas C. Kellet

1998 *The Sacred Landscape of the Inca: The Cuzco Ceque System*. Austin: University of Texas Press

2010 Cultural Transformations of the Chanka Homeland (Andahuaylas, Peru) During the Late-Intermediate Period (A.D. 1000-1400). *Latin American Antiquity*, 21(1): 87-111.

Bauer, Brian and Charles Stanish

2001 *Ritual and Pilgrimage in the Ancient Andes: The Islands of the Sun and Moon*. Austin: University of Texas Press.

Bermann, Marc

1997 Domestic Life and Vertical Integration in the Tiwanaku Heartland. *Latin American* Antiquity, 8(2): 93-112.

Berríos Vallejo, Francisco

2008 La Problemática de la Cerámica Ychsma: El Estado de la Situación y Algunos Elementos de Discusión. *Revista de Antropología*, 19: 133-168.

Betanzos, Juan Diez de

1999 [1551] *Suma y Narración de los Incas*. Cusco: Fondo Editorial de la UNSAAC.

Billman, Brian R.

2002 Irrigation and the Origins of the Southern Moche State on the North Coast of Peru. *Latin American Antiquity*, 13(4): 371-400.

Bongers, Jacob, Elizabeth Arkush, and Michael Harrower

2012 Landscapes of Death: GIS-based Analyses of Chullpas in the Western Titicaca Basin. *Journal of Archaeological Science*, 39: 1687-1693.

Bray, Tamara

1992 Archaeological Survey in Northern Highland Ecuador: Inca Imperialism and the Pais Caranqui. *World Archaeology*, 24: 218-233.

2003 To Dine Splendidly. In *The Archaeology and Politics of Food and Feasting in Early States and Empires*. ed. by Tamara Bray. New York: Kluwer Academic Press: 93-142.

2008 Late Pre-Hispanic Chiefdoms of Highland Ecuador. In *The Handbook of South American Archaeology*. ed. by Helaine Silverman and William H. Isbell. New York: Springer: 527-543.

Broda, Johanna

2015 Political Expansion and the Creation of Ritual Landscapes: A Comparative Study of Inca and Aztec Cosmovision. *Cambridge Archaeological Journal*, 25(1): 219-238.

Bueno Mendoza, Alberto

2012 Prospecciones Arqueológicas en la Cuenca del Río Lurín 1970-1993. *Investigaciones Sociales*, 16(29): 13-28.

Burbank, Jane and Frederick Cooper

2010 *Empires in World History: Power and the Politics of Difference*. Princeton: Princeton University Press.

Campos Napán, Carlos E.

2010 Sacralización del paisaje, culto solar y poder en los Andes: una aproximación desde la arquitectura Inka de la Costa Sur Central. *Inka Llaqta*, 1: 1-22.

2015 Descubriendo una huaca local: Muyllucamac de Lunahuaná. *Cuadernos de Qhapaq Ñan*, 3: 70-91.

Carlos Crespo, Juan

1978 Chincha y el Mundo Andino en la Relación de 1558. *Historica*, 3(2): 185-212.

Carneiro, Robert L.

1970 A Theory of the Origin of the State: Traditional Theories of State Origins are Considered and Rejected in Favor of a New Ecological Hypothesis. *Science* 169(3947): 733–738.

Casaverde Ríos, Guido

2015a Breves Apuntes sobre la Presencia Inca en Pacarán, Valle Medio de Cañete. *Cuadernos de Qhapaq Ñan*, 3: 112-127.

2015b Los Chaclla en el Valle de Arahuay. Un Mechanismo de Control Inca de la Cuenca Alta del Rio Chillón. *Arqueología y Sociedad*, 30: 185-203.

Casaverde Ríos, Guido and Segisfredo López Vargas

2011 *El Camino Entre Inkawasi de Lunahuaná y la Quebrada Topará: Vía para la Conquista Inca del Señorío Guarco*. Lima: Ministerio de Cultura.

Chase-Dunn, Christopher

2015 Social Evolution and the Future of World Society. *Journal of World-Systems Research*, 11(2): 171-192.

Chu, Alejandro

2017 Investigaciones en el ushnu mayor de Incahuasi, Cañete: Contribuciones al estudio de los ushnus Incas. *Revista del Instituto Riva-Agüero*, 2(1): 11-56.

2018 Instalaciones Imperiales en el Sitio Inca de Incahuasi, Valle Medio de Cañete. *Yungas*, 2(6): 37-44.

Cieza de León, Pedro

1946 [1553] *La Crónica del Peru (Primera Parte de la Crónica del Peru)*. Mexico City: Editorial Nueva España: 127-497.

1967 [1553] *El Señorío de los Incas*. Lima: Instituto de Estudios Peruanos.

1976 [1553] *The Incas*. translated by Harriet de Onis. Norman: University of Oklahoma Press.

Classen, Constance

1993 *Inca Cosmology and the Human Body*. Salt Lake City: University of Utah Press.

Coben, Lawrence

2006 Other Cuzcos: Replicated Theatres of Inka Power. In *Archaeology of Performance*, ed. by Takeshi Inomata and Lawrence Coben. Lanham: Altamira Press: 223-260.

Cobo, Bérnabe

1990 [1653] *Inca Religion and Customs*. translated by Roland Hamilton. Austin: University of Texas Press.

1979 [1653] *History of the Inca Empire*. translated by Roland Hamilton. Austin: University of Texas Press.

Coello Rodríguez, Antonio

1998 La Ocupación Inca en el Valle de Asia, Peru. *Tawantinsuyu*, 5: 44-52.

Collier, George A.

1982 In the Shadow of Empire: New Directions in Mesoamerican and Andean Ethnohistory. In *The Inca and Aztec States, 1400-1800*. ed by George A. Collier, Renato I. Rosaldo, and John D. Wirth. New York: Academic Press.

Conlee, Christina A.

2003 Local Elites and the Reformation of Late Intermediate Period Sociopolitical and Economic Organization in Nasca, Peru. *Latin American Antiquity*, 14(1): 47-65.

Conrad, Geoffrey W.

1977 Chiquitoy Viejo: An Inca Administrative Center in the Chicama Valley, Peru. *Journal of Field Archaeology*, 4(1): 1-18.

1981 Cultural Materialism, Split Inheritance, and the Expansion of Ancient Peruvian Empires. *American Antiquity*, 46(1): 3-26.

Cornejo Guerrero, Miguel A.

1999 *An Archaeological Analysis of an Inka Province: Pachacamac and the Ischma Nation of the Central Coast of Peru*. Doctoral Thesis. The Australian National University.

2013 El Tawantinsuyu y el Patrón de Asentamiento Provincial. *Revista de Arqueología Americana*, 31: 113-167.

Covey, R. Alan

2002 A Processual Study of Inka State Formation. *Journal of Anthropological Archaeology*, 22: 333-357.

2008a Multiregional Perspectives on the Archaeology of the Andes During the Late Intermediate Period (c. A.D. 1000-1400). *Journal of Archaeological Research*, 16(3): 287-338.

2008b The Inca Empire. In *The Handbook of South American Archaeology*. ed. by Helaine Silverman and William H. Isbell. New York: Springer: 809-830.

Cummins, Thomas

2007 Queros, Aquilas, Uncus, and Chulpas: The Composition of Inka Artistic Expression and Power. In *Variations in the Expression of Inka Power: A Symposium at Dumbarton Oaks, 18th and 19th October 1997*. ed. by Richard L. Burger, C. Morris, R. Matos Mendieta, J. Pillsbury, and J. Quilter. Washington: Dumbarton Oaks Research Library and Collection: 267-297.

D'Altroy, Terence N.

1992 *Provincial Power in the Inka Empire*. Washington DC: Smithsonian Institution Press.

2001 State Goods in the Domestic Economy: The Inka Ceramic Assemblage. In *Empire and Domestic Economy*. ed. by Terrence N. D'Altroy and Christine A. Hastorf. New York: Kluwer Academic: 243-264.

2002 *The Incas*. Malden: Blackwell Publishers.

D'Altroy, Terrance N. and Christine A. Hastorf

1984 The Distribution and Contents of Inca State Storehouses in the Xauxa Region of Peru. *American Antiquity,* 49(2):334-349.

D'Altroy, Terence and Timothy Earle

1985 Staple Finance, Wealth Finance, and Storage in the Inka Political Economy. *Current Anthropology,* 26: 187-206.

Dean, Carolyn

2006 Metonymy in Inca Art. In *Presence: The Inherence of the Prototype within Images and Objects*. ed. by Robert Maniura and Rupert Shepherd. Aldershot: Ashgate: 105-120.

2007 The Inka Married the Earth: Integrated Outcrops and the Making of Place. *The Art Bulletin,* 89(3): 502-518.

2010 *A Culture of Stone: Inka Perspectives on Rock*. Durham: Duke University Press.

Díaz Arriola, Luisa

2008 Aproximacones hacia la Problemática del Territorio Ychsma. *Arqueología y Sociedad,* 19: 115-127.

Díaz Carranza, José L.

2015 Hallazgos de Coca en *Colcas* del Valle Medio del Río Cañete Correspondientes al Horizonte Tardo. *Cuadernos de Qhapaq Ñan,* 3: 128-147.

2017 El Monumento y el Flujo en el Paisaje: Organización Espacial y Relaciones Funcionales Intrasitio/Extrasitio en Cruz Blanca, Valle Medio de Cañete. *Cuadernos de Qhapaq Ñan,* 5: 48-67.

Diaz, Luisa and Francisco Vallejo

2002 Armantambo y el Dominio Incaico en el Valle de Lima. *Boletín de Aqueología PUCP,* 6: 355-374.

2004 Variaciones Culturales en el Valle de Lima Durante La Occupación Incaica. *Chungara, Revista de Antropología Chilena,* 36(2): 295-302.

Dillehay, Tom D.

1977 Tawantinsuyu Integration of Chillon Valley, Peru: A Case of Inca Geo-Political Mastery. *Journal of Field Archaeology*, 4(4): 397-405.

Dillehay, Tom D. and Patricia Netherly

1998 Introduction. In *La Frontera del Estado Inca*. ed. by Tom D. Dillehay and Patricia Netherly. Quito: Abya Yala: 3-31.

Donnan, Christopher B.

2004 *Moche Portraits from Ancient Peru*. Austin: University of Texas Press.

Dulanto, Jalh

2008 Between Horizons: Diverse Configurations of Society and Power in the Late Pre-Hispanic Central Andes. In *The Handbook of South American Archaeology*. ed. by Helaine Silverman and William H. Isbell. New York: Springer: 761-782.

Earle, Timothy

1987 Chiefdoms in Archaeological and Ethnohistorical Perspective. *Annual Review of Anthropology* 16(1): 279–308.

Eeckhout, Peter

2004 Reyes del Sol y Señores de la Luna. Inkas y Ychsmas en Pachacamac. *Chungara, Revista de Antropología Chilena*, 36 (2): 495-503.

Eeckhout, Peter and Enrique López-Hurtado

2018 Pachacamac and the Incas on the Coast of Peru. *Oxford Handbook of the Incas*. ed. by Sonia Alconini and R. Alan Covey. Oxford: Oxford University Press: 179-196.

Elson, Christina M. and R. Alan Covey

2006 Intermediate Elites in New World States and Empires. In *Intermediate Elites in Pre-Columbian States and Empires*. ed by Christina M. Elson and R. Alan Covey. Tucson: The University of Arizona Press: 3-20.

Engel, Frédéric A.

1957 Early Sites in the Pisco Valley of Peru: Tambo Colorado. *American Antiquity*, 23(1): 34-45.

1987 *De las Begonias al Maíz. Vida y Producción en el Perú Antiguo*. Lima: Centro de Investigaciones de Zonas Áridas – Universidad Nacional Agraria La Molina.

2010 *Arqueología Inédita de la Costa Peruana*. Lima: Asamblea Nacional de Rectores.

Fehren-Schmitz, L., O. Warnberg, M. Reindel, V. Seidenberg, E. Tomasto-Cagigao, J. Isla-Cuadrado, S. Hummel, and B. Herrmann.

2011 Diachronic Investigations of Mitochondrial and Y-Chromosonal Genetic Markers in Pre-Columbian Andean Highlanders from South Peru. *Annals of Human Genetics*, 75: 266-283.

Feinman, Gary and Jill Neitzel

1984 Too Many Types: An Overview of Sedentary Prestate Societies in the Americas. *Advances in Archaeological Method and Theory*: 39–102.

Feltham, Jane

1983 *The Lurín Valley: AD 1000-1532*. Doctoral Thesis. Institute of Archaeology, University of London.

2009 La Arqueología de Sisicaya. In *La Revista de Sisicaya, 1588*. ed by Frank Salomon, Jane Feltham, and Sue Grosboll. Lima: Fondo Editorial: 57-101.

Fernanini, Francesca

2018 Una Propuesta Preliminar de la Secuencia de la Ocupación Tardía en Cerro de Oro. *Yungas*, 2(6): 25-30.

Fitzpatrick-McKinley, Anne

2015 *Empire, Power and Indigenous Elites: A Case Study of the Nehemiah Memoir*. Boston: Brill.

Flannery, Kent V.

1999 Process and Agency in Early State Formation. *Cambridge Archaeological Journal*, 9(1): 3-21.

2004 Prehistoric Social Evolution. In *New Directions in Anthropology*. ed by Carol E. Ember, Melvin R. Ember, and Peter N. Peregrine. Prentice-Hall, Upper Saddle River, NJ.

Fry, Kirk and Edmundo de la Vega

2005 The Altiplano Period in the Titicaca Basin. In *Advances in Titicaca Basin Archaeology-1*, ed. by Charles Stanish, A. Cohen, and M. Aldenderfer. Los Angeles: Cotsen Institute of Archaeology Press: 173-184.

Garcilaso de la Vega, El Inca

1991 [1609] *Comentarios Reales de los Incas.* Lima: Fundo de Cultural Económica.

Garnsey, Peter and Charles R. Whittaker

1982 *Imperialism in the Ancient World*. Cambridge: Cambridge University Press.

Gasparini, Graziano and Luise Margolies

1980 *Inca Architecture*. Bloomington: Indiana University Press.

Glatz, Claudia and Jesse Casana

2016 Of highland-lowland borderlands: Local societies and foreign power in the Zagros-Mesopotamian interface. *Journal of Anthropological Archaeology*. 44: 127-147.

Gyarmati, János

2015 Paria la Viexa and an Expanding Empire: Provincial Centers in the Political Economy of the Inka Empire (a.d. 1440-1532). *Journal of Field Archaeology*, 40(1): 37-54.

González Carré, Enrique and Denise Pozzi-Escot

2002 Arqueología y Etnohistoria en Vilcashuamán. *Boletín de Arqueología PUCP*, 6: 79-105.

Graeber, David

2011 The Divine Kingship of the Shilluk: On Violence, Utopia, and the Human Condition, or, Elements for an Archaeology of Sovereignty. *HAU*: *Journal of Ethnographic Theory*, 1(1): 1-62

Haas, Jonathan and Winifred Creamer

2006 Crucible of Andean Civilization: The Peruvian Coast from 3000 to 1800 BC. *Current Anthropology*, 47(5): 745-775.

Hastorf, Christine A.

1990 The Effect of the Inka State on Agricultural Production and Crop Consumption. *American Antiquity*, 55(2): 262-290.

Huertas Sánchez, Geraldine

2016 Análisis de la Céramica Tardía en el Sitio Arqueológico El Huarco-Cerro Azul. Proyecto Qhapaq Ñan – Sede Nacional: Lima

Hyslop, John

1984 *The Inka Road System*. London: Academic Press.

1985 *Inkawasi: The New Cuzco*. BAR International Series 234. Oxford: British Archaeological Reports.

Isbell, William H.

2004 Palaces and Politics in the Andean Middle Horizon. In *Palaces of the Ancient World: A Symposium at Dumbarton Oaks*. ed by Susan T. Evans and Joanne Pillsbury. Washington D.C.: Dumbarton Oaks: 191-246.

Janusek, John

1999 Craft and Local Power: Embedded Specialization in Local Cities. *Latin American Antiquity*, 10(2):107-131.

Julien, Catherine

1983 *Hatunqolla: A View of Inca Rule from the Lake Titicaca Region*. University of California Publications in Anthropology, Volume 15. Berkeley: University of California Press.

2000 *Reading Inca History*. Iowa City: University of Iowa Press.

Julien, Daniel G.

1993 Late Pre-Incaic Ethnic Groups in Highland Peru: An Archeological-Ethnohistorical Model of the Political Geography of the Cajamarca Region. *Latin American Antiquity,* 4(3): 246-273.

Kalicki, Pitor

2014 Model of Interregional Contacts between Highland and Coastal Groups in Late Pre-Columbian Periods in the Lomas of the Central Coast of Peru. *Contributions in New World Archaeology*, 6: 83-110.

Kautsky, John H.

1982 *The Politics of Aristocratic Empires*. Chapel Hill: University of North Carolina Press.

Kolata, Alan L.

2013 *Ancient Inca*. New York: Cambridge University Press.

Kroeber, Alfred L.

1937 Archaeological Explorations in Peru, Part IV: Cañete Valley. *Field Museum of Natural History, Anthropology Memoirs*, 2(4): 220-273.

Kroeber, Alfred L. and William Duncan Strong

1924 The Uhle Collections from Chincha. *University of California Publications in Archaeology and Ethnology*, 21(1-2): 1-94.

Kuhrt, Amélie.

2007 *The Persian Empire*. New York: Routledge.

La Lone, Mary B. and Darrell E. La Lone

1987 The Inka State in the Southern Highlands: State Administrative and Production Enclaves. *Ethnohistory*, 34(1): 47-62.

Larrabure y Unanue, Eugenio

1874 *Cañete. Apuntes Geográficos, Históricos, Estadísticos y Arqueologícos*. Lima: Imprenta del Estado.

1941 [1893] *Manuscritos y Publicaciones, Tomo II, Valle de Cañete, Historia y Arqueología*, Lima.

LeVine, Terry Y.

1987 Inka Labor Service at the Regional Level: The Functional Reality. *Ethnohistory*, 34(1): 14-46.

Lindly, John M.

2005 *The Zagros Mousterian: A Regional Perspective*. Anthropological Research Papers, No. 56. Tempe: University of Arizona Press.

Love, Michael

2007 Recent Research in the Southern Highlands and Pacific Coast of Mesoamerica. *Journal of Archaeological Research*. 15(4): 275-328.

Lumbreras, Luis G.

2001 Uhle y los Asentamientos de Chincha en el Siglo XVI. *Revista del Museo Nacional*, 49: 13-87.

Luttwak, Edward N.

2016 *The Grand Strategy of the Roman Empire: From the First Century CE to the Third*. Baltimore: Johns Hopkins University Press.

MacCormack, Sabine

2004 Religion and Society in Inca and Spanish Peru. In *The Colonial Andes. Tapestries and Silverwork, 1530-1830*. ed. by E. Phipps, J. Hecht, C. Esteras Martín. New York: Metropolitan Museum of Art.

2008 Classical Traditions in the Andes. Conversations Across Time and Space. In *Guide to Documentary Sources for Andean Studies 1530-1900 Volume I*. ed. by Joanne Pillsbury. Norman: University of Oklahoma Press: 23-64.

Mallco, Rafael.

2015 Investigaciones Arqueológicas en Tacaraca, un Sitio Ica de la Costa Sur del Perú. *Arqueología y Sociedad*, 29: 71-106.

Mann, Michael

1986 *The Sources of Social Power. Vol. 1.* Cambridge: Cambridge University Press.

Marcone Flores, Giancarlo

2004 Cieneguilla a la Llegada de los Incas Aproximaciones desde la Historia Ecológica y la Arqueológica. *Bulletin de l'Institut français d'études andines*, 33(3) 715-734.

Marcone, Giancarlo and Enrique López-Hurtado

2002 Panquilma y Cieneguilla en la Discusión Arqueológica del Horizonte Tardío de la Costa Central. *Boletín de Arqueología PUCP*, 6: 375-394.

Marcus, Joyce

1987 *Late Intermediate Occupation at Cerro Azul, Perú: A Preliminary Report*. Ann Arbor: University of Michigan.

2008a *Excavations at Cerro Azul, Peru: The Architecture and Pottery*. Cotsen Institute of Archaeology, Monograph 62. Los Angeles: University of California.

2008b The Archaeological Evidence for Social Evolution. *Annual Review of Anthropology*, 37: 251-266.

2017 The Inca Conquest of Cerro Azul. Ñawpa Pacha, 37(2): 175-196.

Marcus, Joyce, J.D. Sommer, and C.P. Glew

1999 Fish and Mammals in the Economy of an Ancient Peruvian Kingdom. *Proceedings of the National Academy of Sciences*, 96(11): 6564-6570.

Markham, Clements R.

1862 *Travels in Peru and India*. London: John Murray.

1864 *The Travels of Pedro Cieza de Leon, A.D. 1532-50, Contained in the First Part of his Chronicle of Peru*. translated and edited by Clements R. Markham. London: Hakluyt Society.

1880 *Peru*. London: Sampson, Low, Marston, Searle and Rivington.

Marussi, Castellan F.

1979 Rupac: Analysis Urbanistico de una Ciudad Prehispanica. *Bulletin de l'Institut Français d'Études Andines*, 8(1-2): 1-33.

Matos Mendieta, Ramiro

1994 *Pumpu: Centro Administrativo Inka de la Puna de Junín*. Lima: Editorial Horizonte.

Mejía Aranguren, Luisa and Antonio Raymondi Cárdenas

2015 Arqueología Tardía en el Valle Bajo de Mala, Distrito de Santa Cruz de Flores, Cañete-Lima. *Arqueología y Sociedad*, 30: 115-140.

Menzel, Dorothy

1959 The Inca Occupation of the South Coast of Peru. *Southwestern Journal of Anthropology*, 15(2): 125-142.

1971 Estudios Arqueológicos en los Valles de Ica, Pisco, Chincha y Cañete. *Revista Aqueología y Sociedad*, 6: 9-100.

Menzel, Dorothy and John H. Rowe

1966 The Role of Chincha in Late Pre-Spanish Peru. *Ñawpa Pacha: Journal of Andean Archaeology*, 4: 63-76.

Middendorf, Ernst W.

1973 [1893] *Perú; Observaciones y Estudios del País y sus Habitantes Durante Una Permanencia de 25 Años*. Lima: Universidad Nacional Mayor de San Marcos.

Mills, Barbara J.

2002 Recent Research on Chaco: Changing Views on Economy Ritual and Society. *Journal of Archaeological Research* 10(1): 65–117

Moore, Jerry D. and Carol J. Mackey

2008 The Chimú Empire. In *The Handbook of South American Archaeology*. ed by Helaine Silverman and William H. Isbell. New York: Springer: 783-807.

Morris Craig

1988 Más allá de las fronteras de Chincha. In *La Frontera del Estado Inca*, ed. by Tom D. Dillehay and Patricia Netherly. Quito: Abya-Yala: 106-113.

2007 Andean Ethnohistory and the Agenda for Inka Archaeology. In *Variations in the Expression of Inka Power: A Symposium at Dumbarton Oaks*, 18th and 19th October 1997. ed. by Richard L. Burger, C. Morris, R. Matos Mendieta, J. Pillsbury, and J. Quilter. Washington: Dumbarton Oaks Research Library and Collection: 1-10.

Morris, Craig, Alan Covey, and Pat Stein

2011 *The Huanuco Pampa Archaeological Project: Volume 1, the Plaza and Palace Complex*. New York: American Museum of Natural History.

Morris, Craig and Julían Idilio Santillana

2007 The Inka Transformation of the Chincha Capital. In *Variations in the Expression of Inka Power: A Symposium at Dumbarton Oaks*, 18th and 19th October 1997. ed. by Richard L. Burger, C. Morris, R. Matos Mendieta, J. Pillsbury, and J. Quilter. Washington: Dumbarton Oaks Research Library and Collection: 267-297.

Murra, John

1980 *The Economic Organization of the Inca State*. Greenwich: JAI.

Nair, Stella

2015 *At Home with the Sapa Inca: Architecture, Space, and Legacy at Chinchero*. Austin: University of Texas Press.

Nigra, Ben, T. Jones, J. Bongers, C. Stanish, H. Tantalean, and K. Perez

2014 The Chincha Kingdom: The Archaeology and Ethnohistory of the Late Intermediate Period South Coast, Peru. *Backdirt*, 36-57.

Niles, Susan

1992 Inca Architecture and the Sacred Landscape. In *The Ancient Americas: Art from Sacred Landscapes*. ed. by Richard F. Thownsend. Chicago: The Art Institute of Chicago: 346-357.

2004 The Nature of Inca Royal Estates. In *Machu Picchu: Unveiling the Mystery of the Incas*. ed. by Richard L. Burger and Lucy C. Salazar. New Haven: Yale University Press: 49-70.

Obstfeld, David, Stephen P. Borgatti, and Jason Davis

2014 Brokerage as a Process: Decoupling Third Party Action from Social Network Structure. *Research in the Sociology of Organizations*, 40: 135-158.

Ogburn, Dennis

2008 Dynamic Display, Propaganda, and the Reinforcement of Provincial Power in the Inca Empire. *Archaeological Papers of the American Anthropological Association*, 14(1): 225-239.

Paredes Sánchez, Luis E.

2013 Elementos de Análisis para la Ubicación Cronológica de Nieve Nieve. Proyecto Qhapaq Ñan – Sede Nacional: Lima.

Pareja, Dante

2012 Santo Domingo de los Olleros. ¿Un Caso de Control de la Producción de la Cerámica Inca? In *Naturaleza y Cultura en América Latina: Escenario para un modelo de desarrollo no civilizatorio Memoria del XVIII Foro de Estudiantes Latinoamericanos de Antropología y Arqueología FELAA*. ed. by Eloy Alfaro, Katherine Enríquez, and Yolanda Flores. Quito: Editorial Universitaria Abya-Yala: 552-567.

Parker, Bradley J.

2012 The Assyrians Abroad. In *A Companion to the Archaeology of the Ancient Near East*. ed. by D.T. Potts. Malden: Blackwell.

2013 8 Geographies of Power: Territoriality and Empire during the Mesopotamian Iron Age. *Archaeological Papers of the American Anthropological Association*, 22(1): 126-144.

Parsons, Jeffrey R., Charles M. Hastings, and Ramiro M. Matos

1997 Rebuilding the State in Highland Peru: Herder-Cultivator Interaction During the Late-Intermediate Period in the Tarama-Chinchaycocha Region. *Latin American Antiquity*, 8(4): 317-341.

Patterson, Thomas C.

1986 Ideology, Class Formation, and Resistance in the Inca State. *Critique of Anthropology*, 6(1): 75-85.

1987 Merchant Capital and the Formation of the Inca State. *Dialectical Anthropology*, 12(2): 217-227.

Pauketat, Timothy R.

2007 *Chiefdoms and other Archaeological Delusions*. Lanham: AltaMira Press.

1997 Specialization, Political Symbols, and the Crafty Elite of Cahokia. *Southeastern Archaeology*, 16(1): 1-15.

Pease, Franklin

2008 Chronicles of the Andes in the Sixteenth and Seventeenth Centuries. In *Guide to Documentary Sources for Andean Studies 1530-1900 Volume I*. ed. by Joanne Pillsbury. Norman: University of Oklahoma Press: 11-22.

Peralta Mesía, Rodolfo

2013 Investigaciones Arqueológicas en el Sitio El Salitre, Valle de Mala. *Cuadernos de Qhapaq Ñan*, 1: 92-115.

Posner, Eric, Kathryn E. Spier, and Adrian Vermeule

2009 Divide and Conquer. *John M. Olin Program in Law and Economics Working Paper* 467: 1-47.

Protzen, Jean-Pierre

1993 *Inca Architecture and Construction at Ollantaytambo*. New York: Oxford University Press.

2000 Inca Architecture. In *The Inca World: The Development of Pre-Colombian Peru, AD 1000-1534*. ed. by Cecilia Bakula, Laura Laurencich Minelli, and Mireille Vautier. Norman: University of Oklahoma Press: 193-217.

2006 Max Uhle and Tambo Colorado a Century Later. *Ñapa Pacha*, 28(1): 11-40.

Protzen, Jean-Pierre and Craig Morris

2004 Los Colores de Tambo Colorado: Una Reevaluación. *Boletín de Arqueología PUCP*, 8: 267-276.

Proulx, Donald A.

2000 Nasca Ceramic Iconography: An Overview. *The Studio Potter*, 29(1): 37-43.

Ramírez Muñoz, Favio

2015 Estrategias de la Ocupación Tardía en la Cuenca Baja del Río Cañete: Una Propuesta desde la Ecología Cultural. *Cuadernos de Qhapaq Ñan*, 3: 70-91.

Raymondi Cárdenas, Antonio and Luisa Mejía Aranguren.

2014 Ocupaciones Prehispánicas Tardías en el Valle Bajo del Chillón: Una Approximación desde la Huaca Pro. *Arqueología y Sociedad*, 28: 9-42.

Redmond, Elsa A. and Charles S. Spencer

2012 Chiefdoms at the Threshold: The Competitive Origins of the Primary State. *Journal of Anthropological Archaeology*, 31: 22-37.

Rick, John W.

2008 The Evolution of Authority and Power at Chavín de Huántar, Peru. *Archeological Papers of the American Anthropological Association*, 14(1): 71–89

Rogers, J. Daniel

2012 Inner Asian States and Empires: Theories and Synthesis. *Journal of Archaeological Research*, 20: 205-256.

Rostworowski de Diez Canseco, Maria

1970 Mercaderes del Valle de Chincha en la Epoca Prehispánica: Un Documento y unos Comentarios. *Revista Española de Antropología Americana,* 5: 135-184.

1972 El Sitio Arqueológico de Concon en el Valle del Chillón: Derrotero Etnohistórico. *Revista del Museo Nacional,* 38: 315-326

1989 *Costa Peruana Prehispánica*. Lima: Institutos de Estudios Peruanos.

1999a *History of the Inca Realm*. translated by Harry B. Iceland. Cambridge: Cambridge University Press.

1999b Los Curacas Costeños. *Historica,* 13(2): 283-311.

2002 *Obras Completas de María Rostworowski: Volumen II, Pachacamac*. Lima: Instituto de Estudios Peruanos.

Rowe, John

1946 Inca Culture at the Time of the Spanish Conquest. In *Handbook of South American Indians*, ed. by Julian Stewart. Bulletin 143(2). Washington: Bureau of American Ethnology: 183-330.

Ruales, Mario

2000 Investigaciones en Cerro del Oro, Valle de Cañete. *Boletín de Arqueología PUCP*, 4: 359-399.

Sahlins, Marshall D.

1963 Poor Man, Rich Man, Big-man, Chief: Political Types in Melanesia and Polynesia. *Comparative Studies in Society and History*, 5(3): 285-303.

Sandweiss, Daniel H. and David A. Reid

2016 Negotiated Subjugation: Maritime Trade and the Incorporation of Chincha into the Inca Empire. *Journal of Island and Coastal Archaeology*, 11: 311-325.

Santoro, Calogero M., T. D. Dillehay, J. Hidalgo, D. Valenzuela R., Á. L. Romero G., F. Rothhammer, and V. G. Standen

2010 Revista al Tercer Caso de Verticalidad de John Murra en las Costas de los Andes Centrales y Centro Sur. *Chungara, Revista de Antropología*, 42(1): 325-340.

Sarmiento de Gamboa, Pedro

1988 [1572] *Historia de los Incas*. Biblioteca de Viajeros Hispánicos 4, Madrid: Miraguano Ediciones.

Serrudo, Eberth and Larry Coben

2018 Cancharí y la Occupación Inca en el Valle Bajo de Cañete. *Yungas*, 2(6): 17-24.

Silva Sifuentes, Jorge E.

1996 *Prehistoric Settlement Patterns in the Chillón River Valley, Peru*. Doctoral Thesis: University of Michigan.

1998 El Curacazgo de Quivi: Arqueología y Etnohistoria. *Investigaciones Sociales*, 2(2): 39-60.

Simmel, Georg

1950 [1917] The Triad. In *The Sociology of Georg Simmel*, ed. by Kurt H. Wolff. New York: The Free Press: 145-169.

Sinopoli, Carla M.

1994 The Archeology of Empires. *Annual Review of Anthropology*, 23(1): 159-180.

Spalding, Karen

1984 *Huarochirí: An Andean Society Under Inca and Spanish Rule*. Stanford: Stanford University Press.

Spencer, Charles S.

2003 War and Early State Formation in Oaxaca, Mexico. *PNAS,* 100(20): 11185-11187.

2010 Territorial Expansion and Primary State Formation. *Proceedings of the National Academy of Sciences,* 107(16): 7119–7126.

Squier, Ephraim G.

1877 *Perú. Incidents of Travel and Exploration in the Land of the Incas*. New York: Harper and Brothers.

Stanish, Charles

1989 An Archaeological Evaluation of an Ethnohistorical Model in Moquegua. In *Ecology, Settlement, and History in the Osmore Drainage, Peru Part ii*. ed by Don S. Rice, Charles Stanish, and Phillip R. Scarr. BAR International Series 545(ii): 303-320.

1997 Nonmarket Imperialism in the Prehispanic Americas: The Inca Occupation of the Titicaca Basin. *Latin American Antiquity,* 8(3): 195-216.

2000 Negotiating Rank in an Imperial State: Lake Titicaca Basin Elite under Inca and Spanish Control. In *Hierarchies in Action: Cui Bono?* ed. by Michael W. Diehl: 317-339.

2001 Regional Research on the Inca. *Journal of Archaeological Research,* 9(3): 213- 241.

2002 Tiwanaku Political Economy. In *Andean Archaeology I: Variations in Sociopolitical Organization*. ed. by Helaine Silverman and William H. Isbell. New York: Kluwer Academic/Plenum Publishers: 169-198.

2012 Above-Ground Tombs in the Circum-Titicaca Basin. In *Advances in Titicaca Basin Archaeology-1II*, ed. by Alexei Vranich, Elizabeth A. Klarich, and Charles Stanish. Ann Arbor: University of Michigan Museum: 203-220.

Stanish, Charles, Lee Steadman, and Matthew T. Seddon

1994 Archaeological Research at Tumatumani, Juli, Peru. *Fieldiana. Anthrpology*, New Series (23): 1-111.

Steele, Paul R. and Catherine J. Allen

2004 *Handbook of Inca Mythology*. Santa Barbara: ABC-CLIO, Inc.

Stumer, Louis M.

1971 Informe Preliminar sobre el Recorrido del Valle de Cañete. *Arqueología y Sociedad*, 5: 23-29.

Tácunan, Bonifacio, Santiago

2012 Los Colli Una Cultura Poco Conocida del Valle del Chillón. In *Collique: Historia de un Pueblo Solidario*. ed. by Santiago Bonifacio Tácunan. Lima: Fondo Editorial de la Universidad Católica Sedes Sapientiae: 1-23.

Taira, Johnny C.

2011 Huaca Respiro: Un Sitio del Intermedio Tardío en el Valle Bajo del Chillón. *Yachay Llacta Revista Virtual*.

2015 Arqueología del Valle Medio de Mala en Épocas Tardías, Cañete-Lima. *Arqueología y Sociedad*, 29: 17-48.

Tantaleán, Henry

2011 Cochahuasi: Un Palacio Inca en el Valle Medio del Río Mala. *Inka Llaqta*,

Tantaleán, Henry and Omar Pinedo

2004 Acerca de la Ocupaión Inca del Valle de Mala. *Arqueología y Sociedad*, 15: 135- 154.

Tobler, Waldo

1993 Three Presentations on Geographical Analysis and Modeling. *National Center for Geographic Information and Analysis Technical Report*, 93(1): 1-24.

Urton, Gary and Alejandro Chu.

2015 Accounting in the King's Storehouse: The Inkawasi Khipu Archive. *Latin American Antiquity*, 26(4): 512-529.

Vallejo Berríos, Francisco

2009 La Problemática de la Céramica Ychsma: El Estado de la Situación y Algunos Elementos de Discusión. *Revista Chilena de Antropología*, 19: 133-168.

van Dalen Luna, Pieter D.

2011 El Tiwantinsuyu en la Costa Norcentral Peruana: Valles de Chancay y Huaura. *Investigaciones Sociales*, 15(27): 77-103.

2012 Investigaciones en el Complejo Arqueológico de Lumbra, un Asentamiento Tardío del Valle Medio del Río Chancay-Huaral. *Investigaciones Sociales*, 16(28): 285-301.

Van de Mieroop, Marc

2004 *A History of the Ancient Near East (ca. 3000-323 BC).* Malden: Blackwell Publishing.

Villacorta O., Luis F.

2003 Palacios y Ushnus: Curacas del Rímac y Gobierno Inca en la Costa Central. *Boletín de Arqeuología PUCP*, 7: 151-187.

2004 Los Palacios en la Costa Central durante Los Periodos Tardíos: De Pachacamac al Inca. *Bulletin de l'Institut Français d'Études Andines*, 33(3): 539-570.

Villar Córdova, Pedro E.

1935 *Las Culturas Pre-Hispanicas del Departamento de Lima*. Universidad Nacional Mayor de San Marcos, Lima.

Wachtel, Nathan

1982 The Mitimas of the Cochabamba Valley: The Colonization Policy of Huayna Capac. In *The Inca and Aztec States, 1400-1800*. ed by George A. Collier, Renato I. Rosaldo, and John D. Wirth. New York: Academic Press: 199-236.

Wallace, Dwight T.

1986 The Topará Tradition: An Overview.

1998 The Inca Compound at La Centinela, Chincha. *Andean Past,* 5(6): 9-33.

Weber, Max

1978 [1921] Economy and Society: An Outline of Interpretive Sociology. ed. by Guenther Roth and Claus Wittich. Berkeley: University of California Press.

Wernke, Steven A.

2006 The Politics of Community and Inka Statecraft in the Colca Valley, Peru. *Latin American Antiquity*, 17(2): 177-208.

2007 Negotiating Community and Landscape in the Peruvian Andes: A Transconquest View. *American Anthropologist,* 109(1): 130-152.

Willey, Gordon R.

1953 Prehistoric Settlement Patterns in the Virú Valley, Peru. *Smithsonian Institution Bureau of American Ethnology*, Bulletin 155.

Williams, Carlos and Manuel Merino

1974a *Inventario, Catastro, y Delimitación del Patrimonio Arqueológico del Valle de Cañete*. Tomos I, II. Centro de Investigación y Restauración de Bienes Monumentales. Lima: Instituto Nacional de Cultura.

1974b *Inventario, Catastro, y Delimitación del Patrimonio Arqueológico del Valle de Mala*. Centro de Investigación y Restauración de Bienes Monumentales. Lima: Instituto Nacional de Cultura.

Wright, Henry T.

1977 Recent Research on the Origin of the State. *Annual Review of Anthropology*, 6: 379-397.

1984 Prestate Political Formations. *On the Evolution of Complex Societies: Essays in Honor of Harry Hoijer 1982*: 41-77.

Wright, Henry T. and Gregory A. Johnson

1975 Population, Exchange and Early State Formation in Southwestern Iran. *American Anthropologist, New Series*, 77(2): 267-289.

Yamada, Shiego

2005 Kārus on the Frontiers of the Neo-Assyrian Empire. *Orient*, 40: 56-90.

Zuidema, R. T.

1983 Hierarchy and Space in Incaic Social Organization. *Ethnohistory*, 30(2): 49-75.