

GEOSTATISTICAL PERSPECTIVES ON RECUAY MORTUARY LANDSCAPES IN
HIGHLAND PERU

by

Dominic Greenlee

A Thesis Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Master of Science

in Anthropology

The University of Wisconsin-Milwaukee

December 2021

ABSTRACT

GEOSTATISTICAL PERSPECTIVES ON RECUAY MORTUARY LANDSCAPES IN HIGHLAND PERU

by

Dominic Greenlee

The University of Wisconsin-Milwaukee, 2021
Under the Supervision of Professor Jason Sherman

The Recuay lived in the highlands of Peru from AD 250-700. Their customs and traditions were divided into regionally distinct styles of material culture. As the Moche (AD 200-900) emerged along the coast of Peru, the Recuay engaged them in long distance trade, culture exchange, and likely conflict. Towards the end of the Recuay sequence, they were overshadowed by the Wari (AD 600-1000) beginning with the adoption of chullpa style tombs and ending with the full adoption and integration of the Wari cultural bundle in Ancash. This thesis uses published data from the Callejón de Huaylas, specifically from the Río Puenca and Río Santa valleys, respectively on the east and west side of the Cordillera Blanca, to evaluate the Recuay mortuary landscape. The key questions concern changes in mortuary practices over time, associations of these changes with inter-regional influences from the Moche and the Wari, mortuary evidence for the distribution of elites, and contrasts between the Recuay heartland and hinterland. GIS analysis of the distribution of metal and ceramic artifacts, tomb forms, and variations across the cultural sequence is used to address the research questions. This thesis provides an example of data re-use, applying new analytical approaches to previously published data.

Key Words:

Andean archaeology; Recuay; Moche; Wari; Early Intermediate Period; GIS; mortuary landscape

© Copyright by Dominic Greenlee, 2021
All Rights Reserved

TABLE OF CONTENTS

Abstract	ii
List of Figures	vi
List of Tables	viii
1. Introduction	1
Regional Fluorescence	2
Chavín	6
Moche Gallinazo	8
Nasca/Lima	10
Wari	11
Archaeological Definitions of the Recuay Culture	14
Research Questions and Expectations	24
Data Used	26
Outline of thesis	27
2. Recuay Mortuary Practices	29
History of Andean Beliefs about the Dead	31
Chavín Beginning and Huarás Cultivation	39
Recuay Mortuary Architecture	45
Ancestor Veneration in the Recuay Era	46
Major Recuay Mortuary Sites	53
Chullpas	57
Survey of Landscape of Death	58
Conclusion	60
3. Recuay Interaction through Material Exchange, Conflict, and Cultural Contexts	63
Recuay Material Culture Exchange and Networks	65
Ceramic Exchange	69
Non-ceramic Exchange	72
Coca Trade	73
Conflict	77

4. Methods and Materials	81
Discussion of the Sources	86
General Description of the Dataset	87
Breakdown of the Variables within Recuay Dataset	92
Testable Mortuary Patterns	96
Hypotheses and Testable Variables	98
Principles of Data Reuse	103
Description of the Test Sequence	105
Date Queries	105
Clustering Tests	107
Qualitative Assessment of Chullpas	110
5. Analysis and Discussion	112
Analysis and Discussion of Trials 1-6	112
Qualitative Analysis of Chullpa Distribution	149
Discussion of Global Significance	161
Discussion of Laguna Purhuay Outliers	163
Discussion of Testable Variables	164
Discussion and Analysis of Significant Outliers	165
Discussion of Chullpa Qualitative Analysis	170
Final Discussion of the Patterns	171
6. Significance and Conclusion	175
Summary of Recuay Cultural History	175
Recapitulation of Project Results	179
Social Differentiation	185
Archaeological Heterogeneity	187
Culture Change	189
Future Research	191
7. Works Cited	195
8. Appendix A: Raw Coded Data	202
9. Appendix B: Link to the Git Hub Repository	207

LIST OF FIGURES

Figure 1.1	Timeline of Relevant Regional Culture Histories	4
Figure 1.2	Map of the Cultural Regions during the Early Intermediate Period	5
Figure 1.3	Recuay Mortuary Ceramic Assemblage from Coronajirca	15
Figure 1.4	Map of the modern boundary of Ancash, major rivers, mountain ranges, and important cities relevant to this study	12
Figure 2.1	Chullpa 1 from Coronajirca Excavation in 2019	30
Figure 2.2	Sketch of a Deep Stone-Lined Tomb	45
Figure 2.3	Recuay Stone Effigy of a <i>Mallqui</i> Bundle	50
Figure 2.4	Map of Significant Recuay Heartland Sites Discussed in Text	53
Figure 3.1	Head with emanations	70
Figure 4.1	Dataset Sites with Settlement Patterns in the North	83
Figure 4.2	Dataset Sites with Settlement Patterns around Huaraz	84
Figure 4.3	Dataset Sites with Settlement Patterns around Huari	85
Figure 5.1	Trial 2 Local Moran's I for the Late Recuay era	117
Figure 5.2	Trial 3 Local Moran's I for the Classic Recuay era	121
Figure 5.3	Trial 3 Local Getis Gi for the Classic Recuay era	122
Figure 5.4	Trial 3 Local Moran's I for the Late Recuay era	124
Figure 5.5	Trial 3 Local Getis Gi for the Late Recuay era	125
Figure 5.6	Trial 4 Local Moran's I for the Classic Recuay era	129
Figure 5.7	Trial 4 Local Getis Gi for the Classic Recuay era	130
Figure 5.8	Trial 4 Local Moran's I for the Late Recuay era	132
Figure 5.9	Trial 4 Local Getis Gi for the Late Recuay era	133
Figure 5.10	Trial 5 Local Moran's I for the Classic Recuay era	138
Figure 5.11	Trial 5 Local Getis Gi for the Classic Recuay era	139
Figure 5.12	Trial 5 Local Moran's I for the Late Recuay era	141
Figure 5.13	Trial 5 Local Getis Gi for the Late Recuay era	142
Figure 5.14	Trial 6 Local Moran's I outliers during the Classic and Late Recuay era	147
Figure 5.15	Chullpas Present during the Classic Recuay era	151

Figure 5.16	Chullpas Present during the Late Recuay era	152
Figure 5.17	Classic Recuay Mortuary Monuments around Santa Cruz	155
Figure 5.18	Classic Recuay Mortuary Monuments around the Río Ancash	156
Figure 5.19	Classic Recuay Mortuary Monuments around Huaraz	157
Figure 5.20	Classic Recuay Mortuary Monuments around Huari	158
Figure 5.21	Late Recuay Mortuary Monuments around Santa Cruz	159
Figure 5.22	Late Recuay Mortuary Monuments around Huaraz	160
Figure 5.23	Late Recuay Mortuary Monuments around Huari	161
Figure 6.1	Classic Recuay Confluence of Traits in the North	181
Figure 6.2	Classic Recuay Confluence of Traits in the South	182
Figure 6.3	Late Recuay Confluence of Traits in the North	183
Figure 6.4	Late Recuay Confluence of Traits in the South	184

LIST OF TABLES

Table 4.1	General Spatial Variables	92
Table 4.2	Cultural Variables	93
Table 4.3	General Mortuary Burials	93
Table 4.4	Mortuary Variables Breakdown	94
Table 4.5	Coded Variables for First Round Analysis	94
Table 4.6	Appended Recuay Dataset with Spatial Variables	95
Table 4.7	Appended Recuay Dataset with Tested Variables	102
Table 5.1	Trial 1 ID Number Global Statistics	113
Table 5.2	Trial 2 Binary Burial Global Statistics	115
Table 5.3	Trial 3 Binary Ceramic Global Statistics	119
Table 5.4	Trial 4 Ceramic Type Global Statistics	127
Table 5.5	Trial 5 Binary Metalwork Global Statistics	136
Table 5.6	Trial 6 Burial MNI Global Statistics	145
Table 5.7	Attributes for Significant Outliers	167

ACKNOWLEDGEMENTS

Special thanks to Jean Hudson and Brian Nicholls for serving on my thesis committee and providing invaluable feedback. Professor Jason Sherman assisted and guided through the whole process of writing and revision. Thanks also to Bebel Ibarra and everyone associated with the Proyecto Arqueológico Huari-Ancash who oversaw the field work while I was there and made site data available for reuse.

Chapter 1

Introduction

This thesis focuses on the Recuay culture, which flourished in the north-central highlands of Peru during the Early Intermediate Period of the first millennium AD. Recuay mortuary treatment was diverse and reflected the increasingly interconnected world they inhabited. Groups in the main Recuay heartland in the Callejón de Huaylas grew wealthy through trade with their neighbors, as indicated by archaeological evidence of increasingly visible social differentiation. Most importantly elite individuals became associated with the tradition of Andean ancestor veneration. Deceased Recuay elites were offered gifts and sacrifices by generations of their descendants. Their elite lives, deaths, and continued veneration left visible traces on the Recuay landscape.

This thesis examines a landscape of death comprising a set of sites across the Recuay hinterland. These sites range from larger multi-component habitation and mortuary sites to single-component burials. Site data derived from four primary sources (discussed in this chapter, as well as Chapter 4) are used to assess degrees of social differentiation, heterogeneous distribution of Recuay sites, and changes over time in the Recuay hinterland.

In Recuay society some individuals could differentiate themselves through displays of wealth, thereby leaving their mark on the architecture and sculpture of the cities they inhabited. Some of these individuals became venerated ancestors after death and were buried with higher quality ceramics and metalwork. But these elites were not spread evenly across the Callejón.

Some sites like Pashash exhibit incredible evidence of social differentiation, such as the “Señor” buried there (Grieder, 1978: chapter 4; Lau 2013:60-61; Castro and Velarde 2008).

Some Recuay cities were small and their elite inhabitants were less able to make ostentatious displays of wealth, but these too may be identified by looking for material patterns similar to those in the Recuay heartland. One key way in which Recuay mortuary treatment changed over time was the arrival of chullpas. The incorporation of these semi-subterranean burials with defined entrances into the Recuay mortuary tradition facilitated access to ancestors' remains, and thus allowed proper veneration. In earlier times, the Recuay would have had to remove the remains of ancestors and display them on a stone platform. The adoption of chullpas correlates with the beginning of the end for the Recuay, as they indicate the spread of Wari influence. After AD 800, there no longer is anything archaeologically identifiable as “Recuay” left in the highlands, as Recuay groups adopted the Wari cultural bundle and their mortuary customs.

Regional Fluorescence

The first millennium AD was a period of regional fluorescence in the central Andes. Following the decline of the pan-Andean Chavín tradition, the whole region fractured into numerous local styles that were distinct but related to one another (Figure 1.1 and Figure 1.2). This long period witnessed growth and experimentation in technology, agriculture, ceramics, metallurgy, and carved statuary (Bennett and Bird 1964: 113). This fluorescence represents a time when the Andes “flourished to achieve its maximum” within the local styles (Mason 1957: 66). The Regional Fluorescence is an age of intense variability in settlement and urbanization,

which provided the backdrop for regional adaptations. For the first half of the millennium these groups developed styles unique to their respective biomes, with comparatively little interaction or cultural exchange. Out of this incredible diversity emerged many of the artistic traditions which continue to define Andean archaeology (Moore 2014: 263). This could well be the result of increasing urbanization in the central Andes throughout this period which saw a rise in local elites and the proliferation of style based on their tastes (Moore 2014:261; Moseley 1992: 161). Though the general consensus is one of regional development, this in no way precludes intercultural interactions which are visible at some level across cultural regions in the Andes. In contrast, during the second half of the first millennium intersocietal interaction increased first through trade and then through the expansion of the Wari phase.

The Recuay were agriculturalists and herders inhabiting intermontane valleys. As the Recuay fluoresced and grew during the first millennium, other contemporary pre-Hispanic Andean societies lived adjacent to one another in the central region of Peru for several centuries. To the west were the Moche, who inhabited coastal plains and the bottoms of river valleys nearby. Known for their remarkable ceramics, the Moche expanded up river valley floors while their ceramics have been found across the Andes. The Moche and Recuay were characterized by distinct ceramic styles and motifs, architectural styles, cosmology, and forms of social organization. In some regions, such as the Nepeña Valley, these two societies met face to face, but more often their interactions were less direct, involving long distance trade in a massive interaction sphere. These two societies followed distinct yet related cultural trajectories, each growing throughout the first millennium AD. To the south of the Recuay were the Lima and Nasca peoples, with whom they interacted via longer distance trade and exchange. The Recuay's neighbors also included the Wari, the great state whose influence eventually spread across the

Andes. Each of these societies flourished and developed with clear evidence of cross-cultural influences, particularly after AD 500. Each grew in scale and architectural monumentality, as did their cultural manifestations found outside their lands.

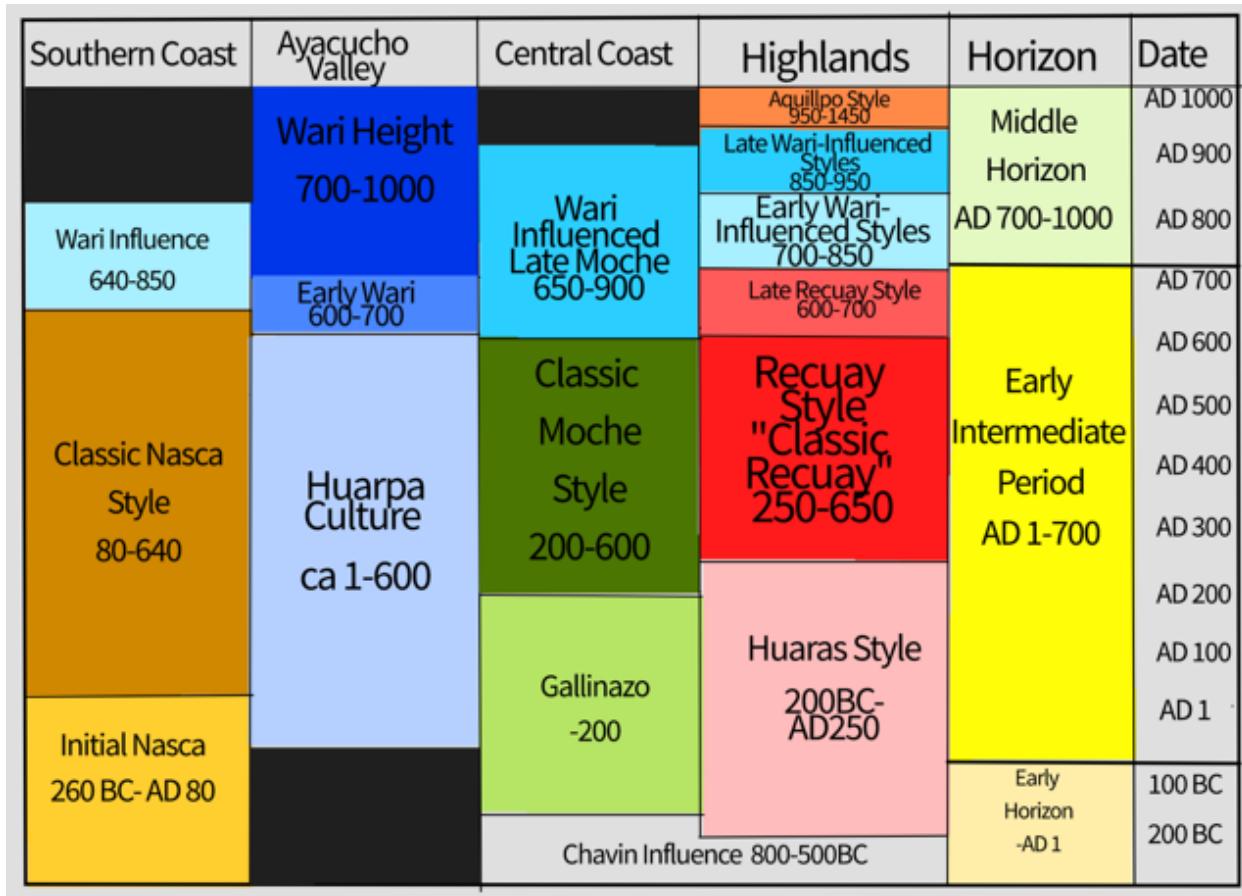


Figure 1.1 Timeline of Relevant Regional Culture Histories

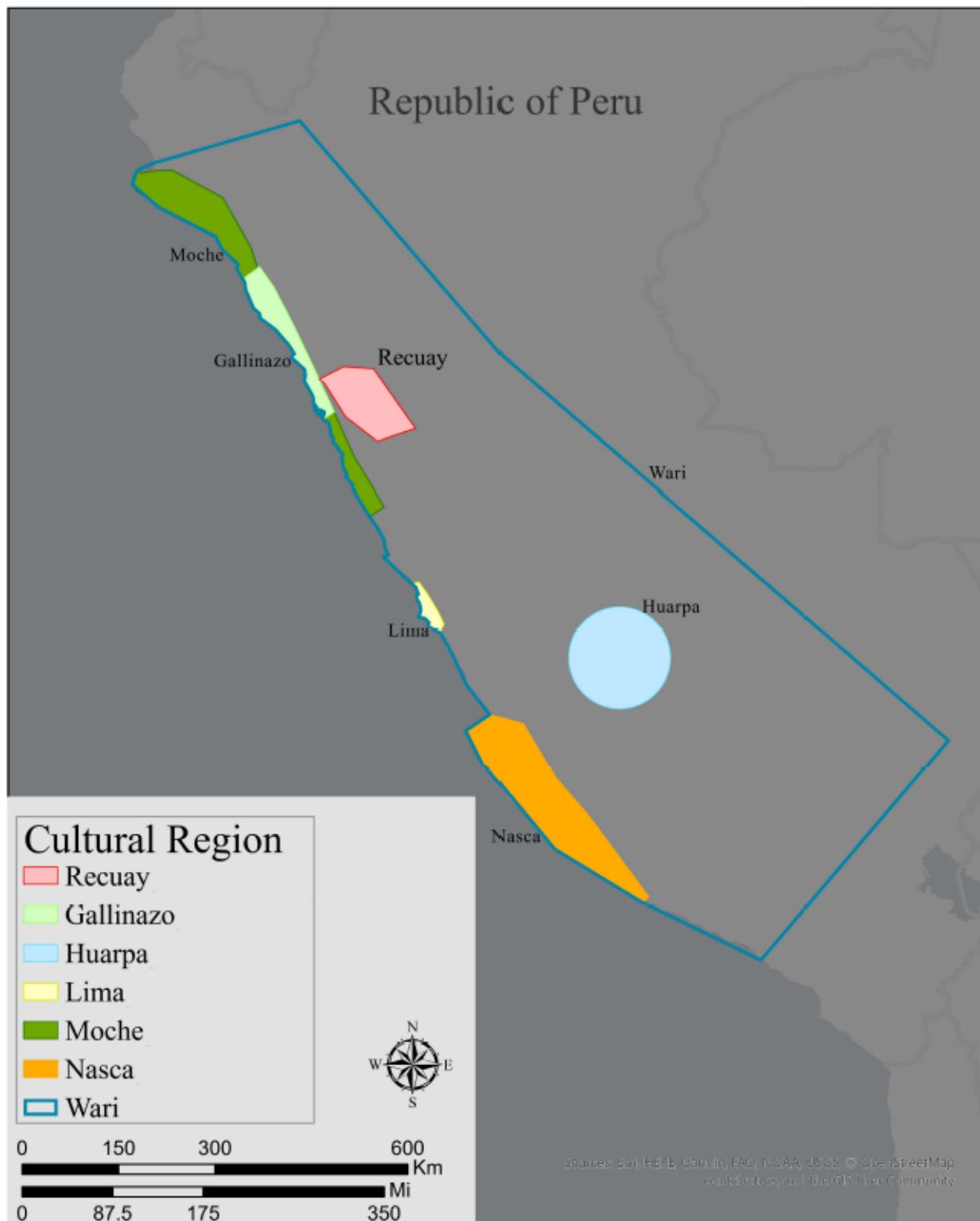


Figure 1.2 Map of the Cultural Regions during the Early Intermediate Period

Chavín

Chavín de Huántar is an anomalous temple complex in the highlands, located at the confluence of the Río Monsa and Río Wacheqsa. It includes the temple with many subterranean galleries and a large sunken plaza near the main entrance capped in columns and covered in shallow relief. The temple was used and built throughout the first millennium BC in several successive building episodes. The site was abandoned sometime after 400 BC (Velásquez 2016: 8-9). This anomalous temple complex was accompanied by a residential zone called ‘La Banda’ and a wealth of smaller villages and hamlets throughout the region. Much of the original village has been re inhabited even today in the modern city (Moore 2014:245). Critically for this study, La Banda was reoccupied by both Huarás and Recuay cultures of the Early Intermediate Period. There were even Huarás occupations of the temple grounds itself, which had been discretely a non-residential ritual area during the era of the temple. By the era of the Recuay there are platform tombs in La Banda complete with traditional Recuay burial offerings (Velasquez 2016: 69-70).

The Chavín site was an important place where the many distinct local cultures in the central Andes came together. For this reason it is often referred to as the Chavín Horizon, implying a period of interregional cultural commonality. Most importantly is a sharing of icon and artistic motif which includes vast interaction spheres without an obvious centralized state or integrated political structures. The very widespread distribution of Chavín-associated material culture also indicates the site’s instrumental role in defining succeeding cultural sequences. One example is the “crested animal”—an artistic feline motif that appears in the Chavín, Recuay, Moche, Gallanazo, and Salinar cultures (Lau 2011:247). Another is the Andean Staff-God so called because the figure is generally shown carrying staffs. The Lanzón is one representation of

the figure, but both male and female representations of the figure are found all throughout the Chavín interaction sphere (Lau 2016: 79). Although the specific representation of these motifs vary widely across time and cultures, they represent Chavín elements that appeared in many regional styles. There are still gaps in our understanding of Chavín, but it clearly was a significant place and tradition in the cultural history of the region.

Chavín's influence was limited to neither artistic motifs nor to the Central Andes. Their expansion seems to have been based on expansion of cultural expressions and access to resources, not on any invasions or military occupations (Lau 2016: 83-84). Obsidian was one material which we can geochemically source. At Chavín there is evidence for obsidian from the Quispisisa source and others in the southern highlands, implying the material traveled long distances to reach the temple (Contreras 2011:383-384). Additionally many *strombus* shells have been found at Chavín, many appeared as ornately decorated trumpets and were identified in ritualized deposits at the site. Many ceramics found at the site were also foreign imports from as far away as the North Coast Cupisnique style (Contreras 2011:384). The Chavín culture produced a new style of heddle weaving principally of camelid wool. This stylistic change ultimately meant that icons could be displayed in large public tapestries on the temple grounds. Additionally there is good evidence for Chavín style tapestries throughout the central Andes (Moseley 1992: 157). Conversely there are relatively few Chavín style ceramics produced for export, but there was a significant emulation in style such as the stirrup-spouted bottles and their associated decorative motifs (Moseley 1992:158). One model of these exchanges used a least-cost path to demonstrate two likely routes for trade in this era: one through the highlands and south towards the obsidian sources, and another along the coast. Each model would connect the

Chavín sphere and effectively shows a possible route to and from the temple for these exotic goods (Contreras 2011:292-294).

One key explanation of the significance of Chavín de Huántar was the presence of an oracle at the great temple. The temple itself was expanded several times during its occupation. The Lanzón in this model, is an early aspect of the Andean Staff-God. Ultimately the oracle at Chavín had many offshoots, proselytizers, and smaller oracles in orbit around the great temple. The Staff-God is represented visually in various types of art, which often leaves a visible trace of the proposed religious expansion (Moseley 1992: 159).

Moche/Gallinazo

Gallinazo is the term used to refer to an early coastal people roughly contemporaneous with the Huarás. Throughout the first centuries BC, Gallinazo populations, architecture, and material culture expanded to encompass the Viru and Moche Valleys (Lau 2011:246). Their settlements tended to be hierarchical in relative size and monumentality, containing platforms, canals, and temples built of adobe bricks. The Gallinazo Group was their main heartland in the Virú Valley (Lau 2011: 246). Other major sites included Cerro Orejas and Cerro Blanco (Moseley 1992:164-166). Eventually the Gallinazo transitioned into the Moche, whose earliest central site was the rebuilt Cerro Blanco. Although this transition is poorly understood and debated by scholars, the Gallinazo became indistinguishable from the Moche in the first centuries AD (Mosley 1992: 166).

The Moche emerged along the coast as a primarily fishing and irrigation farming society that was divided by river valleys and the cordillera. Moche culture expanded along the coast,

building monumental temples and cities adjacent to rivers flowing from the Andes into the Pacific. Over time their influence would spread farther up river valleys, where they came into direct contact with Recuay villages (Proulx 1968,1982). Moche material culture spread far beyond the coastal regions. Moche ceramics were among the finest produced at that time, and they became valued as trade goods throughout the Andes. Moche fine ceramics are divided into those ceramics made with moulds and ceramics made with fine line designs (Moore 2014: 315). Given the intensive study the region and culture has received, there are many local chronologies based on local Moche manifestations. For the sake of simplicity the grounded but simplified chronology was used (Koons and Alex 2014)

This period of regional interdependency produced pronounced changes in ceramic materials in the highlands. Fine foreign ceramics became valued as prestige goods. In the first few centuries AD, local Recuay pottery made from kaolinite and other local clays dominated the mortuary assemblage in the highlands, but over time, these locally produced ceramics were replaced by foreign inspired ones. Occasionally this would manifest as local copies of foreign styles, but mainly vessels were non-locally produced (Lau 2005; Proulx 1968, 1982). Moche materials were most prevalent in the assemblages, although material from Nasca, Lima, and the Casma Valley were also present. This change happened at variable rates for different groups throughout the highlands (Burger et al. 2006; Chicoine 2011; Cordy-Collins 2001; Szpac et al. 2015).

The beginning of intensive exchange of cultural materials in the Río Santa valley also began in the Late Recuay period (Ponte 2015). This interaction started with exchange of ceramics, and early on it was not uncommon to find Moche ceramics present in Recuay burials. As time went on, aspects of the two cultures started to blend as well, including mortuary

practices. In Moche burials, infants were generally separated from adult and subadult remains. These tended to be mass burials, yet there are grave goods generally found in conjunction with the infants, implying deliberate segregation (Ponte 2015). In earlier Recuay burials infants were intermixed with adults, a few of which have been shown to be genetically familial. Over time, the Recuay began to build segregated chullpas that contained primarily infants and subadults. Significantly, these burial sites often contain offerings reflecting the deceased individual's status, including Moche-made ceramics. These two trends reflect increasing Moche influence in material culture and burial customs throughout the Late Recuay period.

Nasca/Lima

The Lima and Nasca cultures emerged along the coast to the south of the Moche. Extreme aridity in the area created cultures reliant upon what water was present. The Lima culture built great canals throughout their lands to optimize agricultural possibilities. By the third century AD, they had begun building monumental mudbrick Huaca pyramids, including the legendary Pachacamac Temple, home of the Pachacamac Oracle, an institution that would persist up to the Spanish Entrada in the sixteenth century (Moseley 1992: 184).

To the south of Lima were the contemporaneous cultures of the Nasca region. The Nasca archaeological culture developed out of older traditions such as Paracas. Their ceramic style and motifs proliferated throughout the region, and fine Nasca pottery that was locally produced has been found in many contexts. It appears even commoner Nasca households could possess some fine ceramics (Moore 2014: 291-294). Textiles were highly refined and valued and featured heavily in mortuary and religious architecture. As with the other cultures, scholars have debated

the nature of Nasca political and economic structures. The Nasca constructed many sites, the most monumental at Cahuachi, sometimes called the Nasca capital. Cahuachi started as a small agricultural village, but in time grew into a massive 150-hectare complex (Moseley 1992: 185-187). Cahuachi contained some 40 mounds, platforms, plazas, and a great temple and yet contained no clear evidence for a large population nor a domestic sector (Moore 2014: 294-295).

Wari: Empire, Phenomenon, Bundle

Beginning around AD 700 the highland Recuay, coastal Moche, and southern peoples in Lima and Nasca began to decline. The exact reasons for this are hotly debated and seem regionally dependent, although mounting ecological stress seems to be one probable cause. The Wari emerged from the dissolution of earlier social structures (Moore 2014: 341; Moseley 1992:218-219). There is scholarly debate about the nature of Wari expansion, but it is clear that aspects of their culture spread outward from the Ayacucho Valley, even as the inhabitants of some regions kept their local material culture.

While early researchers characterized Wari as an empire, contemporary researchers discuss a Wari Phenomenon whose statecraft remains poorly understood. Researchers with a processual perspective identified the capital of the empire as the Huari site (Giersz and Makowski 2014: 286). According to this model, the Wari expanded out from Huari and other major centers and conquered neighboring peoples, thus establishing an empire. Examples of the domineering Wari culture include the sites of Honcopampa and Wilkawain, both of which were Recuay cities which experienced significant change as they became regional Wari centers. The Wari Castillo Huarmey is a similar example located in formerly Moche lands (Giersz and

Makowski 2014: 291). The results of a comparative study in the highlands indicated that increased rates of cranial trauma as well as trophy heads occurred in the Middle Horizon (Arkush and Tung 2013: 27-28). This would certainly be expected as evidence of a militant or otherwise imperial expansion.

One reason scholars abandoned this imperial model was Wari artistic motifs. Wari arts often incorporated local styles into the distinctly Wari style. The motifs found across the area of Wari influence include a wide variety of symbols and styles, evidence of holdover from earlier cultures (Giersz and Makowski 2014: 289). Thus, the Wari Phenomenon consists of interrelated artistic and architectural styles which in some regions never fully supplanted local traditions. For example, the Recuay style of masonry, including subterranean galleries, persisted throughout the Wari era even though architectural styles and urban plans followed the Wari prototype (Giersz and Makowski 2014: 288). Additionally, the study of cranial trauma noted above concluded that although there was a notable increase in violent pathologies during the Middle Horizon, the greatest rates of trauma occurred in other eras. Periods without great societies, cultural “bundles,” empires, or otherwise stabilizing social structures witnessed the highest rates of violent pathologies (Arkush and Tung 2013: 36). This would imply that the periods when large empires were established produced fewer violent pathologies than eras when the highlands were more politically fragmented.

In the highlands of Ancash, the Wari may be conceptualized as a bundle of traits that expanded and brought about changes in the material culture of local societies, with some limited evidence of conflict (Lau 2012: 35). The earliest manifestation of the Wari in the highlands is their polychrome ceramic vessels, which were imported from the Ayacucho Valley throughout highland and coastal Ancash (Lau 2012: 29). In time features such as zoomorphic figures and

tapestries became mainstays in the highlands. There are even some late Recuay ceramics which feature Wari zoomorphic motifs on local vessel forms (Lau 2012:39). Additionally, architectural elements associated with the Wari, such as D-shaped structures and chullpas, were incorporated into the late Recuay architectural styles (Lau 2012:41). Another type of communal architecture was called the *Kanchas*. The word *kanchas* was used originally to describe a form of Inka domestic architecture with several rooms off a central patio (Moore 2014:431). In the Middle Horizon the *kanchas* are much more difficult to date and deduce meaning. The monumental funerary site of Turiqaqa contained over 150 cliffside tombs. The *kanchas* there show evidence of the patio being used as a central meeting and ritual place associated with the mortuary complex (Ibarra 2013:9).

The Wari bundle model of expansion implies that a set of cultural features affiliated with the Wari expanded organically as older regional structures dissolved. The bundle expanded or diffused as a result of power vacuums, and social and material requirements were met by the new structures in ways that the earlier structures had failed. The Wari persisted through the end of the Middle Horizon, but they too eventually collapsed, suggesting that the Wari structures were no longer the best adaptations for life in the highlands. Although the details are debatable, the Wari diminished yet their influence was permanent, as Late Intermediate Period mortuary customs were shaped by the Wari in the Middle Horizon (Cadwallader et al. 2018: 14).

Thus, a basic history of the first millennium AD in the Central Andes consists of a series of regionally distinct artistic, architectural, and material culture traditions. People adopted regionally appropriate adaptive strategies but were also culturally entangled with one another, and the proliferation of trade relationships led to intermixing of contemporary styles. Around AD 600-700 these regional traditions began to decline, perhaps because local adaptive strategies

were no longer sufficient, and in time the Wari style spread throughout the region as highland societies incorporated it into their local cultures. Eventually the Wari likewise faded, leaving another mosaic of related local cultures until states again formed in the Andes.

Archaeological Definitions of the Recuay Culture

The Recuay were an archaeological culture identified based on their distinctive ceramics, architecture, mortuary complexes, and artistic motifs (Figure 1.3). They were the primary culture of agriculturalists and pastoralists in highlands Ancash during the first millennium AD (Lau 2011: 4). Ancash is the modern name for the political department north of Lima consisting of mountainous regions, intermontane valleys, and coastal areas. During the first millennium Ancash was home to the highland Recuay and Huarás, in addition to coastal Moche, Gallinazo, and Salinar cultures (Lau 2011: 243-245). Highland Ancash is defined by its mountains and river valleys. The Cordillera Negra is the first range of unglaciated peaks paralleling the Pacific coast of Peru. There are two river valleys, the Río Santa and Mariñón, on either side of the second major mountain range, the Cordillera Blanca, which contains the Parque Huascaran and the Llamacorral and Ishla Ranra site discussed below. The Recuay were located principally in the great Callejón de Huaylás, that large intermontane valley between the Cordilleras Negra and Blanca with vast areas for agriculture and herding (Figure 1.4).



Tupu Pin from chullpa 3

Grave offering micro-ceramic from chullpa 3



Recuay style ceramic from chullpa 5 in an unusual vessel form

Recuay Ceramic from chullpa 5

Figure 1.3 Recuay Mortuary Ceramic Assemblage from Coronajirca

These ceramic and metal pieces represent an archaeological sample from a row of chullpas at the Coronajirca site near Huari, Ancash. (Photos by author).

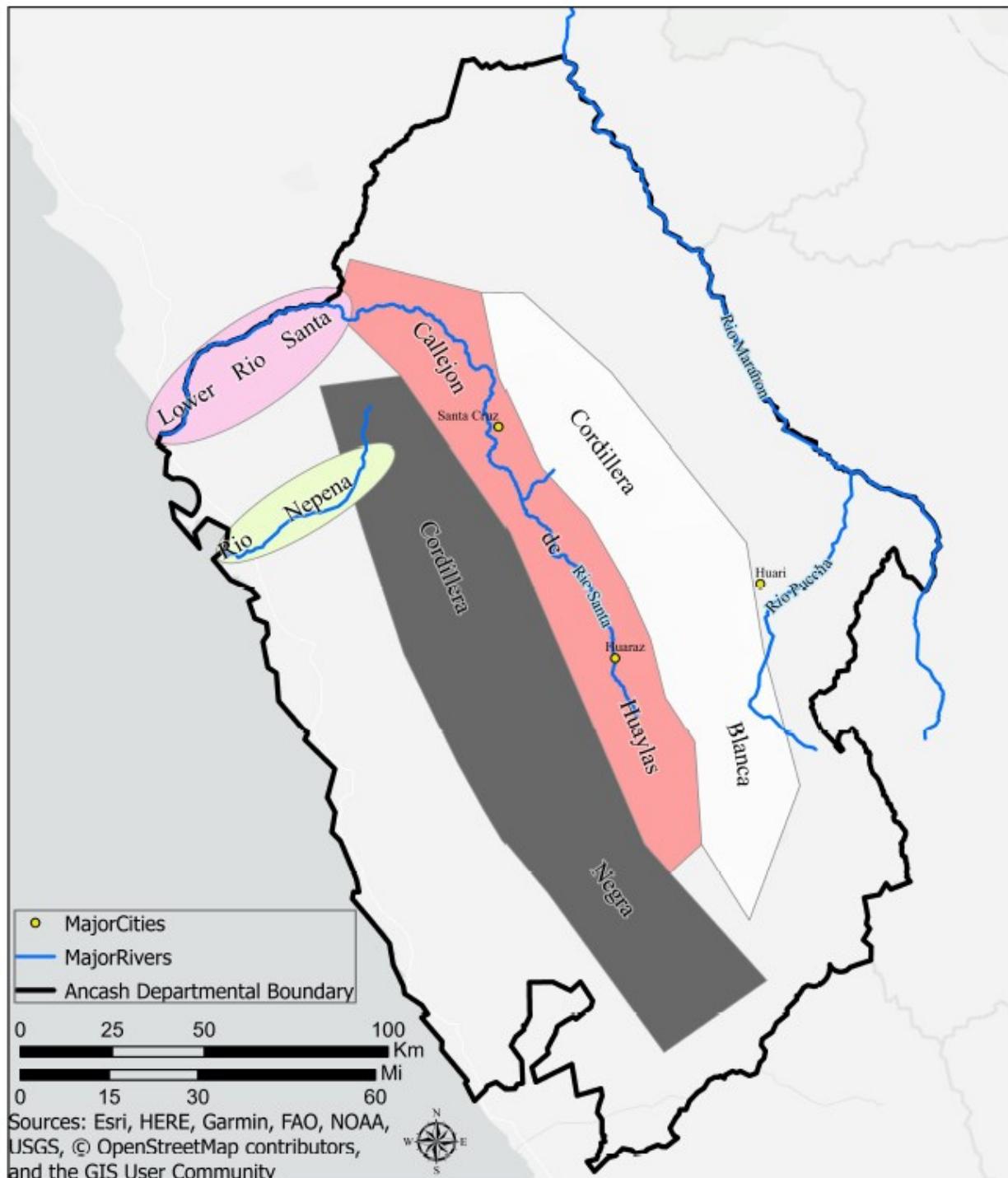


Figure 1.4 Map of the modern boundary of Ancash, major rivers, mountain ranges and important cities relevant to this study

Recuay culture emerged out of the fragmentation of Chavín into a mosaic of succeeding cultures (Lau 2013: 33). The traditional culture history suggests that Chavín led directly into the

Huarás culture, although architecturally and ceramically these represent distinct traditions (Velasco 2016: 77). Chavín was once thought of as a “cradle of civilization” for the upper Andes, but now it seems post-Chavín Andean groups created a mosaic of local styles, some related to and others rejective of Chavín forms (Lau 2011: 244-245) Architecturally, the Huarás diverged from the monumentality of Chavín, with smaller sites even intruding on the great temple at Chavín de Huántar. The new Huarás white-on-red ceramic tradition similarly represents a deliberate rejection of Chavín style (Lau 2011: 244).

Following the Huarás, the Recuay style emerged and proliferated throughout the highlands. Recuay tradition supplanted or absorbed Huarás material culture and architecture, and Recuay settlements varied significantly in monumentality. Most Recuay settlements were small farming communities built along and above river valleys, in addition to some great monumental hilltop cities such as Chinchawas (Ibarra 2013: 5). Recuay subsistence consisted of a traditional highland diet including potatoes, maize, quinoa, squashes, and pumpkins, as well as cuy (which were domesticated ca. 3500-500 BC and became a staple in the highlands), wild and domesticated camelids, and wild game such as the Anteojos (spectacled) Bear, mountainous deer, and rodents. Recuay diets fluctuated based on the seasonal wet and dry cycles common in the tropics (Ibarra 2013: 9).

The Recuay region has been studied by many researchers over the past century, including Tello, Uhle (1902), Roosevelt (1935), Bennett (1943,1944,1964), Bird (1964), Grieder (1978), and Proulx (1968, 1982), as well as more recent and ongoing research by Lau (2002, 2011, 2013, 2015), Ibarra (2004, 2006, 2013), Ponte (2000, 2006, 2015), and Orsini (2011, 2015). In the first half of the twentieth century, researchers tended to view the Recuay simply as one of the multitude of regional styles, principally known for its ceramics and shallow relief sculpture. In

contrast, beginning in the 1960s, processual scholars focused on the cultural processes at play in the Andes during this time. The Recuay were recast as a dynamic society engaged with its neighbors and an integral part of a pan-Andean trade network. Over time it became clear that the initial understanding of the Recuay as peripheral highlanders preyed on by the Moche until they were conquered by the Wari was no longer tenable. Rather, the Recuay were an archaeological culture that traded widely and at times had predatorial relationships with other local groups.

Starting in 1967, the Nepeña Valley became the focus of processual research on the Recuay and Moche (Chicoine 2011; Proulx 1982, 1968). The Recuay lived on the hilltops of the valley along the western periphery of the Callejón de Huaylas, and they exchanged cultural materials with the Moche, who inhabited the valley floor from the coast (Proulx 1982:83, 90-91). The Moche built a monumental pyramid at the village of Pañamarca, which contained trademark Moche walls with ornate murals, courtyards, and a burial complex nearby (Proulx 1982: 84). Pañamarca is the largest and most monumental Moche site in the Nepeña Valley, though there were other Moche agricultural sites throughout the valley floor (Proulx 1982: 83).

Relationships between the Moche and Recuay were not always so peaceful. Later research has indicated that the initial Moche expansion into the Nepeña Valley was likely militaristic. There is evidence of skeletal trauma and fortifications in the earliest Moche sites in the valley (Arkush and Tung 2013: 23-24). Representations of combat are common in Moche, Wari, Recuay, and Gallinazo art. The Moche are particularly famous for their images of combat, ritual sacrifice, and trophy heads. Moche combat included both a sacred ritualized type of combat as well as profane expansionary or defensive combat (Arkush and Tung 2013: 23). Initially researchers presumed the prevalence of combat in imagery was indicative of a warlike people. However, there is good reason to think that conflicts worthy of memorialization on

ceramics or murals were primarily ritualized combat or execution of prisoners (Castillo Butters 2014: 262). This perspective does not suggest that all or even most conflict involving the Moche was sacred or ritualized, merely that what was represented consistently was not profane acts of conflict (Arkush and Stanish 2005: 15-16).

Conflict that occurred along the coast appears to have been primarily between Moche polities, potentially marking expansion or control over resources (Castillo Butters 2014: 268). It was in such conflicts that foreign prisoners would be obtained. Evidence from the Nepeña Valley indicates that the Moche expanded into a region where Recuay sites were already established along the crest (Arkush and Stanish 2005: 16) This could be interpreted as a continuous threat of conflict. In response, the Recuay became combative to fight off Moche invasions; later, they also mounted a short-lived resistance to the Wari (Arkush and Tung 2013: 25). In any case, there was clearly conflict between the highlands and coast that ended in ritualized execution of prisoners. However, there were no substantial long-term incursions of the Moche into the highlands.

In the Nepeña Valley, highlanders tend to be displayed in Moche arts. Individuals represented with feline motifs, pendants on the otherwise naked warriors, and coca bags at their waists are likely Recuay neighbors from the margins of the valley (Castillo Butters 2014:265). In addition to these images of ritual combat, the Moche were known to engage in profane conflict, claiming resources, trade routes, or captives. Exactly how often the Moche engaged in ritual versus profane combat remains unclear (Castillo Butters 2014: 270-271).

Moche artistic representations often feature proud and noble warriors, great fortresses, and ruthless slaughters. As research on the Moche has progressed, it has become increasingly clear that the battles depicted most prominently are primarily ritual violence (Castillo-Butters, 2014:259). It could be said that our understanding of the Moche combat motifs was transformed

from the profane act of combat into the art of ritual violence. The scenes depicted include the so-called combat sacrifice ceremony where warriors are displayed fighting near priests. There is a sub-motif where a human figure is presented with a goblet of blood, which was presumed to be a ritual sacrifice motif. These two motifs are often found adjacent on the same vessel (Castillo-Butters, 2014: 262). In some cases the Moche represented themselves as ritual warriors associated with human sacrifice. In other artistic representations, Moche warriors engage in combat without priests, but with the aid of preternatural human-animal hybrid motifs. Typical anthropomorphic designs include puma, foxes, fish, shark fins, and even lima beans (Castillo-Butters, 2014: 263).

How the artistic motifs compared to actual combat is unclear. Other Late Moche ceramics depict the act of knocking a headdress off another combatant. The battles depicted without priests tend to show masses of combatants engaged with seemingly no plan or strategy. Artistically, the Moche are shown unclothing their defeated opponents and tying a rope around their necks. These defeated warriors were then walked through Moche society and up to the combat sacrifice ceremony (Castillo-Butter, 2013:264). Scenes depicting violence could well be among Moche groups as well as combat levied against surrounding groups, such as the Recuay.

This change in perspective on Recuay and Moche interaction corresponds to a larger change in scholars' understanding of the Moche. Initially the Moche were thought of as a warrior-like, sexually explicit culture reminiscent of the Spartans (Castillo Butters 2014: 257-259). As this view has changed, their presumably predatorial relationship with the Recuay has been called into question. Most critically, the taking of trophy heads and ceremonial violence suggest a relationship of symbolic rivalry. Ritual subordination of foreigners enhanced the Moche themselves and likely produced social cohesion (Lau 2013: 125). The Moche produced

combat imagery, but much of it seems to have been ceremonial in a deadly ritual. The ritual involved full combat paraphernalia for Moche warriors and generally naked foreigners or captives who were to be sacrificed at the end of the ritual (Castillo Butters 2014:263-265).

Scholars have also taken a regional approach at the Recuay site of Chinchawas, but applying concepts from world systems theory to both the Moche and Wari's relations with a Recuay hinterland site. Chinchawas was a late Recuay site which served as a key locality for trade. During the first period of occupation (AD 300-600), Chinchawas was a peripheral Recuay site on the margins of the Callejón. Their location facilitated extensive trade and exchange relationships such as remains of fine kaolinite Kayán ceramics were found, along with Wari goods from the north, pottery from the coastal Neyería culture, and obsidian from several sources in the Andes (Lau 2005: 84-90). After AD 700, the once prestigious kaolin pottery was replaced by foreign Wari wares. Other styles included locally produced Wari-inspired Warmi Redwares (Lau 2005: 84-87). The later phase of occupation also witnessed an increase in obsidian at Chinchawas, though far fewer pieces have been found there than in the Chavín era (Burger et.al. 2006: 109).

Evidence dating to the final phase of occupation at Chinchawas, AD 850-950, includes only imported coastal styles, Wari wares, and the local Warmi style (Lau 2005: 89-90). This era was marked by a general shift in cultural expression throughout the Callejón. As the Recuay were declining, trade was redirected to focus on the Wari. Semi-subterranean mortuary monuments called chullpas proliferated, and D-shaped patios were built at many Recuay sites (Lau 2011:256). There is a notable decline in evidence of trade with the coastal Moche and other groups and an increase in Wari vessels, motifs, and polychrome styles. Even the tradition of fine kaolin ceramic vessels all but disappeared from the archaeological record at the end of the

Recuay culture (Lau 2011: 257-260). During the final phase, after AD 800, smaller patios were constructed at Chinchawas, suggesting that their function was no longer to host huge feasts for the whole population but for smaller gatherings. In the same era the entire mortuary complex at the site was reorganized, including the use of chullpas (Lau 2002 (a): 299). Each of these developments indicates the arrival of the Wari, albeit belatedly in comparison to the rest of the highlands.

Discussions of the Recuay decline have focused on the regional expansion of glaciers and harsher winters associated with the Little Ice Age in the seventh and eighth centuries, as well as Wari expansion and predation (Lau 2011: 262). Chinchawas seems to have persisted long after the Recuay core because it remained a peripheral site, but now in relation to the Wari heartland. After AD 1000, there was no trade between Chinchawas and the outside, likely correlating with the decline of the Wari themselves (Lau 2005: 90). Using this world systems perspective, the Recuay were no longer actors in Moche and Wari trade networks, but drivers of their own.

Recent literature has augmented our understanding of the Wari, creating further questions about their interaction with the Recuay. Perceptions of the Wari have changed from a culture which conquered the highlands and subjugated the Recuay (Ponte 2000: 228) to a more diffusive process (Lau 2012: 24). Processual researchers viewed the Wari as an imperial force, commanding the highlands and the Recuay directly (Ponte 2000: 244). Although the Wari were present in the highlands and even supplanted some Recuay sites, the Wari seem to have left some local customs intact. Critically the Recuay style of masonry, semi-subterranean galleries, and mausoleums persisted in the highlands through the Wari era (Giersz and Makowski 2014: 288). On the other hand, ceramic styles and motifs changed as the Wari grew (Giersz and Makowski 2014: 289). The Wari also established a new core in the Callejón at the Honcopampa site. Some

scholars have even gone so far as to call this the Wari capital in the Callejón (Giersz and Makowski 2014: 291).

The Wari are no longer thought of in terms of simple militaristic expansion and domination of some areas. The Wari can be thought of as an empire, but also as a cultural bundle of religious beliefs and practices, militarism, architecture, artistic motifs, and burial complexes that slowly supplanted the Recuay and other cultures of the highlands (Lau 2012: 24). There was, however, a notable increase in cranial trauma during the era when the Wari were a power in the Andes, but less so in the Recuay highlands than in other areas. Clear evidence of trophy heads were found at some Wari sites, while other sites yielded no such evidence (Arkush and Tung 2013: 26-7). The nature of the Wari cultural bundle's expansion into the highlands remains elusive. Wari cultural traits like fine ceramics and chullpa-style burial treatment predated any encroachment into the Recuay highlands (Lau 2012: 41).

By around AD 600-800, the Wari bundle or empire proliferated alongside the Recuay in many areas. Chullpas and Wari burial goods have been found in association with Recuay goods in mortuary contexts (Lau 2015: 215). It seems the chullpa fit well with pre-existing Recuay mortuary customs. In earlier times the Recuay would build a necropolis within or adjacent to a hilltop village or city. These tended to be modest chambers modified from naturally occurring caves (Lau 2015:207). In time chullpas became the primary burial type even in established Recuay sites (Ibarra 2013: 20). The arrival of the chullpa merely changed the necropolis into semi-subterranean stone structures; the practices of familial burials and grave goods remained (Lau 2015: 224-225). Chullpas were also constructed in other areas of Peru, but the Recuay adopted them early and intently (Ibarra 2013:8). With respect to their mortuary customs, the

Recuay and Wari relationship was not one of domination, but rather an incorporation of new customs and materials with old customs (Lau 2013: 158).

Research Questions and Expectations

This thesis uses mortuary treatment and associated grave materials to explore three interrelated research questions which when pulled together construct a landscape of death:

- 1) Foreign influences and social differentiation: *How do foreign influences and social differentiation manifest in the Recuay hinterland, and do they follow patterns similar to those evident in the heartland?*

We would expect foreign influence in the hinterland to look somewhat similar to the heartland just at a different scale. Sites in the hinterland should contain similar materials from similar trading partners. Although it is expected that there will be fewer valuable foreign goods in these hinterland sites, they will still be present in the archaeological record.

There is evidence of trade with the Gallinazo, Moche, and Salinar relatively early in the Recuay sequence. In later periods, more materials from the Lima and Nasca cultures and eventually the Ayacucho Valley were imported by the Recuay. Naturally ceramics, metal, and lithics preserve the best, but there has also been research on organic materials from the highlands, such as camelid wool and coca. Taken together the Recuay were enmeshed in a trading network which left a visible distinction of cultures on the landscape.

Characteristic Recuay ceramic vessels were made of fine kaolinite rich clays. These can be distinguished from red and white plainware vessels. Additionally there were *tupu* pins,

generally made of copper and bronze, that were used to fasten clothing during life and then hold mummy bundles together after death. Both fine ceramics and *tupu* pins were locally produced status markers. Together with foreign goods, the presence and quantities of these status markers allow an assessment of social differentiation. Recuay individuals' wealth in life was reflected in their burial treatment when they died as discussed in Chapter 2.

If social differentiation in the Recuay hinterlands was comparable to that in the heartland, we would expect to see an uneven distribution where some sites have concentrations of higher-status goods and others little or none.

2) Archaeological heterogeneity: *Is the dispersed settlement pattern evident in the Recuay heartland also evident in the Recuay hinterland?*

The Recuay had no centralized government, so their cities developed locally to meet the needs of the population. If the hinterlands follow the same patterns of heterogeneity, we would expect there to be many local core cities spread across the hinterlands similar to the heartlands but at a smaller scale. There should be significant autocorrelation, especially at the local level.

3) Changes over time: *Did the Recuay culture change in similar ways throughout the hinterlands?*

If the major cultural changes impacted the whole Recuay world, the general changes evident in the Recuay heartland should be also be visible in the hinterland. Before AD 500 there should be mostly locally made, fine kaolin pottery with Gallinazo and Moche wares intermixed. During the Late Recuay period, there should be more foreign high-status goods including Wari materials.

Significant to this argument is not merely the presence of foreign goods, but also changes in mortuary architecture. Higher-status Recuay individuals needed to be accessible after death for their descendants to provide proper veneration. Before the Wari sequence, chullpas began to appear in the highlands (as discussed above and in Chapter 2). The Recuay adopted this style early because it facilitated their offerings and gifts to the dead. Not all Recuay dead were venerated, nor were all entombed in a way that they remained accessible. Thus the presence of chullpas may be considered a proxy for both the spread of Wari influence and also the practice of ancestor veneration.

Data Used

This project makes use of published data from a variety of sources to study patterns in the Recuay hinterland. The data sources include a dissertation by Bria (2017), who analyzed sites near the towns of Caraz and Santa Cruz. Her main focus was Hualcayán, a large multiple-component habitation site with a mortuary sector. She also documented a number of smaller sites near Hualcayán which included isolated burials, smaller residential sites, mound sites, and some agricultural terracing. Data were also obtained from Barbosa's (2008) thesis, which examined three mortuary sites on the Río Ancash containing chullpas and subterranean and cave burials. This study focused primarily on the archaeology of the mortuary architecture, studying the directionality and volume of the monuments. A third data source, a thesis by Ponte (2015), studied sites adjacent to the city of Huaraz, at the southern end of the Río Santa. These sites, which include some small habitations, agricultural terracing, and burial monuments, are located within the Callejón but are peripheral to the main Recuay cities. The final source of data is a study by Ibarra (2010), who has been conducting research at sites across the Cordillera around

the town of Huari since 2006. This area contains a great diversity of sites including cities like Marcajirca, smaller villages, mounds, platforms, and mortuary monuments. These are the only sites included in my study which are not within the Callejón directly.

By integrating data from four different sources, my thesis examines a greater number of Recuay sites and monuments than any of the individual projects and reveals mortuary patterns across the Recuay hinterland that would not be evident from one dataset alone. For this reason the primary analytical approach is geospatial. Data were incorporated into a GIS and a series of clustering and comparative analyses were carried out on the distributions of ceramic and metal artifacts as well as burials. The goal was to identify clusters within the data and how they change across time periods. This focus allows the reconstruction of a mortuary landscape and analysis of treatment of the dead across time and space.

Outline of Thesis

Chapter 2 of this thesis provides a review of literature on mortuary customs in the highlands. A review of chronicles, mythology, and folklore relevant to the study of Andean death allows a proper understanding of ancestor veneration practices. This is followed by a survey of mortuary customs starting with the Chavín and Huarás cultures and continuing through the Recuay and Wari. Recuay mortuary monuments are discussed in detail and then significant Recuay sites are summarized.

Chapter 3 focuses on interactions and trade during the Early Intermediate period. Although trade networks were less extensive during the first half of the millennium AD, the Recuay had significant trading partners throughout their cultural sequence. As in many other

regions of the world, ceramics are the most visible evidence of exchange. The Recuay produced fine pottery using kaolinite-rich clays; both the ceramics and the clays were valued outside the highlands. There is also significant evidence of obsidian trade, especially during the Chavín and Wari periods but also throughout the Recuay era. Furthermore, some perishable goods were valued across the Andes. These included camelid wool as well as coca, a crop only grown in the highlands that nonetheless was prevalent in coastal cultures.

The data and methods used in my analyses are presented in Chapter 4. Data reuse requires a thorough discussion of the sites and materials used in the project, so the data sources and sites they contained are discussed in detail. This chapter also enumerates the mortuary patterns I hoped to identify and the variables used to test them. Chapter 5 describes in detail the tests performed on the sites and the results of these analyses, and then discusses their implications. Chapter 6 is the conclusion which returns to the trends and recapitulates my contributions in comparing trends in the Recuay hinterland and heartland.

Chapter 2

Recuay Mortuary Practices

Recuay mortuary customs varied tremendously by time and place. In the era before the Recuay, ca. AD 200, the dead were buried in the ground and covered. The older buried tombs were likely not intended for descendants to directly interact with the deceased due to the difficulty in accessing them after they were sealed. The first types of mortuary monuments associated with the Recuay were cist burials, lined stone chambers, natural features such as caves, and galleries. The cists would sometimes be located with galleries, a holdover from the Chavín era (Lau 2000:190).

Later Recuay tombs were designed to have a defined entrance, hinting at a ritual interaction between the living and the dead. Recuay mortuary custom seems to correspond to the early days of the highland Ancestor Cult (Ibarra, 2013:6). The dead were mummified and prepared for burial in woven textiles held together by copper, bronze, or rarely gold or silver *tupus*. These pins were functional ornamentation in life, and in death held the mummy together. The practice of mummification spread with the Wari and eventually the Inka. Though mummies and associated materials would become far more ornate with time, common Recuay grave goods include small metal objects, ceramics, micro-ceramics, and animal remains.

Chullpas were common burial monuments starting around AD 500 in the Recuay world. They tend to be semi-subterranean tombs, enclosed but accessible through a defined entrance which usually faces east towards the rising sun (Lau 2000:192). Many chullpas were built on older structures such as the temple at Chavín or stone platforms from earlier Recuay sites at

Chinchawas and Wilkawaín (Lau 2002a: 193). Chullpas could contain single chambers supported by a post in the middle (Figure 2.1). Some chullpas consist of many chambers and ante-chambers supported by many posts. These tend to be clustered together, even creating artificial ridges running along the mountains. The other common burial type were chamber burials. These were usually built by modifying naturally occurring caves to make chambers with carved entrances and decorative motifs.



Figure 2.1 Chullpa 1 from Coronajirca Excavation in 2019
This is typical single-chamber chullpa from the ongoing excavation of the Coronajirca site near Huari under the direction of Bebel Ibarra. There are a line of several similar chullpas along a natural ridge in the landscape.

Isolating the specific rituals from archaeological evidence alone is complicated. Ceramics and grave goods are common, and sometimes there are stone carvings in the chullpas themselves (Ibarra, 2013: 18). In the chullpas, micro-ceramics or miniature vessels are common as grave goods. These range from three to twelve centimeters rim diameter and generally follow the forms

and decorations of full sized Recuay ceramics. They have been shown to contain a wide array of organic materials from common food, to the psychedelic San Pedro cactus prepared as a soupy liquid for consumption. The micro-ceramics are often decorated, including painted motifs, incised designs, and clay rolls baked into the sides of vessels. They are not uncommonly found with faces or heads incised or shown on the sides.

History of Andean Beliefs About the Dead

When the Spaniards arrived in the New World they were immediately consumed with the prospects of conquest. For decades the initial *entrada* was stymied by the remains of the Inka state and hostile locals. By the late sixteenth and early seventeenth centuries the Spanish Viceroyalty was stabilized, and the Spanish began Christianizing the people who would be saved. Thus, we are left with an incredible volume of material written by the conquistadors and their descendants about the customs, religion, and superstition of the Andes. Although these records were created by a conquering people, were intended to reinforce the alterity of non-Christians, and were written only after the conquest of the Inka state, they nevertheless contain valuable information about indigenous Andean societies. The key takeaway from a literature review of the Andean dead is the general commonality of custom as well as local variability. The Spaniards documented some Inka customs very reminiscent of the Early Intermediate Period, just as modern anthropologists have documented stories and customs reminiscent of the Inkas.

Mallqui (*Malki*) is the umbrella term for Andean mummies. The tradition has a long history in the Andes, dating to the Chinchorros peoples along the Pacific coast of southern Peru and northern Chile (Lau 2008:1032). Around 5000 BC, the Chinchorros Black Mummy tradition

began. Their methods started naturally enough, placing bodies within the wet bogs for exposure defleshing. Then the bones were reassembled with wood and clay before being painted with a grey-black paste (Moore 2014:112-113). By around 2000 BC Red Mummies emerged. Organs were removed and the flesh covered in red ochre (Moore 2014: 113-114).

From these beginnings, the *Mallqui* emerged. Mummies played many roles for the societies that made them. The Moche had a series of rituals surrounding death and burial which were acted out ritually, recounted orally, and sometimes even documented in artistic motifs. The stories they tell are thus not perfectly understood, but an artistic interpretation is possible. For example, there is a burial scene that depicts an elite coffin being lowered into the ground while an adjacent figure is consumed by vultures (Moseley 1992: 179-181). Another Moche motif appears to involve a presentation scene where victims are brought in and sacrificed before an observer and various bird and feline motifs (Bourget 2006: 11-13). There were a group of legendary royal tombs uncovered in a salvage operation at the site of Sipán. The Lord of Sipán was found buried with an incredible array of ceramic, gold, silver, turquoise, and a warrior's belt. He also had a richly decorated golden death mask fit to his individual face. The main burial was surrounded by six other individuals (Moore 2014: 317-319).

In the Inka Empire, the mummies were treated especially well. Care and display of the royal mummies was central to Inka statecraft, for the mummies could act as agents of the state. The mummies were not only kept in displayable condition, but venerated with offerings by the living (Urton 1999: 10). Mummies of the Inka rulers and their immediate families were revered in a special room at the Coricancha temple in Cusco (Urton 1999:47).

The mummies were also used in the Inka *ayllu* system. *Ayllu* was a family or lineage system, though it referred to the larger kinship group, sometimes conceptualized by researchers

as Inka ethnic groups. They were vast groups containing thousands of people and were the primary unit for kinship, landownership, and ritual events. *Ayllu* networks maintained the mummies, but they also displayed them at various festivals central to the *ayllu* (Urton 1999: 8). Commoners maintained the veneration of their personal ancestors well into the Colonial era and the customs were documented well by Spaniards (Urton 1999: 62). The incredible *machay* sites in the Cajatambo region contained several thousand mummies to whom routine offerings were made at harvesting and planting as late as AD 1656 (Urton 1999:72).

Ayllu can also be used with respect to the basic social and economic units of the Andes. Ancestor veneration was entangled with the *ayllu* or whichever kinship network was present in pre-Inka times (Herrera 2016:7-9). The Inka divided highland Ancash into five groups for taxation purposes (Herrera 2016:10-11). Testing such lineage archaeologically is difficult, especially with limited samples, although aDNA, mtDNA, morphometrics, and non-metrics these systems can be tested (Herrera 2016:54-56). At Marcajirca, there was a test on cranial non-metrics which could not confirm specific familial linkages such as the *ayllu* though they were able to show a wider familial group likely corresponding to several kinship networks or *ayllu* (Herrera 2016:89-90).

On the matter of how kinship shaped mortuary practices Chronicler Bernabe Cobo wrote:

as soon as the soul had left the body, the members of the deceased's *ayllu* [*ayllu*] and family unit would take the dead body, and if the deceased was a king or a great lord, the body would be embalmed with great skill. As a result it would be preserved intact for many years, and it would not deteriorate or give off a foul odor. Some of the bodies lasted this way for two-hundred years. (Cobo 1990[1653]: 39).

In 1613 Huamán Poma wrote his own account. The bodies were embalmed to avoid damage to the dead, and great care was taken to ensure that the face looked as it did in life. Commoners' mummies were referred to as *aya* but the remains of the Inka themselves were

called *Illapa*, a phrase also associated with lightning. Again the *Mallqui* of a king was dressed richly and buried with gold and silver. The queen was generally buried in the same place as her companion in death (Poma 1978[1613]:79). In keeping with the chronicle of Cobo, the *Mallquis* were put on display for a full month of lamentation and libation. The remains were then placed in a vault called a *pucullo*. During the same period, the princes and legitimate heirs would engage in several months of fasting and ritual to determine the legitimate heir to the throne (Poma 1978[1613]:79-80).

The *Mallqui* had their personal property returned to them in various ways after death. *Mallqui* of the royal line would retain their palaces, lands, and even slaves after death. Mummies kept herds of llamas and alpacas designated for their use and consumption through sacrifices (Lau 2008: 1028-1029). The chroniclers were amazed the Andean people would bury their gold and valuable possessions, instead of hoarding them for familial use. These included ceramic and gold cups and pitchers with *chicha* corn beer (Cobo 1990[1653]: 40). Cobo also noted the offerings to the deceased. Should the mummy require additional offering, the *Mallqui* would complain through their human caretakers and demand more tribute, though his description is that of human charlatans enriching themselves off the idolatry in the Andes (Cobo 1990[1653]: 41-42). Critically, Cobo states that only ancestors who were themselves progenitors of the living were venerated this way. In the Andes descendants focused their preparation and offering only to those who had offspring, and therefore whose line continued to need aid from their progenitor *Mallqui* (Cobo 1990[1653]: 42-43).

Poma (1978 [1613]) also described mortuary treatment of non-royals throughout the lands. Chinchay Suyu corresponds to the northernmost region of the Inka domain, including Ancash and the mountains north of Lima. According to Poma mortuary treatment in Chinchay

Suyu follows similar to the royal burials. There would be five days of fasting and then a llama would be sacrificed and the food offered to the *Mallqui*. Then the body would be carried to the tomb and the widow lamented for two years. The community could return at six months, and then again at a full year to the *Mallqui* and repeat the ritual of fasting, song, lamentation, and libation (Poma 1978[1613]:81).

Naturally the use of chronicles, especially those written by a conqueror about the conquered, must be read with an appropriately guarded attitude. For theoretical purposes, these documents are treated more as representations, akin to an image or painting on a cup. For instance, Poma indicates that mortuary customs in Anti Suyu, corresponding to Amazonian eastern Peru and Bolivia, were primarily cannibalistic. The human remains would be eaten leaving only bones to be reconstructed as a mummy with similar feasting and libations and lamentation (Poma 1978[1613]:81-82). In Colla Suyu, which corresponded to southern Peru, Lake Titicaca, and into Chile and Argentina, the pattern was similar to the wider Inka empire, with ceremonial embalming and burned gifts. Poma claims when the *Mallqui* was appreciative of the gifts, they would represent their gratitude with lively cracks and noises. Finally in Cunti Suyu, corresponding to southwest costal Peru, bodies were embalmed and the intestines used in the ritual process. Silver was placed in the mouths of these *Mallquis* and appropriate llama sacrifices observed. In all four suyus, there was a fasting around salt. According to Poma (1978[1613]:82) the people believed salt corrupts the living as death corrupts life. Poma also discusses the roles confluences of streams played in the Inka mortuary custom. Principally the divergence of water could be used to divine the amount of time before the next of kin, especially the widow and children, had yet to live (Poma 1978[1613]:84).

Poma also describes the Yunca from the north, the peoples of Quito, who were buried with their dogs, even calling the Yunca dog-eaters with a negative connotation. They too would engage in a libation at death, but it was presented as a different type of celebration. The flesh was removed and placed in ceramics, then the bones tied up in a bundle which was then painted. Then the human remains were placed within the tomb in a circular formation, head of the household at the back and kin spread around. These are to be seen as customs foreign to the main Inka tradition (Poma 1978[1613]:82-84). Neither the dog-eaters nor the cannibals appear to be substantiated as widespread mortuary treatments, implying the representative nature of chronicles.

Another discussion is found in the Huarochirí Manuscript, which was written around AD 1600 by an unknown author. Nonetheless it reflects a narration in Quechua of the cultures and customs immediately surrounding Lima. Though the discussion is written in Quechua, the region was already overrun by a heavy Jesuit presence at the time and the narration of beliefs and customs reflects their influence (Salomon and Urioste 1991: 1-5). Chapters 27 and 28 in particular provide insight into pre-Hispanic mortuary custom.

The dead were to be laid out and cared for properly as described in Chapter 27. During this time the soul would vacate the remains saying “Sio” [a swishing sound] as it flew. In the depths of time the dead would return to the people after five days, but only if the remains were provided with food and drink during their soul’s absence. When the dead were properly cared for, they could be reanimated and reenter the community. The narration indicates once reanimated the body was immortal, and thus the population increased out of control. It was only after a single lazy soul which waited until the sixth day to return that the process of rebirth was ended for all Andean people (Salomon and Urioste 1991: 358).

The reanimation of the body could be a sort of metaphor for the mummification process and the reentry of the dead into society. This is unclear though as the language, translated from Quechua through Spanish to English, points to a reanimation of the corpse with no reference to a *Mallqui*. On the other hand, the story stresses the importance of proper care in handling of the dead. Regardless of the specifics the key seems to be food and drink for the dead and libation when the dead return. The story reinforces the survival of such beliefs well into colonial times.

Chapter 28 of the manuscript describes in detail the ritual meal, though it also serves as a reminder of the social and spiritual world in which the manuscript was written. The chapter begins by comparing the ritual meal with the dead found in the Andes with the Spaniards on All Saints' Day. When a man died, the Quechua peoples around Lima would set out the food and wait for him for five days. At dawn on the fifth day, his wife brought food and *chicha* to the dead, for at dawn the soul could return to their body. As the soul flew into the body in a form akin to a blue fly, the maggots and worms vacated the flesh and the body was returned to his home. By dusk on the fifth day the whole kinship *ayllu* danced and sang and lamented the dead. At last a vaguely described divination involving a spider was preformed to learn which *huaca* the dead man had offended in life. Then appropriate sacrifices, namely a guinea pig, could be made (Salomon and Urioste 1991: 130-131).

Chapter 28 thus describes the strong connection between the dead, the living, and the sacred landscape as represented by the *huaca*. Pre-Hispanic Andean peoples lived amid a landscape of magic mountains, special shrines, and stones representing the ancestors. Through the process we call lithomorphosis the *huaca* stones would be translated into a landmark, a statue of the ancestor as it were (Lau 2008: 1037-1038). It was the ancestor who would become the stones, and the stones could become the ancestor. When the *huaca* are displeased with the living

this story would imply not only that the *huaca* can cause death, but they are the primary cause of death. The dead, the living, and the landscape all play a role in the Andean conception of death.

Around 1598, catholic Padre Francisco de Avila described the native Andean idolatry and worship of false-gods. The body of his work against local religion is based on the materials presented in the Huarochiri Manuscript but from the perspective of a Catholic priest preparing to commit genocide to bring about its end (Salomon and Urioste 1991: 1). His description of the soul leaving the body follows the Huarochiri Manuscript. Upon death, European notions of nuclear kinship are presented and not the extended *ayllu* type of kinship discussed in the original source (Avila, 1966 [c1598] 154-155). Avila also commented on the discussion of All Saints' Day versus the local custom of feasting with the dead. This version again tells of the lamentation and feasting, but without a priest and not on church lands, thus these were considered idolatrous acts (Avila, 1966 [c1598] 156-159). Without becoming too anticipatory, Avila offers insight into the very beginnings of the assault on local customs by the Spanish. Review of his annotations to the same narration provide an insight into how the Spanish were perceiving these customs, even those which do bear similarity to the Catholic rituals by which they were supplanted.

More recently, yet nonetheless informative in describing the living and dead entanglements, are modern collections of folk lore. One Quechua story *Caverna Tenebrosa* (Tenebrous Cave) from Perú recounts the tale of two lovers who dwelled together in a cavern. The wife died and her lover dwelled with her in the cavern.

“Cuando solo los huesos de ella quedaron dendios en la Cueva, el hombre tomó una tibia y con ella fabricó un instrument para desahogar su dolor... El dolor de su alma se expresaba en esa música y hasta las piedras parecían llorar con él.” (Martín 2014: 60)

When only the bones of her remained stretched out in the cave, the man took a tibia and with it fabricated an instrument [Quena flute] to confess his pain... The pain of his soul was expressed in this music until the stones seemed to weep with him. (D Greenlee)

This story describes their banishment to the gloomy cave, the death of the wife, and a mourning process which includes a lengthy period living together in the cavern, exposure defleshing, and using the tibia to fashion a Quena flute (Martín 2014: 60). This story described a very similar system of living with the dead for a time while they are prepared, deposition in a cave, and mournful song to process death. This seems to echo the chroniclers centuries earlier, indicating the persistence of tradition through the Catholic incursion.

In sum, the chroniclers provide a very significant albeit biased image of Andean ancestors and mortuary customs. Though they were outsiders, they took pains to describe the mortuary treatment by the Inka around the time of conquest. These accounts highlight the importance of veneration and tradition surrounding death as well as the customs to directly interact with the dead, wherein the living would mourn while waiting for the return of the deceased. Encompassing everything were larger concepts such as *ayllu* kinship and *huaca* in which the living engaged the spiritual. The living, and the dead, and the landscape all become actors in a singular set of mortuary structures.

Chavín Beginning and Huarás Cultivation (Chavín-Huarás-Recuay)

There is far less known about the Chavín culture's mortuary practices than succeeding cultures. The great temple itself famously has no mortuary contexts identified at the site contemporaneous with the culture or religion. Additionally, there are no known Chavín era burial monuments in the Puccha Valley (Ibarra 2006: 87). The early Recuay platforms often resembled the earlier Chavín platforms, though they were circular and identifiable through the presence of Recuay kaolin ceramic (Ibarra 2006: 86). Another holdover was very

early Recuay *entierros*. The early Recuay used similarly inaccessible tombs buried with sculpture and offerings, very similar to the Chavín burials (Velásquez 2009: 47).

An anomalous burial is the Isabelita Rock. The rock was found at the Amá 2 site and shows the transition from Chavín through the Chapilla (600-200 BC) style to the Huarás. The eight-ton stone has shallow carvings along its surface. These include a human figure with a very long left hand holding a decapitated human head, interpreted as a trophy head. There are geometric designs along the belt of the figure (Ponte 2009: 136). Surrounding the human figure is an undefined reptile head, a deer, a bird, and a snake (Ponte 2009: 137). Around the stone is a circular structure with a grave beneath it. The grave contained some Huarás white-on-red and Chavínoid style ceramics dating to the fifth century BC (Ponte 2009: 138-140). Although the exact meaning of the site and anomalous stone is unclear, the rock is clearly post-Chavín. The presence of likely trophy heads on the human figure, later ceramic materials, and an art style showing neither fully Chavín nor Huarás motifs may indicate a people in transition (Ponte 2009: 144-147).

Another surreal yet strange site is Llamacorral in the Parque Nacional Huascarán. The site is along the cold, clear, glacier-fed Laguna Puruhuay, a large glacier fed lake formed by a natural dam around 4500 years ago (Orsini and Benozzi 2016: 68). The Llamacorral is a series of concentric low stone walls with only one entrance in each circle. These entrances correspond to different directions. The visitor is directed through these rounded walls, walking in ever smaller diameter circles to the wall in the center. This last circle is only 0.8 meters in diameter and is a sunken space where even today food and drinks are offered on special occasions (Orsini and Benozzi 2016: 71).

The concentric walls stand at one end of a long (29 x 9 m) plaza lined in stone. At the other end is a Huanca stone. Along the plaza is a shallow canal of unclear ritual or functional utility (Orsini and Benozzi 2016: 74-75). There is a stone cist near the entrance which contains sacrificed llama bodies, suggesting that the colloquial name of corral is likely a sacred or ritual space (Orsini and Benozzi 2016: 73). Along the mountainous margin far above the lake and Llamacorral is the terminal Formative Period city Ishla Ranra. This is a relatively small city, encased in stone walls that follow natural contours of the ridgetop (Orsini and Benozzi 2016: 77). No human remains have been found at the site (Orsini and Benozzi 2016: 82).

The Llamacorral was used during the entire Early Intermediate Period including by the local Recuay culture. This site is a Huanca monument, located in proximity to a far older site, with a puzzling series of concentric rings which seem to have been primarily used for offering and sacrifice. It is a persistent place for highland groups, who have accessed and reused it even up to the present. One interpretation of this persistent place posits that it is a *Pacarina*, a place of origin for the kinship network. This would match well with the continuous ritual reuse of a far older site for sacrifices (Orsini and Benozzi 2016: 86-88). In any case there is a persistence of tradition at Llamacorral through the upheaval of the end of the Early Horizon and the Wari incursions in the Early Intermediate Period.

Following the decline of the Chavín culture, both the Huarás and Recuay reused the temple ground itself (Velasco 2016: 77). The Canal Rocas was in the Plaza Mayor of the central temple at Chavín. Recuay materials were present at the site early as AD 200 and the Canal Rocas became a Recuay mortuary context (Velasco 2016: 78). There was a minimum of fifteen individuals in the assemblage: eleven adults, three subadults, and one infant. The analysis showed limited pathologies, primary osteoporosis (Velasco 2016:81-82). There were some

fractures corresponding to around 25 percent of the total assemblage. These tended to be minor and none were associated with postmortem dismemberment (Velasco 2016: 84-85).

Across the river to the east of the main complex at Chavín is the La Banda site, which was identified during highway construction (Velásquez 2016: 53). There are some features that indicate Chavín era construction, but there is a higher density of agricultural terraces from the post-Chavín, though still pre-Recuay era (Velásquez 2016: 61-62). During the early Recuay occupation, they built a 100 square meter mortuary platform at La Banda and deposited ceramic offerings in the Recuay style. La Banda appears to be a strictly ceremonial space, as there is little evidence of activities beyond the mortuary customs (Velásquez 2016: 69-71). La Banda is a very early site in the Recuay sequence dating to after AD 200 (Velásquez 2016: 57).

Chavín era burials throughout the Callejón tend to be flexed (Grieder 1978: 52). Post-Chavín burials tend to remain generally flexed. There was a far higher percentage of mummification observed throughout the mortuary contexts after Chavín. Flexed burials seem to have become the preferred positions of mortuary treatment in the highlands (Lau 2002a: 299). The flexed position of many Recuay burials seems to represent a continuation of the Chavín era customs. Contemporaries such as the Moche along coastal valley floors preferred extended burials (Grieder 1978: 51-52).

Additionally post-Chavín ceremonial patterns began to shift to reflect local authority in corporeal form (Lau 2002a). Feline motifs also would persist throughout the entire first millennium AD. Recuay and Wari cultures used feline stone reliefs heavily in mortuary contexts (Lau 2002a:298-299). If Chavín represents a temple with a strong pull to many cultures and

peoples throughout the Andes, then the post Chavín highlands shifted towards local leaders, progenitors, and corporal authority.

Recuay Mortuary Architecture

Despite the relatively dispersed nature of Recuay settlements and few large urban centers, monumentality was present throughout the Recuay world in the form of mortuary monuments. Occasionally we find representative ceramic vessels showing a scene of a village or a mortuary monument. There are representations of the connected living facilities, verandas, and walls (Orsini 2015: 72). Other representations show circular structures associated with the mortuary and religious activities (Orsini 2015: 73). The funerary structures likely represented and reinforced the social order. Monumental tombs and effigies provided a reminder of the dead through representation (Velásquez 2009: 45-46).

Early highland burials were *entierros* far less monumental in nature and generally inaccessible once sealed. This was the primary mode of burial for Chavín though carried into the first phase of the Early Intermediate Period (Velásquez 2009: 47). Starting in the second century AD, mortuary monuments underwent a significant change in form and function. There are four major types of monuments present primarily before AD 700 which were first discussed in great detail by Bennett (1944). Although he developed his chronology prior to any absolute dating, the basic forms he identified/described are still used by researchers today (Lau 2008, 2015; Ponte 2015; Velásquez 2009; Ibarra 2013).

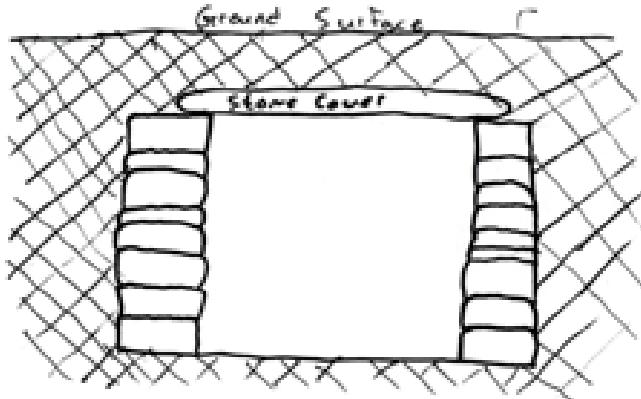
Lined graves appeared first, generally stone boxes which were placed beneath large stones or boulders. These tended to contain few or no ceramics, though occasionally they produced remarkably well preserved materials such as the ones at Wilkawain. This type of burial

was also present during the Chavín era and grew in prevalence throughout the early Recuay era (Bennett 1944:34-35; Ponte 2015: 37).

A second group was unlined graves that were simpler, using natural overhangs, caves, and cracks in the landscape for the primary deposits (Velásquez 2009: 48). They often contained either few ceramics, or extensive ceramic materials in a variety of styles (Bennett 1944:35-38). Commonly *cuy* and other animal remains are found as offerings. One even had monkey remains likely from the Amazon (Velásquez 2009: 48). These simpler graves were used at varying levels until AD 1000 (Ponte 2015: 37).

Third were the subterranean galleries, prevalent in large sites or cities, that were reminiscent of Chavín though many more had been opened and looted. These galleries were entered through shafts and tended to contain remarkable volumes of Recuay and other ceramics (Bennett 1944:42-50). Wilkawain contained large and complex galleries with fine stone work. These galleries continued to receive offerings long after the original deposit (Velásquez 2009: 51-52). The tomb at the Jancu site consisted of a gallery with a chamber beneath a granite slab. The gallery at Jancu was smaller, roughly four by five meters, but contained kaolinite ceramics and fine masonry (Ponte 2015:34and38).

The fourth common type of mortuary treatment from the early Recuay era were the cist burials which Bennett called deep stone-lined tombs. These tend to be single chambers for single burials which were sealed by a large slab of stone on top. Some are rectangular and some are cylindrical. The cists tend to have some of the best preserved ceramic assemblages, likely owing to how difficult they were to access (Bennett 1944:21-28). Cists were the most common type of subterranean burial during the Recuay era (Velásquez 2009: 48-51).



**Figure 2.2 Sketch of a Deep Stone-Lined Tomb
This is the style of tomb characteristic of the Early
and Classic Recuay eras primarily.
Modified from Bennett 1944: 22 by author.**

Starting in the sixth and seventh century AD, there are a variety of changes to the mortuary complexes throughout the highlands. First the cists begin to get deeper and contain more foreign materials. Kaolin pottery became scarce as black ware proliferated. Goblets and zoomorphic forms also began to dominate the ceramic assemblages (Ponte 2015:40).

The late Recuay era also witnessed the adoption of chullpas. Initially chullpas appeared in the north as early as the sixth century and proliferated throughout the remainder of the Recuay and Wari sequence. Chullpas fundamentally changed mortuary treatment as they were generally more monumental and designed to be easily accessed for ancestor veneration and offerings. Chullpas would remain prevalent in the Callejón through the Middle Horizon (Velásquez 2009: 53). These new burials were mostly above ground, and Wari pottery came to dominate ceramic assemblages found within them. At the larger sites like Wilkawain, there were massive multi-room chullpas which harkened back to the mausoleums of the prior era (Ponte 2015: 41-42).

Chullpas tended to be associated with many sets of human remains, possibly serving as burial plots for extended kin groups (Velásquez 2009: 54-56). The larger chullpas were located on the western slopes of the Callejón while the eastern slopes tended to have simpler tombs (Herrera 2016: 29). Chullpas represented a continuity of traditions of masonry and architecture, but also of the ancestor veneration present in earlier tomb types. Offerings and materials continued to accumulate after construction and the original deposition episode (Velásquez 2009: 64).

Ancestor Veneration in the Recuay Era

Cobo described the customs of ancestor veneration in his 1653 chronicle. The scale and duration of the funerary rites were directly proportional to the relative importance and social status of the deceased. The greatest festivals at the deaths of great lords saw eight days of lamentation and celebration. The *Mallqui* was dressed and placed in the tomb with all his wealth. The tomb was opened and the *Mallqui* redressed, even brought out of the tomb for important events such as the anniversary of his death (Cobo 1990[1653]: 250-252). The power of high-status individuals continued after death, as corporal control over resources shaped the landscape for the living.

Although the Andes are known for incredible variability in cosmological and religious beliefs and practices, common trends such as sacred mountainous landscapes and persistent ancestor veneration are well known. Ritual landscapes through the mountains and mortuary treatment together form a genealogy of place (Lau 2002a: 281). Both individual and group identities were constructed through the places in which people lived. In societies focused on agropastoralism, such as those who inhabited the Callejón, control over resources and means of

production are key. Agricultural and sacred lands were linked with the sacred landscape in the Callejón. In this light, changes in culture over time reflected changes in the ways humans interacted with the landscape (Herrera and Lañe 2006).

The Chinchawas site demonstrates ancestor veneration in the Recuay world. There is evidence for public feasting in large enclosed patios along the hilltop. Evidence of cooking refuse was found near the patios piled adjacent to other rooms. There were large volumes of camelid remains as well. The feasts took place in public areas surrounding subterranean chamber tombs. Though they are never as large or contain as much ceramic material as other Recuay sites, the stone patios are richly decorated in stone sculpture (Lau 2002a: 298). Large patios and enclosures were great places for large feasting for a seemingly more general audience. At Chinchawas, ritual feasting and public ancestor veneration were key elements of Recuay social structure.

Wari influence is also noteworthy at the Chinchawas site. Chullpas were first constructed later in the sequence, after AD 700 during the Chinchawasi 2 Phase. The first D-shaped patios were contemporaneous with the chullpa (Lau 2002b: 299-300). Chinchawas also demonstrates the social change accompanying the arrival of the Wari cultural bundle. The Warmi phase, after AD 800, corresponds to a very local style of Wari-Chinchawas synthesis. Around this time all patios were built far smaller to facilitate smaller or more elite veneration of ancestors and gatherings (Lau 2002a: 298). Together these factors indicate a change in ancestor veneration away from large public events and towards smaller scale and private exercises of kinship or social stratification. Though monumental and public construction would continue, there was a push towards inconspicuous burial celebration and sculpture (Lau 2002a: 298).

Recuay ceremonial architecture consists of walls, buildings, galleries, mortuary monuments, platforms, and general offerings. The Recuay represented these ceremonial spaces in architectural ceramics and wall murals that reflect the social hierarchy and ancestor veneration in Recuay society (Lau 2000:182). One mural at the Real Canchos site shows a feasting event along with sculptures possibly displaying local chiefs (Lau 2000:187). Ceramic vessels also show the geography of cities and sites in miniature. These display the cities as they were occupied, with people moving about and warriors bearing shields and maces standing guard (Lau 2000:183-184).

Mallqui were treated with reverence as they became active participants in Andean communities. They became a representation of the society, an effigy for the local community, an image of the people. At Chinchawas there were feasts associated with the mummy bundles both as mortuary treatment as well as from far later ceramics though that had been associated with descendants (Lau 2002a :282). Later traditions would associate the *Mallqui* with authority, even giving them agency and divinity, though it remains unclear how far back in time these trends originated.

Mortuary monuments became the repository for the *Mallqui* throughout the Recuay era. Based on the prevalence and accessibility of the mummies, the prevalence of burial goods, the great attention to preparation of the dead, and the stone images which surround the dead, it is clear these mortuary contexts became more than simple repositories for the dead. Lau (2008:1026-1028) suggests that the customs of transforming the dead into effigies as described by the chroniclers was already present in the highlands during the Recuay era. The Inka ancestors could own property and herds specifically designated for their use in death as offerings. Something akin to this could have been happening in the Recuay world where

ancestors and effigies became physical manifestations of the past (Lau 2008: 1028-1029). This would imply that the effigies and mummies were representative of the kinship structure (Lau 2008: 1030).

In many cemeteries dead individuals have been found with coca leaves in their mouths. An excellent example of this is from the Convento site in Puerto San Antonio just north of the Ayacucho Valley. The site included a burial cist with ceramic vessels in the Cruz Pata style, dating the site to the late Early Intermediate Period and the early Middle Horizon (Wari vintage). The burial offering included two *tupu* pins with coca leaves between them (Valdez et al. 2015:238-239). As plant remains such as leaves do not tend to survive well in the archaeological record, it is usually in grave contexts that such materials are located. Though this example is a bit anachronistic the custom of depositing coca leaves in mortuary contexts does date to the Early Intermediate Period and the Recuay culture as well.

Another aspect associated with ancestor veneration is Recuay sculpture, which is often found as part of mortuary contexts. The sculptures in the mortuary sector at Chinchawas include 43 specimens carved in shallow relief on slabs. Feline and human imagery dominated the assemblage. None of these sculptures were identical to any others. These could be representations of the people in the tombs or perhaps an effigy of them. There are even Recuay shallow relief stone sculptures which *Mallqui* bundle in stone (Figure 2.2) (Lau 2002a: 294-295).



**Figure 2.3 Recuay Stone Effigy of a *Mallqui* Bundle
Museo Arqueologico de Ancash, Huaraz collections.**

Other Recuay contexts had tenon heads, seemingly a holdover from the famous Chavín heads, which would protrude from the chullpas (Lau 2008:1033). The Recuay were also known to have far smaller portable carvings which tended to resemble the larger statues found adjacent to mortuary contexts. These small statues possess the same type of individuality as the larger ones, often with headdresses and clothing painted on them (Lau 2008:1036-1037).

The Recuay culture was known to produce *Mallqui* who could be reached through ritual for the benefit of the living. The platforms were repositories for both offerings to the *Mallqui* as well as the *Mallqui* themselves (Ibarra 2006: 86). As time went on the accessible semi-subterranean and chullpa burials further reinforced this trend. Not only were the dead

accessible, but there was a defined location for offerings at the entry and immediately outside the entrance (Ibarra 2006:87).

Another facet of life to consider are the ambient dangers of living in the highlands. The Andes are prone to dangers from the plate subduction such as volcanoes, avalanches, rockslides, and earthquakes. Being so close to the coast the Andes are also vulnerable to persistent oceanic climatic oscillations such as El Niño and La Niña in addition to significant long-term and short-term variability in the climate (Lau 2016: 51-52). Together this created what Lau (2016:57) calls an “economy of disasters” where the people would have to adapt to a constant threat of natural catastrophe.

In such a tumultuous place, one way of understanding the ancestor veneration could be as an adaptation to these disasters (Lau 2016: 65-67). Neither the Recuay nor the Chavín consistently represented natural landscapes such as mountains or rivers, so the details of their interactions with them remain interpretive (Lau 2016: 75-76). This interpretation would imply that ancestor veneration was linked with the economy of disasters. The danger of natural disasters could have even facilitated the adoption of chullpas, as ancestors would have needed to be more accessible. This would have further facilitated their ability to impact the natural world through the veneration of the dead (Lau 2016: 67-68).

Ancestors sometimes represented a sort of culture hero, a manifestation and personification of progenitors who were instrumental in creating the world inhabited by the living (Velásquez 2009: 45). In modern narrative, the site of Llamacorral was associated with a singular figure María Jiray. The account indicates that she was a *fundadora*, an ancestral founder of the colonial capital in Huari. She led the people from the church in town up to the lake carrying an effigy of the blessed Virgin in the Catholic custom. María Jiray appears to have died

at the end of the procession (Orsini and Benozzi 2016: 64). Though this story represents a far later, early colonial understanding of the site, it reinforces the notion of a dynamic custom of ancestor veneration, much of which is invisible in the archaeological record.

There was—and continues to be—another custom common in the Andes which further reinforces the local hero hypothesis: the piling of stones at archaeological sites. All across the highlands, piles of stones appear in and around historical sites. They are usually set on top of each other as a part of an offering. Cobo (1990 [1653]:116) mentions offerings made alongside roads, small piles of stones commonly constructed by people traveling along them. I have personally seen such stacks of stone all along the concentric walls of the Llamacorral, small piles of flat stones set on the walls to the inner sunken offering pit. Another series of piles were present at the plaza behind the temple at Chavín de Huántar. It is a common practice in the highlands and beyond.

Roosevelt (1935: 31) mentions stone piles as well, in a pass near Santa Clara where they were set in a pile with bones by the side of the road. The story he references was one of witches (*brujos*) who once plagued the area by attacking and destroying the salt marsh, the local source of salt, and made it unproductive. Benevolent spirits changed the witches to stone, another example of lithomorphosis in the ancient Andes. These piles were believed to be the remains of the witches themselves, and by adding a stone to their heaps the travelers would get good luck on their journeys. Thus in the Andes the pilings of stones was a way of remembering past cultural heroes and villains that are only marginally visible to us in the archaeological record. These culture heroes and their effigies offer insights into the dynamic practices of ancestor veneration.

Major Recuay Mortuary Sites

In 1653 Bernabe Cobo wrote: “a universal custom among all of the Indian nations was to pay more attention to the dwelling that they were to have after death than to the one they had during their lifetime... Tall tombs built above ground were more common. But we also find a great variety of these because every Indian nation sought a new style of making them.” (Cobo 1990[1653]: 246). The Recuay show a change in the mortuary customs from platforms, caves, and sepulchers early in their cultural sequence to semi-subterranean chullpas later. Throughout all phases, there were at least some elite tombs which exemplified what Cobo wrote.

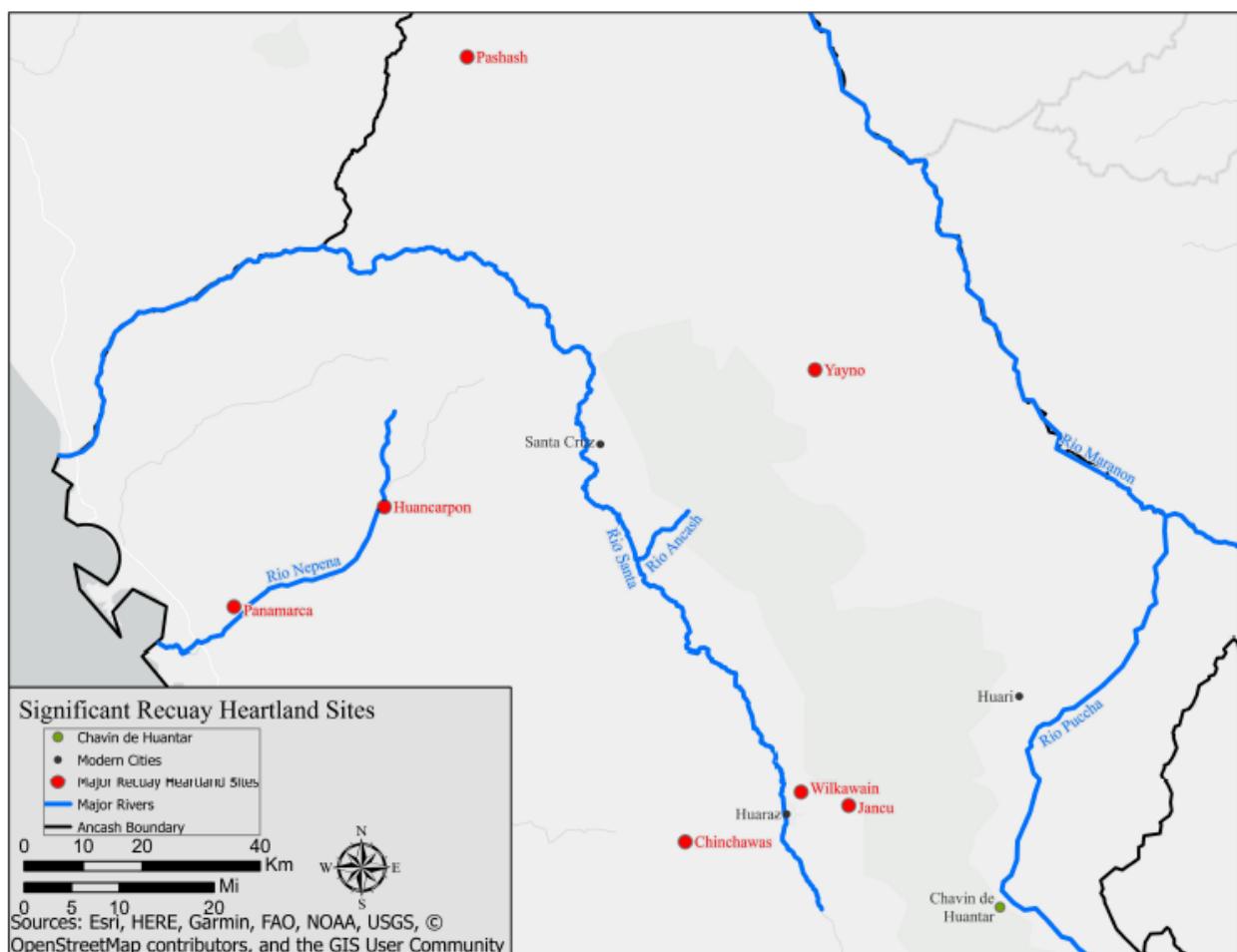


Figure 2.4 Map of Significant Recuay Heartland Sites Discussed in Text

There are many significant Recuay sites which have been exhaustively studied and merit some discussion in this literature review (Figure 2.4). In keeping with the Recuay settlement patterns, there are large and well documented sites all around the Callejón and on both the Coastal and Andean sides. Wherever the Recuay lived, they generally contained a diversity of mortuary monuments regardless of the site's size.

The Antaragá site is the eldest Recuay site in the Alto Mariñón, the region where the Río Puccha and the Río Yanamayo join with the Río Mariñón. The site is a large village of more than 160 hectares segregated into a raised habitation/ceremonial district built above the primary residential zone (Riviera 2016: 95-96). Residential structures are circular and semi-circular buildings up to twenty meters in diameter which are all surrounded by a wall. These structures tend to be fairly large for Recuay residential sites (Riviera 2016: 97and105). Much like at Pashash, there was a particularly large structure associated with the Recuay elite, possibly associated with a local chieftain or lord (Riviera 2016: 206).

The evidence at Antaragá is consistent with early Recuay mortuary patterns. Two types of mortuary monuments are present at the site: cist burials with structures around them, and semi-subterranean burials. The second type was primarily along the southern periphery of the site (Riviera 2016: 97). Some were large quadrangular structures with kaolin ceramics. Though there are no chullpas at the site, Antaragá is a site with early Recuay structures that transition from sepulcher to semi-subterranean buildings (Riviera 2016: 105). This implies the earliest cist and sepulcher burials were being supplanted by the later semi-subterranean monuments even before the chullpa formally arrived in the Recuay world. Antaragá was seemingly abandoned before the arrival of the chullpa into the highlands.

The most ornate and richest of any Recuay era tomb is the legendary horde at Pashash. Encircled by the modern city of Cabana is a great hill with a colonial church and farmstead on the ruins of a far older Recuay dwelling with great walls and platforms. Notably the unusual Caserón is a great wall of unclear utility encompassing the platform (Grieder 1978: 15). The walls built around the hill became retainers for an earthen platform where the temple and burial were built (Grieder 1978: 49). The tomb at Pashash contained a rich deposit of mortuary ceramics, copper, and gold, and then the tomb was sealed with a great stone. These stone sealed portals included the first layer of offerings. A second layer of offerings were placed out beyond the temple entry (Grieder 1978: 45-47). The primary burial dates from AD 400-600 (Castro 2008:262).

The primary burial itself was documented as being in relatively poor condition, flexed and found with wrappings around it. The individual was indeterminate sex based on the state of preservation. Grieder (1978: 51-52) used the presence of quite a few spindle whorls as a presumptive indicator of female. Further analysis of the materials has supported the lady of Pashash. The clothing and *tupu* pins found in the burial match well with the representations of women in ceramics and sculpture. Women seem to have been active players in the ritual customs, especially within the context of elite burials such as Pashash (Castro 2008:263). The burial was accompanied by ceramics laid out in circular fashion on bits of cloth around the burial chamber. Other offerings included jewelry, figurines, spindle whorls, and some bits of crystal. There was also a large assemblage of comparatively rare Recuay pedestal cups (Grieder 1978: 55).

The secondary layer of offerings at the portal to the tomb consisted of bowls, ten copper bells, nine effigy cups, and an assemblage of 66 ceramic vessels including a wide variety of

feline and serpent motifs (Grieder 1978: 56). The third offering consisted of various materials found in the layers above the primary temple. They were categorized as cruder ceramic and lithic materials. Among these was the only weapon, a granite axe, which seemed incongruous with the presumption of a female burial, as weapons are only associated with males in Recuay burials (Grieder 1978: 58). An additional, extended burial was found above the floor and associated only with late Usú phase ceramics, and thus was likely a post-Recuay intrusion to the burial context (Grieder 1978: 52).

The burial at Pashash also represents the regional entanglements throughout the first millennium AD. There were Kotosh and Chavín style ceramic sherds. The burial offerings included a good example of a Moche stirrup bottle in the form of a human with wrappings or blankets around them. This Moche vessel was painted orange and black and was associated with the northern Moche coast (Grieder 1978: 72). Another piece associated with the Moche was a spindle whorl with a swirling pattern. In addition, there was a Virú ceramic vessel with animal head fragments moulded in a gray clay. Presence of these foreign objects implies presence or exchange with these outsiders (Grieder 1978: 73-74). There was some evidence for fortification, such as the Caserón, but no Wari materials present at Pashash (Grieder 1978: 75).

Stonework at Pashash included excellent examples of the classic Recuay style. There were several pedestal cups painted green and black. There are also spindle whorls which had drilled holes (Grieder 1978: 104-109). The offerings also included exemplary metal work in the Recuay style. Nineteen pins made from moulding and then gilded were also found in mortuary contexts (Grieder 1978: 119-120). Moreover, there were several metal earplugs and disks found within a pedestal cup (Grieder 1978: 129).

Chullpas

Chullpa monumental tombs—which spread throughout the highlands starting around AD 500, corresponding to Late Recuay—are generally thought to have originated to the north with the Wari and Casma cultures. Early examples include the mortuary complex in the Callejón de Huaylas, which included many chambers, some with multiple levels. This site is adjacent to the Recuay, but about the same period, the Wari Empire was expanding. There is some debate as to whether the chullpa was a Recuay or Wari invention (Ibarra, 2013: 8).

Though chullpas were comparatively small, they were communal burials. Mummified bundles could be placed in a chullpa over a period of time. At the Classic Recuay City Marcajirca in the Río Puenka, the small chullpa-like burials each had a MNI of around 20. The calibrated carbon dates show a range of around 200 years between the samples, indicating successive generational reuse of the monuments (Ibarra, 2013:20-21). At other sites, such communal tombs were found to contain a *Mallqui* or common ancestor. If these monuments were used for communal burial of a familial group, they were used for a long time. Interestingly, the cave burials surrounding Marcajirca were also communal in nature, but there had been no genetic testing for a *Mallqui*. (Ibarra, 2013: 21-24).

Farallenes Rocosos is a late Recuay mortuary site with examples of materials from Lima in addition to unusual Amazonian materials (Velásquez 2009: 57-58). Though these are uncommon goods to find in highland contexts, they are nonetheless indicative of a wide trade network through the highlands.

The Yayno site was occupied during a similar period and contained chullpa burials, but there is a lack of any Wari ceramics or architecture (Ibarra, 2013:9). Subsequent groups had a similar burial custom to the Recuay. The Marcajirca site is a hilltop settlement with distinct

residential, public, and funerary sectors. The funerary area has a series of quadrilateral tombs, sometimes called chullpas by convention. However, they are far smaller than typical Recuay and Wari chullpas, only 1.2-1.5 meters in diameter. Along the edge of Marcajirca are a series of natural cave tombs that is separated from the primary funerary sector (Ibarra, 2013: 13-17).

Landscapes of Death

Anthropological theories about landscapes of death assume that there is a significant entanglement between the dead and the living. These relationships are diverse and often difficult to reconstruct through inference or interpretation (Ucko, 1969). Methodology for landscapes focuses on spatial and topographic relationships and entanglements between the living and dead. The dead tend to occupy a significant social function. The dead can be separate or bounded, or integrated as liminal members of society (Parker Pearson, 1993:204).

Mortuary traditions in Andean societies involved significant interactions between the dead and the living in the form of easily accessible familial tombs where offerings could be made (Ibarra, 2013). Spatial relationships between the dead and the living are critical, though the researcher needs to be mindful of the possibility of other explanations such as persistent places or connections to the landscape beyond a simple dead and living dichotomy (Parker Pearson, 1993: 206). Accessibility to the remains of deceased individuals was possible in cist, chamber, and chullpa types of burials. In the highlands it seems that not only was direct interaction between the living and the dead possible, it was a regular part of life.

The dead in the highlands were not segregated by great distances from the living. The villages and cities that exist generally had a portion of the city designated to the mortuary complex. In the larger cities, the mortuary sector took the form of a necropolis. In Recuay

settlements, the dead were kept close for revisit, display, or as active participants in affairs of their descendants.

Complicating the matter is the Montaña Magica tradition. There are mountains within the cordilleras which were, and are, significant persistent places for people living in the area. In a manner of speaking, the mountains are granted agency and become living active parts of a human community. There is a mountain called Llamoc in the town of Huarí which was used heavily throughout the cultural sequences. By the time the Spanish arrived, Llamoc was the mother of the local cacique noblemen. The Spanish documented the many sacrifices the people still made there. There were also several *Mallqui* of one Xullea and his wife Isabel Huanay (Principie 1923[1622]: 58-59). This Llamoc mountain also contains a Chavín habitation, an Inka shrine, and a Catholic shrine from the colonial era, and modern Quechua speakers still observe a procession there at the December Solstice. There is a Recuay city called Coronajirca built directly across the valley from this mountain. It is clear that there is something special about this mountain for the local denizens across eras and cultures. This type of sacred landscape could lead to the dead being buried consciously in relationship to some special landmark in addition to their relation to their living descendants.

Anthropological studies of landscapes of death also involve inter-site comparison. No trend is meaningful if it is only true in one area. Data on the placing of mortuary complexes and symbolic localities across many cities is the only way to truly understand the wider trends in death and burial in a society (Parker Pearson, 2013: 206). This thesis focuses on inter-site comparisons within the Recuay hinterland in order to identify regional trends across many sites.

Thirdly, in-depth analysis of the distribution of artifacts and deposits in other contexts is key. Researchers need to consider how materials found in mortuary contexts could be distributed

across sites (Parker Pearson, 1993:207). At many highland sites researchers have documented bodies within waste and various non-mortuary contexts. Sometimes these may be understood as later intrusive deposits or deposits of a lesser caste of society. The dataset used in this thesis contains a large number of both residential and mortuary sites, but all human remains are documented in their appropriate localities making this type of comparison possible.

Differential burial treatment can be used to indicate symbolically the social status of the deceased. In general, age, gender, and social affiliation are marked in mortuary treatment (Binford, 1971: 14). What that differential treatment means is only knowable as a function of the individual culture, place, and time. Additionally, the relative volume of burial goods or size of burial can be an indicator of the importance of the deceased within a particular society (Binford, 1971: 14). An example could be a Moche ceramic found in a burial context at site in a remote environment, such as the highlands. The time and resources required to transport the vessel to this context could indicate that the grave is of a significant individual.

Conclusion

Recuay mortuary customs were firmly rooted in the Andean worldview. Life and death are shaped by the natural and spiritual reality of the highlands. Death is not the end. The dead impact and shape the world inhabited by the living, but the living can affect their world through offering, sacrifice, and proper care for the dead. Chroniclers provide some insight into dynamic social processes which defined these relations including proper care for the dead, embalming ritual, visitation, and sacrifices after death. Ancestor veneration and life after death have persisted in the folk traditions to this day.

During the first millennium AD when the Recuay lived in the highlands, mortuary monuments were in transition. The Isabelita context contains materials from Chavín through Huarás in a sequence showing transition in the cultures. The grounds of Chavín were reused among the similar period of time. Critically, early Recuay entombments and mortuary platforms were very similar to Chavín entombments. Early Recuay monuments were less accessible than later chullpa designs, often being sealed with a large stone or boulder. As time passed, the more accessible platforms and cists grew in prevalence, especially for elite tombs.

By the time the construction of chullpas began in the highlands, elite tombs already contained accessible mummies and a wealth of grave goods. The late Recuay is an era of intense inter-regional entanglements that culminated in the Wari empire or bundle overtaking and supplanting local customs. Chullpas fit well into the highland mortuary tradition of mummies and ancestor veneration. Chullpas are mostly above ground, with defined entrances and the ability to be reused both as a repository for additional deceased and as a place to make offerings. It is logical chullpas are one of the earliest manifestations of the Wari bundle in the highlands. The prevalence of the chullpa proved an enduring means of deposition because they fulfilled the social requirements of ancestor veneration even after the Wari.

Increasingly complex mortuary treatment corresponds to increased population and an increase in the sphere of influence. Recuay grew in social complexity as evidenced by social stratification. This is very visible in sites like Pashash where the primary burial was worthy of the title Lady or Noblewoman of Pashash. Though the specific details of the social hierarchy are difficult to infer, the differential mortuary treatment for the wealthy and elites indicates a level of stratification in Recuay society.

The Recuay grew as a highland culture adjacent to and inexorably linked with their neighbors. The Recuay grew alongside coastal trading partners and rivals such as Gallinazo and Moche. Throughout the later Recuay era, Wari ceramics, chullpas, and other material culture is seen in conjunction with the Recuay growth. Through this lens, the Wari and Recuay represent a synthesis of cultures, not a straight supplantation.

The Recuay revered the dead through many facets of their material culture. Mortuary monuments were built near villages. Whether buried in accessible chullpas or sealed in cists beneath stone, the dead were venerated through offerings and sacrifices. The dead played active roles in society by assisting their kin in times of need. Effigies in stone and miniature figures represent the dead and their continuing roles in living society. Mountains spoke through the dead, indicating how best to live in the highlands. The dead lived through the stone, through the mountains they were entombed on, and in the culture of the living.

Chapter 3:

Recuay Interaction through Material Exchange, Conflict, and Cultural Contexts

And they make their *rescates*, exchanging a plate of fruit for a pot of stew; buy some salt with agi pepper, buy some meat with maize, and so on. In this way, they all get what they need in exchange for their surplus goods... It is done in the following way: the Indian women put all their goods, or part of them if they are fruits or things of this nature, in small piles arranged in a row... The Indian woman who comes to buy with her maize instead of money sits very slowly next to the one selling and makes a small pile of maize with which she plans to pay for what she is buying...The one who is selling looks at the maize, and if she thinks it is too little, she does not say a word... which from beginning to end are never spoken, even if the transaction lasts half an hour, but rather by deeds. The seller reaches with her hand and brings the maize toward her.²²

On the subject of economic exchange in the Andes (Cobo 1979 [1653]:34-35)

The Early Intermediate Period was an age of regional florescence in artistic styles. What had been somewhat unified under the Chavín cultural sequence now fractured into many local styles with a distinct similarity from the beginning. In the period immediately after the collapse of the Chavín sequence, trade and exchange decreased dramatically. During this period the Huarás, Gallinazo, and Salinar cultures experimented and developed their regional styles largely in isolation from one another. After around AD 500 trade increased in volume, variety, and distance. These local styles were now found abroad and in new contexts as the Recuay and Moche became close trading partners and rivals. Later, trade relationships would come to focus on the rising Wari culture. What followed was some conquests, but more cultural exchange. The spread of Wari chullpa burials and artistic motifs predated any direct confrontation between the cultures.

From these early cultures the Recuay and Moche emerged as the dominant material cultures in their respective highland and lowland niches. Kaolin ceramics of this era were among the finest produced in the Callejón. Coastal cultures likewise experimented and their styles developed significantly in this era, resulting in the impeccable Moche fineware unrivaled in its time and place. Both cultures represented their worldviews, ideologies, mythologies, and places in their arts. The Recuay made beautiful models of cities and showed the Amaru serpent. There is also the enigmatic “moon animal” and the widely distributed “crested animal,” both shown in varying contexts and representing something specific.

The Recuay were both producers of final products as well as materials for export. Kaolin vessels and raw clay were prized in the interfaces of Moche and Recuay cultures. Camelid wool from Recuay and highland pastures made their way to the coasts. In time, obsidian traveled through the Recuay highlands into the Moche coastal valleys, the longest distance trading network the Recuay were enmeshed with. Of particular importance was coca, which was only cultivatable in the highlands. There are artistic and archaeological manifestations of the coca trade across the entire Andean region.

Taken together the Early Intermediate Period was a period of intense changes. The collapse of the great pan-Andean structures of Chavín left many peoples in relative isolation and so regional styles manifested out of that base history. But as the new styles emerged, cultural contact and trade eventually resumed, and trade networks only grew larger and more prosperous until the Wari expansion took and fundamentally reworked these networks.

Recuay Material Culture Exchange and Networks

Early in the archaeological investigations of the Recuay, the Recuay were treated as one of many unique regional ceramic styles. Though early researchers understood the Recuay were in the same geographic region as the Chavín sequence, they also found they were unable to identify the relationship in the sequence. The distinct Recuay style of pottery was post-Chavín, but how long, or how closely related was unknown (Bennett 1943:324). Early in the archaeological investigation into the Recuay, the discussion was dominated by attempts to answer these questions and place the Recuay into the Pan-Andean Chavín sequence.

From the collapse of Chavín to around AD 500 the highlands fractured into a wealth of regional styles, sometimes referred to as a mosaic (Lau 2013: 33). During this time the Recuay and preceding Huaráz were largely insular, a commonwealth of polities (Lau 2011: 16). There is limited evidence for communication or trade outside the highlands and the political and social structures remain unclear (Lau 2012:28). The best evidence for exchange outside the Recuay highlands in this era comes from the Gallinazo. Gallinazo black on red vessels are found occasionally in the highlands, and Recuay ceramic bottle forms are occasionally found in the Viru Valley (Lau 2011: 246).

After AD 500 there was an incredible increase in trade both with the coast and with other highlands groups. Two main trade routes ran along the Callejón itself and through the Cordillera Negra (Lau 2012: 28). From the period between AD 500-600, the primary exchange was coastal, with Moche Blackwares being highly valued among the Recuay (Lau 2012: 27). Though the Moche were known for combat imagery and seem to have fought with their neighbors, they also are known to trade with their neighbors. In the Chao Valley, north of the Callejón, the Santa Rita B site produced strong evidence of Moche and Recuay ceramic trade. Around AD 500 the

Moche controlled the valley, having claimed or pacified the Gallinazo (Schwartz 2010: 13). The Santa Rita B site was framed as a trade post, evidenced by a wealth of Moche, Recuay, and other ceramics present. It is also located on the floodplain and may be the only place a city could possibly be built in the immediate area (Schwartz 2010: 8).

Out of 190 sherds sampled from Santa Rita B, around 3% were Recuay styled (Schwartz 2010: 13). XRF analysis of the pieces of kaolin pottery indicated that they were mostly made with local kaolin clays. Significantly, six samples made of this local featured Recuay forms and motifs (Schwartz 2010: 50). These findings support the hypothesis of a rich trade network. Whoever made these Recuay ceramics in local clay would likely have been either a member of the Recuay culture or have traveled enough in the highlands to acquire the skills required to produce Recuay-style vessels. Either case solidifies the understanding of an enmeshed Recuay and Moche trade network north and west of the Callejón (Schwartz 2010: 58). This finding introduces the chance of members of the Recuay culture making Recuay ceramics in foreign lands. Thus, the Recuay cannot be seen as members of a culture at one end of the network, but as actors in many facets at many locations.

The Nepeña Valley was an important location for highland-coastal interactions. There are many sites in this valley showing only one culture's influence, but also many which showed evidence of direct interaction (Proulx 1968: 27-28). The Moche inhabited the floor of the Nepeña Valley starting around AD 300 (Chicoine 2011: 535). There were 42 sites in the Nepeña Valley with Recuay ceramics. Most were hilltop settlements with architectural traits similar those found in the Callejón de Huaylas. These two traits introduced a clear cultural continuity with other sites in the highlands (Proulx 1982: 87-88). Significantly the Huancarpón site, the most monumental

in the entire Nepeña Valley, contained the fired kaolin ceramics, galleries, and lithics associated with the highland Recuay (Proulx 1982: 86-87).

Ceramic vessels and especially kaolin pottery were exchanged or traded through the Nepeña Valley and many of these sites show a mixing of Recuay and Moche materials (Proulx 1982:88). In the Nepeña Valley Recuay potters made few local modifications to their style; though there were local artists they created ceramics within their cultural style (Proulx 1968: 39). Conversely the Nepeña Valley was on the southern periphery of the Moche world. Moche inspired vessels made locally were frequently influenced by the local Salinar style more than the Moche heartland (Proulx 1968: 38). The Salinar were another coastal culture emerging out of the Chavín cultural sequence. They built fortified villages and became adept at metallurgy and ceramics during the early part of the Early Intermediate Period (Moseley 1992: 162-164).

At the Huambacho site, only eight kilometers from the Pacific coast in the Nepeña Valley, there was an unusual burial identified. The majority of valley floor burials are clearly Moche, either through grave goods or through sacrifice of captives (Chicoine 2011: 528). This single burial is unique for having no ceramic vessels, but simple cotton clothing and a leather bag with coca leaf. There was also a feline headdress and a pointed mace weapon (Chicoine 2011: 537). These features together have been identified as a highland individual, likely Recuay. The individuals were in excellent condition and accompanied by diverse grave goods. Grave 10 and 11 at the site contained the individuals associated with the highlands. Though both were associated with foreign Recuay materials and burial customs, there was scarce evidence of perimortem trauma or pathology to indicate violent deaths (Chicoine 2011: 535,539-541). These individuals are evidence for the contact between Recuay and Moche

peoples which is not overtly related to any combat. A likely explanation is this is a foreign merchant or traveler who died abroad and was buried at Huambacho (Chicoine 2011: 543). Together, these show the Moche and Recuay as actors in trade, and they shed some light on the complexity of the relationship. There is ritual combat and sacrifice, but also co-habitation and mutually beneficial relationships.

There is evidence for interaction in an even wider network. The Moche and Lambayque each represented highlanders in ceramics. These are generally identified by their non-coastal dress, including ornaments such as musical drums and labrets (Cordy-Collins 1002: 247). Though these representations are difficult to identify to a source, they are unmistakably highlanders. The figures carry drums foreign to the Moche coast and sacks with coca. These features indicate a northern Ecuador culture, likely La Tolita or Jama-Coaque both of whom are shown persistently in Moche arts wearing labrets (Cordy-Collins 2001: 254). Though these labret wearing foreigners likely do not represent the Recuay, they are evidence of the network the Recuay were a part of, albeit via the Moche. The people were interacting with cultures across the Andes, but not part of a pan-Andean sequence, merely as a function of exchange and representation.

The final key in Recuay material exchange is their eventual decline and supplantation by the Wari. By around AD 800 the highlands were inundated with Wari cultural materials and techniques for ceramic production. This era represents a broad cultural transformation from local autonomous styles and material culture to one dominated by foreign status goods (Lau 2016: 153-154). The motifs were changed slowly, starting even before the Wari expansion through trade. In time many icons of the older trading network were all but replaced by Wari expansion from the south (Giersz and Makowski 2014: 291). After AD 700 the Wari began to dominate the

material trade as Wari polychrome ceramics became highly valued. The Wari also traded in *Spondylus*, turquoise, and obsidian (Lau 2012: 29-30). The chullpa burial monument had expanded with the trade networks and by this era was the primary means of burial in the Recuay highlands (Lau 2012:41 and 2016:155-157).

By AD 800, the Wari had changed every cultural trajectory in the highlands. The Recuay styles had diminished and the sites were firmly transformed by the Wari bundle (Lau 2012: 32-33). Trade surged and Wari ceramics are found throughout the Callejón. Wari style finewares were also emulated using local materials and techniques (Lau 2012: 32). The largest Wari site in the Callejón is Honcopampa. This site was a Recuay village built around AD 400. Though there is abundant evidence of Wari materials, the architecture remained largely unchanged. Only two of the trademark Wari D-shaped structures are present at Honcopampa (Lau 2012: 36-37). Significantly, Wari motifs did not fully supersede Recuay ones. Feline motifs and zoomorphs persisted long after the Recuay (Lau 2012: 40). This understanding of a Wari bundle gives an image closer to what is observed throughout the highlands: diffusion and synthesis of Recuay and Wari material cultures.

Ceramic Exchange

The Recuay had a distinct ceramic tradition characterised by kaolin finewares with distinct highland motifs. One Recuay ceramic motif commonly found on fine vessels is the so-called moon animal. The context for this strange creature was not well known. Moon animals usually consist of a feline motif often with many other motifs around it. One common one is the guardian moon animal. The moon animal takes on many forms across representations. One version has human male figures accompanying or flanked by the moon animal. Another shows a

human figure accompanying llamas with a moon animal adjacent (Hohmann 2003). The moon animal is likely part of supernatural or ritual structures as it is shown highly stylized in some cases such as a rounded head with four moon animal emanations found on a sherd at Pashash (Figure 3.1).



Figure 3.1 Head with emanations, sherd 12/7 from Grieder 1978:139.

This piece was recovered from the horde at Pashash and demonstrates a head with emanations of the Moon Animal. Modified and colorized by author

There were distinct similarities in style and decorative motifs between the Recuay and Moche. There are even a few hybrid vessels which exhibit styles from both cultures (Reichert 1982: 281). One of the most important motifs which appeared in Recuay, Moche, Gallinazo, and many cultures was the crested animal. generally show a jaguar or puma feline. However, there is a divergence in how the creature is portrayed. The Recuay depicted primarily two-dimensional felines on their vessels. In some cases they are depicted in subordinate or even supporting positions to human figures. Other depictions show the creature anthropomorphized wearing

checkered tunics (Reichert 1982:286-288). In addition the Salinar and Gallinazo depicted the crested animal on their ceramics. Their styles included anthropomorphic depictions carrying weapons or sacrificial knives. These depictions became common in later coastal Moche manifestations of the crested animal (Lau 2011:247). Moche iconography shows the same crested animal in a three-dimensional representation. Rather than a decorative motif of a crested animal, the Moche shaped entire vessels as the great feline (Reichert 1982: 286-288).

These motifs may not be evidence of cultural contact in the Early Intermediate Period, but rather a manifestation of the earlier diffusion of the Chavín style during the Early Horizon. The crested animal motif seemed to spread with the Chavín religion throughout the Andes. As the ancestral Chavín style declined and fractured, successors including the Huaraz, Gallinazo, Moche, and Recuay retained the style of the crested animal. Though the Recuay and Moche were distinct cultures, both were influenced by the ancestral Chavín styles. This is further reinforced by the rarity of true hybrid vessels, indicating diffusion of the technique, but sharing the motif, implying a possible common origin (Reichert 1982: 190-191). But as the style continued and other cultures developed, the crested animal appears to take on divergent meanings in the region (Lau 2011:247).

Among the Recuay's most technically impressive representations are cities and architecture complete with miniature warriors on parapets, and drummers in cities. Warriors tend to be displayed bearing shields and clubs. Occasionally these figures will be displayed in rich adornments carrying staffs and trophy heads (Cromphout 2017:38). Musicians are depicted with drums, pipes, and flutes of the highland style. Both male and females are shown as musicians, though whenever the musician is shown adjacent to warriors he is always a male and wears a helm akin to other warriors (Cromphout 2017: 47-48). Recuay ceramic motif shows a trend of

stratification with respect to wealth of ornamentation and ritualized combat though less understood than the Moche ritual combat (Cromphout 2017: 32-33).

Moche elites typically represented their worldviews on their fine ceramics.

Representations of the Moche, and their predecessor Gallinazo, represented mostly male figures in their art (Wolosyn 2011: 85-86). Sometimes they were warriors or prisoners, shown with some weapons and associated paraphernalia. These could have been scenes from a literal battle, scenes from a mythical battle, scenes from a ritualized form of combat, or scenes from an execution. Warriors identifiable as foreigners are relatively common, the key is that the Moche could identify their own people and the outsiders (Wolosyn 2011: 93).

Non-Ceramic Exchange

Obsidian was also widely traded and as a prestige good. There are several sources of obsidian in the highlands, and it became a trade good we can observe as it moves around the landscape. The Chavín were unique in their heavy usage of obsidian. As the Recuay became central, obsidian declined until after the Wari were emerging as trading partners (Burger et.al 2006: 103). At Chinchawas, the period of intense trade with the Wari in AD 700-850 also saw the greatest amount of obsidian. This obsidian has been traced to the Quispisisa source which is near Huanca Sancos in the Ayacucho province (Lau 2005: 90). This source is nearly 600 km from the Callejón and thus reflects the long-distance trade network the Recuay were entangled in (Burger et.al. 2006:101). During this era the Recuay enjoyed cultural stability and prosperity being connected with such a vast network (Burger et.al 2006: 104). As the Wari declined, so too did Chinchawas and the trade network they represented (Burger et.al. 2006: 108). The requisite for such widespread obsidian so far from the source is an economic advantage for the trade or

exchange. In the Callejón this requires stability and prosperity such as the height of Chavín, and the Wari expansion. Nonetheless the Recuay would, at different points in their sequence, trade remarkable distances for it.

Wool was another material traded from the highlands to the coast. The Huaca Santa Clara in the Viru Valley and the Chancay Valley each produced well preserved assemblages of textiles (Szpak et. al. 2015: 451). The textiles in the Viru Valley were spun in local ties and textile technique. The textiles in the Chancay Valley were made in a style associated with the highlands (Szpak et. al. 2015: 455-456). Though there were local textile styles, the camelid wool was not from these areas. The samples have an isotopic signature of the highlands that differs from the wool found in the Viru Valley. The samples from Chancay resembled closely the isotopic signature of textiles from a sample of camelids recovered at the Chinchawas site in particular (Szpak et. al. 2015: 455). Other highland materials traded great distances include coca, mineral ores, and kaolin clay (Szpak et. al. 2015: 457).

Coca Trade

The highly valued trade good exclusively from the highlands was coca leaves. They were used at all elevations as a mild stimulant and pain reliever, which when chewed on was said to enhance vigour and strength. Ethnographically coca is used in marriages, rites of passage, and many ceremonies. Coca is also used for divination and healing among modern Quechua speaking peoples (Valdez et.al. 2015: 234). It was traded widely in historical and contemporary times. The crop had to be cultivated in the highlands, but below 2600 MASL as the crop is not frost resistant (Valdez et.al. 2015: 231-232).

Ethnohistorically coca was also used widely. The Spaniards abhorred the practice as an indigenous means of intoxication. Bernabe Cobo referenced the leaves' role in sacrifices made to the earth. While priests and nobles poured chicha libation from golden cups, many vegetables were offered including coca, red ochre, maize flour, and other fruits. The sacrifices were made sometimes as whole leaves, and sometimes as chewed pieces. The coca was scattered on top of the sacrifices and then chicha was poured on top of all. These sacrifices appear to have been agricultural rituals to the earth (Cobo 1990 [1653]: 116). Naturally the plant's role in religious custom, offerings, and mortuary rites made it a prime candidate for persecution as an aspect of idolatry and Satan worship. As time wore on though, the Spaniards learned to profit from the leaves, growing large coca plantations and trading it back to local workers, notably in the great mines at Potosí (Valdez et.al. 2015:232).

Throughout the entire cultural sequences of the Andes, coca played a significant role in the development of cultures and religions. Coca was likely first cultivated in the Preceramic Phase around 5000-3600 BC likely on the eastern Amazonian slopes of the Andes. As such Chavín and the culture it spread would have had access to coca. The temple itself is situated on a major trade route through the highlands. There is limited evidence for coca cultivation itself, but this likely is a survival bias at play more than evidence of disuse (Valdez et.al. 2015: 237).

The Moche and Nasca certainly had access to the crop, despite being coastal and well below where it could be cultivated. There is evidence for periodontal disease among the Moche a direct result of intensive coca chewing. Coca bags have been found in the late Classical Nasca, after AD 500 (Valdez et.al. 2015: 238). The Wari grew their coca in the Apurimac Valley, and some researchers have suggested the need of additional coca fields as a factor in the eastward expansion of the Wari state. In time the Ayacucho Valley would also be used by the Wari for

intensive coca agriculture, a trend continued through the Inka period (Valdez et.al. 2015:235-236).

During the Early Intermediate Period we have extensive evidence for trade of coca from the highlands to the coastal lowlands. There is often some ambiguity about the origin of coca as a trade good. There are significant portions of the Andes where coca can be grown but the leaves do not tend to survive well enough for additional analysis (Valdez et.al. 2015: 240, 246).

In addition to the archaeological evidence for the coca, there is significant artistic representations of the material as well. The Moche depicted foreigners often in art, but sometimes there is evidence for coca. One ceramic depicts pairs of warriors in the classic Moche Ritualised Conflict scene. Foreigners are shown with disk ornaments and trophy hands in ornate headdresses. These figures also carry small bags with a rounded bottom and decorations visible. These bags are carried around their necks, on their backs, or dangling from their mouths (Benson 1984: 368-369). There are some bags which take on the appearance of human heads. It is possible these are a representation of trophy heads. But there is also a tradition of small metal bags decorated with head-like effigy designs (Benson 1984: 371)

In any case these figures are marked as foreigners represented within Moche arts. Headdresses in the forms of trophy hands are common in representations of highlanders. Some of these figures also carry square shields, a style not found along the coast. The bags too are marks of foreigners (Benson 1984:272). It is likely these people are representations of Recuay people in the arts of the Moche. These motifs are seemingly too specific to be a general outsider, a representation of the relative alterity of the Recuay.

What is clear from this representation is that the Recuay foreigners were battling the Moche. The bags they carry in their mouths and around their necks are not dissimilar to bags

used in transporting coca. We know there was a rich trade between the highlands and lowlands in this era. The Moche used coca, but they could not grow it on their coastal valley homes. While we know there was extensive trading for it, there are a multitude of battle scenes depicting these bags as well, implying conflict was a part of coca procurement (Benson 1984: 372).

As with all the Moche ritual conflict art there is a question about how literally the scenes are to be taken. It is possible the Recuay and Moche were literally engaged in conflict over the coca. As these two cultures were in close contact, there could have been struggles over valuable resources such as coca (Benson 1984: 372). On the other hand, coca was said to be associated with Amaru: the two headed sky serpent. Coca was a gift from the sky and became associated with Amaru. There is a vessel which displays two figures with ear ornaments and clubs being attacked by the image of the Amaru. This points toward a mythical combat with the legendary snake who is associated with the Sky and coca's origin (Benson 1984: 373). In either case the Moche and the Recuay put time into representing and mythically contextualizing the coca plant.

Another motif depicting foreigners could have been showing traders. As with the bags of coca to identify highlanders, some imagery of the Recuay depicts men carrying strombus shells as horns. The motif is called a salesman because it shows a man holding products in his hands, like a salesman. This salesman motif also is shown flanked by birds or jungle felines. It is possible the salesman motif is indeed depicting merchants and their wares. Given the context and the presence of supernatural creatures, it is also possible they are involved in some type of ritual or sacrifice (Wolosyn 2011: 87-88). In either case the salesmen motif clearly indicates a foreigner with coca, highlands iconography, and likely a Recuay individual.

Across these various artistic representations it is clear there was an impulse to identify foreigners. A highlander is easily identifiable as “not Moche” but specific cultural affiliation is not always clear. These are two cultures with a common base of Chavín ideology, material culture, and motifs. What separated them were the biological and ecological biomes in which they developed: Moche on the coastal valleys and Recuay in the highlands and mountaintops. These were different people with different arts and customs, but also different access to materials the other required. Coca only grows in the highlands, and strombus shells belong to marine snails. When the Wari arrived they would establish themselves in both environments and greatly expand production, but in the Early Intermediate Period these areas were not unified. They were rivals, trading partners, and sometimes enemies, but always separate peoples in this era.

Conflict

There are two major sources of conflict within the Early Intermediate Period in the highlands. One is the age-old conflict between coastal lowlanders who spread along valley floors, and the highlanders. This manifested throughout the first millennium AD in confrontations between the Recuay and Moche (Arkush and Stanish 2005:15-16). The other is the conflict spurred on by the expansion of the Wari into the highlands after AD 650 (Arkush and Stanish 2005: 12). There are several lines of evidence used to discuss conflict in this era: violent pathologies, settlement orientation, and representative combat imagery. Relatively little evidence of combat is visible throughout the Recuay world. Most of what is known and interpreted comes from more indirect methods such as representations on ceramics and statues, or the presence of vast walls around the hilltop cities (Lau 2000:181-182).

The Recuay and the Wari after dwelled in hilltop settlements. These are sites which are difficult to access from the valley floor and tend to have walls and other defensive structures (Arkush and Tung 2013: 25). The large Recuay settlement at Yayno included extensive fortifications. These fortifications encompassed the town and the population density (Lau 2010: 425). Residential compounds were large circular and quadrangular buildings with multiple individual residences within. These structures were connected by terraces and causeways. The walls are able to limit and direct the flow of people through the city, towards distinctive plazas and causeways with gates and parapets (Lau 2010: 431-434). There were no weapons or points found along the walls (Lau 2010: 436). There are thirty peripheral communities within five kilometers of Yayno. Down the mountains are a series of drainage trenches which even today slow drainage. The trenches are also possibly part of this buffer ring of villages and other inhibitors to slow the attackers as they approached Yayno (Lau 2010: 428-428).

In reference to Yayno's architecture as defensive or differentiation of space Lau (2010:438) concludes: "Yayno's architecture... is overbuilt if they were only for defensive purposes, and the fortified forms would be unnecessary if they were only ceremonial in function." With this assessment in mind, it is probable the walls, parapets, causeways, and plazas of Yayno and the potential buffer ring of villages and trenches were primarily for both functions. These architectural elements both divided space by directing the living through their daily life and also could have been used as defensive structures whenever the need arose. Drainage was likely built into the design as a necessity for habitation in the mountains.

The Moche were known for having incredible combat imagery adorning their walls and ceramics. Until the 1970s, the general consensus was that this imagery indicated a highly militant

population (Castillo-Butters 2014: 257-258). As research expanded and developed more examples were uncovered that showed both a commonality in motifs as well as a profoundly individualistic aspect. Personal insignias, personal weapons, and anthropomorphic figures showed an individuality to many of the figures represented (Castillo-Butters 2014: 263). Discussions evolved into a division between the ritual combat most often displayed on ceramics and the secular combat associated with the spread of the Moche (Arkush and Tung 2013:23-24).

The ritual combat generally features foreigners depicted with headdresses and weapons not found in the Moche world. These figures were naked save for their headdresses and weapons (Castillo-Butters 2014: 264-265). The secular conflict is generally seen as Moche versus Moche. Commanding resources and trade routes were important facets of Moche statecraft, and secular conflict allowed one polity to control others (Castillo-Butters 2014: 268-271). A third option could be, much like Homer's *Iliad*, these are representations or allegories of some mythical or pseudo-historical battle or event (Lau 2004: 174). It is entirely probable the true nature of conflict in the Early Intermediate Period will remain shrouded and interpretive.

In these combat images, the Moche are identifiable by the Moche's clubs, conical headdresses, and paint or tattoos on their faces. Recuay images are identifiable by having non-Moche headdresses, occasionally including display of trophy hands without arms attached. Other Recuay images have rounded helmets or skullcap like hats (Lau 2004: 168-169). Recuay also would be displayed with earplugs and spools in addition to odd crescent shaped ornaments. When the Moche would display Recuay, or general foreigner, they would display the figure otherwise unclothed, a stark contrast with the colored tunics the Moche are depicted wearing (Lau 2004: 170-171). Recuay would bear shields, as corroborated by their miniatures guarding ceramic architectural models, while the Moche would never carry shields. The Recuay also have

a distinctive highland star-shaped mace, allowing blunt-forced trauma of a club to become pointed trauma (Lau 2004: 171-172). Nonetheless, the Recuay are depicted in Moche ceramic as defeated, the scenes depict the Moche demolishing their opponents, claiming trophies, and sacrificing their opponents later (Lau 2004: 176-177).

The Wari empire, phenomenon, or cultural bundle expanded into the Recuay world and throughout the Calleojón. There is Wari influence into the Nasca and Ica Valleys (Cadwallader et.al 2018: 1). Whether by invasion of an empire or expansion of a cultural bundle, the Wari styles of building, mortuary treatment, and material culture came to dominate much of the northern Andes. Though their expansion was far reaching, mortuary customs were incorporated rather than changed outright. In the Nasca Valley earlier tombs oriented east to west and bodies deposited in bundles with arms folded across the chest persisted through the Wari incursion (Cadwallader et.al 2018: 9-10).

The Wari expansions resulted in a spreading material culture far and wide in the Andes. They continued building high settlements at hilltops with walls and defensive structures. The Wari era also saw an increase in trophies throughout the highlands and higher rates of cranial trauma (Arkush and Tung 2013: 27-28). Indeed the highest rates of cranial trauma are to be found not in the eras of hilltop forts and cities but in the eras of crisis and major social changes. For instance, there was a surge in violent pathologies associated with the Inka arrival into the highlands, but once they were established there was a notable decline in violent pathologies at settlements and cities during the Pax Inka (Arkush and Tung 2013: 30-32).

Chapter 4

Methods and Materials

Introduction

This project focuses on comparison between sites across a variety of localities in the Recuay hinterlands to show commonality and variation. Primary data were derived from four published sources on Recuay sites in the Callejón de Huaylás (Figures 4.1-4.3). The analyses and interpretations presented in this thesis contribute to our understanding of Recuay culture by providing a larger, regional perspective on the hinterlands that complements research conducted at particular sites. Great care was also taken in the construction of datasets so they could be reused effectively.

The theses by Victor Ponte (2015) and Rebecca Bria (2017) present analysis and descriptions of several highland sites along the Río Santa west of the Cordillera Blanca in the Callejon de Huaylás. Ponte conducted a series of skeletal analyses from a variety of sites in the southern headwaters of the Río Santa, near the modern town of Huaraz at the southern end of the Callejon. Bria worked at the site of Hualcayán and in quite a few of the other smaller sites associated with that locality. While the site is nearer to the Recuay heartland, it is at the periphery of it. Data was also derived from a thesis by Valverde Barbosa (2008), who documented three sites in the Río Ancash, which empties into the Santa between Huaraz and Santa Cruz. The three Río Santa datasets were then be compared with data from the Río Puccha on the eastern side of the Cordillera Blanca. Information on sites along the Río Puccha was

recorded by Bebel Ibarra in a variety of documents and the reports from his project (Ibarra et.al. 2010).

Using published sources permits access to a far greater volume of data than any individual project could have collected directly, and it allows us to study the Recuay at the regional level through the lens of already known sites. However, errors are always possible when using published data. Any errors made in the original documentation are compounded in further reanalysis and discussion of the data, and any miscomprehension of published data similarly may lead to errors in the final product. Nonetheless, regional landscape studies can yield valuable insights into Recuay culture.

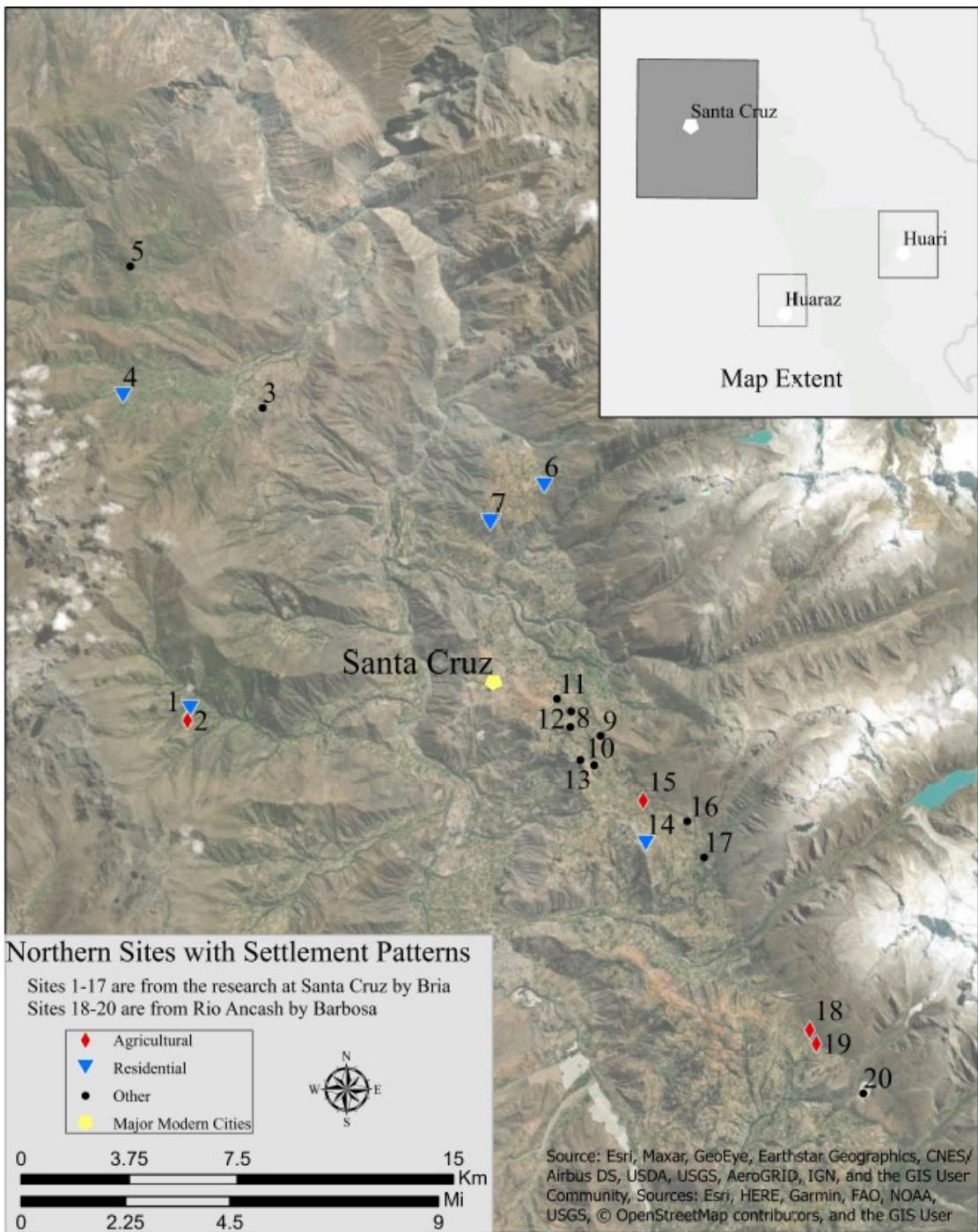


Figure 4.1 Dataset Sites with Settlement Patterns in the North

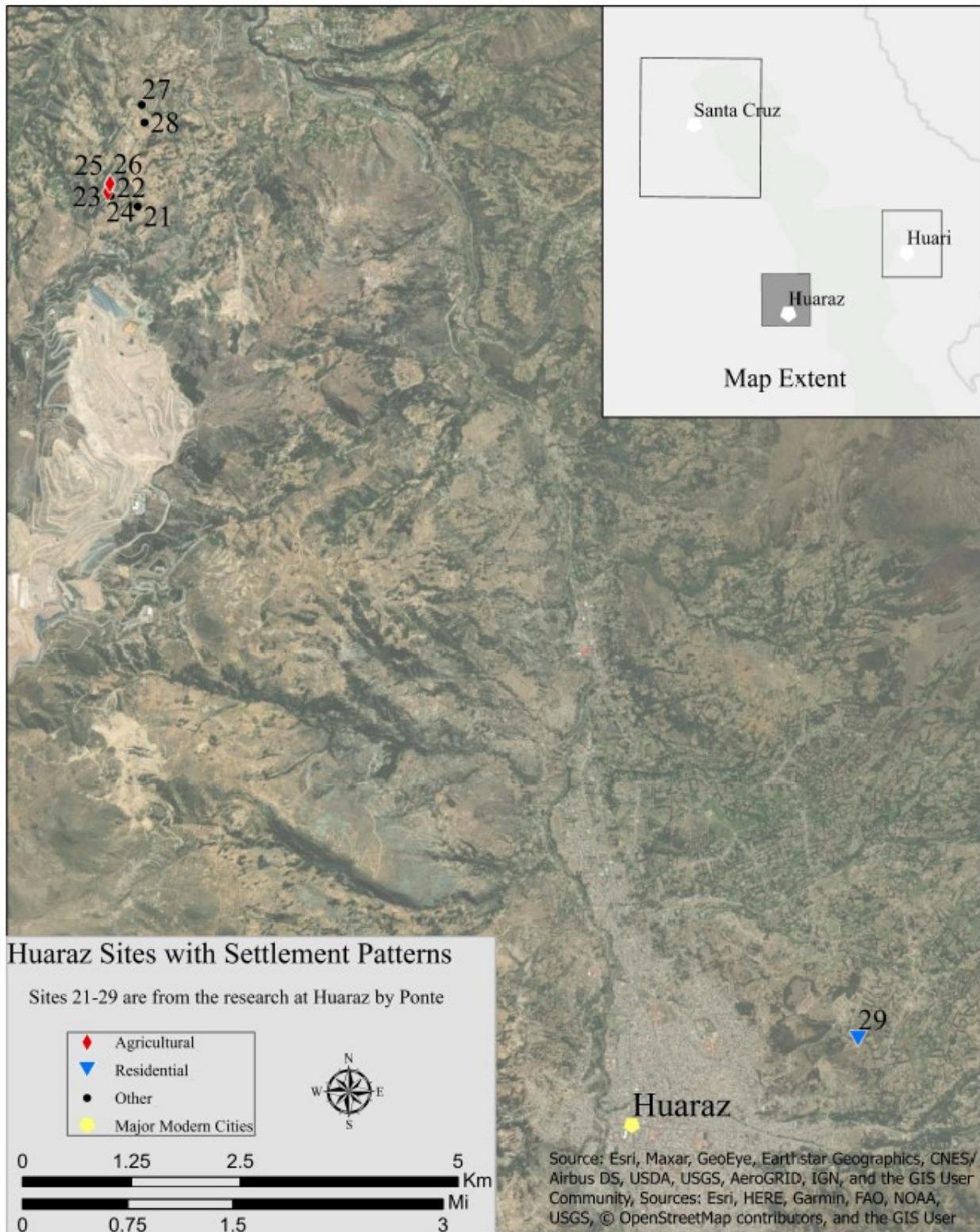


Figure 4.2 Dataset Sites with Settlement Patterns around Huaraz

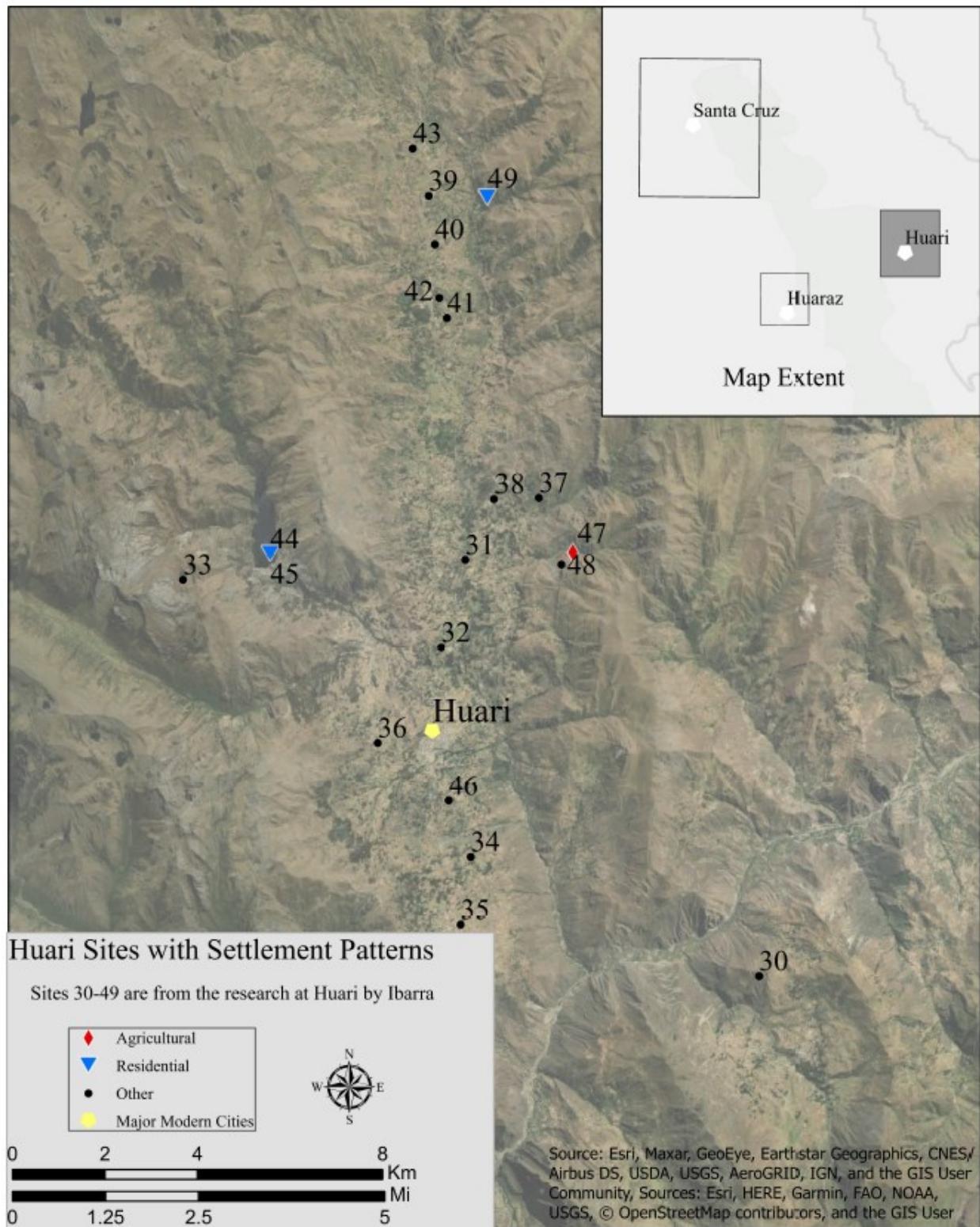


Figure 4.3 Dataset Sites with Settlement Patterns around Huari

Discussion of the Sources

Bria's (2017) work focused on the ritual economy at the Hualcayán site north of Caraz near Santa Cruz. She wrote about feasting episodes and the archaeological evidence they can leave. There are several sites adjacent to the larger village which are documented in her work. She adopted a *longue durée* approach to study long-term trends at the Hualcayán site and locality from early Kotosh and Chavín through the Recuay and into the Wari. Because she focused primarily on Hualcayán and only did surface collection at the other seventeen sites, the dataset is somewhat lop-sided. Nevertheless, for most of the sites there is geographic information, the cultural affiliation, and a description of the mortuary or residential buildings.

Barbosa's (2008) thesis contains in-depth analysis of three sites near the headwaters of the Río Ancash, just south of the sites studied by Bria. Barbosa conducted clustering and structure-volume analyses on each of the three sites, all of which contain many mortuary structures (chullpas). This project focused on the chullpas themselves, including their dimensions and orientations. The analysis was not focused on the human remains they contained, but rather the mortuary monuments themselves.

Ponte (2015) discusses a variety of hilltop sites near the modern city of Huaraz. These sites demonstrate the tremendous variability in the Recuay hinterland. They include small villages and some terraced agricultural mounds. In all, a total of 41 sites were observed and catalogued. Twenty-four of these sites included burials. Ponte's work includes bioarchaeological assessments for all remains possible, and he assessed mortuary materials and their contexts. These sites contained a wide variety of mortuary goods including kaolin ceramics, orangewares, and effigy vessels. Copper *tupus*, disks, and spatulas dominated the metal assemblages. His analyses indicated that there was social stratification at these sites. Wealthier sites with more

restrictive monumental architecture and large quantities of mortuary goods stood in contrast to smaller monuments with fewer mortuary goods. He included his own date ranges for the sites, which were correlated with the chronology presented by Lau (2002).

Bebel Ibarra (2010) has served as the PI for the Proyecto Arqueológico Huari-Ancash since 2006. The project has focused on the region immediately surrounding the modern village of Huari. Although there is evidence of occupation from pre-Chavín through the Spanish colonial era, the area had never been intensively studied prior to this project. The project identified many sites, mortuary complexes, and isolated manifestations. Notably, this dataset includes the Laguna Purhuay sites of Ishla Ranra and Llamacorral.

General Description of the Dataset

This thesis compares a set of cultural features across hinterland sites from the Recuay era of the Early Intermediate Period. These sites are far from the Recuay core in the Callejón de Huaylas yet resemble strongly their more monumental counterparts. The datasets are standardized and constructed deliberately to facilitate comparison and minimize errors, inaccuracy, and inconsistency in the data reuse.

Projects utilizing GIS require some basic spatial data in order to be useful. Fortunately, Peru uses the UTM (zone 18 south) coordinate system for official purposes. The use of a single projection for the whole nation eliminates the need to project data once they have been entered. Latitude and longitude are given in meters from the datum, that is meters from the origin of the UTM zone. This does pose a question, as the different researchers did not record coordinates with the same number of significant figures, such as rounded to meter versus

centimeter or decimeter. However, this may not be all that essential given the orders of magnitude involved. The points are variable enough to make sub-meter accuracy less significant than if the points were all in close proximity. Nonetheless, the coordinates were not standardized, but rather the values provided by other researchers were used as is. Every CSV file uses the standard measurement for location on the surface of the earth, regardless of how specific the measurements were. The additional spatial variable is altitude, discussed always in meters above sea level (*metros sobre el nivel del mar*). As with the other spatial variables, values published were taken directly and not rounded.

Most of the sites included in this project have a seriated period associated with them, but only a few have dates derived from an absolute dating method. For the purposes of this project, all the seriated estimates are placed within the chronological sequence presented by Lau (2002b). The date for each site was represented first as a general era, a direct transcription of the way the author or researcher described the period when the site was occupied. Based on those chronological descriptions, sites were then assigned the date ranges specified by Lau for each period. For some sites the seriated dates are more specific than the estimated dates in Lau (2002b). In these cases, the more specific published date is used.

Additionally, the authors used contexts and material remains site to interpret and estimate cultural affinity. Their cultural assessments are generally stated outright or can be inferred from their discussion of sites. “Recuay” is an umbrella term for a variety of material and ceramic expressions that occurred during the first millennia AD. How specifically the researchers decided to break down the Recuay era is remarkably local in nature. For the purposes of this project, general phases are used to describe the Recuay, Huarás, Post-Recuay, Moche, and Wari. Specific local styles, such as the Warmi style of Wari-influenced Recuay ceramics found at the

Chinchawas site, are coded as post-Recuay because they represent a period of cultural transition brought on by the Wari.

The next set of variables represent recorded mortuary materials and their contexts. These variables are deliberately general and selected with analysis in mind. First are qualitative descriptions of the mortuary and non-mortuary architecture. Mortuary architecture usually includes graves themselves, which were given values such as chullpa or Chamber to match with the general names assigned to the Recuay mortuary contexts. Non-grave structures typically are mounds or walls, structures adjacent to the mortuary structures. Such walls and platforms were associated with feasting and ancestor veneration throughout the Recuay world.

Mortuary treatment varied over the entire Recuay era. Early Recuay tombs were inaccessible in caves or buried under boulders. Early Recuay tombs also included mausoleums, underground tombs accessible through labyrinthine galleries. These early forms of burial appear to be holdovers from Chavín. In time they gave way to platforms and more accessible cist tombs which facilitated community-wide feasting events. As evidenced by their tombs, the Recuay pioneered an ancestor veneration tradition in the highlands.

Chullpas were first constructed by the Recuay in the sixth century AD. The frequency of these mortuary monuments increased between the seventh and eighth centuries, eventually becoming a common form of mortuary treatment. Although chullpas are often associated with the expanding Wari empire/bundle, Recuay peoples adopted these monuments long before the Wari were established. Chullpas represented a newer, more accessible means of burial. In the highlands there was a long tradition of interaction with accessible *Mallqui* for the benefit of the living. Chullpas fit into this adaptive strategy well.

This project includes examples of early platforms and boulder burials. There are galleries and chullpas from a variety of contexts. In isolation each represents a separate mortuary context. Some are monumental and suggest a significant investment of time and materials. Others are reuses of naturally occurring features in the landscape. When viewed together, the hinterlands are characterized by a diverse set of mortuary contexts. The dataset demonstrates that the same type of mortuary customs built in remarkable monumentality in the Callejón are present in the southern and eastern peripheral sites as well.

In the interest of calculation, some variables were recorded as simply present or absent; these include burials, ceramic materials, and metalwork. There are also counts, allowing the different types of burial to be represented independent of one another. Again, the tally is taken directly from the researchers and coded numerically to facilitate statistical analysis and synthesis.

Ceramics made from highland kaolinite-rich clays are a hallmark of the Recuay. During the early Recuay era, they were valued as ceremonial and mortuary goods. Recuay assemblages contain variable amounts of these ceramics through time, but the presence of kaolin pottery is reliable an indicator of the Recuay across researchers. Kaolin ceramics were also valued as trade goods, as evidenced by their relative prevalence among the Moche, Gallinazo, and neighboring cultures. Moche materials are also found in Recuay contexts. These variables represent the presence of different styles or types of ceramics, with a special focus on foreign materials.

In terms of cultural affiliation, most of the ceramics can be identified as Recuay, Moche, or Post-Recuay. Other diagnostic ceramics include are kaolin or Akillpo. Diagnostic pottery often serves as the basis for the determination of cultural affiliation(s). In addition, highly valued materials such as kaolin pottery or foreign Moche materials indicate a wealthier or elite burial.

Ceramic style is more a qualitative variable which can be used to infer changes in mortuary treatment over time and space.

To better understand and represent the mortuary patterns, additional information about interred individuals was also coded for each of the mortuary contexts. This information can provide clues about cultural affiliations. For instance, the Moche tended to segregate infants from adults and adolescents in their mortuary contexts. In contrast, infants were frequently found intermixed with adults and adolescents in the highlands and Recuay mortuary contexts. The Recuay also tended to mix adult males and females. Data were deliberately coded in a way that would demonstrate these trends. Presence or absence of burials was included in the dataset, along with the number of individuals found in each mortuary context, maximizing the opportunities to run statistical tests. The mortuary breakdown begins with a simple MNI, a total tallied count of the estimated minimum number of individuals each assemblage represents. These numbers vary from a minimum of one to a maximum of 129 at the Hualcayan site. There are quite a few null values, which are 0, throughout the dataset.

To gaining a more complete understanding of the dataset, the mortuary treatments are further broken down. Each file contains separate columns for adult males, females, and indeterminate. There is also a column for combined total adults. Detailed data were not available for some sites, so in these cases they might only have a total adult column. . In keeping with the standards of human remains no attempt was made to categorize infant or subadult sex as these estimations tend to be inaccurate and tenuous at best prior to adult pelvic and cranial fusion (Ubelaker and Buikstra 1994: 16). A total tally of subadult and infant is the only valid way to represent these subadult dead.

Breakdown of Variables within Recuay Dataset

When building a dataset for reuse, the key is standardization of every piece used to build the dataset. Not all the authors wrote in English, but I was able to process the information from its Spanish language original. There were some discrepancies when assessing the age of sites, and not all of the variables are represented or discussed by all the authors. The ideal dataset for this project would include the full set of variables for each site.

Each CSV file represents a distinct data source. Linking data together in a GIS does not require the data to come from the same source file. Nevertheless, I combined all four into a single Recuay Dataset so that all the data would be easier to access across tests. In the end there was one Recuay Dataset CSV file which contained the pooled data from all four primary sources.

Table 4.1 General Spatial Variables

ID	This is a simple counting number. Each site is a unique and nonrecurring value. The variable itself is included not only as a placeholder but also as a numeric variable for geoprocessing on.
Site_Name	In the reports, an official designation of the site was nearly always given and this designation was documented. This variable represents the most precise means of identifying a site.
Special	Some sites would have a special name used to describe them. There are enough sites with only an official designation to render this variable less useful than the Site_Name. All spellings were taken directly from the respective document or report.
Longitude_E	Meters East of the origin of UTM zone 18 South. Taken directly from the authors without rounding or significant figures.
Latitude_N	Meters North of the origin of UTM zone 18 South. Taken directly from the authors without rounding or significant figures.
Location	Combination variable of Longitude_E and Latitude_N into one column. This allows both projection of XY data into a GIS environment, but also have the two together for other geoprocessing techniques. The values from the columns are simply copied with out edit into Location column.
Altitude_MASL	Altitude of the site, reported by the researchers. Copied directly into the column without rounding or significant figures.

Table 4.2 Cultural Variables

Era	Period assigned based on seriation or dating scheme, correlated to Lau 2002 (b)
Culture	Author's interpretation of the cultural affinity of the site based on material remains and context of the site.
Date_Start	Start date assigned from Lau 2002 (b) which allows estimation for the date range of a site to be in a standard, comparable, and grounded format.
Date_End	End date assigned from Lau 2002 (b) which allows estimation for the date range of a site to be in a standard, comparable, and grounded format.

Table 4.3 General Mortuary Variables

NonGrave_Structure	Architectural elements from the site that are not distinctly mortuary in nature. Walls, corrals, and mounds are common examples.
Grave_Type	Architectural style of mortuary monument. Chullpa, Platform, Cave, and subterranean are common.
Number_Chullpa	Tallied count of the number of chullpas present.
Number_Cave	Tallied count of the number of caves identified.
Number_Subterranean	Tallied count of the number of subterranean identified.
Number_Platform	Tallied count of the number of Platforms present.
Burials	Binary variable identifying the presence or absence of mortuary materials. Coded by Yes or No.
Ceramic	Binary variable identifying the presence or absence of ceramic materials. Coded by Yes or No.
Ceramic_Type	Diagnostic ceramics present at the site. Only when cultural affiliation of the ceramic is recorded or documented by the authors.
Metal	Binary Variable identifying presence or absence of metal materials of any type. Coded Yes or No

Table 4.4 Mortuary Variables Breakdown

MNI	Total Minimum Number of individuals
Adult_Male	Count of the total number of adults estimated as male.
Adult_Female	Count of the total number of adults estimated as female.
Adult_Indeterminate	Count of the total number of adults of indeterminate sex
Total_Adult	Tallied total count of all adults recorded at the site. For sites without a full biological profile, total adult is all that is available and represents the highest level of specificity possible.
Total_Subadult	Count of the total number of individuals estimated as subadults.
Total_Infant	Count of the total number of individuals estimated as infants.

Table 4.5 Coded Variables for the first round Analysis

Burials_Num	Binary for presence or absence of human material. 0= No 1=Yes
Ceramic_Num	Binary for presence or absence of ceramic material. 0=No 1=Yes
Ceramic_Type_Num	Coded value for the type of ceramic present. 0=Absent 1=Recuay Plainware 2=Recuay Fineware or Kaolin 3=Foreign
Metal_Num	Binary for presence or absence of metal material. 0=No 1=Yes

Table 4.6 Appended Recuay Dataset with Spatial Variables

ID_Number	ID	Site Name	Culture	Date_Start	Date_End	NonGrave_Structure	Grave_Type
1	BRIA_1	NONE	Recuay	200	700	Residential	NONE
2	BRIA_2	NONE	Recuay Casma	700	1000	Corral	Chullpa
3	BRIA_3	NONE	Recuay	200	700	NONE	Chullpa on Platform
4	BRIA_4	Cashacoto	Recuay	200	700	Residential	Chullpa
5	BRIA_5	Parian Punta	Recuay	200	700	Platform	Chullpa
6	BRIA_6	Hualcayan	Recuay_Various	0	1000	Mound & Patio	Chullpa & Subterranean
7	BRIA_7	Cruz Punta	Recuay	700	1000	Residential	NONE
8	BRIA_8	Wayumarca	Recuay	200	700	Mound	Chullpa
9	BRIA_9	Cementario Katiamá	Recuay	200	700	Platform	Chullpa on Platform
10	BRIA_10	Pariamarca	Recuay	0	1000	Platform	Subterranean
11	BRIA_11	NONE	Recuay	200	700	NONE	Subterranean
12	BRIA_12	NONE	Recuay	200	700	NONE	Chullpa
13	BRIA_13	NONE	Recuay	200	700	NONE	Subterranean
14	BRIA_14	Ushmucorral	Recuay	200	700	Residential	Chullpa
15	BRIA_15	NONE	Recuay	200	700	Terrace	Chullpa
16	BRIA_16	NONE	Recuay	200	700	Platform	Chullpa & Subterranean
17	BRIA_17	Wancotay	Recuay	200	700	Platform	Subterranean
18	BARBOSA_1	Oqtawain	Recuay	500	1000	Canal	Chullpa
19	BARBOSA_2	Collpacatac	Recuay	500	1000	Canal	Chullpa & Subterranean
20	BARBOSA_3	Kenshu Antapampa	Recuay	500	1000	Mound	Chullpa Subterranean & Cave
21	PONTE_1	Ama	Recuay	500	650	Mound	Chamber
22	PONTE_2	Quitapampa A	Recuay	500	650	NONE	Chamber
23	PONTE_3	Quitapampa B	Recuay	500	650	Roadway	Chamber
24	PONTE_4	Quitapampa C	Recuay	700	1000	Terrace	Chamber
25	PONTE_5	Ama II A	Recuay	200	500	Terrace	Cave
26	PONTE_6	Ama II B	Recuay	500	650	Terrace	Chamber
27	PONTE_8	Horno Jirca	Recuay	200	500	NONE	Chamber
28	PONTE_9	Cochapampa	Recuay	700	1000	NONE	Chamber
29	PONTE_10	Marca Jirka	Recuay	500	650	Domestic	Chamber
30	Ibarra_2	Pan de Azucar	Recuay_Various	0	1470	Walls	Platform
31	Ibarra_14	Yamllipitec	Recuay	-200	700	Mound	NONE
32	Ibarra_15	Cashapallan	Recuay	-200	700	Mound	NONE
33	Ibarra_16	Ã‘awpamarca de Acopalca	Recuay	-200	700	Wall	NONE

ID_Number	ID	Site Name	Culture	Date_Start	Date_End	NonGrave_Structure	Grave_Type
34	Ibarra_18	Mashuanco	Recuay	0	700	NONE	Cave
35	Ibarra_19	Yacya	Recuay_Various	0	1470	Wall	NONE
36	Ibarra_20	Chullin 2	Recuay	0	700	Platform	NONE
37	Ibarra_21	Reparin	Recuay	-200	700	Mound	NONE
38	Ibarra_22	Pirushto	Recuay	-200	700	Mound	NONE
39	Ibarra_23	Ushnujirca	Recuay	0	700	Wall	Subterranean
40	Ibarra_24	Huamparan	Recuay	0	700	Corral	NONE
41	Ibarra_25	Ogupampa	Recuay	0	700	Mound	Mound
42	Ibarra_26	Chuncayajirca 2	Recuay	-200	700	Platform	NONE
43	Ibarra_27	Chuncayajirca 1	Recuay	-200	700	Platform	NONE
44	Ibarra_28	Llamacorral	Recuay	-200	700	Walls	NONE
45	Ibarra_29	Ishla Ranra	Recuay	-200	700	Residential	Tombas
46	Ibarra_30	Buenos Aires	Recuay	0	700	Platform	NONE
47	Ibarra_31	Ushcugaga	Pre_Recuay	-1200	0	Corral	Tombas
48	Ibarra_32	Pirushto de Cajay 2	Recuay	-200	700	Platform & Huanca	NONE
49	Ibarra_33	Ushnu de Cajay	Recuay	600	1200	Residential	Chullpa & Subterranean

Testable Mortuary Patterns

The Recuay heartland of the Callejón de Huaylás contains sites with elaborate burials, such as the sites of Pashash and Yayno. Social differentiation is evident from the mortuary treatment at such settlements. Key trading localities such as Chinchawas also demonstrate variability in the presence and quantity of prestige goods, such as ceramics from the coast. In Recuay society, certain individuals distinguished themselves by acquiring fine pottery and other valued trade goods. In death these people could be venerated as ancestors or placed in a familial tomb with venerated ancestors. Thus, social differentiation present in life was reflected in differential mortuary treatment after death. Burials of elites and powerful individuals reflected their status and wealth. The presence and volume of foreign ceramics are key variables that may be used to assess relative wealth. Common foreign ceramics in the hinterlands were obtained from the Moche, Gallinazo, and Cajamarca. Later in the Recuay era, the Wari style ceramic became valued and there was local emulation of the Wari ceramic style as well as indirect exchange for foreign pieces.

Recuay people inhabited a world in which deceased personal, familial, and group ancestors or progenitors were accessible to their descendants. Burials in caves or in chullpas were accessible to the living through defined entrances in the stone, and there is archaeological evidence that they were accessed and reused over centuries. Even when a burial entrance was sealed, ceramics were placed near the entrance. These could include fine foreign and domestic ceramics, utilitarian pottery, or small highland vessels with rim diameters less than ten centimeters that were decorated very similar to their larger counterparts.

Metalwork is another common wealth or status item found in chullpas. Although there are occasional artistic or representative metal pieces found in mortuary contexts, the most

common are *tupu* pins. These pins served as functional means of holding ponchos and shawls to the wearer, as well as decorative expressions of wealth. There is immense variation in styles and types of *tupu* pins, from leaf-shaped pins to very ornate decorative pieces.

Additionally, the Recuay tended to divide their settlements into residential, sacred, and mortuary sectors. In some of the larger settlements, the mortuary sector rose to the scale of a necropolis. Some of the larger settlements such as Chinchawas included walls and causeways to direct people to and through these sectors. Regardless of scope, the Recuay divided space between the living and the dead. Though sectors are far less monumental in hinterland sites, a division of space may still be observed.

Finally, the architectural elements involved in early mortuary treatment included single cists and cave burials. There is even reuse of Chavín temple stones to make Recuay mortuary monuments across the river from the older temple. Early mortuary practices also included platforms, great stones where significant mummy burials were stored and displayed. Direct interaction between the living and the dead was intended as evidenced by the reuse of tombs over time, the display of mummies, and the presence of anachronistic ceramics. After AD 600 chullpa burials became prevalent in the heartland and hinterlands with the arrival of the Wari cultural bundle. Although there was a change in the architectural elements constructed by the Recuay, the mortuary customs were absorbed into a new style. Later Recuay chullpa burials still show differentiation through grave goods, the presence of foreign material and metalwork, and continued reuse and reentry of tombs.

Hypotheses and Testable Variables

We might expect Recuay mortuary treatment in the hinterland to follow similar patterns to those in the heartland. Four primary variables can be considered in order to address the three interrelated issues outlined in Chapter 1: social differentiation, archaeological heterogeneity, and cultural change through time.

1) Social differentiation: Social differentiation in Recuay society was manifested in mortuary contexts. I propose to infer social differentiation by assessing high-status materials found at certain sites. It is expected that individuals who lived and were buried at some of the sites had access to kaolinite, Moche, or other fine foreign ceramics, while at other sites such pottery is somewhat limited. Likewise, the presence or absence of metal objects such as *tupu* pins used to hold *Mallqui* bundles together may indicate social differentiation reflected in mortuary treatment.

2) Archaeological heterogeneity: Although there were many architectural styles, artistic motifs, and cultural attributes which connected the Recuay socially, there was also significant division within Recuay society. This is reflected in Recuay settlement patterns. The heartland contained a diverse tapestry of Recuay cities, each of which could be considered a local central place that exerted a strong political, economic, and social “pull” on other neighboring settlements. It is expected that in the hinterland there will be some cities or sites, such as possibly Hualcayán or Marcajirca, which acted as local cores.

3) Cultural change through time: There were two periods of immense change in the Recuay world. The first came after ca. AD 500, when trade between the Recuay and coastal groups expanded considerably. These expanded trade networks manifested archaeologically as a

mixing of cultural materials. The second big change occurred after AD 700, when the Wari expanded throughout the Central and Northern Andes. Many chullpas were built during this time, and Wari ceramics and other material culture became common. The expectation is that these changes in culture will be reflected in mortuary data, and that the arrival of the Wari in the hinterland should again be manifested archaeologically as it is in the heartland, although at a different scale.

These three general hypotheses and expectations may be tested by considering the following variables:

- 1) concentration of foreign goods (including pottery) in tombs,
- 2) presence of metalwork,
- 3) changes in tomb types over time
- 4) presence of chullpas as evidence for changes in ancestor veneration

The basic type of analysis that was used is a common spatial test for clustering. First, Moran's I is a test on the variance of spatially local points. Getti's G is a test on values, a weighted nearest neighbor type of P-test. Both allow for a global test on all the points across the entire dataset, as well as a local test which can generate specific clusters and outliers. Together these four tests can show spatial autocorrelation and clustering within the dataset.

1) Concentration of ceramics can be assessed first in terms of presence or absence. This should demonstrate that the use of ceramics in mortuary contexts was similar across the Recuay hinterland. A test can then be run on ceramic types, such that kaolin and fine foreign ceramics

are weighted more heavily than ordinary Recuay decorated pottery. This test may show that there are meaningful and similar clusters of high-status goods across the Recuay hinterland.

2) Concentration of metalwork can be assessed in the same way, although the analysis was restricted to presence or absence of metal artifacts. This is mostly because of how the original researchers documented sites. Some provide details about the types of metalwork that have been found while others only noted the presence of metal. In any case, the presence of metalwork alone does not indicate high-status burials, but can corroborate the ceramic tests.

Together the tests on ceramics and metalwork indicate the degree of similarity of samples throughout the hinterlands. If concentrations of prestige goods are relatively stable from site to site, this would imply that social differentiation was manifested in burials to a similar extent throughout the dataset.

3) Concentrations of different tomb types, such as platforms, subterranean burials, or chullpas, through time is really more of a question of change in mortuary customs associated with the Wari cultural bundle. Such changes in the Recuay heartland are well documented, with whole cities taking on a distinctly Wari flavor in the seventh and eighth centuries. Differential change in Recuay mortuary customs could demonstrate or approximate the highly variable rate at which the cultural bundle moved through the highlands. Together with variable one, these trends could also be indicative of changes in Recuay material culture over time. Trends in tomb construction and mortuary treatment may yield insights into significant cultural shifts. For example, the presence of Moche, Gallinazo, or Cajamarca ceramics in a cist burial would suggest that the tomb likely dates from before AD 550, while Wari-inspired vessels in a chullpa tomb would indicate a date after 550 AD. As noted previously, the dates of most sites and none of the datasets have absolute dates associated with them.

4) Chullpas were constructed only in the Late Recuay era, a time when the Wari cultural bundle was spreading dramatically throughout the highlands. Their presence alone indicates a later site, but it also can indicate burial of a higher-status individual. Chullpas were built so the Recuay could deposit and maintain access to the remains of significant ancestors. Although it is difficult to assess specific practices of ancestor veneration and gift-giving, the presence of accessible mummies in a stone burial monument indicates that the interred individuals were significant in life.

Consideration of chullpas in the hinterland allows us to assess the Wari's influence in the region and also ancestor veneration. In the Callejón heartland, chullpas were built long before other manifestations of the Wari bundle. The chullpa fit well into the Recuay's pre-existing practices of ancestor veneration in platform burials by making ancestors even more accessible to their descendants. As it was adopted, the transition of the highlands from the Recuay sequence to the pan-Andean Wari sequence began. The presence of chullpas was tested in two ways: first statistically and then qualitatively by showing their distribution across the dataset.

Table 4.7 Appended Recuay Dataset with Tested Variables

ID	Chullpa	Cave	Subterranean	Platform	Burials_NUM	Burials	Ceramic_NUM	Ceramic_Type	Ceramic_Type_Num	Metal_Num	MNI
1	0	0	0	0	0	No	1	Recuay	1	0	0
2	3	0	0	0	1	Looted	1	Akillpo	3	0	0
3	1	0	0	1	0	No	0	NONE	0	0	0
4	2	0	0	0	1	Looted	0	NONE	0	0	0
5	1	0	0	0	1	Looted	1	Kaolin	2	0	0
6	2	0	4	0	1	Yes	1	Kaolin	2	1	129
7	0	0	0	0	0	No	1	Akillpo	3	1	0
8	1	0	0	0	1	Looted	1	Recuay	1	0	0
9	1	0	2	1	1	Looted	0	NONE	0	0	0
10	0	0	2	0	0	No	0	NONE	0	0	0
11	0	0	3	0	1	Looted	0	NONE	0	0	0
12	2	0	0	0	0	No	0	NONE	0	0	0
13	0	0	20	0	1	Looted	0	NONE	0	0	0
14	9	0	0	0	0	No	0	NONE	0	0	0
15	1	0	0	0	0	No	0	NONE	0	0	0
16	5	0	5	0	1	Looted	0	NONE	0	0	0
17	0	0	5	0	1	Looted	0	NONE	0	0	0
18	11	0	0	0	1	Yes	1	Recuay	1	0	0
19	55	0	2	0	1	Yes	1	Recuay	1	0	0
20	14	15	13	0	1	Yes	1	Akillpo	3	0	0
21	0	0	4	0	1	Yes	1	Moche	3	1	18
22	0	0	1	0	0	No	1	Kaolin	2	1	0
23	0	0	3	0	0	No	1	Moche	3	0	0
24	0	0	3	0	0	No	1	Recuay	1	1	0
25	0	1	0	0	1	Yes	0	Plain	1	0	1
26	0	0	1	0	1	Yes	1	Kaolin	2	1	9
27	0	0	3	0	1	Yes	1	Kaolin	2	1	8
28	0	0	4	0	1	Yes	1	Recuay	1	1	88
29	0	0	6	0	1	Yes	1	Kaolin	2	1	8
30	0	0	0	1	1	Yes	1	<NULL>	1	0	0
31	0	0	0	0	0	No	1	<NULL>	1	0	0
32	0	0	0	0	0	No	1	<NULL>	1	0	0
33	0	0	0	0	0	No	0	NONE	0	0	0
ID	Chullpa	Cave	Subterranean	Platform	Burials_NUM	Burials	Ceramic_NUM	Ceramic_Type	Ceramic_Type_Num	Metal_Num	MNI
34	0	0	0	0	1	Yes	1	<NULL>	1	0	0
35	0	0	0	0	0	No	1	<NULL>	1	0	0
36	0	0	0	0	0	No	1	Kaolin	2	0	0
37	0	0	0	0	0	No	1	<NULL>	1	0	0
38	0	0	0	0	0	No	1	<NULL>	1	0	0
39	0	0	18	0	1	Yes	1	<NULL>	1	0	0
40	0	0	0	0	0	No	0	NONE	0	0	0
41	0	0	0	0	1	Yes	0	NONE	0	0	10
42	0	0	0	0	0	No	1	<NULL>	1	0	0
43	0	0	0	0	0	No	1	<NULL>	1	0	0
44	0	0	0	0	0	No	0	NONE	0	0	0
45	5	0	0	0	1	Yes	1	<NULL>	1	0	5
46	0	0	0	0	0	No	1	<NULL>	1	0	0
47	0	0	0	0	1	Yes	1	<NULL>	1	0	0
48	0	0	0	0	0	No	1	<NULL>	1	0	0
49	3	0	0	0	1	Yes	1	<NULL>	1	0	0

Principles of Data Reuse

The preceding discussion provides detail on data entry and the decisions that were made when creating the files and running the analyses. The prerequisite for such analyses to produce meaningful results is valid data. The data that were used were collected from government documents, reports, Master's theses, and dissertations. Therefore a presumption of validity is implicit in the reuse of the data. If the research presented in those sources was inadequate, it seems likely that a degree would not have been granted to the researcher or the Peruvian government would not have accepted the form.

Once the validity of the data has been confirmed, the next step is to standardize the data. Variables and data entry define the type of analysis which can be done. The decisions that were made about variable definition and quantification were in the interest of creating a dataset from several different published sources which could be analyzed as a whole or as individual pieces. Familiarity with the programs used for data analysis, namely ArcGIS, allows some anticipation of potential pitfalls caused by different types of variables.

Deciding what types of variables to consider directly informed the data coding and entry. Here is the first source of error directly introduced during this project. Although there may have been errors in the course of the field research, such inconsistencies would be mostly undetectable from the outside once the reports were written. Any errors that occurred in the process of coding and entering data into datasheets were my own, although efforts were taken throughout the process to minimize the potential for such errors.

The data spreadsheets were all saved as Comma Separated Value or CSV files. CSV files are a very simple tabular way to store the data. The files consist of series of values separated by

commas which can be reconstructed into a spreadsheet in any proprietary or open-source tabulation software. It is a simple file format and thus results in very small file sizes. Due to the simplicity of the file format, CSV has become the preferred file format for long-term data storage.

Once the data were entered, they were cleaned in order to assess and minimize potential error from data entry inconsistencies. Cleaning includes searching for errors in the entry and discrepancies in the data. These can include anything from misspelling to extra letters in one cell to superfluous spaces. Once the sheets were completed and in their usable form, they were updated to the Open Refine environment. Each column was faceted by text or number and analyzed. There were occasional minor errors, though in general the data was fairly cleaned. One source of inconsistency was in entries of the binary variables such as “NO” versus “No” or “no” text entries. Others included minor spelling or spacing errors. As all data entry was done personally, there was limited ambiguity in the meanings of such errors. Once the data was prepared it became the DatasetRecuay_Cleaned which was used for the first round of analysis.

In the interest of good data reuse and management, there is a Git Hub repository set up for the data. Git Hub is a software for hosting and storing raw data and files online. Although it was originally designed to facilitate remote software development, scholars can use Git Hub as a space to store and back up any materials necessary for the research process.

Description of the Test Sequence

Date Queries

The first step in my analyses involved using the DatasetRecuay_Cleaned and generating layers representing sites dating to different eras. Each of the layers contained the same dataset, just queried to show a particular time period. Some sites in the dataset were single-use burial plots, while others were residential areas occupied for the entire first millennium AD. Some sites are represented multiple times in the various layers, implying they were in use during multiple periods. All of the sites are represented at least once in the subset layers described below. These divisions represent the fundamental units of analysis for the first round of analysis.

Date Queries are a convenient way to make a subset of the data. All of the layers that were generated started as the Recuay Dataset and contained all this original layer's attributes. There is an operation, written in SQL, which defines the desired subset. These date queries were designed to show specific periods represented in the dataset. The date ranges given by Lau (2002b) were used to define the various subsets. Once a subset was selected, it was exported into a new layer to carry out the rest of the analysis.

Existent Sites in AD 1: This first layer was created by querying the original dataset so that the Date Start was less than or equal to 0, thereby identifying sites initially occupied before the first century. The resulting layer was primarily used as a means of showing the dataset before the Recuay era, a convenient starting place when societies in the region were in their formative phases. This subset contained 21 records.

Huaras Recuay: This layer was created by querying the original dataset so the Date Start equaled -200 (200 BC). This included only sites with a Huarás occupation, although this subset

also included some sites which eventually had evidence of a Recuay presence. This subset contained a total of 10 records.

Classic Recuay: This layer was created by querying the original dataset so the Date Start was greater than or equal to zero and the Date Start was less than 600. The resulting subset included sites occupied between AD 1 and 600, during the Classic Recuay era. As discussed previously, after AD 600 the Recuay begin to incorporate elements of Wari culture. This subset contained a total of 33 records.

Late Recuay: This layer was generated by querying the original dataset so the Date End was greater than or equal to 650. The sites in this subset date to the Late Recuay period, which started ca. AD 650. A gap between the Classic Recuay, ending at AD 600, and the beginning of Late Recuay in AD 650 was built into the data deliberately in order to divide Classic and Late era sites. The Late Recuay subset contained a total of 46 records.

Post Recuay: This layer was created by querying the original dataset so the Date End was greater than 700. This identified sites whose use or occupation continued after the Recuay period and into the Wari era. Some of these sites were used or occupied through Inka and even to Spaniard times. There were 12 records in this subset.

Naturally most of the sites fell into the Classic and Late Recuay periods. Any site included in the dataset should have a date range that falls at least partly within the Recuay era. The Huarás and Post Recuay periods were not the focus of this project, so sites used or occupied during those times were included in the analysis only if they had a Recuay occupation as well.

Clustering Tests

This project made use of GIS software to generate maps and conduct spatial analysis.

First I ran a series of clustering tests designed to show patterns in Recuay hinterland sites.

Clusters show where data points with like values or commonalities of extreme values occur within the dataset. Clustering analysis is a type of spatial statistical analysis which makes use of the capabilities of a GIS. I also created thematic maps which display interpretations of the data. These maps make use of the GIS capacity to demonstrate trends within data without statistical analysis.

I conducted a total of six trials in the first round of analysis, each trial representing a test on the numerical variables. I ran two tests in each round, Moran's I and Getis Gi, to assess spatial autocorrelation and hotspot analysis. Although both tests indicate clustering, the results are distinct from and complement one another.

When the global statistics are not significant, local statistics can be used: “When a global test does not indicate a significant degree of clustering, local statistics can be useful in deciding whether a) the study area is relatively homogeneous in the sense that local statistics are quite similar throughout the area or b) there are local outliers that contribute to a significant global statistic” (Peterson 2015: 308). Both Global and Local tests can complement one another by showing that data are clustered and values of high or low are found near one another.

Moran's I is the classic statistic for assessing spatial autocorrelation. It was pioneered in the late 1940s for use in assessing points for spatial “joins” in data. The test assumes either that points are independent from one another, or that they were randomly arranged (Moran 1948). For the purposes of this project, all points are assumed to be independent from one another. Though

they are not randomly arranged, there was no indication that any site was assigned values identical to another. There is independence, if not randomness implied.

Moran's I Global statistic generates a co-efficient between zero and one. An I value of positive one indicates a strong spatial clustering in that area—that is, the points tend to contain high values and low values adjacent to or near one another. An I value of negative one indicates a strong negative autocorrelation. This implies that points are truly dispersed with high and low values around one another. An I value of zero indicates an absence of a pattern. This indicates that there is something akin to randomness as the prominent feature (Rogerson 2015: 302).

Patterns in the data are autocorrelated when observed values geographically near one another possess similar values. The I statistic can demonstrate that values near one another are not random, but that an extraneous factor of geography is influencing the data. This is useful in social scientific research because many features created by humans are placed deliberately. Showing that a given variable is more clustered than could be random suggests that these features were consciously placed on the landscape.

The Global statistic is merely a descriptive statistic, a co-efficient implying relatedness or lack thereof in the overall dataset. The GIS program runs the weighted test, and then outputs the I co-efficient together with a Z-Scored value and a P-Test for significance. A P-Value of .05 was used as a general conventional cutoff. The output also displays a null curve demonstrating the probability that the spatial patterns could be random based on the tests for significance. Although the global test can never display where the autocorrelation and dispersal occurs, it can demonstrate the presence of such correlation within the data.

Global statistics were calculated only for the Recuay Dataset, the Classic Recuay, and the Late Recuay. This was a deliberate decision as Moran's I and Getis' Gi require N=30 to produce results. The Huaras and Post Recuay layers had 10 and 12 records respectively. Had I calculated Moran's statistic the value would have outlandish degrees of freedom, pushing the test statistic's value towards insignificance.

Local tests are used to demonstrate the Global clusters spatially. Local Moran's I runs a related analysis, though the output demonstrates the location of the autocorrelated or dispersed points. Local statistics can detect clusters which may or may not be significant across the entire dataset but hold local significance (Rogerson 2015: 308-9).

The GIS output for Local (Anselin) Moran's I is a map layer displaying the points with symbology to match. Where clusters occur they are placed into categories of high-high and low-low clusters. Outlier points occur whenever there is a point with values significantly different from the other points around it. These outliers are labeled based on whether they are high values surrounded by low values or low values surrounded by high. Nonsignificant values are also displayed, indicating points that are either random or near random with respect to points around them. In other words, these points are not autocorrelated with surrounding points.

The Getis Gi statistic is a test to locate clusters of high and low values. It is a weighted and modified form of nearest neighbor test, but whereas that test only looks at distance between points, the Gi statistic can identify higher and lower than average groupings in the data. The Gi test allows an assessment of whether the high and low values are clustered in a statistically meaningful way within the data. When the data are distributed normally the Gi can still find clusters of higher or lower than average values (Rogerson 2015: 309-310).

The Global test is Getis Gi General, which calculates hot and cold clusters in the data. The global test does not produce a layer, but a Gi value, a Z-score for that Gi, and then runs the standard P-test on the Z-score. This value is then interpreted at the .05 significance level as evidence for significant global clustering of high and low values. As with the Global Moran's I calculation, this is a descriptive statistic across the entire dataset. Positive Global Gi values imply clustering of values above the mean while negative Gi values imply clustering of values below the mean.

The final test is Getis Ord Gi which calculates local stats and produces a layer showing the clustering of high and low values. The output is a set of points at the 90%, 95%, and 99% confidence levels, each coded by red for high and blue for low. There are also outliers identified by each local trial. There are high-low outliers, points in the data where an outlier has a value significantly higher than the neighborhood's values, and low-high outliers where a point has a significantly lower value. Either can be significant or interesting because outliers often indicate something unusual in the data points within that neighborhood.

For each of the six trials, Global I and Gi values were produced for the Recuay Dataset, Classical, and Late Recuay eras. Then Local I and Gi were produced for the Recuay Dataset, Exist Sites in AD 1, Huaras-Recuay, Classical Recuay, Late Recuay, and Post-Recuay layers.

Qualitative Assessment of Chullpas

Mortuary monuments were also included as a variable in my analyses. Initially I was planning to use the same clustering tests on chullpas and mortuary monuments, but the results were inconclusive. The dataset seems to be too dispersed for consistent statistical clusters, so I

decided to show patterns through a qualitative display of the data. I began by generating a series of maps showing chullpas across the study area. The presence or absence of chullpas at different sites reflected the adoption of this form of mortuary monument over time. I then used pie charts to show the relative prevalence of chullpas and other types of monuments at different sites.

Although there are many sites with only one kind of mortuary monument, some contained a variety of monument types. This was not a statistical test, but it did allow me to demonstrate the spread of chullpas across the hinterland and throughout time.

Chapter 5

Analysis and Discussion

This chapter describes the analysis carried out on the 49 sites included in the Recuay dataset. The clustering trials conducted on the six variables are discussed, as are the resultant data from each trial. The chapter also includes a series of thematic maps and qualitative analysis of mortuary monuments across the dataset. Finally, the chapter concludes with a more general discussion of the global trends and outliers identified in my analyses.

Trial 1

The first trial showed without question that the datasets used in this project were sensitive to the Moran's I and Getis Gi calculations at the local and global level. More than anything this demonstrates that the datasets and method of analysis can work together. All four tests produced significant values, but they were also designed to show a demonstrative clustering. As I entered the values into the master dataset they were given an ID number sequentially starting with the first point AC02 in the Bria (2017) dataset and ending with Ushnu de Cajay in the Ibarra (2010) dataset. All values were entered sequentially with respect to source. Although each source had its own series of sites, all were combined in a single sequence. Sites from the Bria dataset start with ID 1 and go to ID 17; sites from Barbosa (2008) begin with ID 18 and ends on ID 20; sites from Ponte (2015) begin with ID 21 and end on ID 29; and finally sites from Ibarra (2010) begin with ID 30 and end on ID 49.

All other values were coded in the same way across datasets; it was only the ID number which varied. This allowed for a very basic test on the dataset to make certain it was sensitive to the tests by showing a clustering in ID numbers which I wrote into the dataset, with ID numbers for sites from Bria (2017) all at the extreme low end and values for sites from Ibarra (2010) all on the high end.

Table 5.1: Trial 1 ID Number Global Statistics

Test	Test Statistic	Z-Score	P-Value	Interpretation
Recuay Dataset	I=0.957871	Z=9.643685	P=0.00	Significantly positively autocorrelated
Recuay Dataset	Gi=0.027608	Z=7.352501	P=0.00	Significant hotspot clustering
Classic Recuay	I=0.957871	Z=7.668169	P=0.00	Significantly positively autocorrelated
Classic Recuay	Gi=0.041988	Z=7.352501	P=0.00	Significant hotspot clustering
Late Recuay	I=0.949636	Z=9.541934	P=0.00	Significantly positively autocorrelated
Late Recuay	Gi=0.029629	Z=6.786307	P=0.00	Significant hotspot clustering

The Global Moran's I statistics showed that the dataset was extraordinarily clustered, far beyond what could possibly be random (Table 5.1). The P-value of 0.00 clearly indicates that the clustering in the data is deliberate and not due to random chance. When the local tests were run, they showed Low-Low clustering in the Bria dataset and High-High clustering in the Ibarra dataset for both the Classic and Late Recuay eras. Getis Gi statistics complemented this trend with P-values of 0.00, again indicating these hot and cold spots cannot possibly be due to chance. Local Getis Gi statistics again pointed to hotspots in the Ibarra dataset, and coldspots in the Bria dataset. There were a few outliers between, but these are the significant results.

Local Moran's I statistics for the Classic era produced low-low clustering around the sites from Bria in the north, and a high-high clustering in the sites near Huari from the Ibarra (2010) dataset. The sites from Barbosa and Ponte were insignificant. Local Getis G showed hotspots in

Huari and coldspots near Santa Cruz. One site in the Barbosa dataset was a lesser cold point.

These clusters and hotspots in the Classic era were as expected.

The Local Moran's I statistics for the Late Recuay show the same pattern as during the Classic: High-High clustering in Huari and Low-Low in the Bria sites around Santa Cruz. The Late Recuay dataset includes more sites than the Classic dataset, but the clusters remained the same. The Local Getis Gi produced hotspots in Huari and coldspots in Santa Cruz. One site in the Barbosa set is a coldspot, while nothing around Huarás is significant.

These results demonstrate unequivocally that Trial 1 was successful. The purpose of Trial 1 was simply to test the dataset by applying the analytical method to a meaningless but highly clustered variable and see whether the test was able to identify those clusters. Trial 1 clearly identified the clusters I wrote into the dataset. Trial 1 was not intended to show clusters in variables, but only clusters in the dataset. In subsequent trials that focused on the variables discussed in Chapter 4, the presumption was that the dataset was sensitive to the tests applied and thus any results are in some way meaningful.

Trial 2

The second trial was run on the Burial_Num variable, which was simply the presence or absence of human remains at sites in the dataset. This trial was not sensitive to variation in the number of individuals, only the presence of burial material. This allows us to distinguish mortuary versus nonmortuary sites. My original goal was to identify mortuary districts both within habitation sites and in isolated sites. The combination of multi-component sites with residential and mortuary clusters but also isolated single component mortuary sites was observed

across the dataset. The issue was in how I structured the dataset, each author documented mortuary and residential sites. I coded all mortuary monuments in the same way, and so it became a test on presence of any mortuary material instead of a test on site components.

Table 5.2: Trial 2 Binary Burial Global Statistics

Test	Test Statistic	Z-Score	P-Value	Interpretation
Recuay Dataset	I=0.006463	Z=0.266675	P=0.789720	Insignificant autocorrelation Random clustered
Recuay Dataset	Gi=0.020457	Z= -0.172047	P=0.863410	Insignificant coldspot clustering
Classic Recuay	I= -0.62948	Z= -0.247280	P=0.804692	Insignificant autocorrelation Negative Clustering
Classic Recuay	Gi=0.029525	Z= -0.578446	P=0.562963	Insignificant coldspot clustering
Late Recuay	I=0.014488	Z=0.075282	P=0.939991	Insignificant autocorrelation Random clustering
Late Recuay	Gi=0.020244	Z= -0.733104	P=0.463495	Insignificant coldspot clustering

Global statistics for the Recuay Dataset produced nothing significant, and local clustering only showed outliers (Table 5.2). Existent sites similarly only showed outliers at the local levels. Both statistics did show sites 44-45, in the Laguna Purhuay locality, as outliers. Likewise, there was nothing significantly different from random in the Classic Recuay dataset. There were outliers again in the local statistics, but they were relatively scattered throughout the dataset.

Local statistics for the Recuay Dataset showed low-low clustering around the Huari locality, with sites 30, 34, 41, 44, 45, and 47 as outliers. Notably, Llamacorral (site 44) and Ishla Ranra (site 45) were outliers in many tests, and both are adjacent the Laguna Purhuay. This low-low clustering around Huari was also a statistical cold-spot in the local Getis Gi test, a complementary result.

Local Moran's I for Existent Sites in AD 1 produced only outliers. High-low outliers included site 6 near Santa Cruz, site 47 near Huari, and site 44-45, the Llamacorral-Ishla Ranra cluster. Site 10 near Santa Cruz was also a low-high outlier. There was nothing significant from the local Getis Gi statistic. Local Moran's I for Huarás-Recuay produced only outliers as well. Sites 44-45 were once again a high-low outlier. The Local Getis Gi statistic produced nothing significant.

Local Moran's I analysis for the Classic Recuay layer showed only a high-low outlier at site number 34 Mashuanco, and the local Getis Gi indicated no significant clustering. Local I statistics for the Late Recuay (Figure 5.1) showed a high-high cluster along the Río Ancash and low-low clustering in Huari. There were several high-low outliers including sites 30, 34, 41, and 44-45. Getis Gi local statistics also indicated these clusters: there was a hotspot along the Río Ancash and a cold spot in Huari at the 95% significance level.

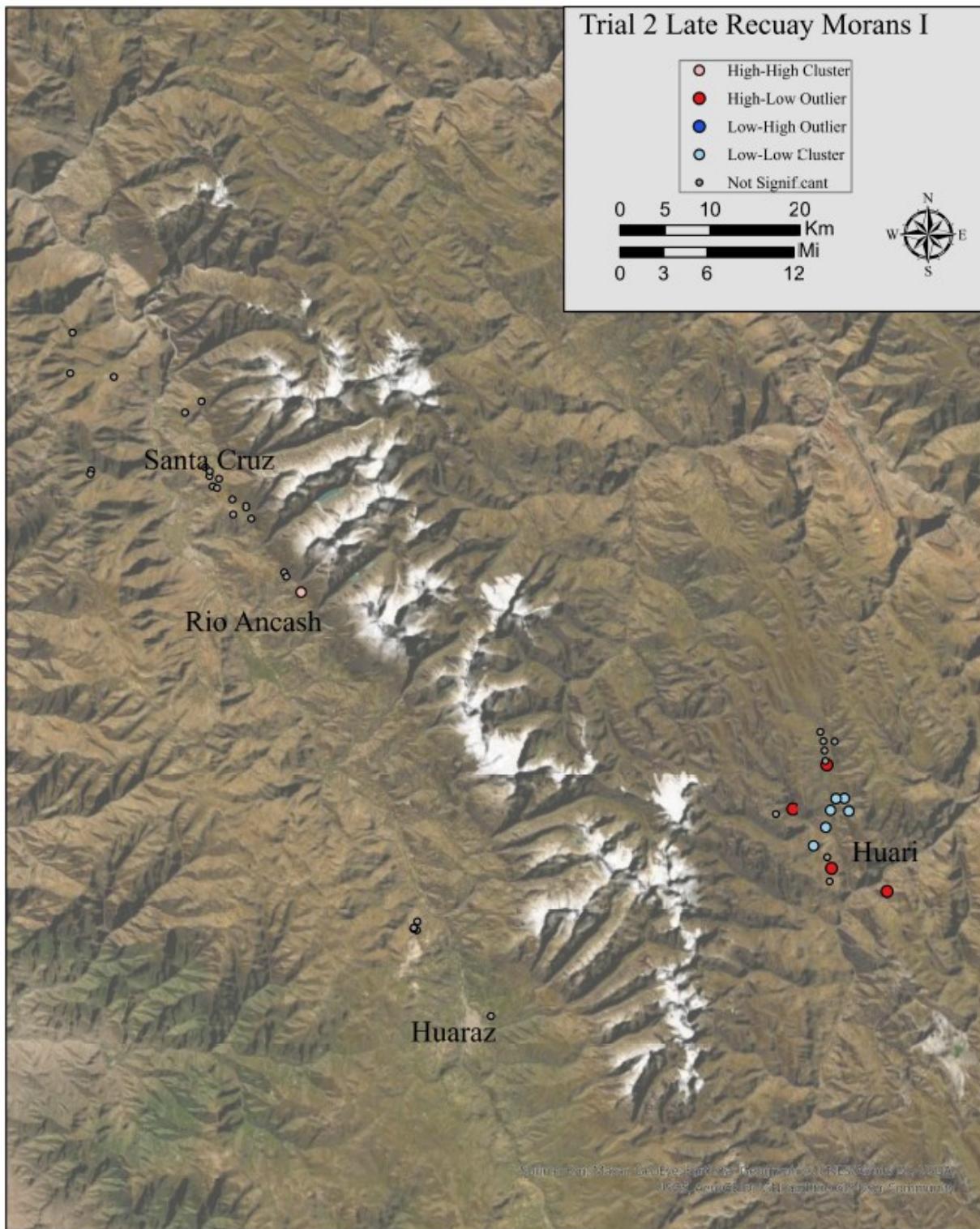


Figure 5.1 Trial 2 Local Moran's I for the Late Recuay Era

This map shows results for Local Moran's I on the binary burial variable during the Late Recuay era. Note the low-low clustering around Huari surrounded by high-low outliers and the high-high cluster around the Río Ancash.

The Post Recuay layer contained only outliers spread throughout the dataset. High-low outliers included sites 30 and 12 near Huari, site 28 at Huaraz, and site 26 near Santa Cruz. Huaraz site 24 and Huari site 35 were also low-high outliers. Local Getis Gi identified no significant hot or cold spots in the data.

Discussion of Trial 2

Interestingly, Trial 2 revealed that sites 30, 34, and 41, and the Purhuay sites 44-45, were persistent outliers in the local tests. Site 30, Pan de Azucar, was an outlier in the Recuay Dataset, the Late Recuay, and the Post Recuay. Site 34, Mashuanco, was also an outlier in the Recuay Dataset and the Late Recuay. Site 41, Ogupampa, was an outlier in the Recuay Dataset and in the Late Recuay. Sites 30, 34, and 41 all were isolated sites with a single individual buried in them. The fact that these sites were persistent outliers in the second trial could indicate that they were truly outliers in all periods.

I had hoped this trial might allow me to distinguish strictly mortuary sites versus mortuary components within larger residential sites, but it appears this is not the right way to approach the question. Part of the problem was the presence of so many sites with few burials present within them. The Recuay Dataset includes many isolated burials, caves, and single-use monuments but relatively few larger multi-chullpa sites. If there is a way to assess the mortuary districts, it is likely to be at a more local or site level. Because each site had a value of either one or zero, Trial 2 did not allow for assessments of large- versus small-scale mortuary complexes. Thus, the many small sites had the same value as larger sites with far more burials present.

Finally, Trial 2 was affected by many extraneous factors. The highland climate can destroy or preserve mortuary materials in any contexts. In addition, many mortuary sites have been disturbed or looted over the centuries. Ideally, we would have a complete dataset of all the burials present or looted at each site as well as the type(s) of monuments present, but such information is not available for all sites in the Recuay Dataset. At the present, it is unclear whether this type of trial would be beneficial even if such modifications were made.

Trial 3

Trial 3 tested the Ceramic_Num variable which indicated presence or absence of ceramics at a given site. This test was designed to show patterns in the regional ceramic distribution.

Table 5.3: Trial 3 Binary Ceramic Global Statistics

Test	Test Statistic	Z-Score	P-Value	Interpretation
Recuay Dataset	I=0.243520	Z=2.597638	P=0.009387	Significant slightly positive autocorrelation
Recuay Dataset	Gi=0.022625	Z=1.382472	P=0.0022625	Significant hotspot clustering
Classic Recuay	I= 0.236909	Z= 2.084085	P=0.037152	Significant slightly positive autocorrelation
Classic Recuay	Gi=0.033478	Z=0.602661	P=0.546734	Insignificant hotspot clustering
Late Recuay	I=0.304899	Z=3.204363	P=0.001354	Significant slightly positive autocorrelation
Late Recuay	Gi=0.024980	Z=1.895379	P=0.058042	Hotspot clustering on the cusp of significance

The Recuay dataset produced a globally significant autocorrelation but a Gi value not distinct from random (Table 5.3). The same was true for the Classic Recuay and Late Recuay datasets, although in the latter case the Gi value produced a P-value of 0.058 on the cusp of

statistical significance. Thus, all three tests showed globally significant autocorrelation but only one showed nearly significant hotspots.

Local statistics for the Recuay dataset showed high-high clustering in Huari and low-low clustering in Santa Cruz. Sites 5, 7, and 8 north of Santa Cruz were high-low outliers. There was also a low-high outlier at Huaraz. Local Getis Gi complemented the I values, indicating a hotspot in the Huari locality and coldspot near Santa Cruz.

Similarly, for the Existent Sites in AD 1 dataset, there was high-high clustering in Huari, and sites 42 and 44-45 (Laguna Purhuay) were high-low outliers. Only outliers were identified in Santa Cruz: one high-low outlier (site 6) and one low-high outlier (site 10). Local Getis Gi complemented the I statistics, as the Huari clustering was a coldspot at the 95% confidence level. Local statistics for the Huarás layer produced only an outlier, the Laguna Purhuay sites 44-45. Getis Gi indicated that these sites and site 33 in Huari were coldspots.

Local statistics on the Classic Recuay layer (Figure 5.2) showed significant low-low clustering in Santa Cruz with high-low outliers to the north (sites 1, 5, 6, and 8). There was a single low-high outlier (site 25) in Huaraz. Local Getis Gi (Figure 5.3) complemented these results showing coldspots around Santa Cruz at the 95% confidence level. Site 21 in Huaraz as well as sites 30 and 35 in Huari were also identified as isolated hotspots.

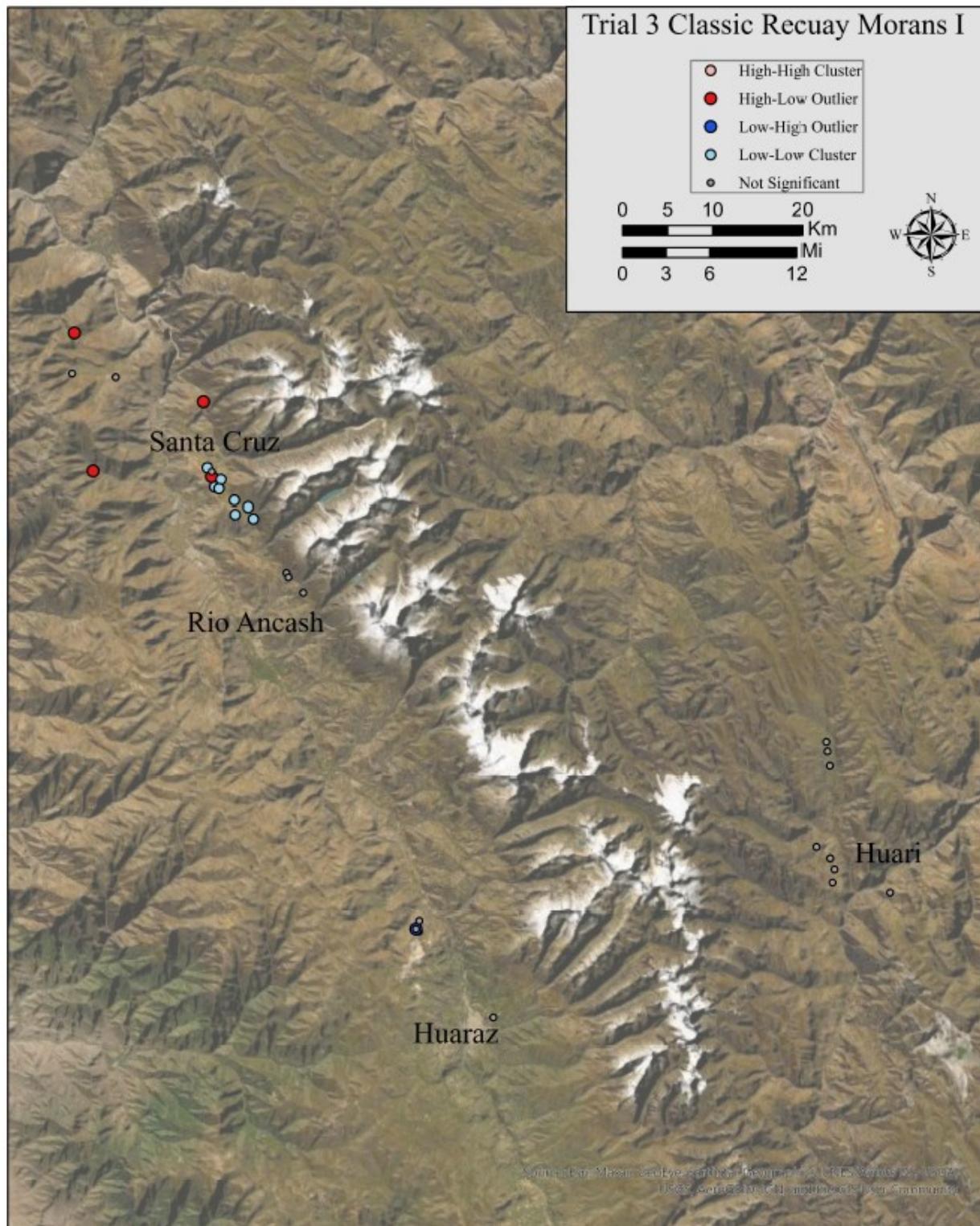


Figure 5.2 Trial 3 Local Moran's I for the Classic Recuay era

This map shows the results for the Local Moran's I on the binary ceramic variable during the Classic Recuay era. Note the low-low clustering around Santa Cruz with high-low outliers to the north and low-high outliers near Huaraz.

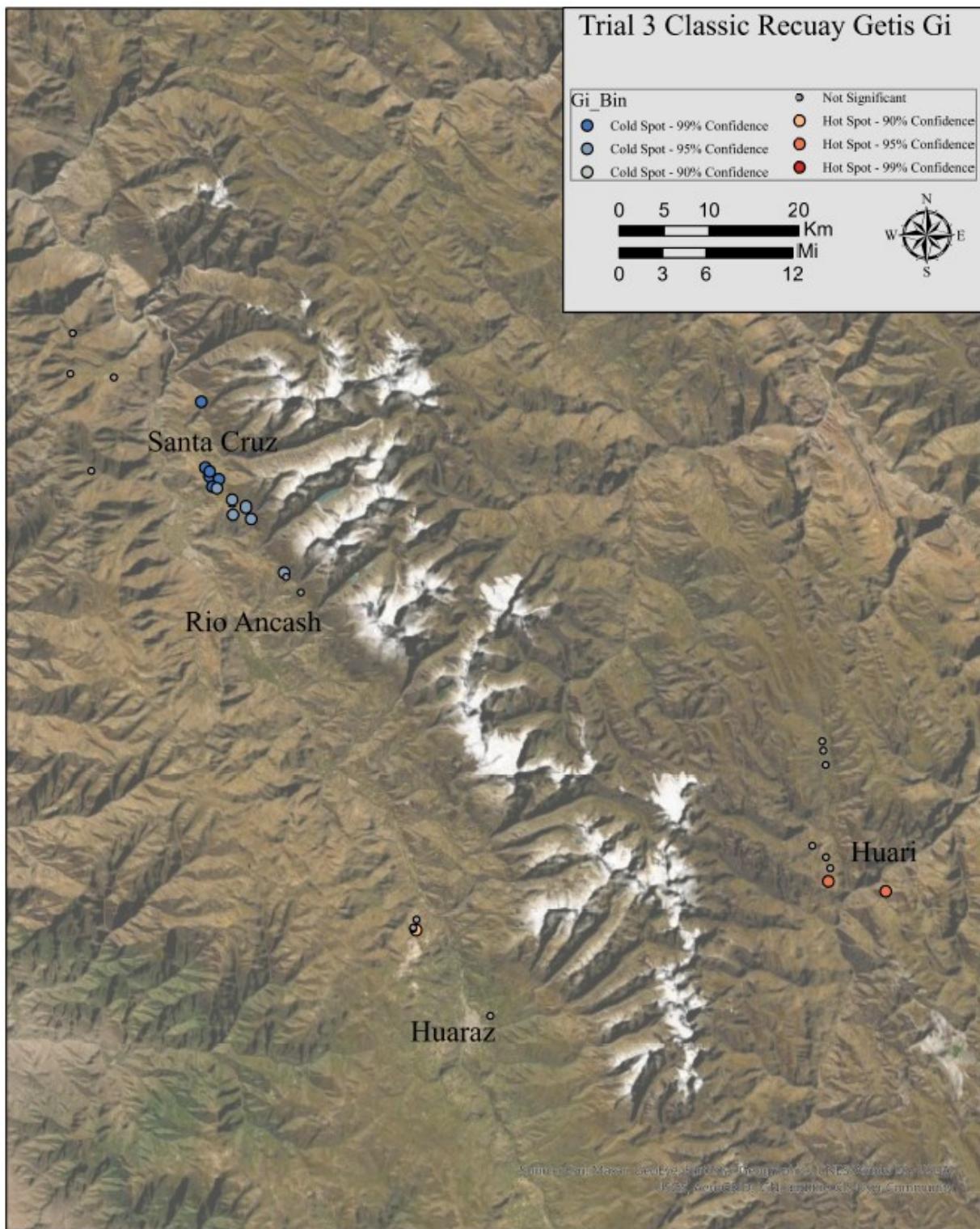


Figure 5.3 Trial 3 Local Getis Gi for the Classic Recuay era

This map shows the results for the Local Getis Gi on the binary ceramic variable during the Classic Recuay era. Note the 95% and 99% cold spots near Santa Cruz and the isolated hotspots in Huari and Huaraz.

Local I statistics in the Late Recuay (Figure 5.4) showed significant low-low clustering in Santa Cruz and high-high clustering south of Huari. Sites 5, 7, and 8 north of Santa Cruz were high-low outliers. Getis Gi (Figure 5.5) yielded complementary results, although it is doubtful that they are significant. There was a visible coldspot in Santa Cruz and a hotspot in Huari. There were also a few isolated hotspots north of Huaraz and on the Río Ancash. For the Post Recuay dataset, there was only a single low-high outlier (site 10) near Santa Cruz, and there were no significant hot or cold spots indicated by the local Getis Gi.

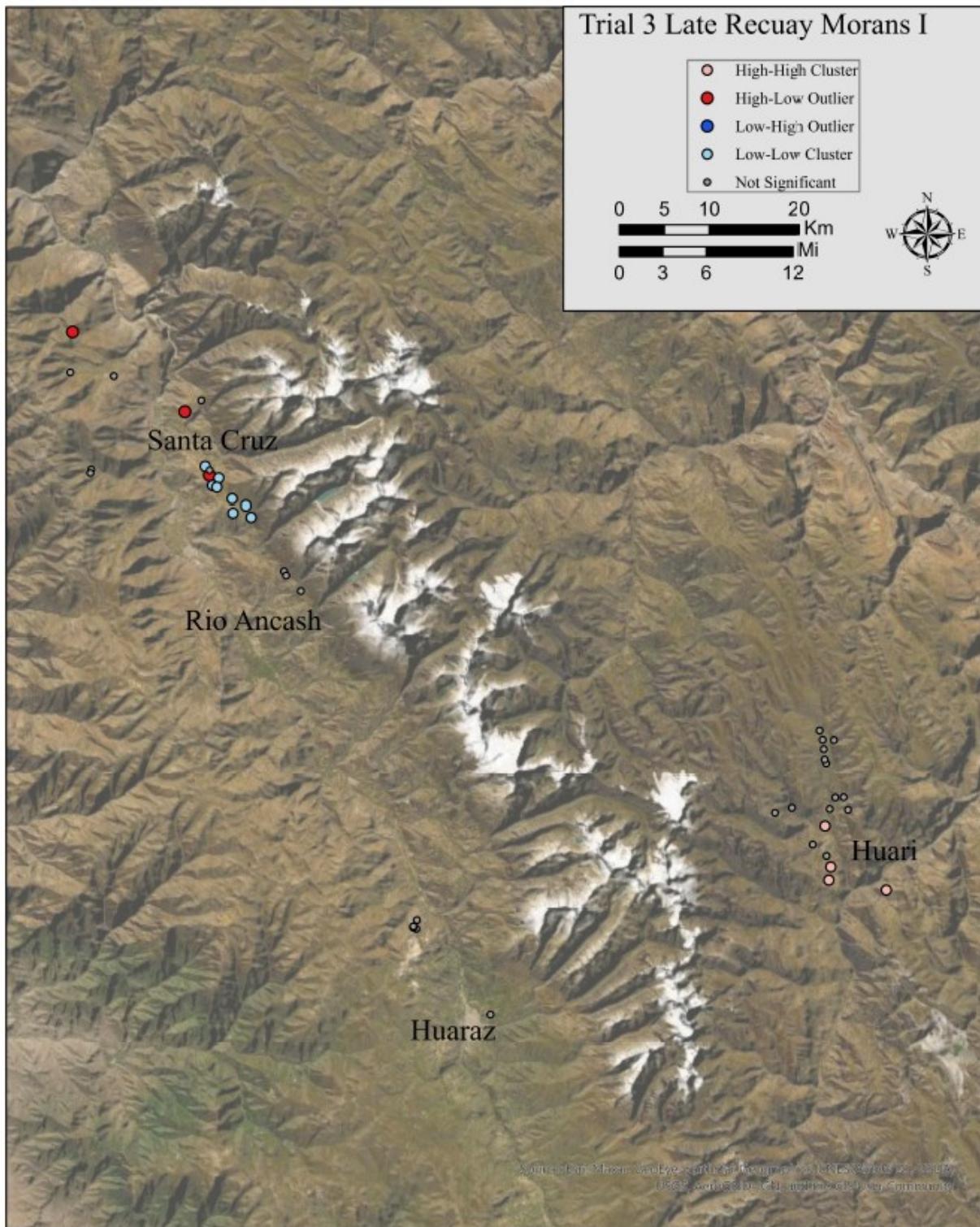


Figure 5.4 Trial 3 Local Moran's I for the Late Recuay era

This map shows the results for the Local Moran's I on the binary ceramic variable during the Late Recuay era. Note the low-low clustering around Santa Cruz with high-low outliers and the small high-high clustering near Huari.

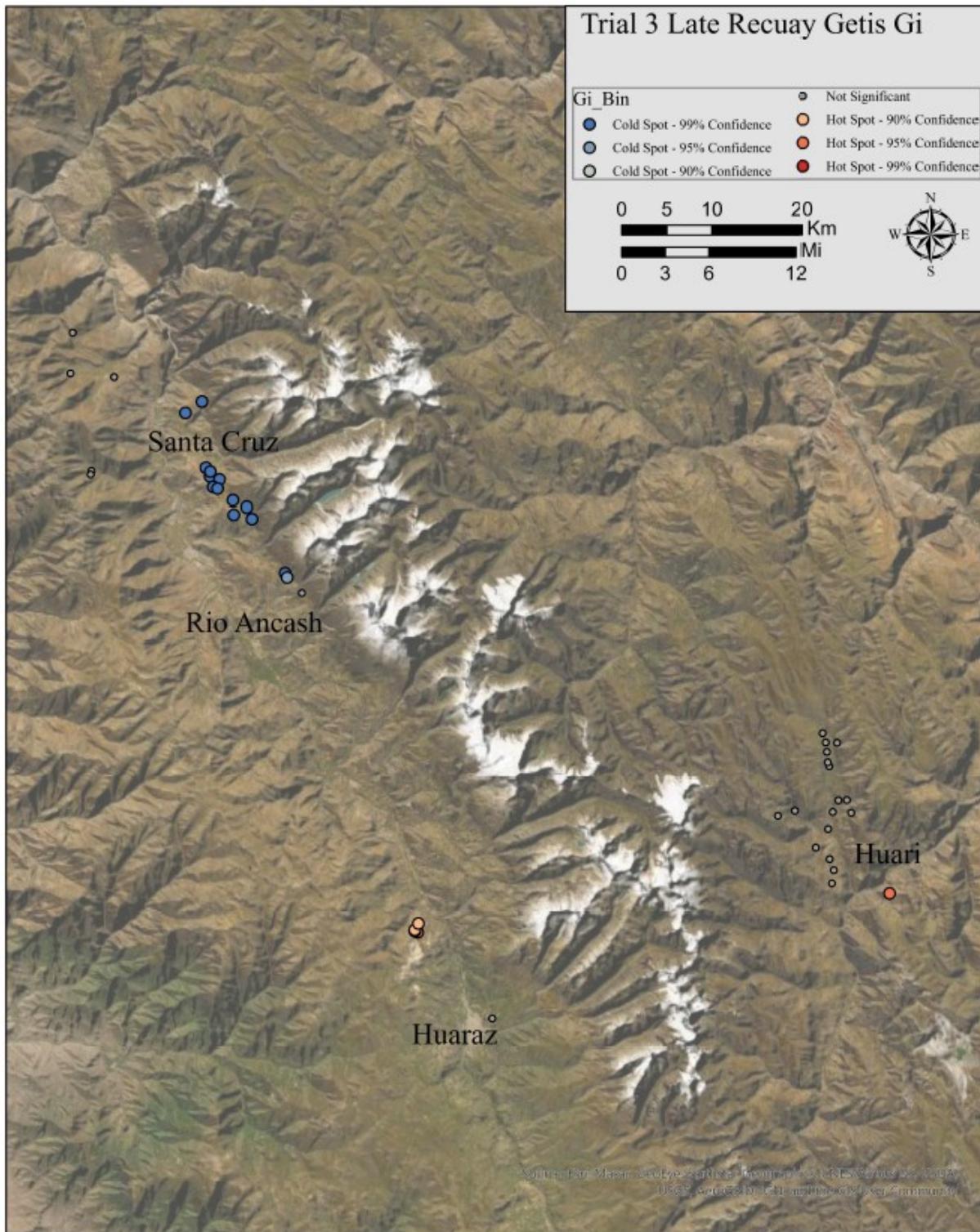


Figure 5.5 Trial 3 Local Getis Gi for the Late Recuay Era

This map shows the results of the local Getis Gi on the binary ceramic variable during the Late Recuay era. Note the coldspot near Santa Cruz (99% confidence) and hotspots in Huaraz and Huari (95% confidence).

Discussion of Trial 3

There were several recurrent outliers in Trial 3, most importantly Parian Punta (site 5) and Wayumarca (site 8), both of which were high-low outliers for the Recuay, Classic Recuay, and Late Recuay datasets. Cruz Punta (site 7) was also a high-low outlier for the Recuay and Late Recuay datasets. Sites 44-45 in the Laguna Purhuay locality were also high-low outliers, but only in the Existents Sites in AD 1 trial. Interestingly, Pariamarca (site 10) was a low-high outlier in the Existents Sites in AD 1 and Post Recuay periods only.

Taken together, the global and local statistics show clearly that there is meaningful clustering around Huari and Santa Cruz, as well as many outliers all across the sample space. The tests for autocorrelation showed that these local results are not due to random chance. Trial 3 tests tended to complement one another well. High-high clustering in Huari and low-low clustering in Santa Cruz accorded with Gi hotspots in Huari and coldspots in Santa Cruz.

Sites 5, 7, and 8 all contained ceramics, but no ceramics were recorded at many nearby sites. Llamacorral (site 44) did not contain ceramics while Ishla Ranra (site 45) did. These sites are located immediately adjacent to one another, so the question becomes why were these sites in the Laguna Purhuay locality outliers only once across Trial 3? Sites 42-49 all contained some ceramics with the sole exception of Llamacorral. It stands to reason that although sites 44-45 are so close to each other, neighboring sites with ceramics may have overpowered the local outlier. There is only one site in the area which does not have ceramics, so it is an outlier but only sometimes statistically significant. Thus, in several cases these sites must be high-low outliers relative to values immediately adjacent to them.

Trial 4

Trial 4 tested the Ceramic_Type_Num variable, which was coded as Recuay plainwares, Recuay Fineware, and foreign ceramics. Trial 4 was designed to complement Trial 3 with a more sensitive test.

Table 5.4: Trial 4 Ceramic Type Global Statistics

Test	Test Statistic	Z-Score	P-Value	Interpretation
Recuay Dataset	I=0.225355	Z=2.450499	P=0.014266	Significant slightly positive autocorrelation
Recuay Dataset	Gi=0.023621	Z=1.436216	P=0.150941	Insignificant hotspot clustering
Classic Recuay	I=0.416340	Z=3.543422	P=0.000395	Significant positive autocorrelation
Classic Recuay	Gi=0.041017	Z=2.119290	P=0.034066	Significant hotspot clustering
Late Recuay	I=0.249135	Z=2.694425	P=0.007051	Significant slightly positive autocorrelation
Late Recuay	Gi=0.026335	Z=1.787636	P=0.073835	Hotspot clustering on the cusp of significance

Global statistics for the Recuay dataset produced significant autocorrelation, but insignificant Gi values (Table 5.4). By the Classic Recuay both the I and Gi statistics were significant. Results for the Late Recuay included a significant I value but a Gi value of .074 which is near the cusp of statistical significance. Taken together, the global data indicate significant autocorrelation but only sometimes significant hotspots.

Local clusters included low-low clustering in Santa Cruz, and high-high clustering in Huaraz with some significant low-high outliers (sites 23 and 24) near Huaraz. The Llamacorral site (44-45) and site 42 in Huari were also outliers. Local Getis Gi complemented these results with coldspots in Santa Cruz and Huaraz at the 95% significance level.

Local tests on the Existent Sites in AD 1 dataset identified only outliers, high-low at sites 42 and 44-45 in Huari, as well as site 6 in Santa Cruz. Site 10 in Santa Cruz was also a low-high outlier. Local Getis Gi showed no significant hotspots or coldspots. Only one high-low outlier, Llamacorral (sites 44-45), was present in the Huarás layer. There was also a complementary coldspot at the Laguna Purhuay.

Local I statistics on the Classic Recuay dataset (Figure 5.6) showed high-high clustering in Huari and Huaraz, with site 39 in Huari as a high-low outlier. There was a low-low cluster near Santa Cruz with high-low outliers along the periphery (sites 3, 6, and 15). Site 18 along the Río Ancash was a high-low outlier. Local Getis Gi (Figure 5.7) complemented the results, showing a coldspot in Santa Cruz and a hotspot near Huaraz at the 95% confidence level.

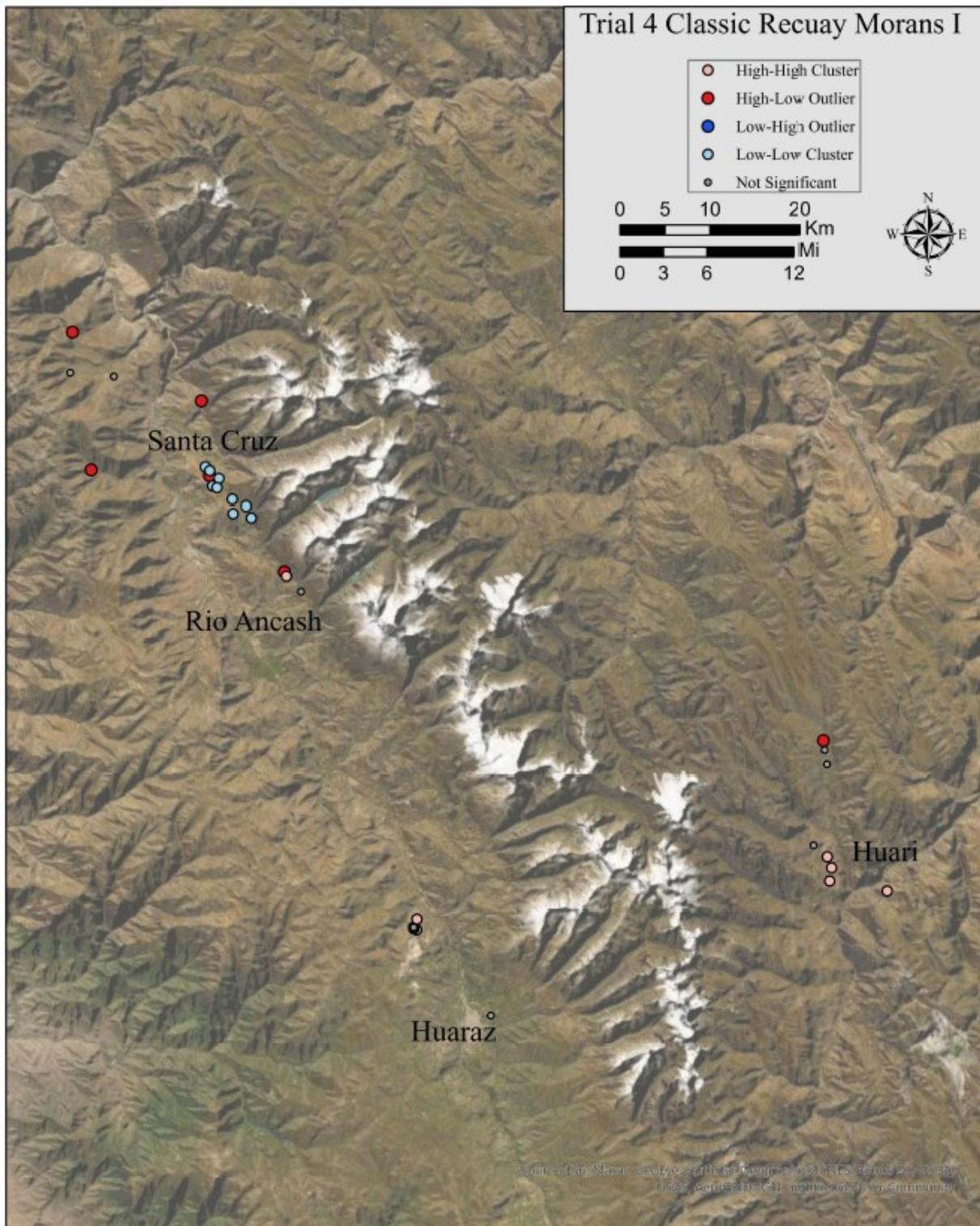


Figure 5.6 Trial 4 Local Moran's I for the Classic Recuay era

This map shows the results of the local Moran's I on the coded ceramic variable during the Classic era. Note the low-low clustering surrounded by high-low outliers in Santa Cruz, the high-high cluster around Huaraz and Huari, and the outliers along the Río Ancash.

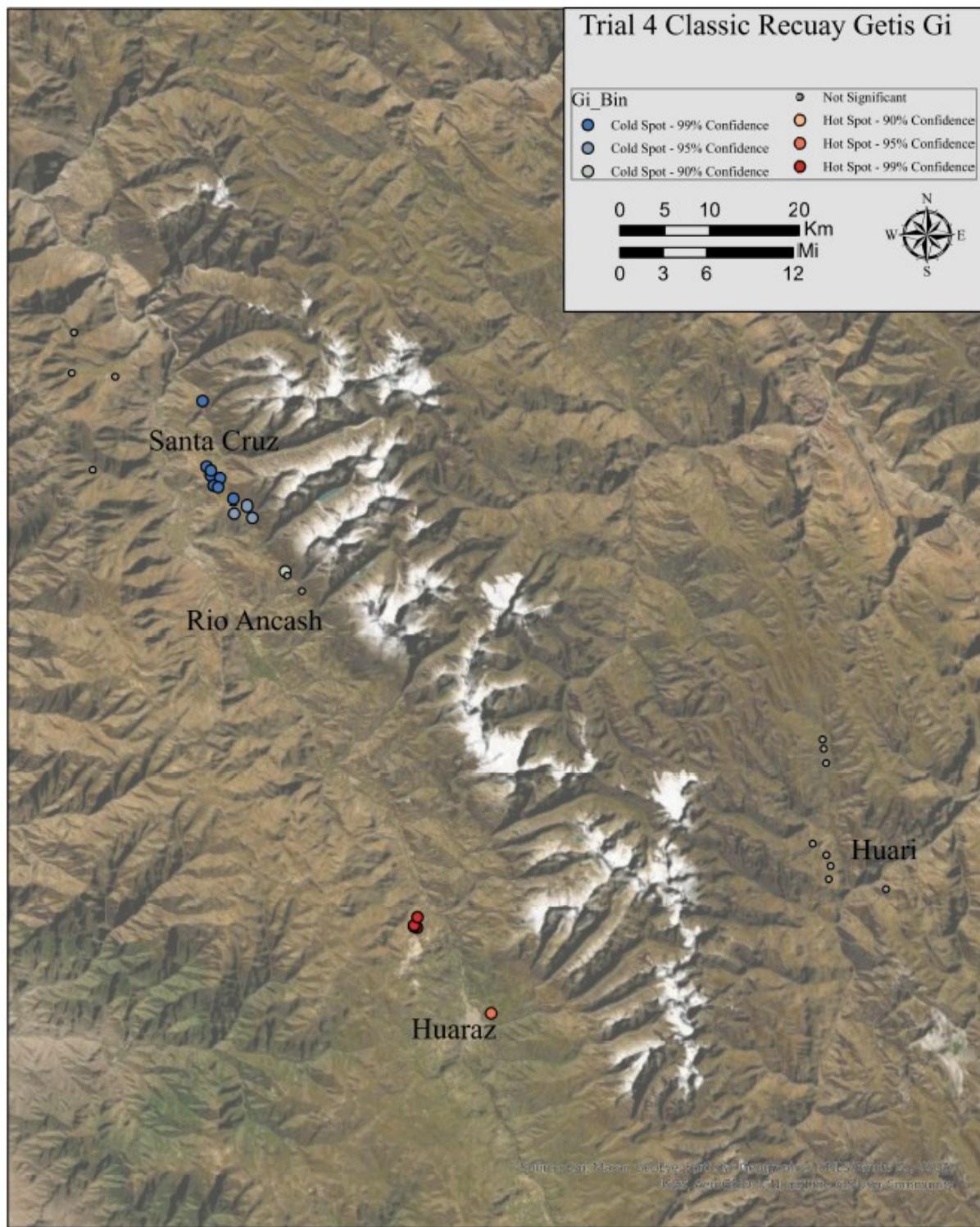


Figure 5.7 Trial 4 Local Getis Gi for the Classic Recuay era

This map shows the results for local Getis Gi on the coded ceramic variable during the Classic Recuay era. Note the coldspot around Santa Cruz (99% confidence) and hotspot north of Huaraz (99% confidence).

Local I tests on the Late Recuay dataset (Figure 5.8) showed low-low clustering in Santa Cruz, with high-low outliers in the north. A high cluster was evident in Huaráz, with sites 23 and 28 as low-high outliers. At Huari, the Llamacorral sites (44-45) were a low-low cluster. Local Getis Gi values (Figure 5.9) corroborate these findings, with hotspots in Huaráz and coldspots at Santa Cruz at the 95% significance level. Finally, only a single low-high outlier, site 10 in Santa Cruz, was identified in the post Recuay dataset. Local Getis Gi produced nothing significant.

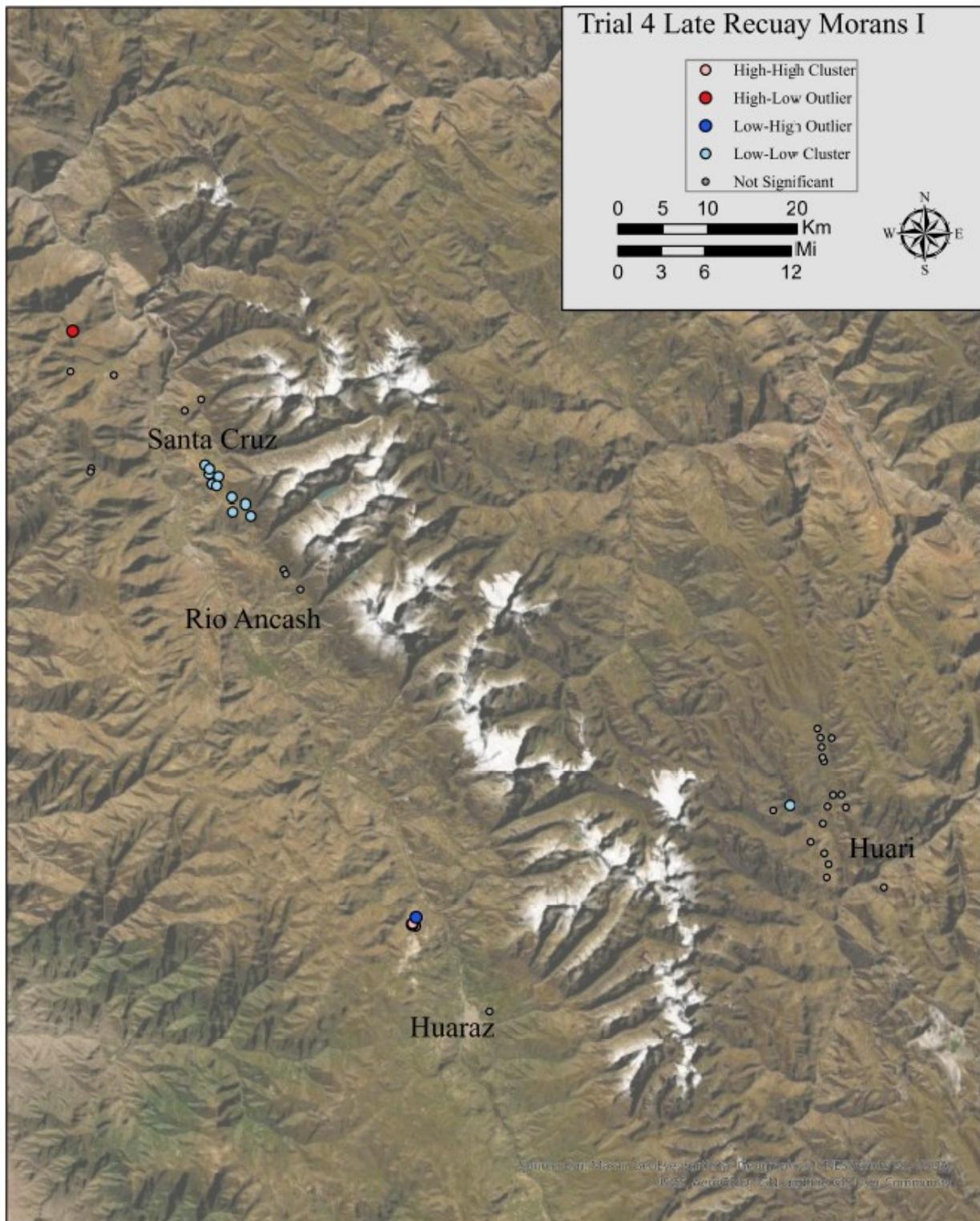


Figure 5.8 Trial 4 Local Moran's I for the Late Recuay era

This map shows the results of the local Moran's I on the coded ceramic variable during the Late Recuay era. Note the low-low cluster around Santa Cruz and the high-high cluster around Huaraz.

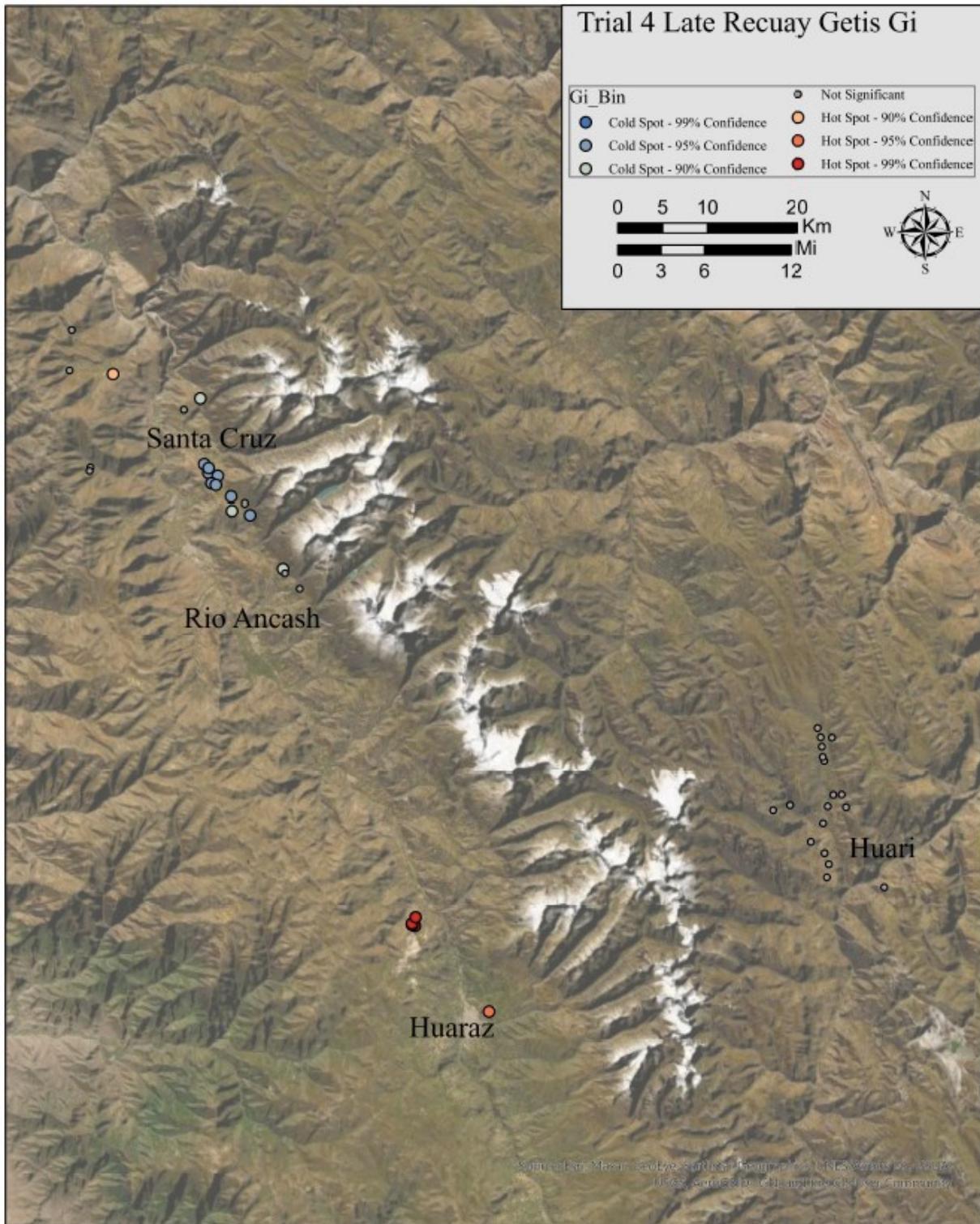


Figure 5.9 Trial 4 Local Getis Gi for the Late Recuay era

This map shows the results for the local Getis Gi on the coded ceramic variable during the Late Recuay era. Note the coldspot around Santa Cruz (95% confidence) and the hotspot around Huaraz (99% confidence).

Discussion of Trial 4

Local low-low clusters existed in Santa Cruz for the Recuay , Classic Recuay, and Late Recuay datasets. There was high-high clustering in Huaraz during the Recuay and Classic Recuay periods, and a smaller cluster in the Late Recuay. There was high-high clustering in Huari also in the Classic Recuay. Santa Cruz exhibited Gi coldspots as well during the Recuay, Classic Recuay, and Late Recuay eras. Conversely, there was a Gi hotspot near Huaraz in the Classic Recuay and Post Recuay eras.

There were also some outliers such as Quitapampa B (site 23) which was a low-high outlier for the Recuay dataset and Late Recuay. This site contained foreign Moche ceramics, and thus it represents an outlier relative to nearby sites where local Recuay pottery was found. Hualcayán (site 6) was also a high-low outlier in the Exist Sites in AD 1 and Classic Recuay periods. Hualcayán contained local Recuay kaolin fineware but no foreign ceramics. Chuncayajirca 2 (site 42) had only Local Recuay plainware but was a significant outlier in the Recuay and Exist Sites in AD 1 datasets. However, it was not significant in any of the later trials, so it seems the site was an outlier only when the entire dataset was considered.

One final significant outlier was the locality near Laguna Purhuay (sites 44-45). This locality was a high-low outlier for both the Recuay and the Exist Sites in AD 1 datasets, but only low-low clustering was evident in the Late Recuay era. This difference could be due to the fact that no ceramics were documented at Llamacorral (site 44) while Ishla Ranra (site 45) contained only local Recuay ceramics. Given the scale from 0-3, these values were still at the low end of the scale. So it seems that the subset of the Recuay Dataset used in a given trial played a role in determining the relative significance of this locality.

Trial 4 revealed low-low clustering around Santa Cruz for several of the tests. This was also true in Trial 3, in which the same area was a low-low cluster. The sites near Huaraz showed consistently high-high clustering. Nearly all of these sites contained ceramics, but a fair number included fine pottery and two had foreign Moche material. Thus, it makes sense that this could be a hotspot or cluster in several of the tests for Trial 4 but not in Trial 3. All ceramics were coded in the same way for Trial 3, so the presence of fine or foreign ceramics had no greater pull than did the presence of plainware. In Trial 4 the significance of such concentration of fine pottery was enough to consistently produce a high-high cluster, whereas in Trial 3 these sites only appeared as outliers.

This trend is flipped for the sites around Huari. Sites near Huari were from the Ibarra (2010) dataset and almost all contained ceramics, primarily plain Recuay or otherwise nondiagnostic pottery. This means that most of the sites had a value of 1 or “present” in Trial 3, and most kept values of 1 or “Local Recuay” for Trial 4. As a result, in Trial 3 there was an area of high-high clustering and hotspots among these sites, while in Trial 4 the abundance of mainly plainware produced only outliers.

Trial 5

Trial 5 tested the Metal_Num variable, which indicated the presence or absence of metal artifacts at a site. Given the lack of typological or stylistic data in the various site reports, there can be no complementary assessment of types or styles of metal artifacts. Some of the authors focused on metalwork as a portion of their analysis, while others simply noted the presence or absence of metal at a site (e.g., Ponte [2015] provides a tally of metal and types while Ibarra

[2010] only notes the presence of metal). Therefore, this test was not sensitive to quantity of metalwork at sites, only its presence.

Table 5.5: Trial 5 Binary Metalwork Global Statistics

Test	Test Statistic	Z-Score	P-Value	Interpretation
Recuay Dataset	I=0.462331	Z=4.861910	P=0.000001	Significant positive autocorrelation
Recuay Dataset	Gi=0.065857	Z=4.326386	P=0.000015	Significant hotspot clustering
Classic Recuay	I=0.348017	Z=3.084549	P=0.002039	Significant positive autocorrelation
Classic Recuay	Gi=0.084501	Z=2.563004	P=0.010377	Significant hotspot clustering
Late Recuay	I=0.538277	Z=5.651898	P=0.00	Significant positive autocorrelation
Late Recuay	Gi=0.083341	Z=5.065333	P=0.00	Significant hotspot clustering

Both global statistics were non-random for the Recuay dataset (Table 5.5). This was also true for the Classic Recuay and Late Recuay subsets. Together this means that for the entire Recuay era these data are both meaningfully autocorrelated and have significant hotspots.

Local tests on the Recuay dataset showed a low-low clustering in Huari and at Santa Cruz. Huaraz showed high-high clustering as well. Local Getis Gi values complemented these results with a cold spot in Huari and a hotspot in Huaraz (95% and 99% significance, respectively). There was a weaker cold spot at Caraz near Santa Cruz.

Local tests on the Existnt Sites in AD 1 dataset produced only outliers, both in Santa Cruz (site 6 was a high-low outlier and site 10 was a low-high outlier). Local Getis Gi values indicated a cold spot in Huari and a hotspot including site 10. The local statistics could not be run on the Huarás Recuay layer because none of the sites contained metal; all the sites were

coded as zeroes for the metal variable, so no meaningful clustering or hotspots are statistically possible.

The local Moran's I for the Classic Recuay era (Figure 5.10) showed a low-low cluster in Santa Cruz and high-high clustering in Huaraz. Sites 21 and 22 near Huaraz were low-high outliers and site 6 near Santa Cruz was a high-low outlier. Local Getis Gi (Figure 5.11) complemented these results, showing hotspots at Huaraz (99% confidence level) and a coldspot at Santa Cruz (95% level).

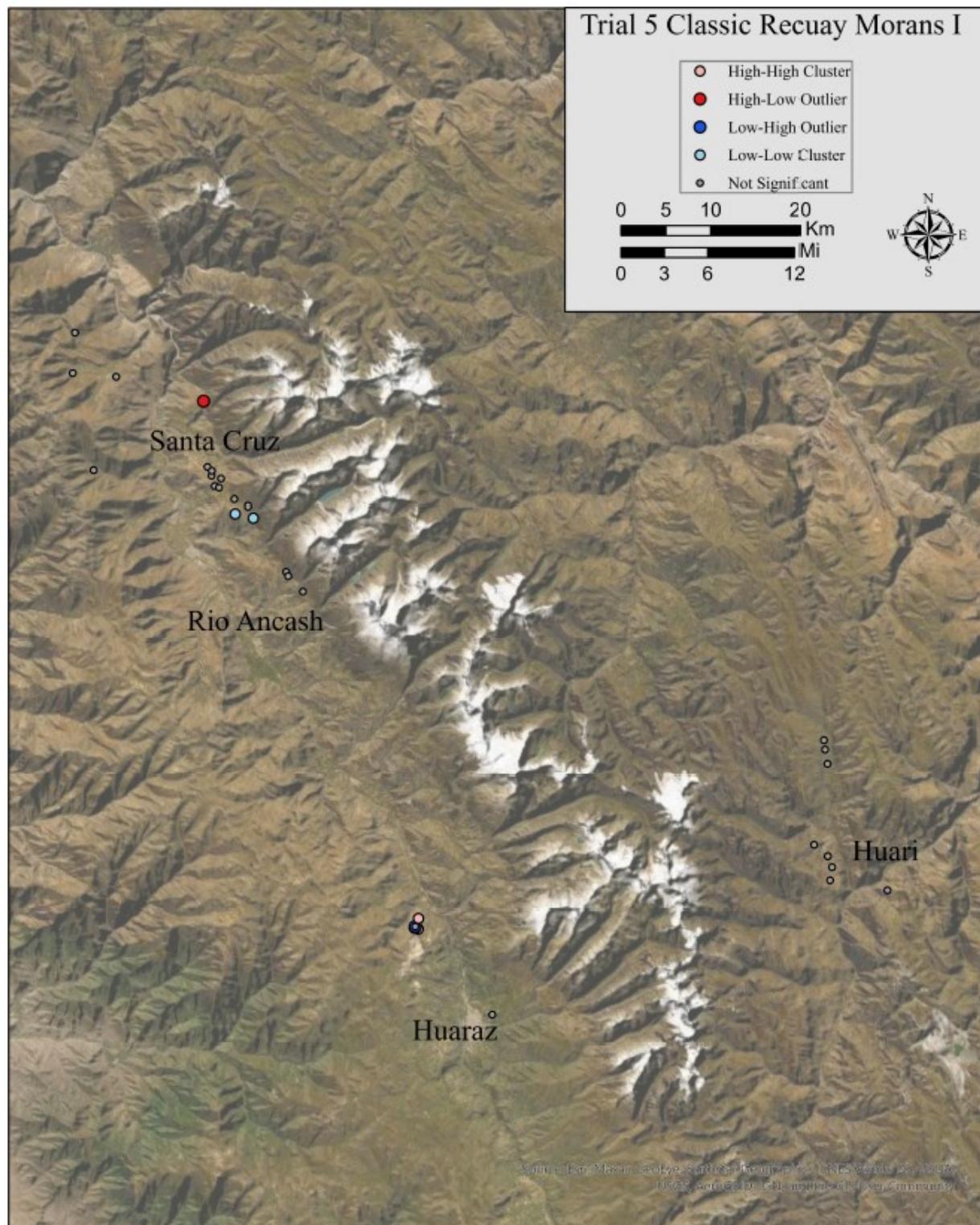


Figure 5.10 Trial 5 Local Moran's I for the Classic Recuay era

This map shows the Local Moran's I on the binary metal presence variable during the Classic era. Note the low-low cluster in Santa Cruz with a high-low outlier and the low-low cluster around Huaraz.

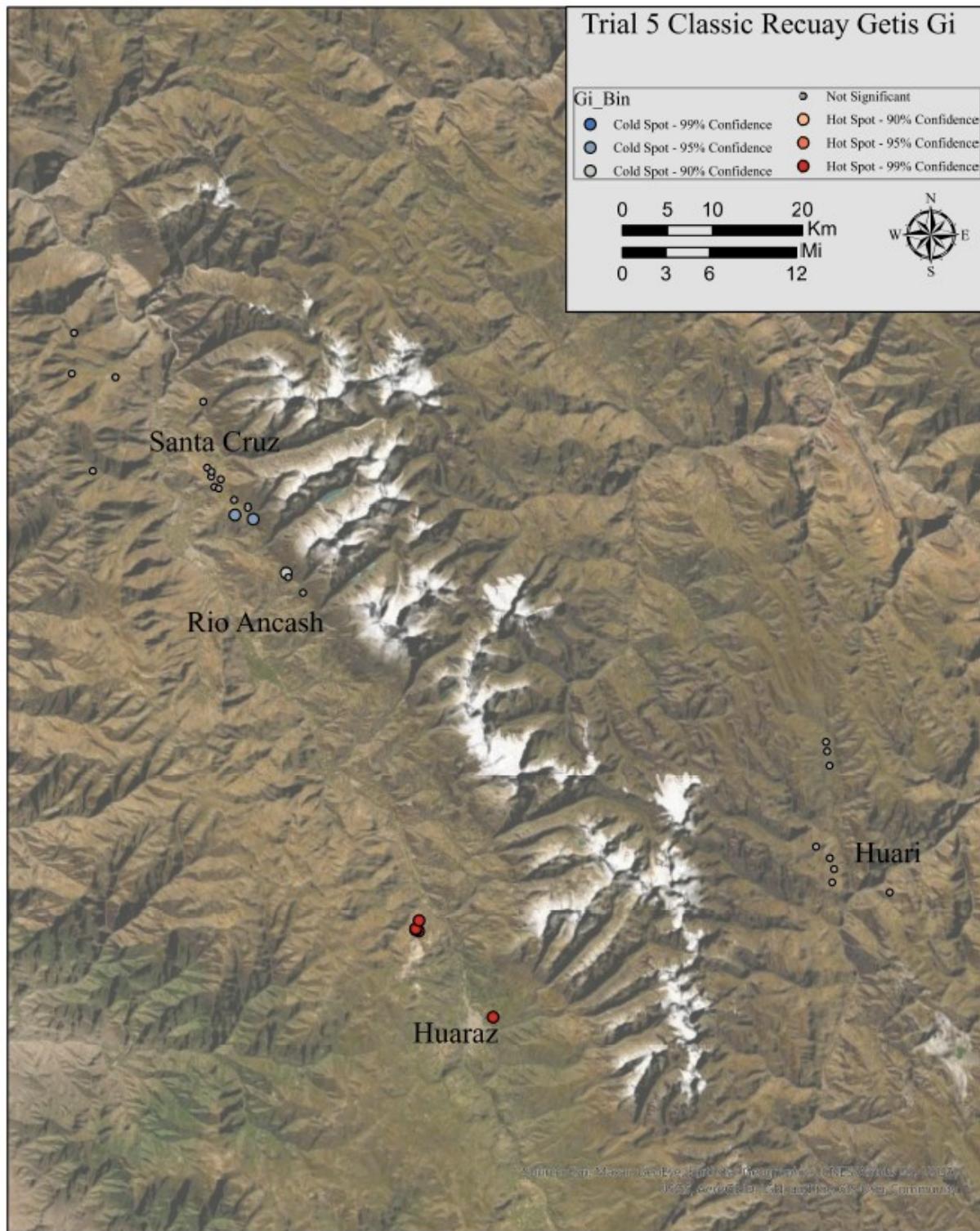


Figure 5.11 Trial 5 Local Getis Gi for the Classic Recuay era

This map shows the local Getis Gi on the binary metal presence variable during the Classic Recuay era. Note the coldspot around Santa Cruz (95% confidence) and the hotspot near Huaraz (99% confidence).

Local statistics for the Late Recuay era (Figure 5.12) indicated low-low clustering in Huari and high-high clustering in Huaraz. Site 23 near Huaraz was a low-high outlier. Local Getis Gi (Figure 5.13) complemented these results well, showing a coldspot in Huari and a hotspot in Huaraz at the 95% and 99% confidence levels, respectively. A single site (17) near Santa Cruz was a coldspot at the 90% confidence level. Global statistics for Trial 5 showed significant autocorrelation and extreme value clusters. Local tests were generally complementary.

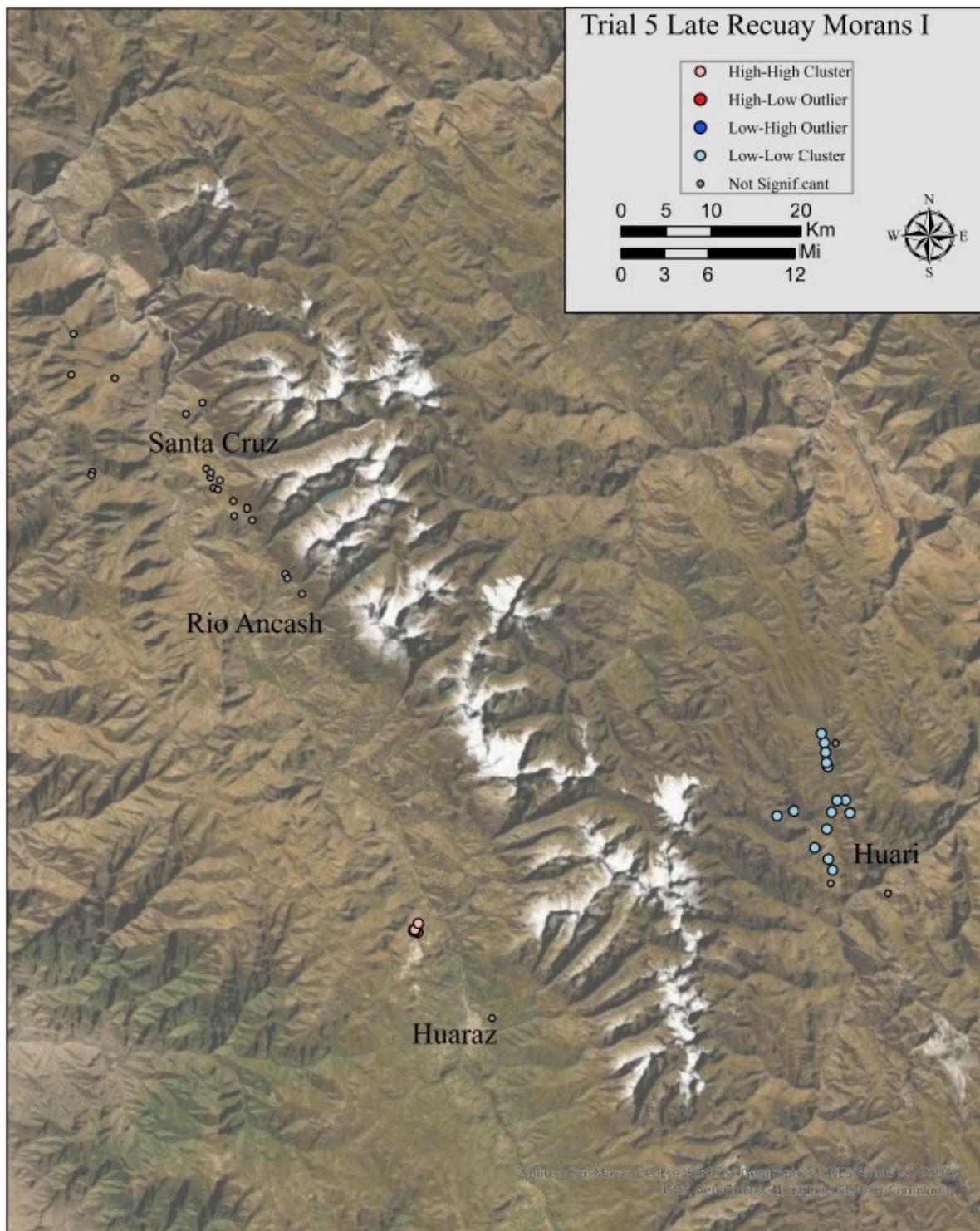


Figure 5.12 Trial 5 Local Moran's I for the Late Recuay era

This map shows the local Moran's I results on the binary metal presence variable during the Late Recuay Era. Note the low-low clustering in Huari and the high-high clustering near Huaraz.

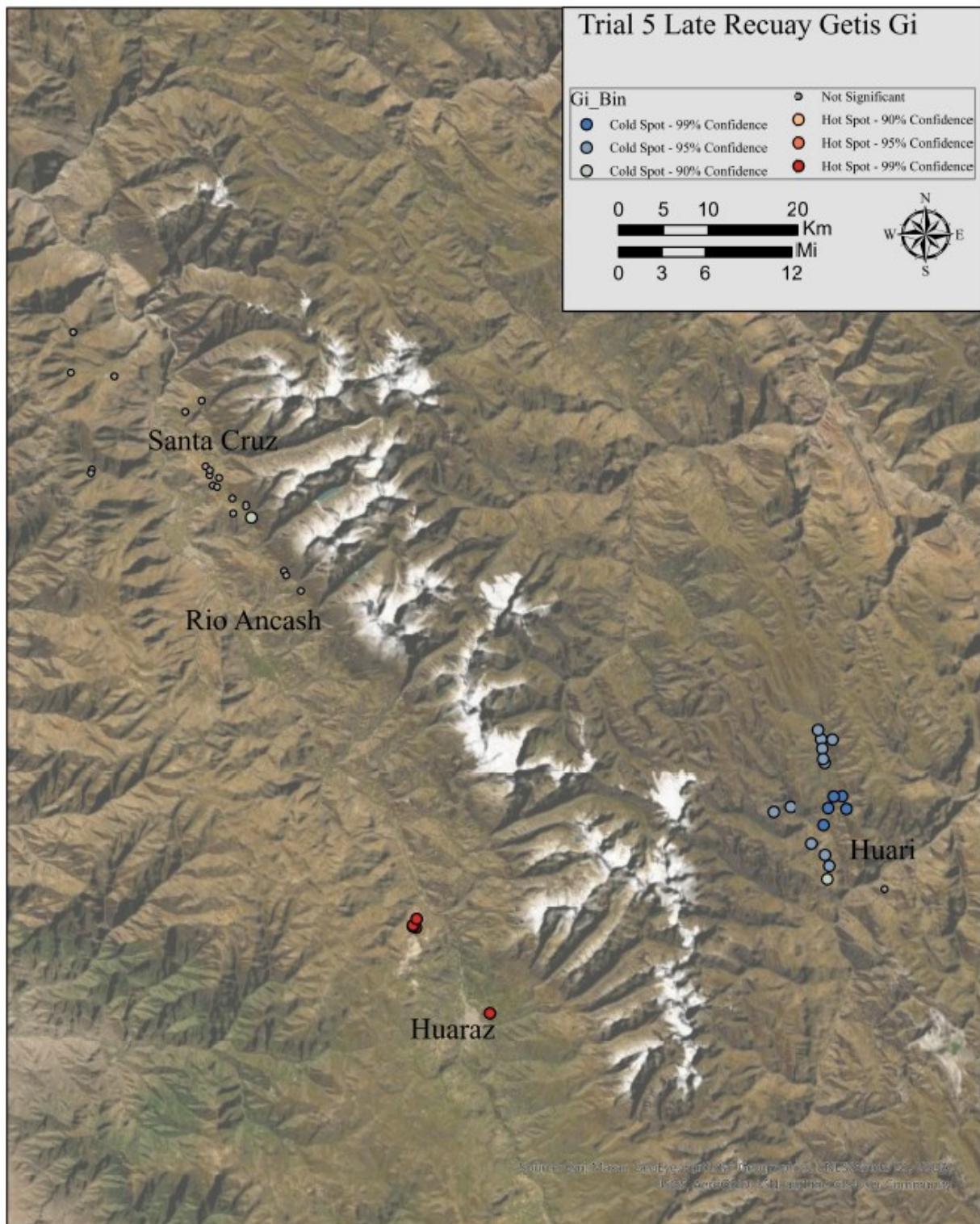


Figure 5.13 Trial 5 Local Getis Gi for the Late Recuay era

This map shows the local Getis Gi results on the binary metal presence variable during the Late Recuay era. Note the coldspot near Huari (95-99% confidence) and the hotspot near Huaraz.

Discussion of Trial 5

There were several outliers in Trial 5. Significantly, Hualcayán (site 6) was a high-low outlier in the Late Recuay. In the Classic Recuay era, Ama (site 21) and Quitapampa A (site 22) were in a high-low cluster. These two sites are near one another, and each of them contained some metalwork, so they were therefore clustered as outliers.

These trends make some sense, as the sites reported by Ibarra (2010) contained relatively little metalwork. In contrast, metal was found at seven out of ten sites near Huaraz reported by Ponte (2015). High-high clustering was evident near Huaraz in all eras. It is clear from the raw data that there was a relative abundance of metalwork throughout the entire trial. At the same time, sites around Santa Cruz only had a few pieces of metalwork.

Most importantly, the results of every global test in Trial 5 were significant. This indicates that the clusters and outliers that were identified are meaningful. This could be due partly to clustering in the dataset itself. Many sites in Huari had no metalwork, so this area represents a distinct coldspot, while most sites near Huaraz contained metal artifacts and so are therefore a hotspot in the dataset.

It is possible this is the result of how the sites were documented. Many sites had no metalwork at all and those that did tended to be clustered in the Huaraz area (the Ponte dataset). The official forms used to document sites indicate that metalwork should be noted whenever present, so ideally the Recuay datasets should accurately reflect where metalwork was found. At the present I have no means of testing this and can only work with published materials.

As stated above, many of the sites were looted prior to documentation. Metal artifacts are valued not only for sale, but also as a purely practical material. They can be melted and reformed

to suit the needs of people who find them, whether they be of the same or a later culture, a colonial master, or modern agriculturalists. Based solely on published data, I have no means of assessing whether there was significant destruction or removal of materials between their deposition and documentation.

Finally, there is a very real possibility that more metalwork was present at the sites near Huaraz than in the other localities. The sites documented by Ibarra near Huari and the sites in the Río Ancash studied by Barbosa were characterized as Recuay hinterland sites. All are located outside of the main Callejón and therefore the various trade networks which allowed the Recuay heartland to flourish. Although the sites near Huaraz are in the upper Río Santa, they are still in the Callejón and the Classic Recuay heartland. It therefore makes some sense that more metal would be found at these sites than at sites farther afield.

At the same time, the sites studied by Bria around Santa Cruz are far closer to the Recuay heartland than even the sites near Huaraz. Despite their proximity to the heartland, only a few of the sites had any documented metalwork. This could be due to differential preservation. The larger sites which were documented more intensively are closer to modern cities, such as Huaraz and Santa Cruz, so significant disturbance of these sites in the past and present seems likely.

Trial 6

For Trial 6 the Moran's I and Getis' Gi were run on the MNI variable. As in Trial 2, the goal was to identify clustering of sites with respect to mortuary monuments—specifically, the number of individuals buried at different sites.

Table 5.6: Trial 6 Burial MNI Global Statistics

Test	Test Statistic	Z-Score	P-Value	Interpretation
Recuay Dataset	I=0.006486	Z=0.381770	P=0.702632	Insignificant autocorrelation random clustering
Recuay Dataset	Gi=0.023217	Z=0.072228	P=0.942421	Insignificant hotspot clustering
Classic Recuay	I= -0.017189	Z=0.390948	P=0.695836	Insignificant autocorrelation random clustering
Classic Recuay	Gi=0.015810	Z= -0.450429	P=0.652401	Insignificant hotspot clustering
Late Recuay	I=0.001522	Z=0.330361	P=0.741127	Insignificant autocorrelation Random clustering
Late Recuay	Gi=0.018013	Z= -0.115273	P=0.908229	Insignificant hotspot clustering

Neither the I nor the Gi statistic for the Recuay Dataset was significantly different from random (Table 5.6). This was also true for the Classic Recuay era and for the Late Recuay. As in Trial 2, this would imply that only local clusters were meaningful. Unlike Trial 2, the local tests indicated clusters and hotspots beyond outliers.

Local tests on the Recuay dataset showed low-low clustering in Santa Cruz, with site 6 as a high-low outlier and site 7 as a low-high outlier. There was also high-high clustering at Huaraz. There was significant low-low clustering in Huari near the Laguna Purhuay (sites 44-45). Getis Gi showed only a single hotspot in Santa Cruz at the 90% confidence level. Analysis of the Existent Sites in AD 1 dataset indicated only outliers at Santa Cruz: one high-low outlier (site 6) and one low-high outlier (site 10). Getis Gi showed a hotspot in Santa Cruz as well.

Local Moran's I for the Recuay dataset revealed only outliers in Huarás. Site 33 was a low-high outlier and the Laguna Purhuay sites (44-45) were high-low outliers. The Local Getis Gi test showed nothing significant. In the Classic and Late Recuay periods (Figure 5.14), the

Local Moran's I showed only outliers in Santa Cruz, sites 6 (a high-low outlier) and 7 (a low-high outlier). In Huaraz there was another high-low outlier (site 28). Local Getis Gi showed nothing significant.

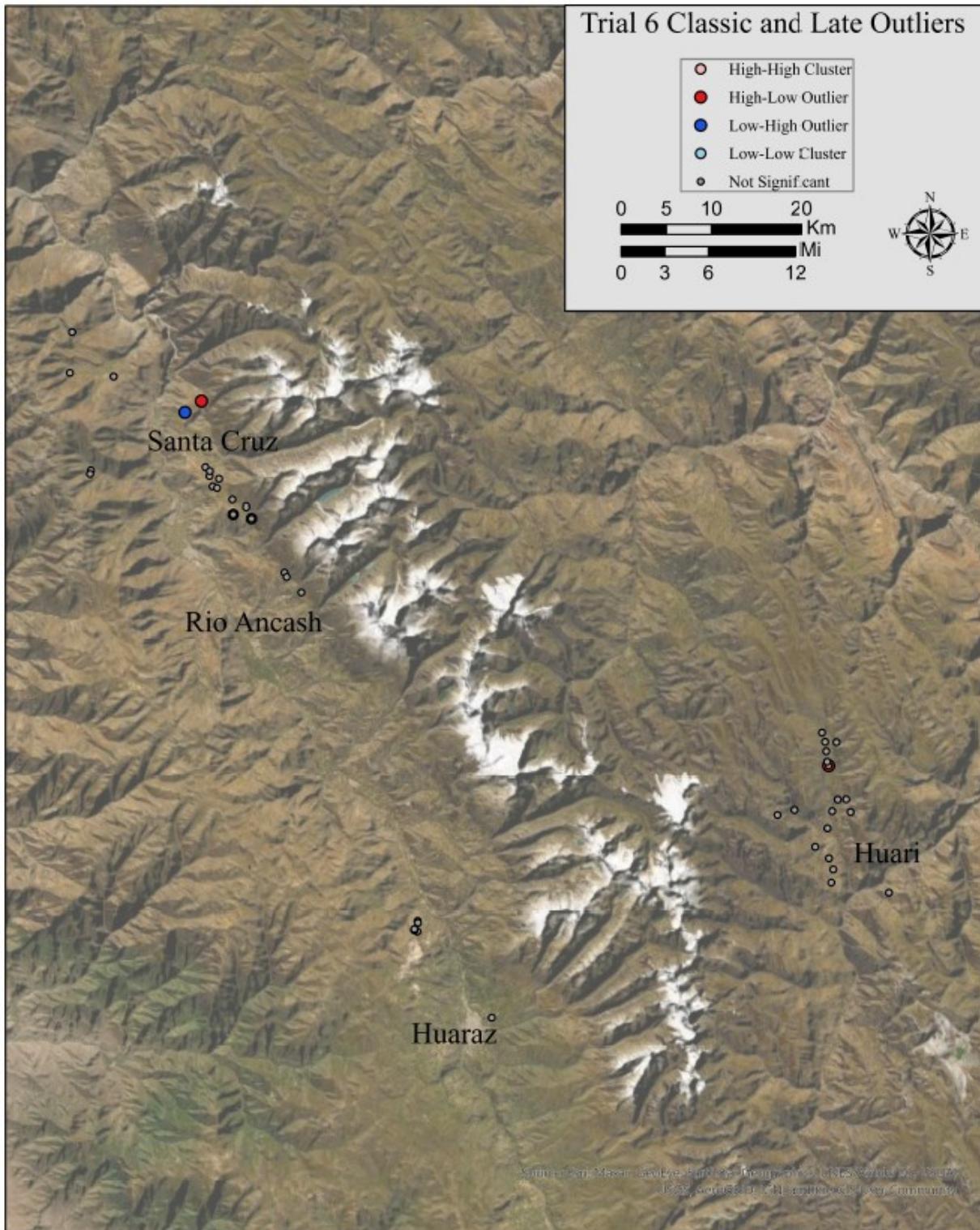


Figure 5.14 Trial 6 Local Moran's I outliers for the MNI variable during the Classic and Late Recuay eras

This map is a composite of the Local Moran's I outliers for the Classic and Late Recuay eras. There were no clusters in either test, just outliers across the dataset.

Discussion of Trial 6

Local tests on the Recuay Dataset showed low-low clustering in the sites near Santa Cruz and a high-high clustering near Huaraz. The Purhuay locality (sites 44-45) was also a low-low cluster. The sites near Santa Cruz were also a hotspot, but only at the 90% significance level. The AD 1 and Huarás Recuay datasets also produced only outliers. In the Classic Recuay era, the same sites near Santa Cruz exhibited low-low clustering but there was a hotspot in the same area. By the Late Recuay era only outliers existed in the entire dataset.

These results indicate that there was significant low-low clustering near Santa Cruz throughout the dataset during the Classic and Late Recuay periods. This makes some sense as there were relatively few sites in this area where human remains have been found. One exception was Hualcayán (site 6), which was an outlier in the Recuay Dataset, the Existents Sites in AD 1, the Classic Recuay, and the Late Recuay periods. Hualcayán was an important site with a significant mortuary complex throughout the Recuay era, so it was the main focus of Bria's research. Thus, it was recorded in far more detail than any of the other sites she documented near Santa Cruz. Notably, it is the only site reported by Bria with a high MNI (129 individuals). This means that Hualcayán could be an outlier principally because it was the site that was studied most intensively in that project.

It is difficult to determine if it was an outlier because there were so few sites in the Bria dataset with mortuary contexts, rather than a true outlier. Nevertheless, it is clear from Trial 6 that Hualcayán was significant in some way, as Bria (2017) indicates. Several of the tests, including those run on the Recuay and Late Recuay datasets, indicated a low-high outlier between Cruz Punta and Hualcayán, which had MNIs of 0 and 129 respectively.

Overall, Trial 6 was intended to complement Trial 2. While Trial 2 only produced outliers, Trial 6 identified both clusters and outliers. On the other hand, none of the Global statistics were significant at the .05 level. This is not inherently a problem as the Global metrics are designed to test the whole dataset and the Local are designed for subsets. Neither Trial 2 nor 6 produced significant Global statistics meaning the datasets are not clustered as a whole by these variables. There is also the possibility that the presence of sites so different as Hualcayán and Cruz Punta might be artificially creating clusters like that near Laguna Purhuay (sites 44-45). This does explain the outliers, but it does not make them insignificant. Cruz Punta was a residential site. The Recuay tended to live adjacent their mortuary monuments, but only rarely are remains found inside residential areas. Hualcayán was a site with a mortuary mound and patio. This implies that the basic binary variable in Trial 2 was insufficient at identifying such relations while the MNI variable in Trial 6 was able to.

Qualitative Analysis of Chullpa Distribution

One of the chief goals of this project was an assessment of the spread of Wari cultural elements into the highlands. I had intended to run a cluster analysis on the chullpa data, but this proved to be difficult because of the dispersed distribution of chullpas across the dataset. I did run the usual Global and Local four test trial on the number of chullpas variable during the Classic Recuay period. Both the Global I and Gi values were significant at the .05 level, but the local tests showed only a high-high cluster around the Río Ancash, which was the only statistically significant local hotspot. In all, these tests were not very informative or demonstrative. Therefore I decided to assess the appearance and spread of chullpas in the study area qualitatively. Using the same periods and definition-queried layers discussed above, I

generated a series of maps showing the presence of chullpas and the frequencies of different types of mortuary monuments at sites.

The Existents Sites in AD 1 layer included only two sites with chullpas, Hualcayán and Ishla Ranra. Neither of these sites actually had chullpas in AD 1; rather, they were simply sites occupied in AD 1 that continued to be inhabited long enough to contain chullpas. Similarly, Ishla Ranra was the only site in the Huarás-Recuay layer with a chullpa. These results indicated that most of the Recuay and Huarás sites inhabited at the beginning of the Early Intermediate Period would not persist into the period when chullpas began to be constructed. This is reasonable as many of the sites were single burials, or small residential or agricultural sites.

By the Classic Recuay period, there was a fair distribution of sites in the Santa Cruz region which contained chullpas (Figure 5.15). All three of the sites along the Río Ancash contained chullpas. It seems the chullpa was adopted comparatively early there. Significantly, during the Classic era there were no chullpas built at the sites near Huaraz or Huari. The Classic Recuay era was a time when the Wari were beginning their expansion and elements of their cultural bundle appeared in the highlands, though not yet into Ancash directly. Finding some chullpas in sites closest to the Callejón heartland and along trade routes was the expected results.

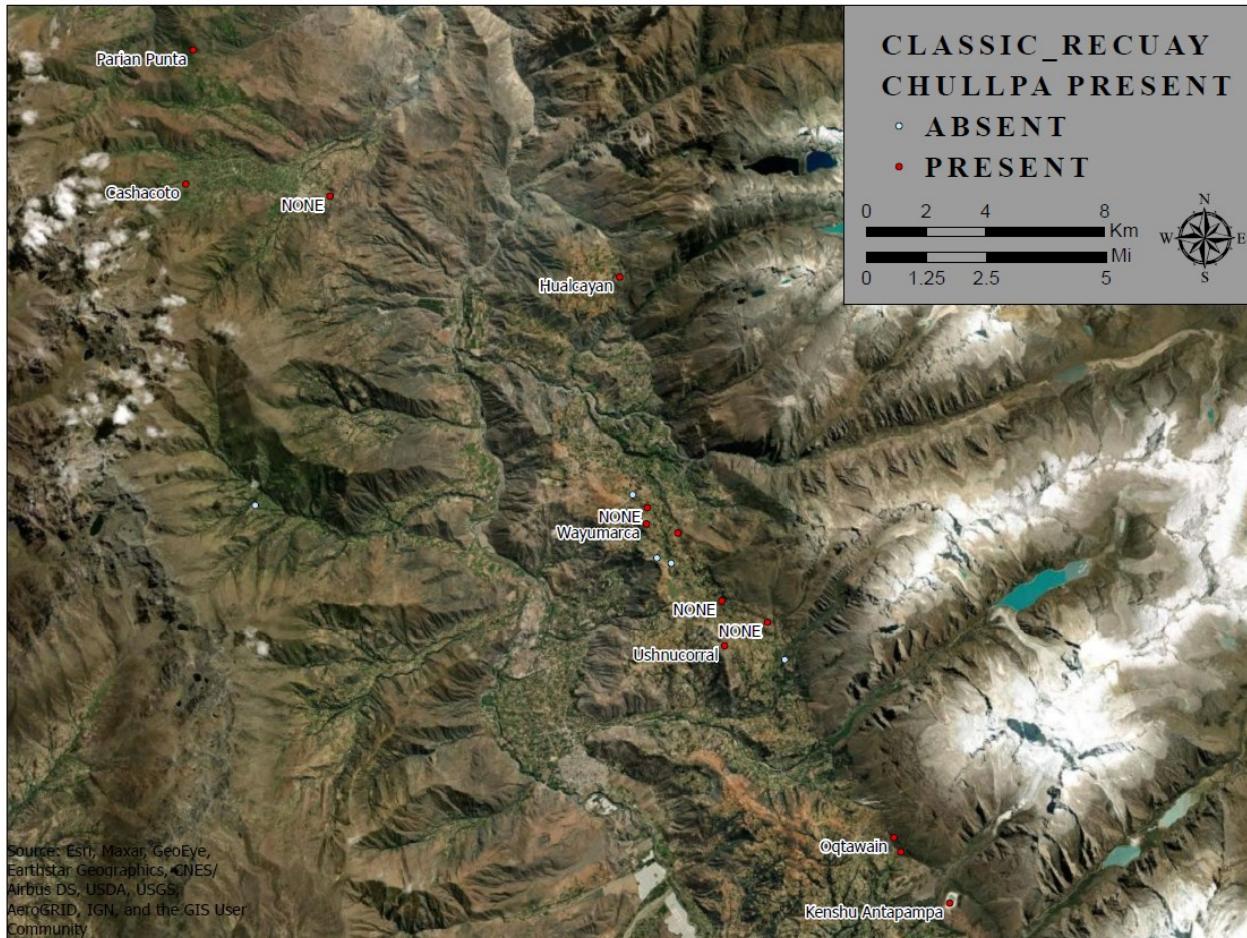
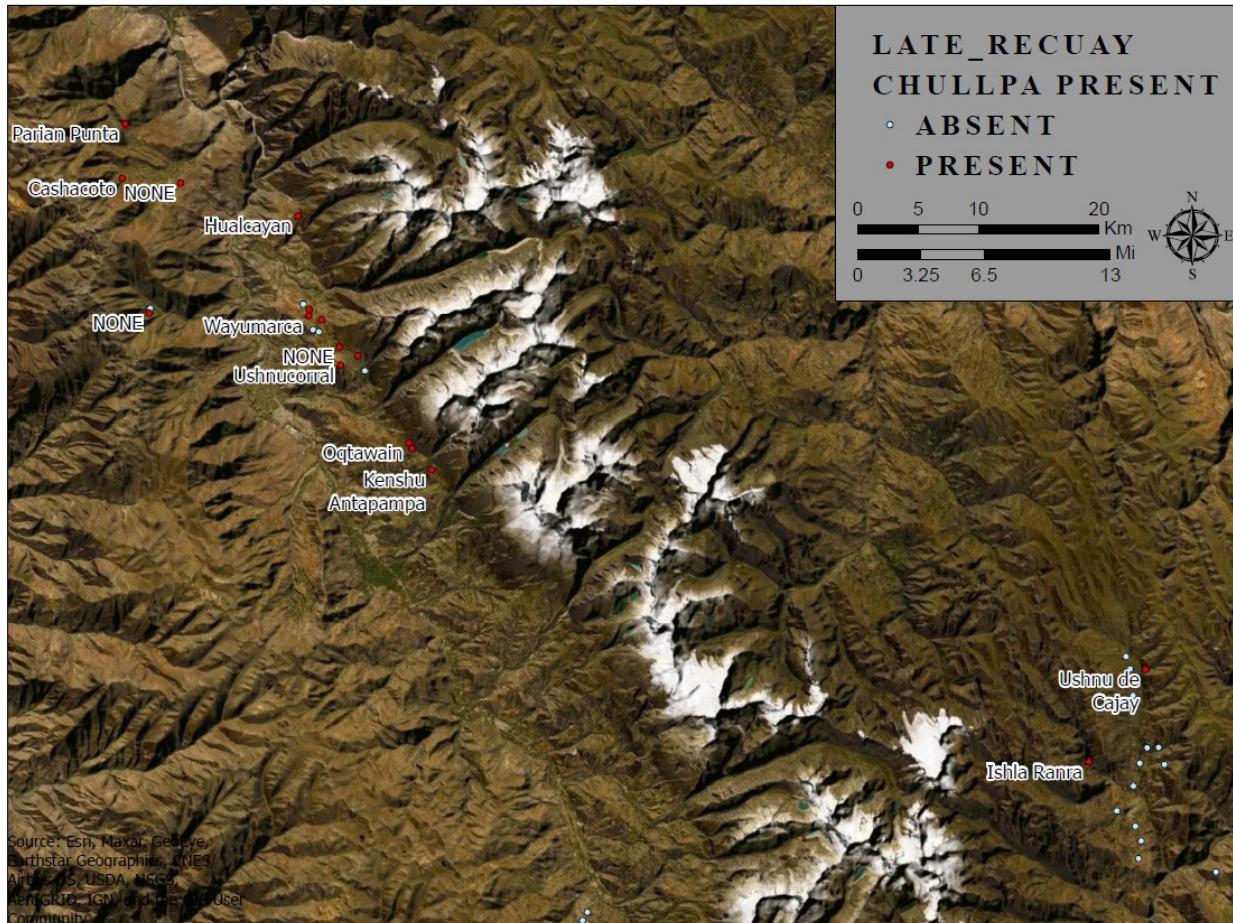


Figure 5.15 Chullpas present during the Classic Recuay Era

This map shows the distribution of chullpas among sites occupied in the Classic Recuay era. Chullpas began being built in Ancash during the late Classic era.

During the Late Recuay era, chullpas became more widespread than during the Classic period (Figure 5.16). It was during this era that the chullpa appeared in full force across the highlands. There were even more sites near Santa Cruz with chullpas, and all three of the Río Ancash sites were still being used at this time. Significantly, the sites of Ishla Ránra and Ushnu de Cajay near Huari also contained chullpas. The Wari expansion and the Recuay's transition into the Wari sequence occurred during the Late Recuay. Thus, it is not surprising that chullpas were built at more sites, and the geographical distribution of sites with chullpas was greater than

in previous periods. By the Post-Recuay era there were far fewer sites still occupied. About half of those that were still being used contained chullpas.



Map 5.16 Chullpas Present in the Late Recuay Era

This map shows the distribution of chullpas among sites occupied during the Late Recuay era. This is the beginning of chullpa building in Ancash.

Qualitative assessment of the available data clearly shows the spread of chullpas through the Recuay era. Early on there were no chullpas, and only a few large and important sites were used long enough for chullpas to be built at them. During the Classic era there are far more sites with chullpas, but they were concentrated nearest the Recuay heartland in Santa Cruz and along the Río Ancash. Then during the Late Recuay period there was a surge of chullpa building. By

that time, the Wari cultural bundle was absorbed and adopted fully into local traditions. There were noticeably more sites with chullpas present, and these sites were distributed more widely in the highlands. By the Post-Recuay only a few sites remained in use, but those that did often contained chullpas.

In addition to assessing the presence of chullpas at sites over time, the data allowed comparisons of various mortuary types through time. Again, statistical clustering and regression produced less meaningful results than I had anticipated, so I decided to adopt a more qualitative approach by generating maps with pie-charts showing the frequency of different mortuary treatments present at sites across the various eras.

Those sites existent in AD 1 contained primarily subterranean burials, although there were some platforms as well. Again, Ishla Ranra and Hualcayán contained chullpas that were constructed during a later phase of their occupations. Most importantly, all sites except Hualcayán contained only one type of burial. Both subterranean burials and chullpas were present at Hualcayán.

By the Classic Recuay era, each of the sites around Huaraz contained a single burial type (Figure 5.19). There was one cave burial, and the remainder of these sites had subterranean burials. Similarly around Huari there were only single subterranean and platform types (Figure 5.20). There were no chullpas present in either area until the Late Recuay period, a result that complements well the prior discussion. Sites near the Río Ancash contained a mixture of mortuary types (Figure 5.18). Chullpas were present in all three sites, as well as a combination of subterranean and cave burials. This region had two sites with multiple mortuary treatments.

An interesting pattern is evident around Santa Cruz (Figure 5.17). Most of the sites have a single burial type, either subterranean or chullpa. There are also several sites with multiple burial types, usually platform or subterranean with chullpas present. This pattern shows how significant the chullpa became during the Classic era. Given that the Santa Cruz area was occupied more intensively than any of the other regions throughout the periods considered in this study, it makes sense that there would be a higher volume and variety of mortuary types there. Sites near Santa Cruz were closest to the Recuay heartland and the major cultural transformations that occurred there.

During the Classic Recuay period, chullpas were appearing more frequently in Ancash. This change was most pronounced in the northern areas with denser populations located closer to the heartland. The presence of chullpas at sites where individuals were buried in preceding periods likely reflects Recuay ancestor veneration. Around Santa Cruz the change was stark. There are many sites with only subterranean burials or only chullpas, and there are some with overlap. In this region chullpas may have been adopted because they facilitated a shift from traditional entombment to a form of interment in which ancestors remained accessible to their living descendants.

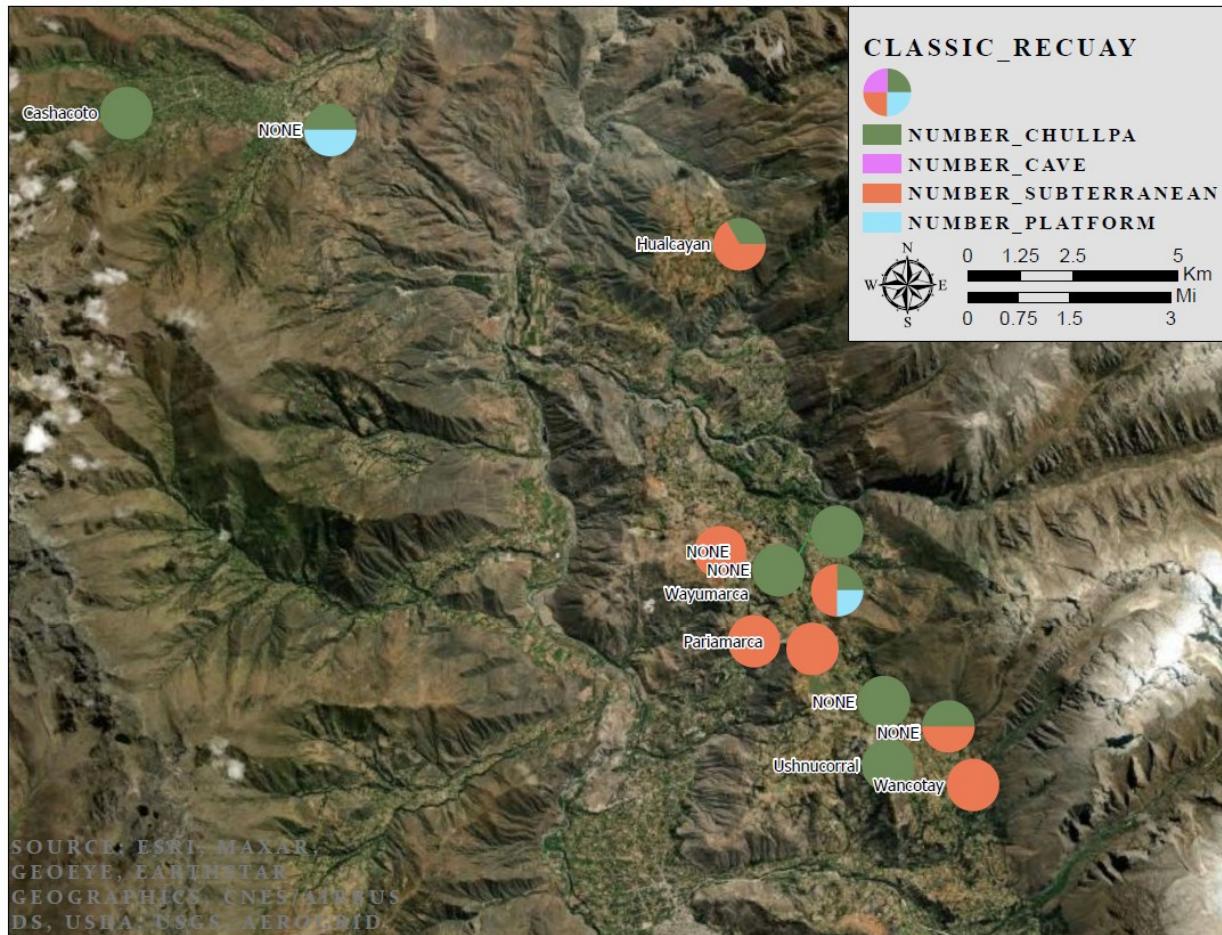


Figure 5.17 Classic Recuay Mortuary Monuments around Santa Cruz.

These are the sites near Santa Cruz which contained mortuary monuments. During the Classic Recuay era these sites contained combinations of chullpa, subterranean, and platform burials characteristic of the Recuay culture.

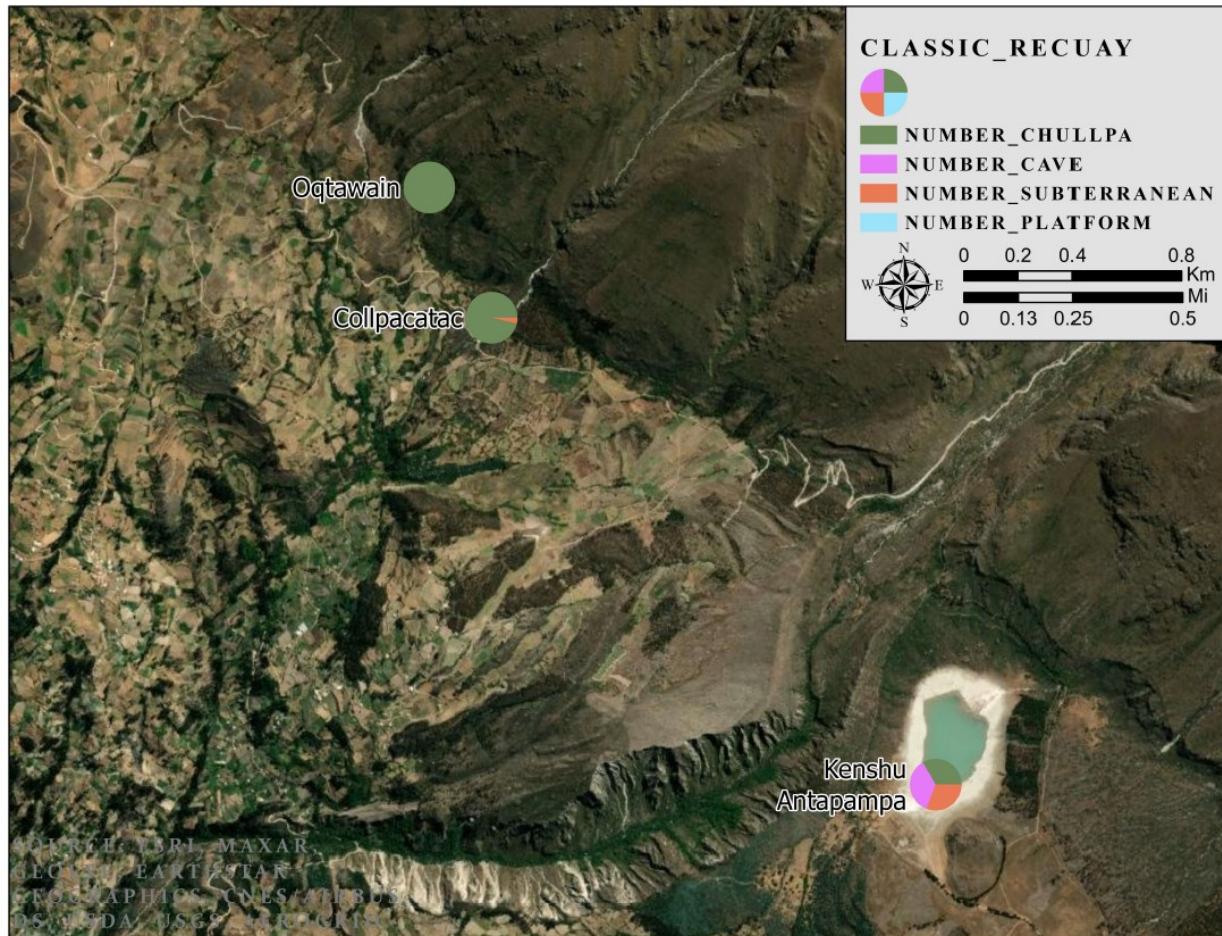


Figure 5.18 Classic Recuay Mortuary Monuments around the Río Ancash

These are the sites near the Río Ancash which contained mortuary monuments during the Classic Recuay era. These sites contained combinations of chullpa, subterranean, and cave burials characteristic of the Recuay culture.

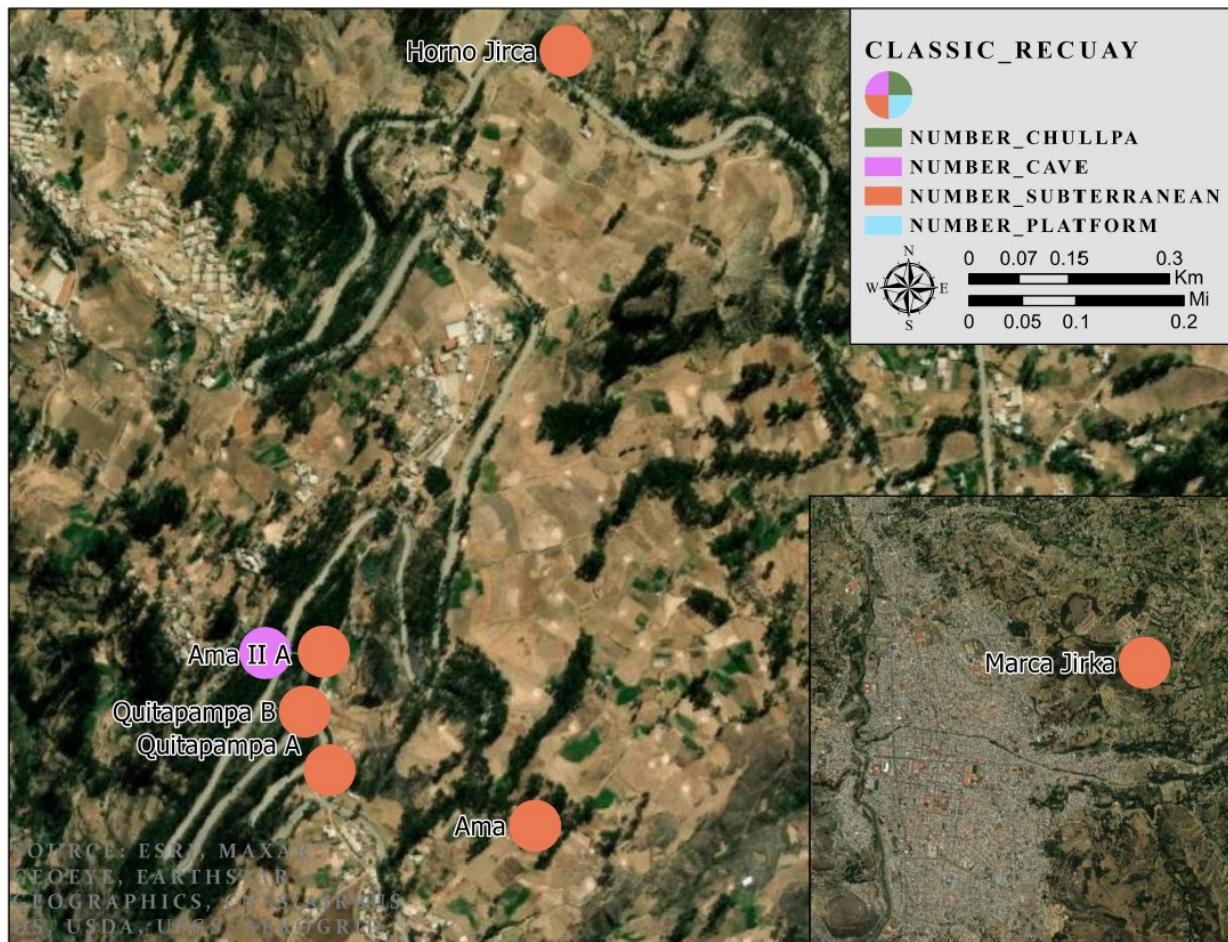


Figure 5.19 Classic Recuay Mortuary Monuments around Huaraz

These are the sites near Huaraz which contained mortuary monuments during the Classic Recuay era. These show a more homogeneous distribution of subterranean and cave burials common during the Recuay era.

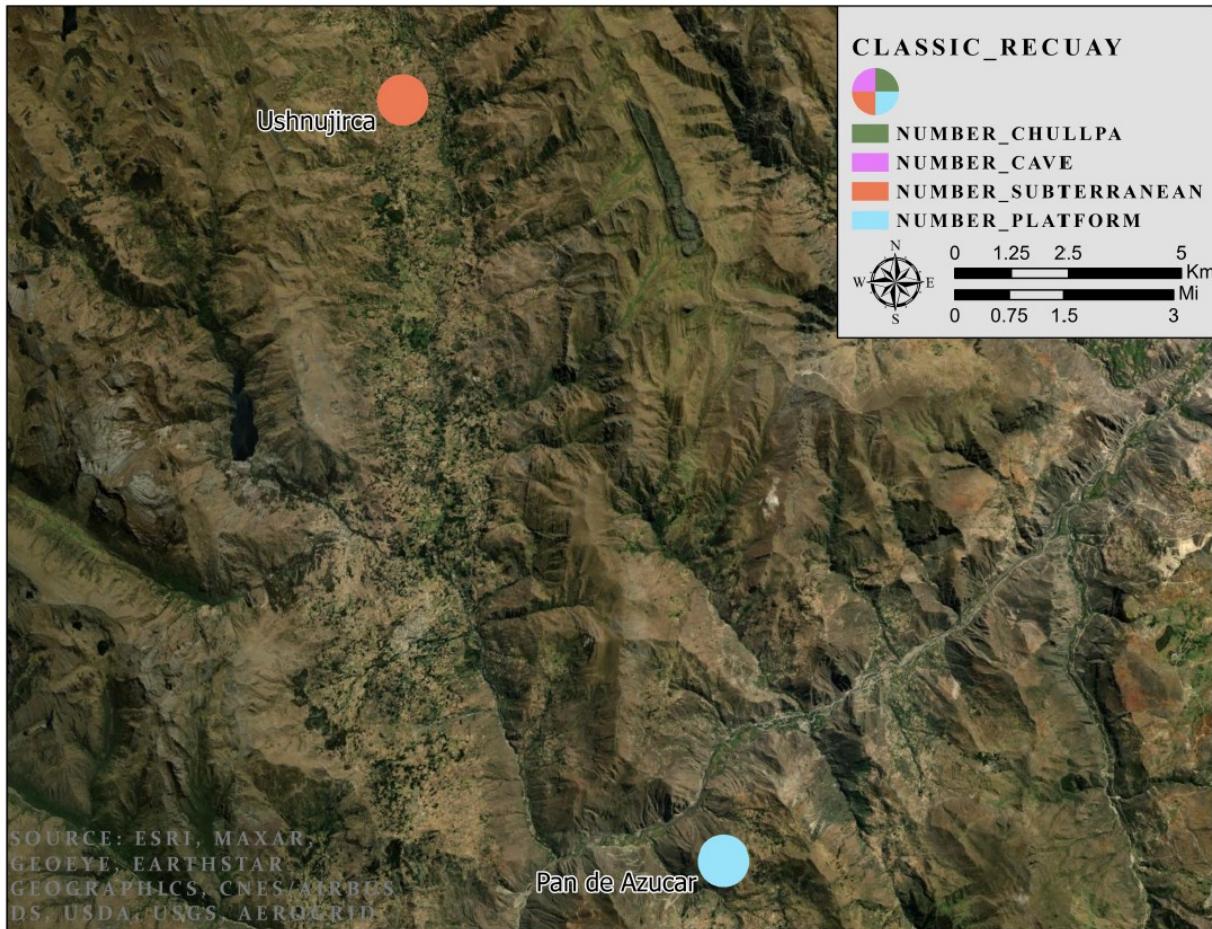


Figure 5.20 Classic Recuay Mortuary Monuments around Huari

These are the sites near Huari which contained mortuary monuments during the Classic Recuay era. Note the relatively few data points present at this locality.

During the Late Recuay era there was a continuation of the trends observed in the Classic. Around Huaraz there were no chullpas but only subterranean burials in the Late Recuay era (Figure 5.22). Around Huari the first chullpas appeared, but they were built at only two sites (Figure 5.23). The three sites along the Río Ancash showed no change since the Classic (Figure 5.18). Around Santa Cruz the trend evident in the Classic continued, but there were a few new sites with only chullpa burials from the Late Recuay era (Figure 5.21).

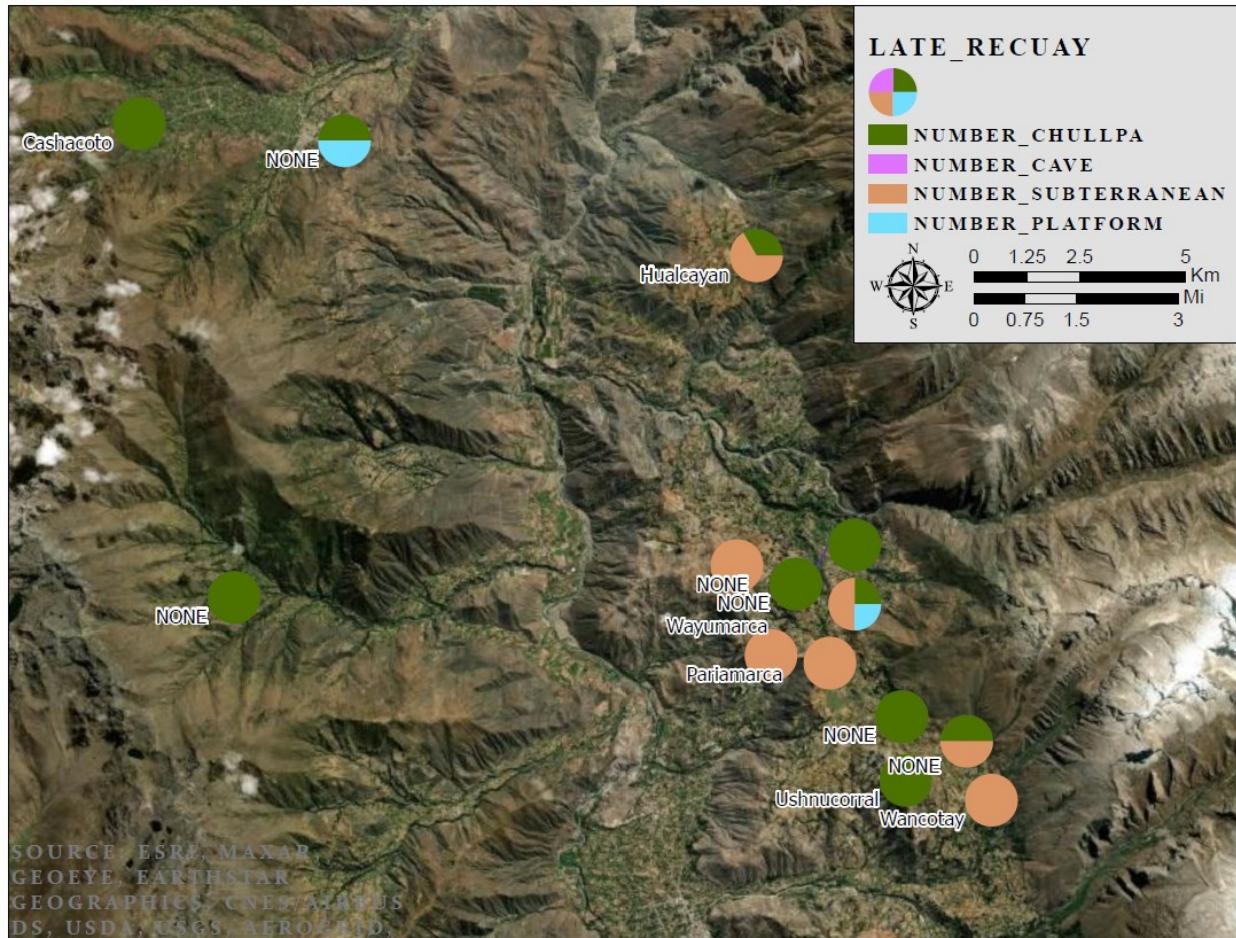


Figure 5.21 Late Recuay Mortuary Monuments around Santa Cruz

These are the sites near Santa Cruz which contained mortuary monuments during the Late Recuay era. These sites contain high concentrations of chullpas, as well as subterranean and platform burials.

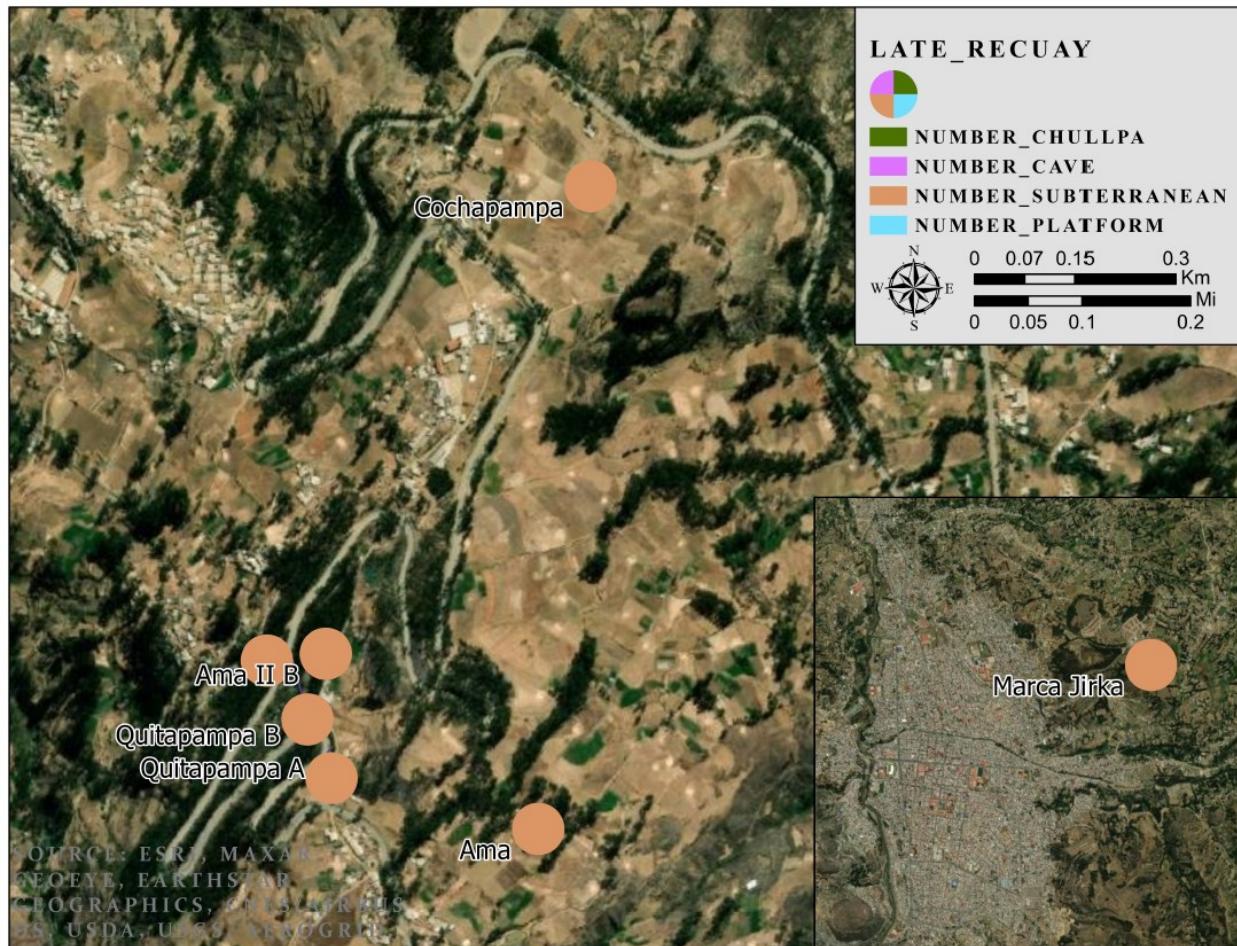


Figure 5.22 Late Recuay Mortuary Monuments around Huaraz

This map shows the sites near Huaraz which contained mortuary monuments in the Late Recuay era. These sites contain only subterranean burials.

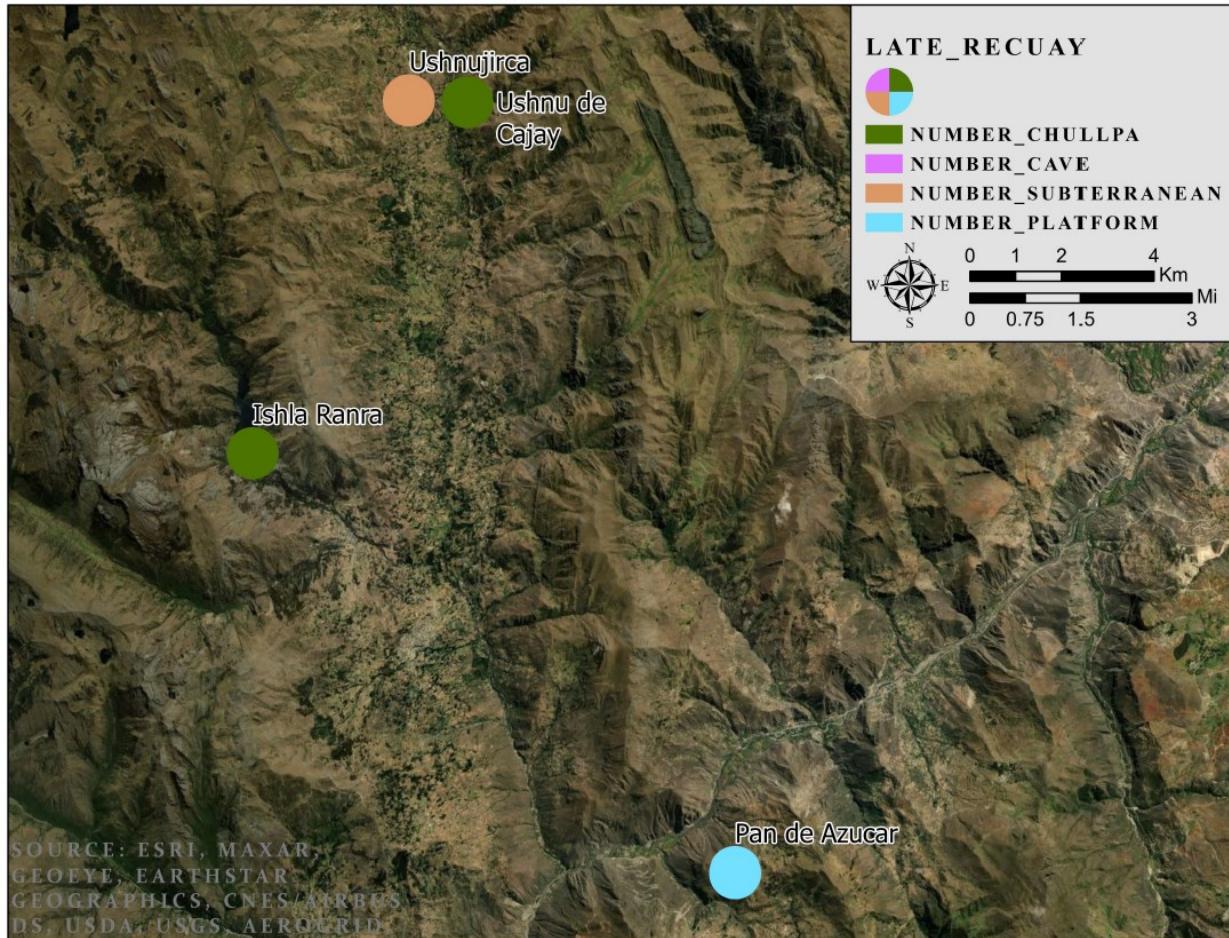


Figure 5.23 Late Recuay Mortuary Monuments around Huari

This map shows the sites near Huari which contained mortuary monuments during the Late Recuay era. These sites are single component, but include chullpa, platform, and subterranean burials.

Discussion of Global Significance

There are several regions in the dataset which were consistently statistically significant across the trials, and several which were consistently insignificant across trials. This seems to be due primarily to the relative dispersal of the dataset. Global tests assess trends across the dataset but may not be sensitive to local outliers. As there are many outliers spread all throughout the data, the global tests varied in their relative statistical significance. This does not mean that the

local clusters and hotspots are not valid, just that there are enough outliers to overwhelm the global test so the data are being pulled in too many directions.

During Trials 2 and 3 neither I nor Gi was statistically significant for the Recuay Dataset, Classic, and Late Recuay. Trial 3 produced a significant I but insignificant Gi for the Recuay Dataset, the Classic, and Late Recuay. Trial 4 produced significant I but not Gi for the Recuay Dataset, but both were significant during the Classic Recuay, and the Late Recuay demonstrated significant I and a Gi at the cusp of significance. Trial 5 produced significant I and Gi for the Recuay Dataset, Classic, and Late Recuay trials.

Though there were locally significant points in all the trials, the global statistics for Trials 2 and 6 were never significant. Trial 2 focused on the presence or absence of any burial material, and Trial 6 was a test on the number of individuals at each site. It could be that there was an issue with how I conceptualized the variables for the datasets. I had thought there would be a way to identify mortuary versus non-mortuary sites based on the presence and volume of burial material they contained. However, all global tests showed there were no patterns of autocorrelation or hotspots in either trial. I am not certain exactly what this means at the moment. A part of the problem could be that many sites were both mortuary and residential. If the goal is to distinguish mortuary complexes from residential sites, then the dataset would need to be more sensitive than that. This means that in Trial 2 a huge site with many burials, such as Hualcayán, and a site like Ama II A, which had only one burial, were represented in these global statistics as the same value. Even when the MNI was used in Trial 6, the dataset still is not sensitive enough to identify mortuary and residential as separate site components. In addition, the same large sites such as Hualcayán are surrounded by sites without any mortuary material at all. This made Hualcayán an outlier in many of the local tests and not a cluster.

In contrast, Trials 3, 4, and 5 all had significant global Moran's I statistics and occasionally significant Getis' Gi statistics. These trials focused on the presence/absence of ceramics, ceramic types, and presence/absence of metalwork. The significant global Moran's I for all datasets indicates that these data are autocorrelated significantly in every trial. Likely the most important reason for this pattern is that ceramics, different ceramic types, and metal are distributed widely across the dataset. Unlike burials, which were distributed somewhat unevenly across the dataset, high-status goods were found across the dataset. This distribution is significant enough to be more than random, but there was also clear clustering in the data.

Discussion of Laguna Purhuay Locality

The Llamacorral site is an anomaly built in the lakebed of glacial Laguna Purhuay. At the summit of a cliff nearby is the residential settlement Ishla Ranra. These two sites are located very near each other, but at dramatically different elevations. Thus, it is logical they are commonly autocorrelated or outliers. The Llamacorral site has long confounded researchers, so it is not surprising that it is a persistent outlier in this research. Without a doubt this strange site is anomalous in the highlands, as it completely lacked human remains, ceramics, metalwork, and mortuary structures. The only archaeological remains at the site are large carved stones. Given the site's location in a lakebed, it does make some sense that there would be limited material recovered there. Though scholars have been studying these sites for decades, they are in a national park. Llamacorral is a short walk from the boat landing and dock. Though it has been studied it is perhaps the most heavily trafficked site in the entire dataset. Thus the Laguna Purhuay sites are a genuine anomaly with a high risk of artifact removal.

Discussion of Testable Variables

The main issues that this project was intended to explore were social differentiation of elite or wealthy Recuay individuals from their peers, the heterogeneity or dispersed nature of Recuay settlement systems, and changes in Recuay culture over time.

Elite differentiation was assessed based on the presence of metal artifacts, the presence of foreign ceramics, and the relative quantities of ceramics at certain sites. When high-status individuals died in the Recuay world, they joined their own ancestors in familial tombs and were venerated and given gifts by their descendants. As such the Recuay left visible signs of status in their graves for generations after the individual died. Together status goods present in a tomb, offerings as part of veneration outside the tomb, and ready access to the ancestor's *Mallqui*, effigy, or physical remains imply the individuals in the chullpas were elites. Access to the remains of deceased family members was a key element of Recuay ancestor veneration, but only higher-status ancestors needed to be accessed and venerated.

Archaeological heterogeneity was present across the heartland. The Recuay inhabited and used many kinds of sites, from hilltop cities to small agricultural hamlets. Elites congregated in certain sites and left their marks on the landscape. This was assessed in every trial by the clustering tests. Certain sites became locally significant centers with many elite residents and large quantities of high-status goods, but these sites were spread out irregularly across the Recuay heartland and hinterland.

Cultural change was assessed primarily by examining the volume of foreign ceramics present in mortuary contexts. The original intent was to consider tomb type as well, presuming that chullpas were evidence for Wari expansion. However, as I conducted my analyses it became

clear the chullpas were not numerous enough across the dataset for the Moran's I. Instead, the qualitative presence or abundance of chullpas was used to corroborate the statistical findings.

Discussion and Analysis of Significant Outliers

The outliers identified in my analyses provide some insight into the structure of the dataset, and some clear patterns are evident (Table 5.7). The most pronounced pattern is that when sites were outliers, they tended to be outliers across different trials. Table 5.7 shows attributes for these persistent outliers. Sites like Hualcayán, Cruz Punta, Amá, Quitapampa A, and Ishla Ranra likely were very significant places on the landscape, local cores as it were, where a combination of attributes creates a statistical pull across trials and different eras.

Throughout the various trials, all of these outlier sites were statistically distinct from nearby sites. Thus, these are the sites where a strong argument could be made for local social differentiation of elites as reflected in mortuary practices. Though all these sites are in the Recuay hinterland, it is not surprising there were comparatively wealthier individuals who manifested their wealth at these sites throughout the hinterland. These sites tend to have the attributes we would expect. The majority contained mortuary complexes, although human remains were found at only four of the sites. Ceramics were found at most of them, commonly kaolin and foreign pottery. Additionally, four sites contained metalwork and three contained chullpas.

The combinations of metalwork, ceramics, and burials found at these sites suggest that some individuals with wealth resided there. Interestingly, only three sites contained chullpas, which may indicate that Recuay elites in the hinterland only sometimes adopted the Wari cultural

bundle as their society was changing. Hualcayán and Cruz Punta were dated through AD 1000, indicating they were occupied during the Recuay era and then continued throughout the entire Wari era. Ama and Quitapampa showed no signs of usage or occupation after AD 650, while Ogupampa, Chuncayajirca, Llamacorral, and Ishla Ranra were not used after AD 700. Thus, adopting facets of Wari culture may have been an adaptive strategy for some elites that helped ensure their sites' survival.

As noted above, Llamacorral contained no burials, ceramics, metalwork, or mortuary structures, yet it was still an outlier due to its proximity to Ishla Ranra, which contained burials and Recuay plainware. Both sites were occupied from the Huarás period through the end of the Recuay era in AD 700. Neither contained any chullpas, indicating their inhabitants never adopted the Wari cultural bundle. Ishla Ranra is an outlier due to what was found there, Llamacorral due to what was not found there. Together they provide a pull on each statistical test, demonstrating their respective uniqueness.

Table 5.7 Attributes for Significant Outliers

Site Name	Site Number	Burial Number	Ceramic Number	Ceramic Type Number	Metal Number	MNI	Chullpas
Parian Punta	05	1 Present	1 Present	2 kaolin	0 Absent	0	1
Hualcayán	06	1 Present	1 Present	2 kaolin	1 Present	129	2
Cruz Punta	07	0 Absent	1 Present	3 Foreign Akillpo	1 Present	0	0
Wayumarca	08	1 Present	1 Present	1 Recuay Plainware	0 Absent	0	1
Ama	21	1 Present	1 Present	3 Foreign Moche	1 Present	18	0
Quitapampa A	22	0 Absent	1 Present	2 Recuay kaolin	1 Present	0	0
Ogupampa	41	1 Present	0 Absent	0 Absent	0 Absent	10	0
Chuncayajirca 2	42	0 Absent	1 Present	1 Recuay Plainware	0 Absent	0	0
Llamacorral	44	0 Absent	0 Absent	0 Absent	0 Absent	0	0
Ishla Ranra	45	1 Present	1 Present	1 Recuay Plainware	0 Absent	5	0

This project focused on sites that were statistical outliers as a means of assessing both social differentiation and heterogeneity. The diversity of mortuary types found at these sites is what I was assessing as archaeological heterogeneity. The Recuay world has many sites ranging from large hilltop cities where elite ancestors could be venerated in a necropolis with many monumental chullpas down to single burials and tiny agricultural hamlets. Some of the outliers were indicated by the statistical tests because they were large cities with complex multiple components. Elites who resided at these sites exerted their influence to acquire prestige goods and foreign-made artifacts. Other outliers were smaller and single component sites.

Amá consisted of four semi-subterranean mortuary structures built on a mound, which is used today for modern agriculture. There were modern coins found as offerings near the entrance. These structures were oval chambers described in the original research as megalithic.

There was some damage to the structures, including the collapse of several of the chambers and local farmers reusing the stones. Most of the materials recovered at the site were nondiagnostic ceramics. Cultural affiliation was based on the presence of Recuay copperwork, which included Recuay-style *tupu* pins. Five fragments of a single vessel associated with the Moche were also found at the site. This vessel was interpreted as an exotic prestige item. Ponte (2015:140-144) interpreted Amá as a communal entombment, possibly representing a familial unit such as an *ayllu*. His interpretation fits well with my assertions as well. The Amá site was a persistent outlier because it was a Recuay burial with fine foreign pottery, abundant metalwork, and multi-component burial structures. The site was an outlier because it manifested the wealth and status a local elite family or families in a region of comparatively low status peoples.

Quitapampa A consisted of a single chamber burial around 600 m from the Quitapampa B habitation component of the site. It was a semi-circular monument with a megalithic ceiling. Modern agricultural practices have partially disturbed it, but the architecture was more or less intact. This site was rich in Recuay material, around 14 items deposited as grave offerings. The assemblage included kaolin and orangeware ceramics and copper *tupu* pins. The site was noteworthy for being a small mortuary context with many grave goods (Ponte 2015: 150-158). This assessment is likely applicable to the results of my analysis: the site is an outlier because it contained many grave goods despite its small size.

Ogupampa was a single-component site with ten tombs built on small mounds (Ibarra et.al. 2010: 41). The site was an outlier because it was a single component site with ten tombs, and really nothing else. Similarly, Chuncayajirca 2 was a small circular platform with walls and a series of terraces. The only ceramic material present was Recuay plainware. There were no high-status ceramics, metal artifacts, or chullpas found at the site (Ibarra et.al. 2010: 42).

Chuncayajirca 2 and Ogupampa were outliers principally because the materials I was using to assess relative status or cultural change were not present at either site.

Parian Punta was a multi-component site with numerous chullpas. The principle diagnostic artifact was kaolin ceramics deposited as grave goods (Bria 2017: 610-611). This site was an outlier because of the lack of associated metalwork. The presence of several chullpas with kaolin pottery indicates that these were mortuary monuments for high-status individuals with access to valuable goods. These people may have adopted aspects of the Wari cultural bundle comparatively early as evidenced by the relative abundance and size of the chullpas.

The Recuay hilltop city Hualcayán was a large multi-component site with residential and mortuary sectors. Kaolin ceramics were present, as was metalwork. This site contained many chullpas (Bria 2017). I expected this site to be significant, as it was possibly the largest city in the dataset and contained by far the greatest number of chullpas of any site. Hualcayán was an outlier because its inhabitants had access to high-status goods and were associated with some of the largest constructions on the landscape. As the Wari bundle expanded, elites at sites like Hualcayán adopted chullpas in order to display their status and wealth after death.

Cruz Punta was a hilltop site with several rooms around a central plaza. This site contained a metal trumpet and Akillpo ceramics. The original researchers interpreted this as a possible communication or lookout structure (Bria 2017: 613). Wayumarca was another hilltop site with a platform and a single heavily damaged chullpa. Only non-diagnostic Early Intermediate Period ceramics were identified at this site (Bria 2017: 614). Although both of the sites were outliers, neither was a major site. What set these two apart was their unusual combination of attributes.

Discussion of the Chullpa Qualitative Analysis

During the Classic Recuay era there were some chullpas built near Santa Cruz and the Río Ancash. These areas are far closer to the Recuay heartland than those at Huari or Huaraz, which contained no chullpas at that time. By the Late Recuay period there were even more chullpas present in the northern localities, but the first chullpas appeared near Huari. This pattern suggests that the Recuay closer to the Callejón and trade networks that ran through it were quicker to adopt chullpas, and produced more during the Recuay era than did Recuay groups in more remote areas.

Most of the sites included in my analyses consisted of only one type of mortuary treatment, although there were some sites with multiple burial types. In the latter cases, there does not seem to be a meaningful pattern in which mortuary monuments are present together. These two observations demonstrate the archaeological heterogeneity present in the dataset because there are commonalities in tomb type but in different combinations at different sites across the dataset. The Recuay buried their dead in culturally specific but locally distinct ways.

Patterns of chullpa use shed light on both the manifestation of elite status and culture change. Chullpas were stone constructs for the dead. Some were massive “mega-chullpas” but even the smaller ones represented a significant investment of time and resources. Elites were buried in chullpas, and then their descendants venerated them until they could join their kin in the familial chullpa. During the Late-Recuay era chullpas were associated with Wari D-shaped patios, and acts of ancestor veneration changed from large-scale community events to smaller familial affairs. The adoption of chullpas alone does not indicate significant change in ancestor veneration, but it does represent a change in mortuary treatment before the arrival of the Wari cultural bundle.

Ultimately these trends are evident without the need for statistical analyses. Chullpas originated during the late Classical Recuay period and continued through Late and Post Recuay times. Although chullpas were associated with the arrival of the Wari bundle, they did not wholly replace tradition Recuay burial practices until much later. Nonetheless, there is a clear trend showing the spread of chullpas across the highlands throughout the Recuay sequence.

Final Discussion of Patterns

There were some clear patterns in the data beyond the outliers. Most importantly, the sites near Santa Cruz, around Huaraz, and along the Río Ancash tended to contain more high-status goods than the sites near Huari. The latter sites contained mostly Recuay plainware with a few instances of fine kaolin pottery. None of the sites near Huari contained metalwork. Moreover, only Ushnu de Cajay, which was occupied from AD 600-1200, contained three chullpas. Subterranean, platform, and cave burials were predominant at the sites near Huari.

These trends may indicate that the sites near Huari were more isolated from the trade routes that resulted in such diverse assemblages at the other localities. Most of the Huari sites were occupied from 200 BC to around AD 700, which corresponds roughly to the Huarás and Recuay eras, but we do not have evidence for occupation of most of these sites after the Late Recuay.

There can be little doubt that these sites around Huari represented a distinct hinterland during the Classic Recuay period. As the Recuay flourished, so too did people in the hinterland near Huari, although they appear to have interacted with outsiders much less frequently than Recuay groups in the Callejón did. The relatively few fine ceramics found in Huari tend to be

Recuay kaolin pottery rather than foreign-made goods. This pattern in ceramics accords with the scarcity of chullpas in this area, suggesting that the Wari did not encroach as intensively into the hinterlands of Huari as they did in the Callejón.

Similar patterns are evident at the sites near Huaráz, but they appear to have been less isolated. Seven out of the nine sites contained some metalwork. Two sites contained fine Moche pottery while another four contained Recuay-made kaolin ceramics—evidence of higher-status burials at all six sites. Similar to the Huari sites, there were no chullpas present around Huarás. This fits well with the date ranges of these sites: most were occupied in the Early and Classic Recuay, but only two showed any evidence of use after AD 700. These sites were associated primarily with the Recuay, and neither Huarás nor Wari influence was as pronounced in this region as elsewhere.

These patterns suggest that the Huaraz sites were less isolated than those near Huari. These sites are located near the headwaters of the Río Santa, at the extreme southern end of the Callejón. It makes sense that they would have more evidence of interaction with other Recuay and foreign groups than the sites in Huari simply because they were far closer. The sites near Huari are on the other side of the Cordillera Blanca, outside the Callejón itself. Thus, the Huaráz sites are closer to the core of the Recuay culture and its trade networks during the second half of the first millennium. The inhabitants of these Recuay sites were able to produce or obtain more kaolin pottery. They had greater access to the coastal Moche and the fine goods they could offer. The date ranges of and lack of chullpas at Huaráz sites imply that they were similarly isolated during the initial expansion of the Wari into the Callejón.

The sites along the Río Ancash were fewer in number than the other localities, but noticeably different as hinterland sites. All three had some ceramic material present; two

contained Recuay pottery and the third had foreign Akillpo-style ceramics. There was no metalwork present in any of these sites. All three contained chullpas, although two were mixed with earlier subterranean and cave burials. These patterns make some sense as the sites were occupied during the Classic, Late, and Post Recuay eras, corresponding to the second half of the first millennium. The Río Ancash lies to the north of Huaraz and closer to the Recuay heartland. The relative abundance of prestige goods shows that the area was far more closely linked to the central heartland and its trade networks.

Chullpas were relatively abundant at these sites as well—a total of 70 in comparison to just 15 cave and 15 subterranean burials. This indicates that the Wari cultural bundle reached the Río Ancash during the Recuay era and strongly influenced Recuay culture. Chullpas were adopted by elites in the Río Ancash area during the Late Recuay era. These elites selected chullpas as their form of burial and veneration of the dead rather than traditional Recuay mortuary practices. This is significant evidence for cultural change in the Late Recuay era.

The sites around Santa Cruz varied somewhat in terms of the mortuary types and artifacts found in them. Eleven of the 18 sites contained no ceramics at all. Kaolin pottery was found at two, and two others contained foreign-made Akillpo ceramics. Only two sites contained metal artifacts. On the other hand, there were 28 chullpas, 37 subterranean burials, and two platforms. Variation in mortuary treatment at these sites is not surprising given the dates of their occupations throughout the entire first millennium, including before and after Recuay habitation. There are many subterranean burials corresponding to the early and Classic Recuay, as well as many chullpas from the Late and Post-Recuay eras. These sites exhibit a good cross-section of Recuay mortuary practices from the first millennium.

Moreover, among all the sites that were analyzed, those around Santa Cruz most clearly illustrate cultural change during the Recuay era. These sites are located at the edge of the Recuay heartland, along the Río Santa, and nearer the coast than any other sites in the dataset. This region was more heavily impacted as the Wari expanded into the Callejón and spread their cultural bundle. Consequently, Recuay inhabitants of these sites seem to have shifted from the predominantly subterranean form of burial to chullpas.

Interestingly, there are only two platform burials near Santa Cruz. Discussions about the chullpa's adoption throughout the Andes generally emphasizes the need for significant ancestors to be accessible to their descendants. Evidence from these sites near Santa Cruz may indicate not only adoption of the chullpa, but also changes in ancestor veneration practices. Initially, there were relatively few platform burials designed for access to and veneration of the dead constructed in this area. Instead, these sites contained primarily subterranean burials, which were less accessible and monumental than the platforms. When chullpas were adopted, this likely reflected changes in mortuary customs associated with ancestor veneration. It is possible these Recuay people chose to represent their ancestors as effigies or in Huaca stone rather than accessible *Mallqui* bundles until the chullpa was adopted.

Chapter 6

Conclusion

Summary of Recuay Cultural History

The Recuay culture emerged out of a poorly understood sequence at the end of Chavín. The great temple's influence was felt in the highlands throughout the Early Horizon or the Chavín Pan-Andean sequence. In the last few centuries BC, the temple at Chavín and many associated sites fell into disuse. The Chavín phenomenon had been a homogenizing force in the highlands, coasts, and eastern slopes for over a millennium. As Chavín and its great temples exerted less influence on the Andes, the whole region began to fracture into a mosaic of many cultures. These cultures retained some elements of the Chavín tradition, but regionally distinct customs emerged. The Huarás and Recuay traditions predominated. There were Chavín era tomb types used during this period. Ceramic styles diverged significantly and swiftly from antecedents in the highlands. This period witnessed a fundamental change in highland culture.

The Recuay were agriculturalists and camelid pastoralists. They were producers of wool, valued across the Andes for use in clothing and tapestry, and coca, a crop only growable at higher altitudes. Coca is a crop with well documented physical and culturally specific mystical properties whose use has been documented widely across cultures during the Early Intermediate Period. Starting around AD 500 there were significant changes in the highland culture again. Old trade networks were revitalized and a period of expanding regional interdependence began. For the first time since the collapse of Chavín the highlands were enmeshed in trade networks encompassing the entire central Andes. The Recuay acquired goods like obsidian which had to

be transported long distances. They also imported ceramics from all across the Andes, especially from the coastal Moche culture famous for its fine pottery. The Moche, as well as their predecessors Gallinazo and Salinar and their contemporaries in Lima and Nasca, produced ceramics imported to the highlands.

In my literature review I have never encountered a researcher suggesting that the Recuay were an empire or centralized state. Many Recuay cities, towns, and hamlets were built throughout the Callejón, but none can be called a capital city or seat of bureaucracy. Even the wealthiest Recuay burial ever unearthed, at the site of Pashash, was interpreted as a local elite of that city. Clearly Recuay culture was manifested in many different ways across the Callejón and Cordilleras. Structures found throughout the Recuay area seem to be best understood with respect to interregional trade. The Recuay were an archaeologically heterogeneous culture characterized by a diversity of architectural forms and styles that fit local needs and customs.

The greatest quantities of foreign imports came later, during the expansion of the Wari cultural bundle. Beginning in the Late Recuay era, Wari cultural expressions proliferated in the highlands. These included architectural forms such as D-shaped patios and chullpas reflecting a change in mortuary practices. Chullpas are semi-subterranean but have an accessible door that allowed ancestors' remains to be added and visited by the living. The D-shaped patios are far smaller than the raised platforms and plazas used by the Recuay in prior eras. Although ancestors were to be venerated in the chullpa with offerings and gifts, the celebrations were more exclusive. The patios were enclosed and could not accommodate the type of ostentatious displays of communal ancestral veneration common in the Classic Recuay era.

While there were new architectural elements brought into the mortuary custom, the basic principles of ancestor veneration do not seem to have been changed as dramatically. Gifts and

food were brought to tombs all throughout the Recuay era. Ancestors were transformed into stone effigies so they could be even more accessible to the people. The dead and the living were entangled during the entire Recuay cultural sequence. The Wari bundle reinforced Recuay mortuary customs even as it fundamentally changed the Recuay way of life.

After AD 800 there were no longer cultural manifestations that can be identified archaeologically as Recuay. Some sites such as Chinchawas demonstrate how local styles could morph into a Wari-inspired “warmi” style. But by this point the spread of the Wari cultural bundle had made the entire Central Andes far more archaeologically homogeneous.

Three major periods of cultural transformation are evident in the Recuay highlands. The first was the period when the Recuay emerged as one of many local styles in the wake of the decline of Chavín. Following a period of largely insular Recuay culture, the Recuay and Moche became enmeshed in a vast trade network during the Classic Recuay period. Finally, the spread of the Wari bundle and its impact on Recuay culture were manifested archaeologically. At no point does there appear to have been a significant replacement of the population. Rather, the Recuay adopted new styles and architecture and incorporated them into their own customs.

As these cultures changed, elites morphed with them. Recuay elites were able to demonstrate their power, wealth, and ancestry in order to differentiate themselves socially from lower-status members of their society. Throughout the Recuay sequence, there were some people who were able to manifest incredible wealth in their monumental constructions and mortuary treatment. Such elites could afford and mobilize the labor required to build monumental structures, and they could acquire fancy foreign and domestic ceramics of the highest craftsmanship. Elites were the chief beneficiaries of ever-expanding trade networks.

My analyses were not able to test whether the Recuay elites who constructed the first chullpas were the same elites whose tombs were decorated with fine local and imported pottery. It is possible they were the same elite families, or that there was cultural replacement as the old ways fell into disuse and new ways were adopted by new elites. For example, it is possible that some Recuay merchants who became wealthy during the height of the regional trading era attained elite status due to their wealth. It could be a matter of cross-cultural emulation—that is, Recuay elites looking to the Wari and seeing a new way elites should manifest their wealth. Wari elites held small parties in small patios for other elites, but older Recuay elites held great community-wide affairs in great open plazas. Ascertaining the precise mechanisms of social change was never a principle objective of this project.

The dead were never far from the living in the pre-Hispanic Callejón. From the early Huarás era through the Recuay and into the Wari periods, mortuary complexes were always located near residential sites. The dead could be visited and venerated, and offerings or libations offered to them. During the Early Intermediate period, mortuary treatment included platforms, overhangs, and caves to facilitate visitation by the living. Dead individuals could be defleshed or buried, but the most important people in any society were preserved. In the Andes there was a rich tradition of mummification and the transformation of bodies into *Mallqui* effigy bundles. There are many places where the dead were lithomorphosed into literal features on the landscape, such as unusual boulders or piles of stones. In all cases familial ancestors and cultural heroes were venerated by their living descendants.

Without a doubt the dead occupied a position within living Recuay society. Ethnohistorically the mummies of great leaders such as the Inka owned property and retained their palaces. These mummies were kept for display on ceremonial occasions, times when the

Inka needed to establish his line and display his claim to the divine power he possessed. These mummies could be sent on diplomatic missions and aid their descendants in securing the Land of Four Quarters. Although we do not have evidence of the dead as ambassadors in the Recuay era, the dead did act as members of society. Their roles were diverse as they could be guides and aides, but also cause trouble for the living when they were not properly venerated. The dead were used as a means of explaining the landscape around the living. The ambient dangers of life in the highlands came from neglect or improper veneration of their ancestors.

The purpose of this project was to construct a regional dataset comprising many Recuay sites with mortuary contexts throughout the Callejón de Huaylas, test the landscape for evidence of social differentiation, archaeological heterogeneity, and then test for evidence of cultural change. Inferences were then made to explain how these hinterland Recuay sites fit with patterns already observed throughout the Recuay world. Statistical clustering is a great way to approach inter-site comparisons because each site may be treated as a point with attributes that can be tested in sequence. My analysis focused almost entirely on mortuary-related attributes and changes in their expression and distribution.

Recapitulation of Project Results (Figures 6.1-6.4)

To identify and study patterns related to social differentiation, archaeological heterogeneity, and cultural change, I decided to focus on several attributes of sites, including the presence of ceramics, ceramic types, the presence of metalwork, the presence of human remains, and finally frequencies of different types of mortuary monuments across the study area. Researchers in the Recuay area, and indeed the entire pre-Hispanic Andes, have often focused on

these variables when discussing cultural manifestations and change. Social hierarchies tend to be literally built into the mortuary monuments and treatments. Distinctions between elite and non-elite mortuary contexts are one of the most archaeologically visible patterns in the region. Cultural changes tended to be associated with major shifts in artifacts, architecture, and the arts. Such changes involved interaction with neighbors through trade routes, conflict, conquest, or (in the case of the Wari) all three over the course of several centuries.

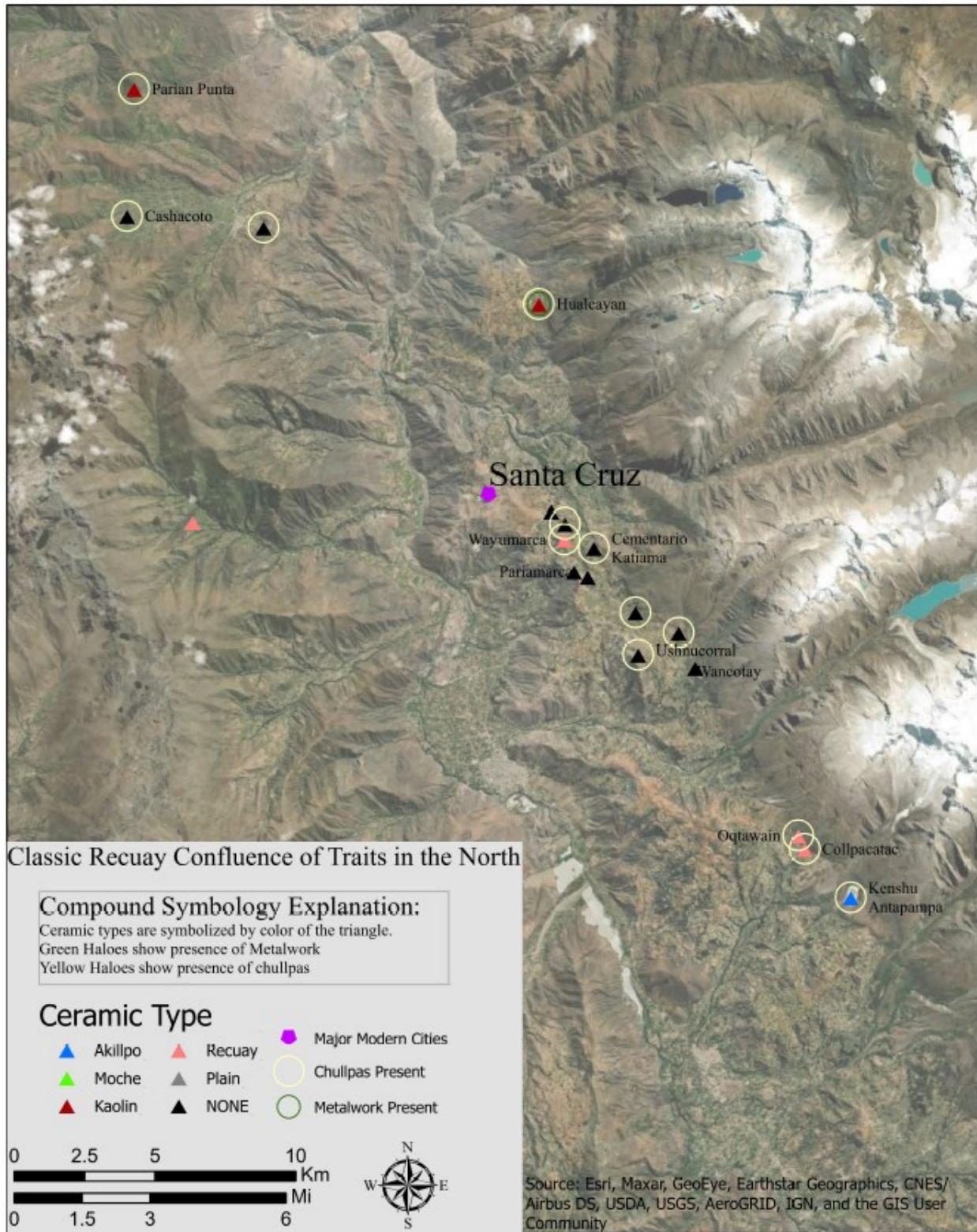
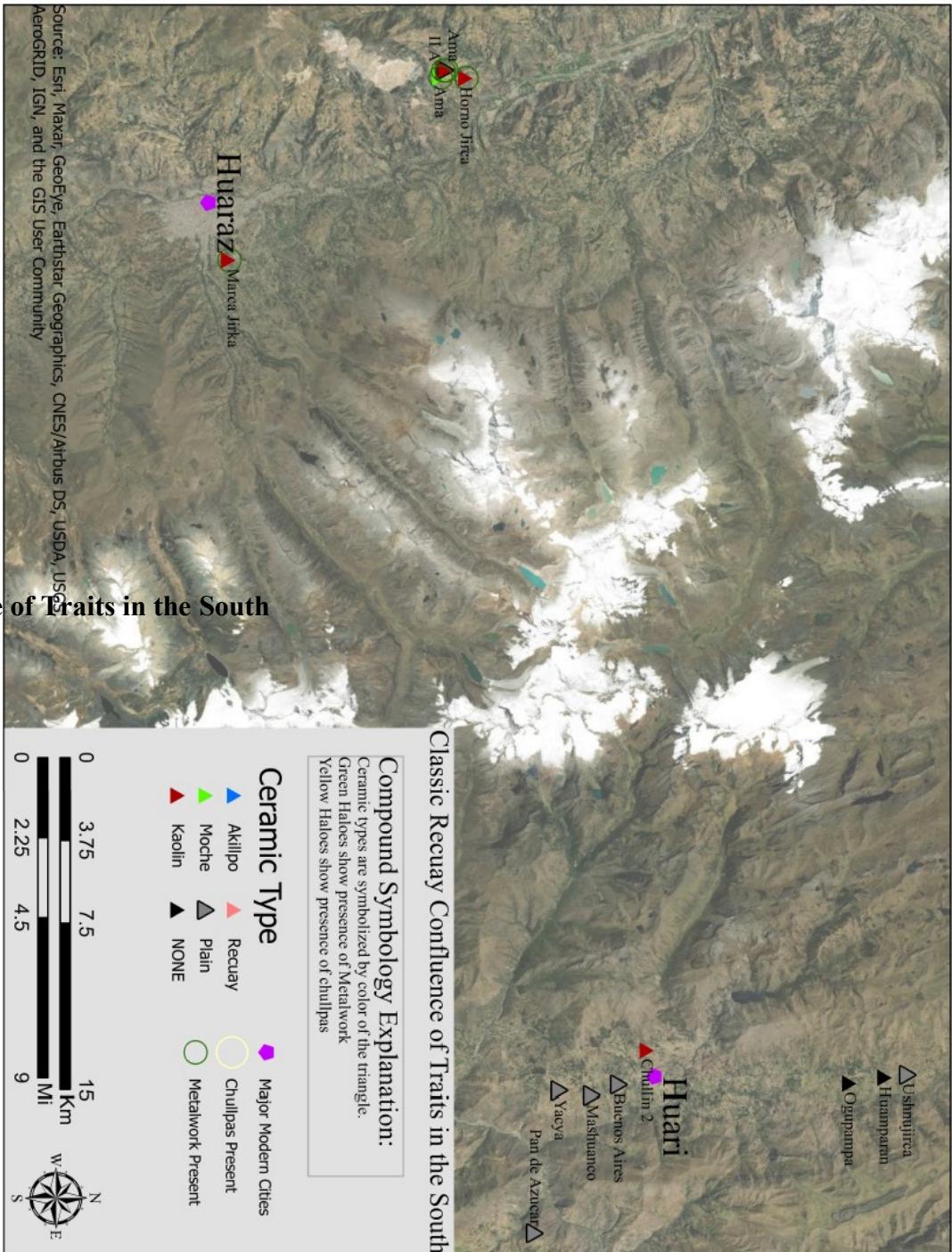


Figure 6.1 Classic Recuay Confluence of Traits in the North

Classic Recuay Confluence of Traits in the South



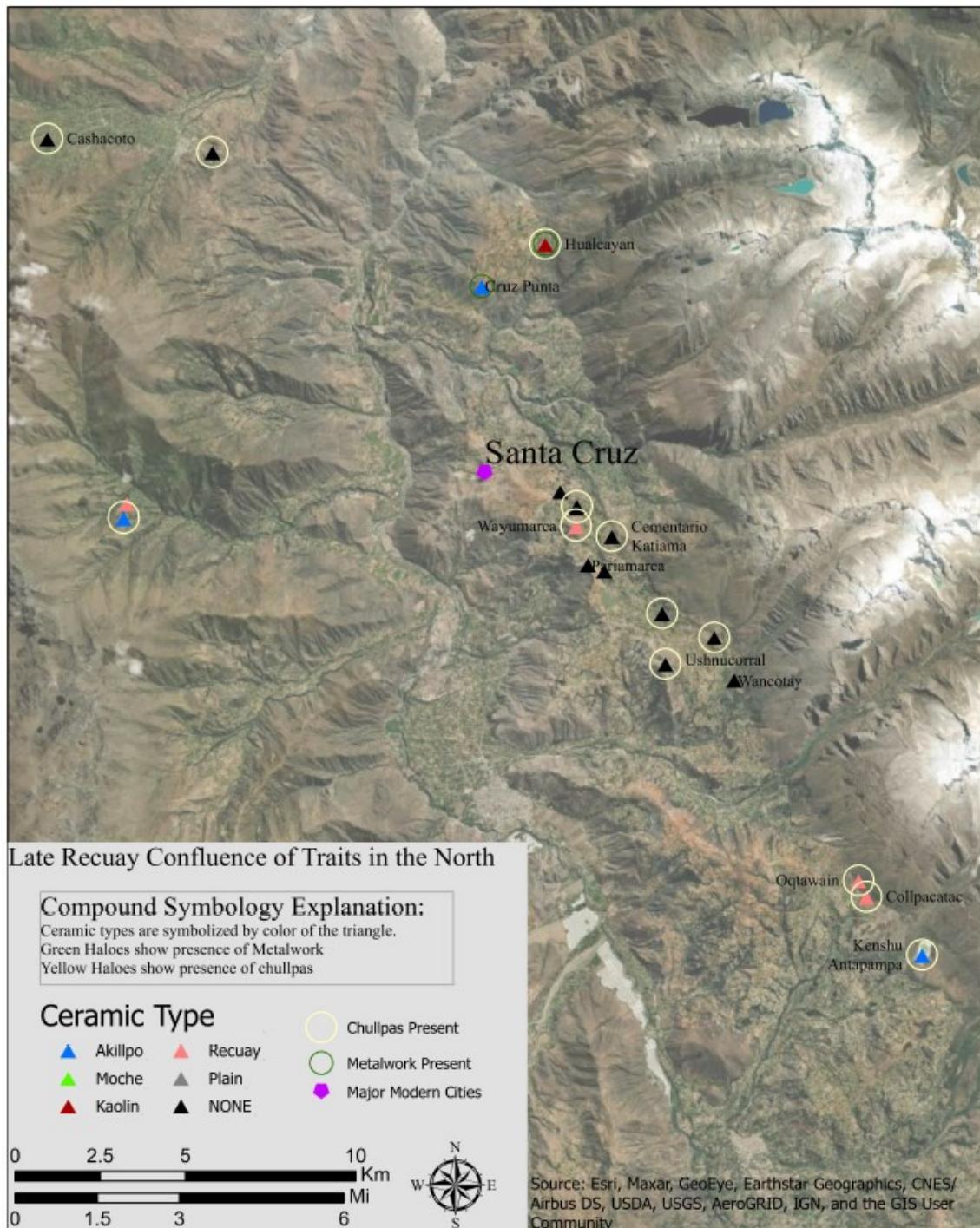
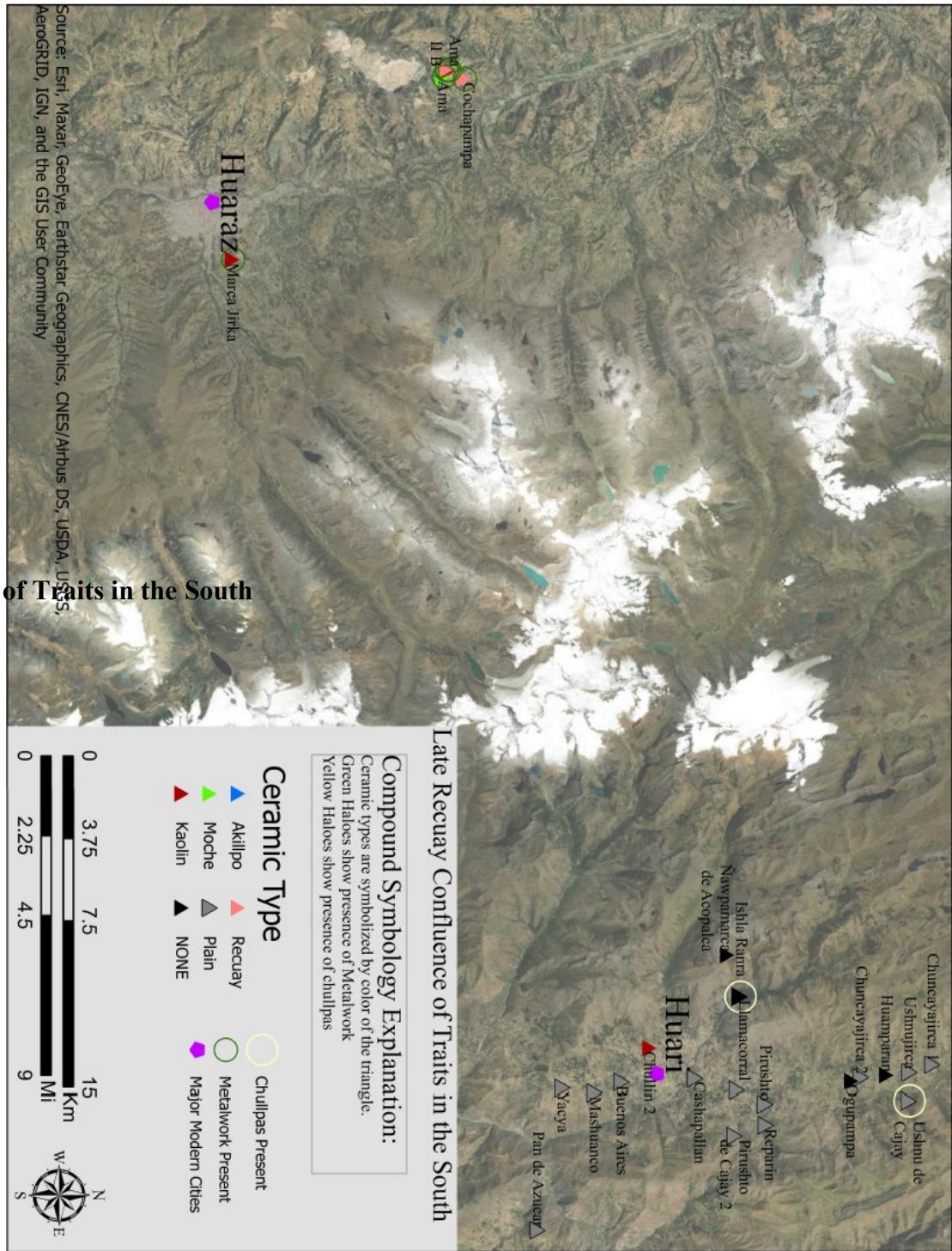


Figure 6.3 Late Recuay Confluence of Traits in the North

Late Recuay Confluence of Traits in the South



Social Differentiation

Social differentiation was assessed through the presence of status-related goods. The Recuay made fine pottery using kaolinite-rich clay native to the highlands. Kaolin ceramics were a status marker throughout the Recuay era. During the first half of the first millennium AD there was less trade with regions outside the Callejón than there was before or after this phase. Thus, local prestige goods played a key role of social differentiation. Many Recuay were buried with plain utilitarian ceramics, so the presence of fine pottery implies a more significant or higher-status tomb.

After AD 500 there was greater access to foreign materials. Elites could demonstrate their wealth by owning and using fine pottery made in distant places. There was significant variation in these status goods across the dataset. Some sites were larger cities with greater regional significance. Cities like Hualcayán and settlements in the Río Ancash were closer to the Recuay heartland and seem to have had greater access to foreign prestige goods. The Late Recuay was a period of great cultural mixing as the Wari bundle expanded or was adopted. Unfortunately, there were few Wari ceramics in the dataset which might indicate the adoption of foreign ceramics, so other factors like the construction of chullpas were considered to demonstrate this trend.

My analyses showed without a doubt that throughout the Recuay world there were people who could demonstrate their social status in their cities and on the landscape. Each of the tests on ceramics and metalworks identified sites where high-status goods were present. The trends observed in the Classic and Late Recuay data are close to what was expected from the literature review. Recuay culture transformed slowly, first as a result of expanding trade networks and then

again with the arrival of the Wari. In all periods Recuay elites could mobilize significant wealth to acquire valuable goods and build monuments to their venerated ancestors.

Ponte's (2015) work focused on the hinterland site of Marca Jirka in the southern extremity of the Río Santa. Like Hualcayán, Marca Jirka was a significant hinterland city where elites displayed their status and wealth. A key cultural practice Ponte (2015:97-98) assessed was cranial modification, present in many graves at the site. He concluded that there are similarities in Recuay mortuary treatment across sites: Burials are located near villages, there tend to be multiple burials near one another, and there is a diversity of mortuary structures present (Ponte 2015: 91-93). He also noted that there was differential access to elite goods such as finely sculpted kaolinite ceramics and metalwork, including gold. Marca Jirka was clearly where wealthier Recuay elites lived, but there was no sign of interaction with the Moche at that site (Ponte 2015: 94-96).

The Recuay at Marca Jirka lived among their local mountain gods (*apus*), which provided the backdrop for powerful rituals conducted by elites. Both Hualcayán and Marca Jirka fit well into my hypothesis about archaeological heterogeneity: the Recuay constructed villages throughout the Callejón, then some individuals became wealthier and these elites were able to manifest their wealth in status goods during life and after death. Though none achieved the opulence of the burial at Pashash, these elites were nonetheless able to display their wealth and status and differentiate themselves socially at the local level.

Heterogeneity

Recuay elites built great cities with significant mortuary complexes in those areas where they could mobilize enough capital to match their ambition. Such sites were distributed widely. All of the tests on global clustering showed either a cluster within the dataset, or insignificant global clusters with outliers demonstrating archaeological heterogeneity.

Among the most important tests were the tests for global significance. Sometimes the I or Gi statistic was significant at the .05 level, but most of the time they were not. This is ultimately expected based on the hypothesis that the highlands, while never homogeneous, exhibited relatively similar trends throughout the Recuay era. When the global I statistics are not significant at the .05 level, it means the data are not clustered for those attributes. The insignificant I statistic indicates that the data are distributed in a way that could be the result of random chance. While this is inconclusive, the null hypothesis of spatially clustered or dispersed data can be rejected. This actually means that the data are not clustered around certain parts of the study area, nor are the data so dispersed that it results in a negative I value. An insignificant I indicates is that the data are not distinct from a random distribution, but these are sites built by humans.

In other types of analysis this rejection of the null hypothesis is conclusive, but with I it only indicates that the data are neither clustered nor dispersed. Each site was built and used by Recuay people, as such the data are definitely not the result of random chance. This becomes visible in the local I tests, which can show smaller clusters pulling the data in different directions. For example, Hualcayán is a significant site with many smaller sites nearby. In several tests Hualcayán was identified as an outlier or a focus for an autocorrelated cluster even when the Global I showed insignificant global autocorrelation.

When there are insignificant Global results but significant local results, this demonstrates the heterogeneity of the highlands. The Recuay heartland contains the huge and important sites, but in many localities across the Callejón. It would make sense that global autocorrelation could be minimized by the presence of so many sites so far from one another. In the hinterlands the same trend could indicate that Recuay cities contained locally significant attributes, but the presence of so many locally significant sites distributed across the whole study area pulls the global tests towards insignificance.

The analytical results support the hypothesis that the hinterland sites are clustered in a manner similar to those in the heartland. There is no reason to believe that the sites were built by some centralized government; rather Recuay sites were usually constructed by local workers and elites. There should be many smaller cores throughout the hinterland, just as there are many significant sites in the heartland. These sites constitute the local clusters whose pull makes the global clusters appear random.

Ibarra's (2010) work around Huari focused on the Recuay, Chavín, and Wari. There are many Recuay sites and tombs in the region. All are hinterland sites, but the basic elements of Recuay culture are present in them, including ceramic and metal grave goods. During the Wari era chullpas and D-shaped patios began to appear near Huari. There was a shift to chullpas early on, and the Recuay placed great emphasis on their ancestor cults (Ibarra et.al. 2010: 11-13).

Archaeological heterogeneity in Recuay culture is precisely what was documented in Huari. As agriculturalists and herders, the Recuay lived in dispersed hilltop cities and small agricultural settlements. Sites like Hualcayán or Marca Jirka represent central elite cities prior to the adoption of Recuay customs that remained significant throughout the Recuay era. Sites in Huari typify patterns evident in the hinterland, beyond the Cordillera Blanca. There were still

hilltop cities, but these were far smaller and less monumental than in the central Callejón. The results of research at Huari accords with my hypothesis about archaeological heterogeneity in the Recuay hinterland.

Culture Change

This project focused on some basic but telltale markers of cultural change. Fine ceramics were not only markers of elite tastes, they were also proxies for the physical movement of people, material culture, and ideas. The Recuay were in contact with the Moche, and not just in the heavily studied Nepeña Valley. During the Classic Recuay era elites living in areas as far from the coast as Huari could still use their power and wealth to acquire highly valuable foreign goods. The importation of such items marked the first major cultural transformation, from a predominance of very insular local styles to widely traded goods indicating great regional interdependence.

Bria's (2017) research at Hualcayán involved a very long-term study of the site, starting with the Kotosh and Chavín and then continuing with the Huarás and Recuay occupations at the site. Her research focused on the transition between cultures and the first manifestation of Recuay-ness in the region (Bria 2017:556-559). As with the transition from Recuay to Wari, the transition from Chavín to Recuay did not represent a usurpation or relocation but an adoption of cultural habits. Hualcayán was established in the Early Formative and transformed several times into new cultural expressions (Bria 2017: 569). Although Bria's work was a *longue durée* study of a single settlement and sites nearby, her basic conclusions accord with my arguments about culture change. Hualcayán was occupied for millennia and its inhabitants were able to manifest

several different cultures over time. It was a city that functioned as an important central place even though it was not one of the main heartland cities. Hualcayán was an exceptional city whose elites participated in a series of cultural transformations, from Kotosh to Chavín, then Chavín to Huarás, and eventually Recuay.

These cultural changes did not involve a complete replacement of the population, but rather transformation of customs over time. The Recuay adopted chullpas long before the appearance of other Wari manifestations in the Callejón. The process was slow, starting with elites selecting the new custom and fitting it into their pre-existing ancestor veneration. These elites manifested their wealth and status after death. Hualcayán is close to the Recuay heartland and trade networks (rooted in older Chavín networks) that connected the site to the heartland and eventually to the Wari.

I had hoped that Wari ceramics would be more prominent in the sources I derived data from, but there was mostly kaolin and fine coastal pottery present in the dataset. Nevertheless, the major cultural transformation from a variety of regional styles into a single pan-Andean Wari phase was evident. Chullpas appeared in the highlands after AD 600 and were visible nearly everywhere in the dataset except around Huaraz. Chullpas and D-shaped patios are architectural hallmarks of the Wari era, though they appear in the highlands before other markers.

Barbosa's (2008) research on mortuary monuments at three sites along the Río Ancash focused on the distribution and architectural characteristics of the monuments themselves. Oqtawain (site 18) and Collpacatac (site 19) both contained chullpas where the living venerated their ancestors. Kenshu Antapampa (site 20) contained a "mega-chullpa" in addition to subterranean and cave burials. Ceramics found at the site were primarily classic Recuay, Wari, and Akillpo. These sites are in the Cordillera Blanca and did not exhibit any coastal influence

(Barbosa 2008: 101-103). Barbosa's observations are strong evidence for cultural change in Ancash. Recuay groups in this region were close enough to the heartland and trade networks to exhibit the early arrival and adoption of the Wari bundle.

The purpose of this thesis was to provide some insight into the development of Recuay culture during the first millennium AD, a period of dramatic social and political change in the Andes. Highland cultures were transformed as new sources of wealth were acquired via trade networks. As cultures came into contact, they impacted one another. Over time, changes in ceramic forms, artistic motifs, and mortuary architecture became visible in the archaeological record. Geostatistical analyses undertaken with GIS software allow us to identify and interpret patterning in the archaeological evidence, and thus to understand better the development of Recuay culture in the Peruvian highlands.

Future Research

In the course of my research, I deliberately made decisions which facilitated additional data reuse. I used file formats such as the CSV which do not lose data to compression or corruption over time. Though the analysis was done in proprietary ESRI environments, the underlying data can be reused in any software that can read these files. As such the dataset could be modified and reused to answer other possible research questions. I had initially considered trying to answer a few questions which now could be opportunities for future research.

The biggest possibility for future research is intra-site comparisons. Although the qualitative analysis of mortuary monuments did shed some light on intra-site patterns, there was no way within the structure of the dataset to test mortuary patterns within sites statistically. When designing the dataset I organized everything at the site level. This meant all sites were

entered in the same way including hilltop cities with multiple-components and several periods of occupation, as well as isolated Recuay manifestations such as single-use grave sites. City-dwelling Recuay tended to bury their venerated ancestors near their cities or villages, sometimes even in mortuary districts. But given how I structured the dataset, tests could only be run on a site's overall attributes and not the breakdown within the site. The next logical step would be to segregate out the data so that there is a meaningful distinction between mortuary sectors of a residential site and sites that were solely mortuary in function.

There is a variable in the dataset called NonGrave_Structure which I had intended to compare with the Grave_Type variable. The first issue that emerged was a tremendous variability in how sites' components were discussed. The NonGrave_Structure variable included residential, agricultural, corral, platform, mound, terraces, canals, roadways, domestic structures, walls, and a single Huanca. Many sites had no other non-mortuary structures while others had different combinations. Coding the sites like this allowed me to see whether a particular site was isolated or a component of a larger site, but was of limited use beyond that. In the future I would need to break down these variables and standardize their inputs. Then I could run additional tests on correlation, for example between the presence of platforms and chullpas. This type of analysis would allow an assessment of the spatial relationships between residential and non-residential structures with respect to their mortuary monuments.

Another test I had originally intended to conduct was a mortuary breakdown. Although I had coded age and sex variables (e.g., adult male, female, indeterminate, subadult, infant) into the dataset, there were far too many sites with mortuary architecture but no remains found. Most pronounced were the sites along the Río Ancash, where a total of 110 mortuary monuments were identified, but researchers had focused on the architecture and not human remains. Recuay

mortuary treatment tended to be based on kinship, though it has proven notoriously hard to replicate (Herrera 2016:89-90). In general the Recuay buried their dead in communal tombs with adult males and females, subadults, and infants all together in a familial tomb. Though I could have tested this by the coded variables, there were so many sites with mortuary architecture but no remains reported. If I were to test this further I would need more sites with physical remains present and documented in this way.

Finally the powerful thing about data reuse is its capacity for addition. I used published theses, dissertations, and records but there could be many more data sources available. The basic dataset that I built for this thesis could be expanded with more sites and more data. I terminated my analyses at the date when Ancash became archaeologically indistinguishable from the Wari, but there is no reason that all these analyses could not be used on other periods, such as the Late Intermediate Period after the Wari era. The same dataset design could be expanded for additional eras or archaeological cultures.

Other kinds of data could also be added to the dataset in order to conduct different types of analysis. For my project I selected mortuary monuments and prestige goods principally. There are many archaeological projects which could provide different types of data. For example, I did not factor in any lithics, because I did not have access to that type of data. Some of the authors discussed lithics in detail while others did not at all. Additionally, there were some Recuay tombs which contained faunal as well as human remains, which were the focus of my research.

Thus, future research could provide a more complete picture of these Recuay sites. Geospatial data are designed to be joined to other data sources. The dataset used in this thesis research could be expanded to include additional information on Recuay sites as long as it can be joined or related to the pre-existing sites. The most powerful aspect of this kind of research is the

possibility of integrating a variety of data types to answer different questions about Recuay culture. For example, spatial variables such as elevation and ecological setting could be incorporated into the dataset. There could also be more intensive assessment of site visibility through the use of viewsheds, or computation of least-cost paths to better understand trade and exchange routes between sites.

Works Cited

- Arkush, Elizabeth and Stanish, Charles
2005 Interpreting Conflict in the Ancient Andes: Implications for the Archaeology of Warfare. *Current Anthropology* 46 (1): 3-28.
- Arkush, Elizabeth., and Tung, Tiffany.
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.
- Avila, Padre Francisco.
2012 [c1598] *Dioses y Hombres de Huarochirí: narración quechua recogida por Francisco de Avila*. Instituto de Estudios Peruanos. Lima, Peru.
- Barbosa, Alejandra María Valverde.
2008 ¿Dónde Están los Ancestros? Estructuras funerarias de la Cordillera Blanca, Perú. Unpublished Master's Thesis, Departamento de Antropología, Universidad de los Andes. Bogotá, Colombia.
- Bennett, Wendell C.
1943 The Position of Chavín in Andean Sequences. *Proceedings of the American Philosophical Society* 86(2):323-327.
- 1944 The North Highlands of Peru: excavations in the Callejón de Huaylas and at Chavín de Huántar. *Anthropological Papers of the American Museum of Natural History* vol 39 (1). New York City, USA.
- Bennett, Wendell C., and Bird, Junius B.
1964 The Mastercraftsman Period. In *Andean Culture History: the archaeology of central Andes from early man to the Incas*. 113-135. Natural History Press (Doubleday Company) Garden City, New York.
- Benson, Elizabeth P.
1984 The Men who have Bags in their Mouths. *Indiana* 9: 367-381.
- Binford, LR.
1971 Mortuary Practices: their Study and Potential. *Memoirs of the Society for American Archaeology*. No 25: 6-29.
- Bourget, Steve
2006 *Sex, Death, and Sacrifice in Moche Religion and Visual Culture*. University of Texas Press. Austin, Texas.
- Bria, Rebecca E.
2017 Ritual, Economy, and the Construction of Community at Ancient Hualcayán (Ancash, Peru). Unpublished Dissertation for University of Nashville, Nashville Tennessee.

- Burger, Richard., Lau, George., Glascock, M., and Ponte, V.
 2006 The History of Prehispanic Obsidian Procurement in Highland Ancash, Peru. In *La Complejidad Social en la Sierra de Ancash*. Civiche Raccolte d'Arte Applicata del Castello, Sforzesco Milan. 103-120.
- Cadwallader et.al.
 2018 Doubts about how the Middle Horizon Collapsed (ca AD 1000) and other Insights from the Looted Cemeteries of the Lower Ica Valley, South Coast of Peru. *Journal of Field Archaeology*: 1-16. doi 10.1080/00934690.2018.1464306.
- Castillo-Butters, L.J.
 2014 Taming the Moche. In *Embattled Bodies, Embattled Places: War in Pre-Colombian Mesoamerica and the Andes*, edited by Mary Pye and Colin McEwan, pp 257-282. Dumbarton Oaks, Washington D.C.
- Castro, Pamela and Velarde, María Inés.
 2008 La Tumba de una Mujer de élite Recuay. In *Señores de los Reinos de la Luna* Makowski, Pillsbury, Jordán (eds) Banco de Crédito del Perú, Lima.
- Chicoine, David.
 2011 Death and Religion in the Southern Moche Periphery: Funerary Practices at Huambacho Nepeña Valley, Peru. *Latin American Antiquity* Vol 22(4):525-548.
- Cobo, Bernabe.
 1979 [1653] *History of the Inca Empire: an account of the Indians' customs and their origin together with a treatise on Inca legends, history, and social institutions*. Translated by R. Hamilton. University of Texas press, Austin.
 1990 [1653] Inca Religion and Customs. Translated by Roland Hamilton. University of Texas Press. Austin, USA.
- Cordy-Collins, Alana
 2001 Labretted Ladies: Foreign Women in Northern Moche and Lambayeque Art. *Studies in the history of Art* 63: 246-257.
- Cromphout, Alexandria.
 2019 Social Differentiation among the Recuay: An Iconographic Study. *Indiana* 34(1):31-59.
- Contreras, Daniel A.
 2011 How Far to Conchucos? A GIS Approach to Assessing the Implications of Exotic Materials at Chavín de Huántar. *World Archaeology* 43(3):380-397.
- Giersz, Milosz. and Makowski, Krzysztof.
 2014 The Wari Phenomenon: In the Tracks of a Pre-Hispanic Empire. In *Castillo de Huarmey. El Mausoleo Imperial Wari* Giersz, and Pardo, eds. 285-294. Museo de Arte de Lima, Lima.

- Grieder, Terrence
1978 *Art and Archaeology of Pashash*. University of Texas Press. Austin USA.
- Herrera, Alexander and Lañe, Kevin.
2006 La Complejidad Social en la Arqueología de la Sierra de Ancash. In *La Complejidad Social en la Sierra de Ancash: Ensayos sobre paisaje, economía y continuidades culturales*. Herrera, Orsini, Lañe (eds):7-14 Civiche Raccolte d'Arte Applicata del Castellol Sforzesco, Milan.
- Herrera, Sarah Frances.
2016 Death and the Family: Testing Andean Lineage Tombs through Cranial Non-Metrics. Unpublished Master's Thesis, Department of Anthropology, Colorado State University. Fort Collins, Colorado.
- Hohmann, Carolina.
2003 El Rostro Circular Frontal de Boca Dentada en la Iconografía Recuay. *Arqueologicas* 26:131-152).
- Ibarra, Bebel.
2006 Ancestros y Muerte Durante la época prehispánica en la Sierra de Ancash: Buscando nuestros Sntepasados. In *La Complejidad Social en la Sierra de Ancash: Ensayos sobre paisaje, economía y continuidades culturales*. Herrera, Orsini, and Lañe (eds):85-103. Civiche Raccolte d'Arte Applicata del Castellol Sforzesco Milan.
2013 Mortuary Practices in the Peruvian Northern Highlands: an approach from Marcajirca site in Huari-Ancash. Instituto de Estudios Huarinos 1-27.
- Ibarra, Bebel (editor)
2004 *Arqueología de la Sierra de Ancash: Propuestas Y Perspectivas* (Segunda Edición). Instituto Cultural Rvna, Lima Peru.
2013 *Cien Años de la Arqueología en la Sierra de Ancash*. Instituto de Estudios Huarinos.
- Ibarra, Bebel. Orsini, Carolina, García Cristian V. Villar, Sonia R. and Honores Fernando.
2010 Proyecto Arqueológico Huari-Ancash: Informe Final de Labores Presentado al Instituto Nacional de Cultura temporada 2008-2010. Prospección Arqueológica con Excavaciones en la Cuenca del Rio Puccha Provincia de Huari. Ancash. Instituto Nacional de Cultura, Lima. Peru
- Koons, Michele. And Alex, Bridget.
2014 Revised Moche Chronology based on Bayesian Models of Reliable Radiocarbon Dates. *Radiocarbon*, 56(3):1039-1055.

- Lau, George F
2000 Espacio Ceremonial Recuay. In *Los Dioses del Antiguo Perú* Makowski (ed): 178-197.
Banco de Credito, Lima.
- 2002 (a) Feasting and Ancestor Veneration at Chinchawas North Highlands of Ancash, Peru.
Latin Antiquity 13(3): 279-304.
- 2002(b) The Recuay Culture of Peru's North-Central Highlands: A Reappraisal of
Chronology and its Implications. *Journal of Field Archaeology* 29(1): 177-202.
- 2004 Object of Contention: an Examination of Recuay-Moche Combat Imagery. *Cambridge Archaeological Journal* 14(2):163-184.
- 2005 Core-Periphery relations in the Recuay Hinterlands: Economic Interaction at
Chinchawas. *Antiquity*. 79: 78-99.
- 2008 Ancestor Images in the Andes. In *The Handbook of South American Archaeology*.
Silverman and Isbell (eds). Springer, New York City.
- 2010 Fortifications as Warfare Culture: the Hilltop Centre of Yayno (Ancash, Peru) AD 400
800. *Cambridge Archaeological Journal* 20(3): 419-448.
- 2011 *Andean Expressions: Art and Archaeology of the Recuay Culture*. University of Iowa
Press, Iowa City, Iowa.
- 2012 Intercultural Relations in Northern Peru: the North Central Highlands during the Middle
Horizon. *Boletín de Arqueología PUCP* 16: 23-52.
- 2013 Ancient Alterity in the Andes. Routledge, Abingdon Oxon.
- 2015 The Dead and the Longue Durée in Peru's North Highlands. In *Living with the Dead in
the Andes* Shimada and Fitzsimmons eds. 200-244. University of Arizona Press Tucson,
Arizona.
- 2016 (a) *An Archaeology of Ancash: Stones, Ruins, and Communities in Andean Peru*.
Routledge Press, Abingdon, Oxon.
- 2016 (b) Peligros ambientales y el archivo arqueológico: culturas y vulnerabilidad antigua en
la sierra de Áncash, Perú. In: Las sociedades andinas frente a los cambios pasados y
actuales: dinámicas territoriales, crisis, fronteras y movilidad. Goepfert, Vásquez,
Clément and Christol (eds). l'Institut Français d'Études Andines Lima.
- Martín, Paula.
2014 *Pachamama Tales*. ABC-CLIO LLC Santa Barbra, USA.

- Mason, Alden J.
 1957 The Florescent Era. In *The Ancient Civilizations of Peru*. 66-88. Pelican Books
 Harmondsworth, Middlesex.
- Moore, Jerry d.
 2014 *A Prehistory of South America: Ancient cultural diversity on the least known continent*.
 University Press of Colorado, Boulder USA.
- Moran, P.A.P.
 1948 The Interpretation of Statistical Maps. *Journal of the Royal Statistical Society series B*.
 10(2):243-251.
- Moseley, Michael E.
 1992 *The Incas and their Ancestors: the Archaeology of Peru*. Thames and Hudson LTD,
 London, UK.
- Orsini, Carolina.
 2011 La Representación del Espacio en la Cerámica Architectónica Recuay. In *Microcosmos Visión Andina de los Espacios pre Hispánicos* Gavazzi (ed) 70-77. Apus Graph Ediciones, Lima.
- Orsini, C. and Benozzi, E.
 2015 Los Ancestros, las Llamas, y el Agua. Reconstruyendo Prácticas Rituales junto a la Laguna de Puruhuay (Ancash, Perú). *Indiana* 34(1) 61-94.
- Parker Pearson, M.
 1993 The Powerful Dead: Archaeological Relationships between the Living and the Dead.
 Cambridge Archaeological Journal 3(2): 203-229.
- Poma, Don Felipe Huamán.
 1978 [1567-1613] *Letter to a King: a Peruvian chief's account of life under the Incas and under Spanish rule*. Translated by Christopher Dilke. Sequoia-Elsevier Publishing Company. New York City, USA.
- Ponte, Victor M
 2000 Transformación Social y Política en el Callejón de Hyaulas, siglos III-X DC. *Boletín de Arqueología PUCP*. 4:219-251.
 2009 An Analysis of the Isabelita Rock Engraving and its Archaeological Context, Callejón de Huaylas, Perú. *Andean Past* 9: 131-175.
 2015 Regional Perspective of Recuay Mortuary Practices: a View from the Hinterlands, Callejon de Huaylas, Peru. Unpublished Thesis for University of Milwaukee, Milwaukee Wisconsin.

- Príncipe, Hernández Rodrigo.
 1923 [1622] Mitología Andina-Idolatrías en Recuay. Inca 1: 28-78.
- Proulx, Donald A
 1982 Territoriality in the Early Intermediate Period: the case of Moche and Recuay. *Nawpa Pacha: Journal of Andean Archaeology* 20: 83-96.
- 1968 *An Archaeological Survey of the Nepeña Valley, Peru*. Research Reports no 2.
 Department of Anthropology, University of Massachusetts: Amherst.
- Reichert, R.X.
 1982 Moche Iconography- the Highland Connection. In *Pre-Colombian Art History: Selected Readings*. Cordy-Collins(ed) Peek Publications, Palo Alto, US.
- Renfrew, Colin. and Bahn, Paul.
 2012 *Archaeology: Theories, Methods, and Practice* (6th edition) Thames & Hudson, London.
- Rogerson, P.A.
 2015 *Statistical Methods for Geography* (4th Edition) Sage Publications. Los Angeles USA.
- Roosevelt, Cornelius V.S.
 1935 Ancient Civilizations of the Santa Valley and Chavín. *Geographical Review* 25(1):21-42.
- Salomon, Frank. and Urioste, George L. (translators)
 1991 *The Huarochirí Manuscript: a testament of ancient and colonial Andean Religion*.
 University of Texas Press, Austin USA.
- Shwartz, Pamela
 2010 X-Ray Fluorescence Analysis of Ceramics from Santa Rita B, Northern Peru.
 Unpublished Master's Thesis, Department of Anthropology, Florida State University.
 Tallahassee Florida.
- Szpak, P et.al.
 2015 Origins of Prehispanic Camelid Wool Textiles from the North and Central Coasts of Peru Traced by Carbon and Nitrogen Isotopic Analyses. *Current Anthropology* 56(3):449-459.
- Ucko, PJ.
 1969 Ethnography and Archaeological Interpretation of Funerary Remains. *World Archaeology* 1(2): 262-280.
- Uhle, Max
 1902 Types of Culture in Peru. *American Anthropologist* new series 4(4) 753-759.

- Urton, Gary
1999 *Inca Myths*. British Museum Press and University of Texas Press, London UK and Austin USA.
- Ubelaker, D.H. and Buikstra, J.E.
1994 *Standards for Data Collection from Human Skeletal Remains*. Arkansas Archaeological Survey, Fayetteville, Arkansas.
- Valdez, L.M. Taboada, J. and Valdez, J.E.
2015 Ancient Use of Coca Leaves in the Peruvian Central Highlands. *Journal of Anthropological Research* 71(2):231-258.
- Velasco, Matthew
2016 Prácticas Mortuorias post-Chavín: Un Análisis Tafonómico de Restos Humanos entremezclados del Cana Rocas de Chavín de Huántar. In *Arqueología de la Sierra de Ancash 2: Población y Territorio*. Ibarra (ed) 77-92. Instituto de Estudios Huarinos, Lima.
- Velásquez, Jorge Gamboa.
2016 Las Ocupaciones Formativas en la Banda: Excavaciones durante la Construcción de la Variante Chavín y su Impacto Socioeconómico en el Valle del Monsa. In *Arqueología de la Sierra de Ancash 2: Población y Territorio*. Ibarra (ed) 53-76. Instituto de Estudios Huarinos, Lima.
- 2009 Diversidad Formal y Cronológica de las Prácticas Funerarias Recuay. In *Kullpi: Investigaciones Culturales en la Provincia de Huaraz y el Norte Chico*. Luna and Romero (eds): 35-75. Lima.
- Woloszyn, Janusz Z.
2011 Enemigos íntimos- los representantes de la cultura Recuay en la Iconografía Moche. *Antropologia Polityki w Ameryce Lacinskiei na poczatku XXI*. 81-101.

Appendix A:

Raw Coded Data

Below are the coded data from the Recuay Dataset. These include all of the data created or used in this project. There are some columns which were not used and others which had to be modified as the project was in progress.

Trial 1: Dummy trial on the ID_Number column

Trial 2: Test on the Burials_Num variable

Trial 3: Test on Ceramic_NUM variable

Trial 4: Test on Ceramic_Type_Num variable

Trial 5: Test on Metal_Num variable

Trial 6: Test on MNI variable

Qualitative Chullpa: Symbology of the Grave_Type variable

ID_Number	ID	Site_Name	Special Site Name	Longitude_E	Latitude_N	Altitude_MASL	Era	Culture
1	BRIA_1	AC02	NONE	180121	9007534	3252	EIP	Recuay
2	BRIA_2	AC08	NONE	180026	9007139	3361	LIP	Recuay
3	BRIA_3	HY02	NONE	182633	9017914	2793	EIP(P)	Recuay
4	BRIA_4	HY03	Cashacoto	177790	9018318	3150	EIP	Recuay
5	BRIA_5	HY04	Parian Punta	178037	9022821	3565	EIP	Recuay
6	BRIA_6	HU01	Hualcayan	192358	9015200	3250	LF On	Recuay_Various
7	BRIA_7	HU02	Cruz Punta	190534	9013954	2965	LIP	Recuay
8	BRIA_8	SC01	Wayumarca	193259	9006910	3239	EIP	Recuay
9	BRIA_9	SC03	Cementario Katama	194311	9006605	3400	EIP(P)	Recuay
10	BRIA_10	SC05	Pariamarca	193609	9005770	3307	LF On	Recuay
11	BRIA_11	SC06	NONE	192796	9007889	3111	EIP(P)	Recuay
12	BRIA_12	SC07	NONE	193286	9007455	3188	EIP(P)	Recuay
13	BRIA_13	SC08	NONE	194091	9005589	3311	EIP(P)	Recuay
14	BRIA_14	PC01	Ushnucorral	195885	9002822	3640	EIP(P)	Recuay
15	BRIA_15	PC02	NONE	195790	9004325	3470	EIP(P)	Recuay
16	BRIA_16	PC03	NONE	197321	9003606	3545	EIP(P)	Recuay
17	BRIA_17	PC04	Wancotay	197904	9002354	3350	EIP(P)	Recuay
18	BARBOSA_1	Yu_13	Oqtawain	201570	8996380	3410	LR	Recuay
19	BARBOSA_2	Yu_14	Collpacatac	201800	8995900	3350	LR	Recuay
20	BARBOSA_3	Yu_16	Kenshu Antapampa	203440	8994180	3480	LR	Recuay
21	PONTE_1	PAn5_34	Ama	216267.6	8956527.8	3534	RE	Recuay
22	PONTE_2	PAn5_35	Quitapampa A	215958.7	8956650.3	3571	RE	Recuay
23	PONTE_3	PAn5_42	Quitapampa B	215921.4	8956700	3565	RE	Recuay
24	PONTE_4	Pan5_50	Quitapampa C	215922.6	8956692	3566	LR	Recuay
25	PONTE_5	PAn5_49	Ama II A	215944.1	8956785.9	3534	RE	Recuay
26	PONTE_6	PAn5_49	Ama II B	215949.9	8956790.2	3532	RE	Recuay
27	PONTE_8	PAn5_38	Horno Jirca	216313.3	8957692.6	3319	RE	Recuay
28	PONTE_9	PAn5_43	Cochapampa	216345.8	8957488.8	3357	LR	Recuay
29	PONTE_10	PAn5_64	Marca Jirka	224527.3	8946993.9	3276	RE	Recuay
30	Ibarra_2	55	Pan de Azucar	268440	8960820	3280	IT/IT	Recuay_Various
31	Ibarra_14	75	Yamillipitec	262120	8969830	3120	HT/IT	Recuay
32	Ibarra_15	76	Cashapallan	261600	8967940	3190	HT/IT	Recuay
33	Ibarra_16	77	Ã'awpamarca de Acopalca	256020	8969400	3690	HT/IT	Recuay

ID_Number	ID	Site_Name	Special Site Name	Longitude_E	Latitude_N	Altitude_MASL	Era	Culture
34	Ibarra_18	80	Mashuanco	262240	8963390	3280	IT	Recuay
35	Ibarra_19	84	Yacya	262020	8961930	3370	IT/IT	Recuay_Variou:
36	Ibarra_20	105	Chullin 2	260230	8965880	3461	IT	Recuay
37	Ibarra_21	106	Reparin	263680	8971140	3590	HT/IT	Recuay
38	Ibarra_22	107	Pirushto	262741	8971112	3351	HT/IT	Recuay
39	Ibarra_23	108	Ushnujirca	261330	8977650	3781	IT	Recuay
40	Ibarra_24	109	Huamparan	261463	8976604	3681	IT	Recuay
41	Ibarra_25	110	Ogupampa	261726	8975015	3540	IT	Recuay
42	Ibarra_26	111	Chuncayajirca 2	261560	8975450	3574	HT/IT	Recuay
43	Ibarra_27	112	Chuncayajirca 1	260985	8978674	3381	HT/IT	Recuay
44	Ibarra_28	113	Llamacorral	257905	8969959	3532	HT/IT	Recuay
45	Ibarra_29	114	Ishla Ranra	257905	8969959	3532	HT/IT	Recuay
46	Ibarra_30	115	Buenos Aires	261763	8964612	3354	IT	Recuay
47	Ibarra_31	116	Ushcugaga	264414	8969995	3653	HT	Pre_Recuay
48	Ibarra_32	117	Pirushto de Cajay 2	264167	8969730	3615	HT/IT	Recuay
49	Ibarra_33	118	Ushnu de Cajay	262596	8977609	3575	HT/IT	Recuay

ID_Number	Date_Start	Date_End	NonGrave_Structure	Grave_Type	Number_Chullpa	Number_Cave	Number_Subterranean
1	200	700	Residential	NONE	0	0	0
2	700	1000	Corral	Chullpa	3	0	0
3	200	700	NONE	Chullpa on Platform	1	0	0
4	200	700	Residential	Chullpa	2	0	0
5	200	700	Platform	Chullpa	1	0	0
6	0	1000	Mound & Patio	Chullpa & Subterranean	2	0	4
7	700	1000	Residential	NONE	0	0	0
8	200	700	Mound	Chullpa	1	0	0
9	200	700	Platform	Chullpa on Platform	1	0	2
10	0	1000	Platform	Subterranean	0	0	2
11	200	700	NONE	Subterranean	0	0	3
12	200	700	NONE	Chullpa	2	0	0
13	200	700	NONE	Subterranean	0	0	20
14	200	700	Residential	Chullpa	9	0	0
15	200	700	Terrace	Chullpa	1	0	0
16	200	700	Platform	Chullpa & Subterranean	5	0	5
17	200	700	Platform	Subterranean	0	0	5
18	500	1000	Canal	Chullpa	11	0	0
19	500	1000	Canal	Chullpa & Subterranean	55	0	2
20	500	1000	Mound	Chullpa & Subterranean & Cave	14	15	13
21	500	650	Mound	Chamber	0	0	4
22	500	650	NONE	Chamber	0	0	1
23	500	650	Roadway	Chamber	0	0	3
24	700	1000	Terrace	Chamber	0	0	3
25	200	500	Terrace	Cave	0	1	0
26	500	650	Terrace	Chamber	0	0	1
27	200	500	NONE	Chamber	0	0	3
28	700	1000	NONE	Chamber	0	0	4
29	500	650	Domestic	Chamber	0	0	6
30	0	1470	Walls	Platform	0	0	0
31	-200	700	Mound	NONE	0	0	0
32	-200	700	Mound	NONE	0	0	0
33	-200	700	Wall	NONE	0	0	0

ID_Number	Date_Start	Date_End	NonGrave_Structure	Grave_Type	Number_Chullpa	Number_Cave	Number_Subterranean
34	0	700	NONE	Cave	0	0	0
35	0	1470	Wall	NONE	0	0	0
36	0	700	Platform	NONE	0	0	0
37	-200	700	Mound	NONE	0	0	0
38	-200	700	Mound	NONE	0	0	0
39	0	700	Wall	Subterranean	0	0	18
40	0	700	Corral	NONE	0	0	0
41	0	700	Mound	Mound	0	0	0
42	-200	700	Platform	NONE	0	0	0
43	-200	700	Platform	NONE	0	0	0
44	-200	700	Walls	NONE	0	0	0
45	-200	700	Residential	Tombas	5	0	0
46	0	700	Platform	NONE	0	0	0
47	-1200	0	Corral	Tombas	0	0	0
48	-200	700	Platform & Huanca	NONE	0	0	0
49	600	1200	Residential	Chullpa & Subterranean	3	0	0

ID_Number	Number_Platform	Burials_NUM	Burials	Ceramic_NUM	Ceramic	Ceramic_Type	Ceramic_Type_Num	Metal_Num	Metal
1	0	0	No	1	Yes	Recuay	1	0	No
2	0	1	Looted	1	Yes	Akillpo	3	0	No
3	1	0	No	0	No	NONE	0	0	No
4	0	1	Looted	0	No	NONE	0	0	No
5	0	1	Looted	1	Yes	Kaolin	2	0	No
6	0	1	Yes	1	Yes	Kaolin	2	1	Yes
7	0	0	No	1	Yes	Akillpo	3	1	Yes
8	0	1	Looted	1	Yes	Recuay	1	0	No
9	1	1	Looted	0	No	NONE	0	0	No
10	0	0	No	0	No	NONE	0	0	No
11	0	1	Looted	0	No	NONE	0	0	No
12	0	0	No	0	No	NONE	0	0	No
13	0	1	Looted	0	No	NONE	0	0	No
14	0	0	No	0	No	NONE	0	0	No
15	0	0	No	0	No	NONE	0	0	No
16	0	1	Looted	0	No	NONE	0	0	No
17	0	1	Looted	0	No	NONE	0	0	No
18	0	1	Yes	1	Yes	Recuay	1	0	No
19	0	1	Yes	1	Yes	Recuay	1	0	No
20	0	1	Yes	1	Yes	Akillpo	3	0	No
21	0	1	Yes	1	Yes	Moche	3	1	Yes
22	0	0	No	1	Yes	Kaolin	2	1	Yes
23	0	0	No	1	Yes	Moche	3	0	No
24	0	0	No	1	Yes	Recuay	1	1	Yes
25	0	1	Yes	0	No	Plain	1	0	No
26	0	1	Yes	1	Yes	Kaolin	2	1	Yes
27	0	1	Yes	1	Yes	Kaolin	2	1	Yes
28	0	1	Yes	1	Yes	Recuay	1	1	Yes
29	0	1	Yes	1	Yes	Kaolin	2	1	Yes
30	1	1	Yes	1	Yes	<NULL>	1	0	No
31	0	0	No	1	Yes	<NULL>	1	0	No
32	0	0	No	1	Yes	<NULL>	1	0	No
33	0	0	No	0	No	NONE	0	0	No

ID_Number	Number_Platform	Burials_NUM	Burials	Ceramic_NUM	Ceramic	Ceramic_Type	Ceramic_Type_Num	Metal_Num	Metal
34	0	1	Yes	1	Yes	<NULL>	1	0	No
35	0	0	No	1	Yes	<NULL>	1	0	No
36	0	0	No	1	Yes	Kaolin	2	0	No
37	0	0	No	1	Yes	<NULL>	1	0	No
38	0	0	No	1	Yes	<NULL>	1	0	No
39	0	1	Yes	1	Yes	<NULL>	1	0	No
40	0	0	No	0	No	NONE	0	0	No
41	0	1	Yes	0	No	NONE	0	0	No
42	0	0	No	1	Yes	<NULL>	1	0	No
43	0	0	No	1	Yes	<NULL>	1	0	No
44	0	0	No	0	No	NONE	0	0	No
45	0	1	Yes	1	Yes	<NULL>	1	0	No
46	0	0	No	1	Yes	<NULL>	1	0	No
47	0	1	Yes	1	Yes	<NULL>	1	0	No
48	0	0	No	1	Yes	<NULL>	1	0	No
49	0	1	Yes	1	Yes	<NULL>	1	0	No

ID_Number	MNI	Adult_Male	Adult_Female	Adule_Indeterminate	Total_Adult	Total_Subadult	Total_Infant
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	129	35	25	19	79	18	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0
21	18	7	5	2	14	4	0
22	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0
25	1	1	0	0	1	0	0
26	9	4	2	1	7	1	0
27	8	3	2	1	6	2	0
28	88	0	2	9	11	6	71
29	8	0	0	2	2	3	3
30	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0

ID_Number	MNI	Adult_Male	Adult_Female	Adule_Indeterminate	Total_Adult	Total_Subadult	Total_Infant
34	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0
41	10	0	0	0	0	0	0
42	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0
45	5	0	0	0	0	0	0
46	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0

Appendix B:

Link to the Git Hub Repository

In the interest of ensuring the long-term accessibility of the project and all data used, I created a repository available to the public on Git Hub (link below).

Raw_Data_Files is the folder with each datasheet used.

Project_Drafts is a folder with the major iterations of this project.

Final_Draft is the folder with this document in finalized form.

Follow this link to reach the repository:

<https://github.com/greenl23/GEOSTATISTICAL-PERSPECTIVES-ON-RECUAY-MORTUARY-LANDSCAPES.git>