MARITIME COMMUNITIES OF THE ANCIENT ANDES

EDITED BY

GABRIEL PRIETO

AND DANIEL H. SANDWEISS

Foreword by Victor D. Thompson

University Press of Florida

Gainesville · Tallahassee · Tampa · Boca Raton

Pensacola · Orlando · Miami · Jacksonville · Ft. Myers · Sarasota

Printed in the United States of America on acid-free paper

This book may be available in an electronic edition.

25 24 23 22 21 20 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

The University Press of Florida is the scholarly publishing agency for the State University System of Florida, comprising Florida A&M University, Florida Atlantic University, Florida Gulf Coast University, Florida International University, Florida State University, New College of Florida, University of Central Florida, University of Florida, University of North Florida, University of South Florida, and University of West Florida.

University Press of Florida
2046 NE Waldo Road
Suite 2100
Gainesville, FL 32609
http://upress.ufl.edu

14

El Contrato del Mar

Maritime Subsistence at Carrizales, Zaña Valley, Peru

PARKER VANVALKENBURGH, SARAH KENNEDY, CAROL ROJAS, AND GABRIEL HASSLER

Few indigenous communities in western South America experienced more dramatic social transformations in the wake of the Spanish invasions than those of coastal Peru. Due to the effects of military combat, the Spanish exploitation of native labor, and the spread of Old World infectious diseases, coastal Peruvian indigenous populations suffered a veritable demographic collapse between the early 1500s and 1650 CE. No subregion appears to have felt the demographic effects of conquest more acutely than the north coast, whose mild climate harbored disease vectors, and where the establishment of new urban centers and commercial outposts brought native peoples frequently into contact with Old World pathogens. According to census estimates, population loss in some north coast communities reached 90 percent, and the region as a whole lost an average of 71 percent of its indigenous population by the mid-seventeenth century (Cook 1981: 118; Ramírez-Horton 1978).

Colonial demographic change on the north coast was closely interrelated with other transformations in the region's social and natural landscapes. Disease transmission accelerated in the late 1560s, as native peoples were resettled into planned towns called *reducciones* (Ramírez-Horton 1978; Ramírez 1996). As indigenous numbers declined, the growth of export-oriented *haciendas* demanded an expanding pool of exploitable labor, and so the viceroyalty imported thousands of enslaved people of African descent to the region (Aguirre 2005; Bowser 1974; O'Toole 2012). The introduction of new crops led to shifts in planting patterns and water usage, such that the total cultivated areas within river valleys declined (Willey 1953: 27). At the same time, the introduction of new species of livestock transformed

the balance between pasture and farmlands and established new roles for maritime protein sources (fresh and dried fish and mollusks) in regional economies.

It is this tumultuous and tragic period in the history of the Peruvian coast that produced the written sources that ethnohistorians have used to develop models of maritime community organization in the pre-Hispanic Andes. Following established practice in Andean studies, archaeologists and ethnohistorians have employed these records—fragmentary representations contained in legal and administrative documents, as well as chronicles written by Colonial travelers and historians (for example, Cieza de León 1986; De Lizárraga 1908)—to piece together synchronic descriptions of sociopolitical organization and cultural life among Colonial period maritime communities. In turn, we have used them to make sense of patterns in pre-Hispanic archaeological materials, attempting to make whole what has been lost to the ravages of time. Yet in the process, we have perhaps paid too little attention to the contingencies of representations contained in written sources from the Colonial period.

This is not to say, however, that archaeologists have read ethnohistoric sources uncritically. As several authors in this volume note, there has been considerable scholarly disagreement about the applicability of one ethnohistoric model (Rostworowski's theory of maritime economic specialization) to the pre-Hispanic past (see also Cock 1986; Rostworowski 1970, 1977; Prieto 2011; Sandweiss 1992). Yet while Rostworowski's model has been previously examined in light of its applicability to pre-Hispanic maritime lifeways (for example, Marcus et al. 1999; Sandweiss 1992), it has yet to be scrutinized through archaeological research on sites occupied during the Early Colonial Period, at the same moments when the documentary records were actually produced.[1]

By enabling archaeologists and ethnohistorians to better understand the social conditions and performative contexts in which Colonial documentary sources were produced, archaeological research on the sixteenth through early seventeenth century maritime sites can help to generate, not just new data to describe how coastal indigenous communities responded to the challenges of Spanish invasion, but also more nuanced understanding of economic and political life among Andean pre-Hispanic maritime communities. As historical archaeologists working in other regions of the globe have long argued, archaeological sites, documentary records, and oral histories are archives that inscribe and animate the past in quite distinct ways (Leone 1984; Leone et al. 1987; McGuire 1992; Preucel 2008; Preucel

and Bauer 2001). It would therefore be wrong-headed to treat archaeological research on historic period sites as a means of "testing" models of sociopolitical organization gleaned from Colonial documents. Yet it can allow us to both contextualize the enunciations of written sources and to recognize the various "silences" they contain (Trouillot 1995).

In the paper, we argue: (1) that Early Colonial maritime lifeways at Carrizales were highly dynamic, responding to both political and demographic change; and (2) that the economic specialization of late pre-Hispanic maritime communities can be understood, at least in some cases, as the product of indigenous elites' self-interested representations of their lifeways and tributary histories to Colonial administrators—a form of what Gayatri Spivak (in Danius and Jonsson 1993) calls "strategic essentialism." Food remains from Carrizales show that this community of fisherfolk was hardly one of hapless specialists. Rather, as they experienced population loss due to both Colonial violence and the spread of European diseases—and to the labor stress posed by tributary requirements—native households pursued a variety of new economic strategies. At the same time, native coastal elites pursued new avenues of engagement and self-representation with viceregal and ecclesiastical institutions in order to secure their relative economic and political advantages vis-à-vis tributary

Pre-Hispanic Sociopolitical Organization, *Reducción*, and *Encomienda* in the Lower Zaña Valley

Situated near the mouth of the seasonal Río Carrizal in Peru's Zaña Valley, the site of Carrizales is located within the Lambayeque region—an area of five interconnected river valleys in the Peruvian department of the same name, which may have contained over 30 percent of all the irrigated land on the Peruvian coast in antiquity (Kosok 1965: 115). Within this region, ethnohistorical scholarship has suggested that late pre-Hispanic communities were organized into *parcialidades*—networks of producers, defined both by kinship and political obligation, who lived not in single nucleated settlements but in scattered hamlets of different sizes, among which rulership and tributary extraction were organized according to nested hierarchies (Netherly 1993; Ramírez-Horton 1981). These networks included lineages with different economic emphases—groups that self-identified themselves as fishermen and agriculturalists—and at least in some cases as craft specialists (Ramírez-Horton 1981; Ramírez 2007). Settlement patterns within each regional system varied, but archaeological surveys

of lower valley regions suggest that, outside of major urban centers, late pre-Hispanic (that is, twelfth–early sixteenth century) settlement patterns were disperse, with hamlets peppered among agricultural fields (Hayashida 2006; Tschauner 2001; VanValkenburgh 2012). Similarly, the only detailed pre-*reducción* record of settlement in the region, Sebastián de La Gama's *visita* of the *repartimiento* of Jayanca (1975[1540]), records 162 small settlements within a two-league radius of the cacique's village.[2]

The relative ranking of *parcialidades* with different economic emphases appears to have varied across valleys. While lords of *indios pescadores* (fishermen) were subordinate to agriculturalists in some regional hierarchies, they were not categorically lower ranked (Netherly 1977; Noack 2007; Ramírez 1996). For example, according to the 1572 census of the *repartimiento* of Chérrepe (Ramírez-Horton 1978), which we argue included the resident of Carrizales, the group's cacique lived in a large coastal settlement and was head of a *parcialidad* dominated by fishermen. Six other *parcialidades* paid tribute to him, and their members, who included both agriculturalists and fishermen, lived in at least three settlements—Chérrepe's own village, an isolated site named Ñoquique, and a small settlement alongside the Convent of Nuestra Señora de Guadalupe, in what is now the lower Chamán Valley (Ramírez-Horton 1978).

Competition between *principales* recorded in sixteenth-century sources suggests that the kinds of tributary relationships that defined the *repartimiento* of Chérrepe were not fixed, but reassembled under changing political circumstances. During the social upheavals of the sixteenth century, for example, some coastal *principales* attempted to assert their autonomy from their ostensible overlords. One leader, a man named Joan Poemape who was the *principal* of Pacasmayo, demanded independence from the cacique of Jequetepeque in 1568, claiming that "he had never until then recognized, nor would he recognize any superior." Instead, the *parcialidades* of Pacasmayo "had always governed themselves, and if anyone had obeyed another it was those [Indians] of Xequetepeque [who followed] those of Pacasmayo" (ADL Cor 280/3583: 1r–1v, my translations; see also Noack 2004, 2007). While each of the major political expansions that affected the north coast between the thirteenth through sixteenth centuries—Chimú, Inka, Spanish—possessed its own dynamics, it is likely that expansions of pre-Hispanic empires into valleys such as Jequetepeque, Zaña, and Chamán allowed for similar negotiations, and that relationships of political domination and subordination (if not *parcialidades* themselves) were continually reshaped.

The Spanish colonization of the north coast followed the contours of previous indigenous institutions and infrastructure, following roads built and maintained during pre-Hispanic times and establishing settlements atop earlier sites. Tribute, formerly rendered unto Inka and Chimú overlords, was redirected to Spanish *encomenderos*, who were granted rights to the labor soon after the foundation of the City of Trujillo, in 1534. As Eurasian domesticates were introduced into local foodways and production regimes, *encomenderos* demanded new products from their charges. According to records compiled by Ramírez (1996: 96–98, 105–106), the community of Chérrepe's tributary obligations varied between a maximum of 4,700 pesos and a minimum 1,300 pesos per year between 1548 and 1569, peaking in the wake of Viceroy La Gasca's assessments in 1549 and falling due to reassessments in the wake of demographic decline, internal migration, and community fragmentation over the next two decades. The most complete list of items in Chérrepe's tribute list (dating to 1564) includes 13 different forms of tribute, including 36 *fanegadas* of wheat (equivalent to 4,680 pounds of flour), 900 pieces of finished cloth, two cotton beds, 1,000 birds, eggs, fish, salt, pigs, *algarrobo* (mesquite) wood, 15 *indios de mita* (native laborers) and 14 shepherds per year (AGI Patronato 97A R.4 15–17v; Ramírez 1996: 106).

In addition to changes in tributary regimes, Spanish Colonial interventions also led to transformations in settlement patterns within the north coast region. The early spread of Old World diseases, which were already wreaking havoc among Native Andean populations before Pizarro's ships arrived in Tumbes, likely contributed to settlement nucleation in the middle decades of the sixteenth century (Cook 1981: 61–62; Newson 1995: 145–146). The Jayanca *visita* of 1540, for example, makes reference to numerous abandoned hamlets, whose last surviving residents would have fled to nearby villages. Other transformations in settlement can be attributed to overt Spanish efforts to reshape north coast landscapes and built environments. In 1563, the viceregal government erected the *villa* of Zaña on the site of an Inka *tambo*, seeking to foster the growth of middling agriculturalists to counterbalance the power of the *encomenderos*. The *villa*'s documents of foundation suggest that indigenous populations were resettled in the margins of the *villa* at the time of its founding in order to provide labor for agricultural ventures (Angulo 1920).

More dramatic changes in settlement patterns—particularly, among the poorer agricultural lands near the ocean—were introduced through the

reducción process. Historians have suggested that the resettlement process in the north coast region was carried in two waves—the first, in 1566–1567, led by the *oidor* Gregorio Gonzalez de Cuenca during the course of a *visita* of the region; the second in 1572, as part of the Toledan *reducción general*, under the direction of *visitador* Juan de Hoçes (Noack 1996; Ramírez-Horton 1978; Ramírez 1996; Rostworowski 1975). Subsequent archaeological research has not identified distinct material signatures for each these two initiatives (VanValkenburgh 2012), and the scope and scale of Cuenca's interventions in local settlement patterns is unclear. However, both movements had similar goals, influenced by decades of Colonial discourse concerning the ordering of native populations and settlements (Matienzo 1967; Mumford 2012).

These shared aspirations are most clearly articulated in documentary sources associated with Toledo's project, the *reducción general*. Legislated through a series of decrees between 1569 and 1575, the Toledan *reducción* initiative sought to move the entirety of Peru's indigenous populations into new settlements, each of which would be laid out along a gridded plan of streets and centered on a plaza, a church, and a series of civic institutions, including a jail and an inn (Toledo 1986). Extended indigenous households would be broken up into nuclear families and placed in separate houses with a single door leading onto the street, to facilitate their surveillance. Within each house, separate bedrooms would be erected for parents, and male and female children to promote sexual modesty. Acting in concert, these spatial strategies would instill their indigenous subjects with what the Spanish called *policía* (urban politeness and discipline), which would facilitate their Christian conversion and catechism, as well as their integration into the Colonial economy (Cummins 2002; Lechner 1989).

As recent scholarship has shown, the Toledan project provoked a wide variety of responses among the up to two million people who were its targets, and it articulated in distinct ways with regionally specific political and economic processes (Mumford 2012; Saito 2012; VanValkenburgh 2012; Wernke 2013; Zuolaga Rada 2013). In much of the southern highlands, resettlement appears to have been tightly bound up with the expansion of Toledo's *mita* labor draft, where it sought to produce docile subjects for work in the mines at Potosí and Huancavelica. In the valleys of the north coast, with its high potential for export-oriented agropastoralism, *reducción* provided a context for co-opting indigenous labor power and freeing up productive land for Spanish exploitation (Ramírez-Horton 1978; Ramírez

1996). Ironically, resettlement also sought to stem the tide of indigenous depopulation, which some Spaniards saw as a result of the poor (moral and physical) order of native peoples.

In the lower Zaña and Chamán valleys, *reducción* seems to have concentrated on nucleating populations within three major sociopolitical units—Zaña itself, headed by the cacique of the same name; Mocupe, reporting to a *principal* subservient to the cacique of Zaña; and Chérrepe, centered on the eponymous maritime settlement and led by the cacique Pedro Chérrepe in 1572. The mechanics of resettlement are obscured by the successive activities of the Cuenca and Toledo *visitas* and other sources of settlement change, such as the destabilizing effects of the El Niño rains of 1578 (Huertas Vallejos 1987), but a general outline of population movements can be sketched.

Sources suggest that Toledo's initiatives led subjects of the cacique of Zaña to be resettled around the recently founded *villa*, as well as in a new *reducción* named Leviche, or Liviche, located across the Zaña river in an area now known as La Otra Banda (Angulo 1920; AGI 461 1578v). The latter was founded by 1568, during the time of the Cuenca *visita*. Further down valley, a settlement named Mocupe was established in the late sixteenth century on the northern slopes of Cerro Purulén, drawing in residents from the *parcialidad* of the same name. It is unclear whether this settlement was founded during the Cuenca or Toledo *visitas*, or at a later date. In the littoral zone, between the Chamán and Zaña valleys, the residents of Ñoquique appear to have been resettled to the head town of Chérrepe (Ramírez-Horton 1978). Previously, the site of the Colonial port of Chérrepe, located at the Caleta (cove) of the same name, had been identified as the head town of the cacique of Chérrepe listed in the 1572 *visita* (Susan Ramírez, personal communication 2008). However, the small footprint of the Colonial settlement found there (3.5 ha)—as compared to the 10 ha average for north coast *reducciones*—makes this unlikely. We suggest that Carrizales, located some 6 km to the north of the Caleta, was the initial settlement of the *reducción* of Chérrepe, and that its residents may have been moved to the inland site of Chérrepe Viejo near the turn of the sixteenth century (Kennedy and VanValkenburgh 2016). We discuss this chronological sequence below.

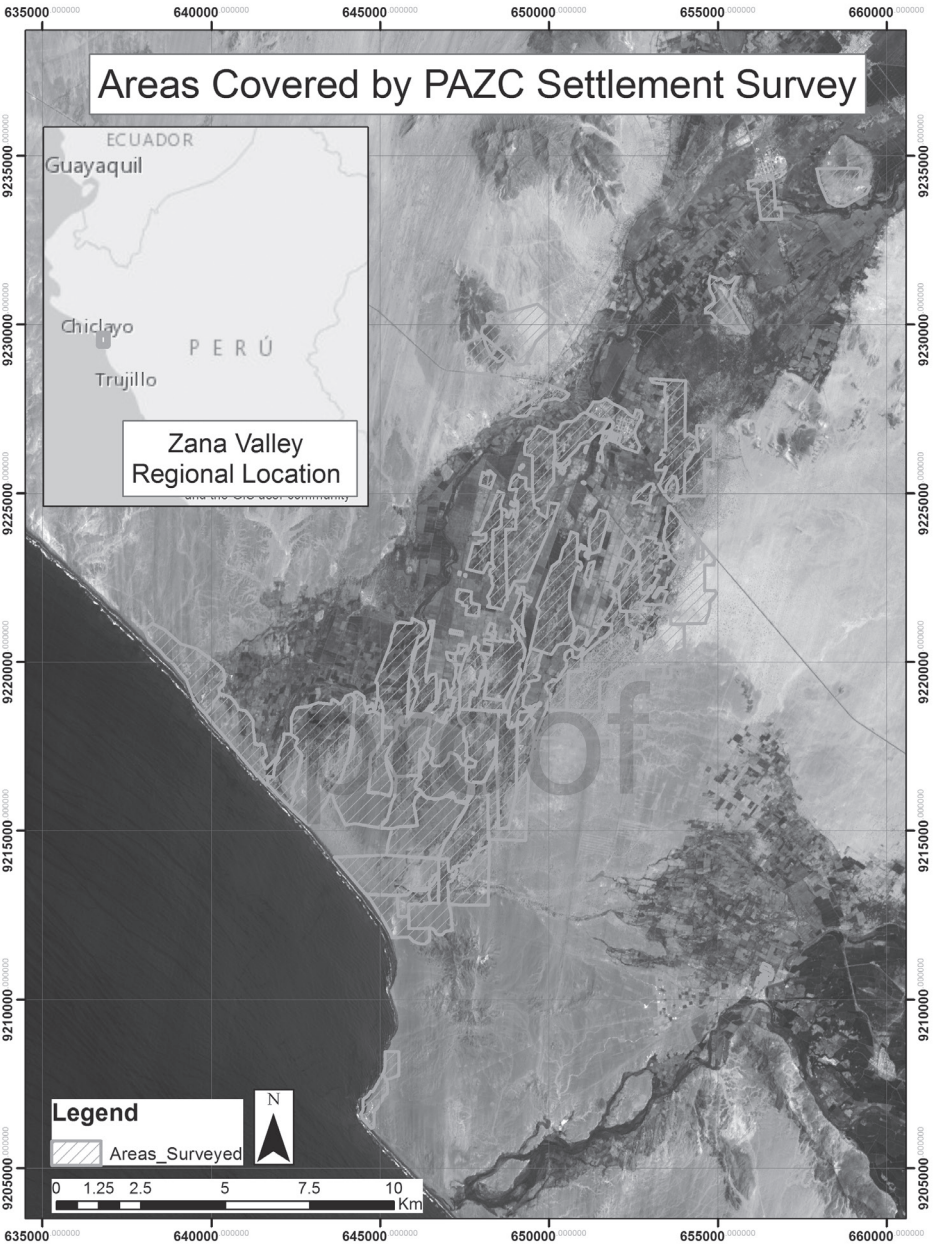


Figure 14.1. Location of the Zaña Valley and the surveyed areas in this research (provided by the authors).

Regional Settlement Patterns

Regional settlement patterns in the lower Zaña and Chamán valleys offer further evidence of late pre-Hispanic sociopolitical organization and its transformation over the course of Spanish colonization. Our research in the region began with a pedestrian survey of the lower Zaña Valley, which covered 90.27 sq km, including a swath of land along 10 km of coastline (Figure 14.1). Survey transect resolution varied between 10 and 100 m, based on ground cover, and led to the recording of 305 individual *conjuntos* of archaeological material—areas with surface ceramic densities above one sherd per sq m, at least one other type of artifact on the surface, and/or diagnostic architectural features. The survey area was explicitly designed to sample areas associated with the 1572 *visita* of Chérrepe (Ramírez-Horton 1978) and a series of Colonial sites discovered during regional archaeological reconnaissance.

The data collected demonstrate continuous (but not superimposed) maritime occupation of the lower Zaña Valley from Preceramic through late pre-Hispanic times. Sea-level rise in the Early Holocene may have obscured the earliest coastal settlements, and maritime sites that we have provisionally dated to the late Preceramic Period require confirmation through excavation (Figure 14.2). Later coastal settlements cluster near sources of freshwater, within 2 km of the mouths of the Zaña River and the seasonal Río Carrizales (Figures 14.2 and 14.3). Whereas occupations near the mouth of the Zaña River are present from Preceramic times, the earliest settlements surrounding the mouth of the Río Carrizales date to the Early Intermediate Period, perhaps reflecting the greater availability of water in that portion of the valley following the construction of the left-bank canal systems in Early Moche times. On the whole, maritime sites in the valleys are more numerous during the Early Intermediate Period, but we take their relative obscurity in earlier times (including the Late Initial Period and Early Horizon) to be due at least in part to the absence of monumental maritime sites in the valley and geomorphological change along the shoreline, particularly the formation of sand dunes.

In accordance with sixteenth century descriptions of the native occupation of the region before *reducción*, Late Intermediate Period and Late Horizon settlements in the valley appear dispersed. Sites themselves are relatively small—a median size around 1 ha in the lowest reaches of the valley—away from the primary administrative center of Cerro Corbacho

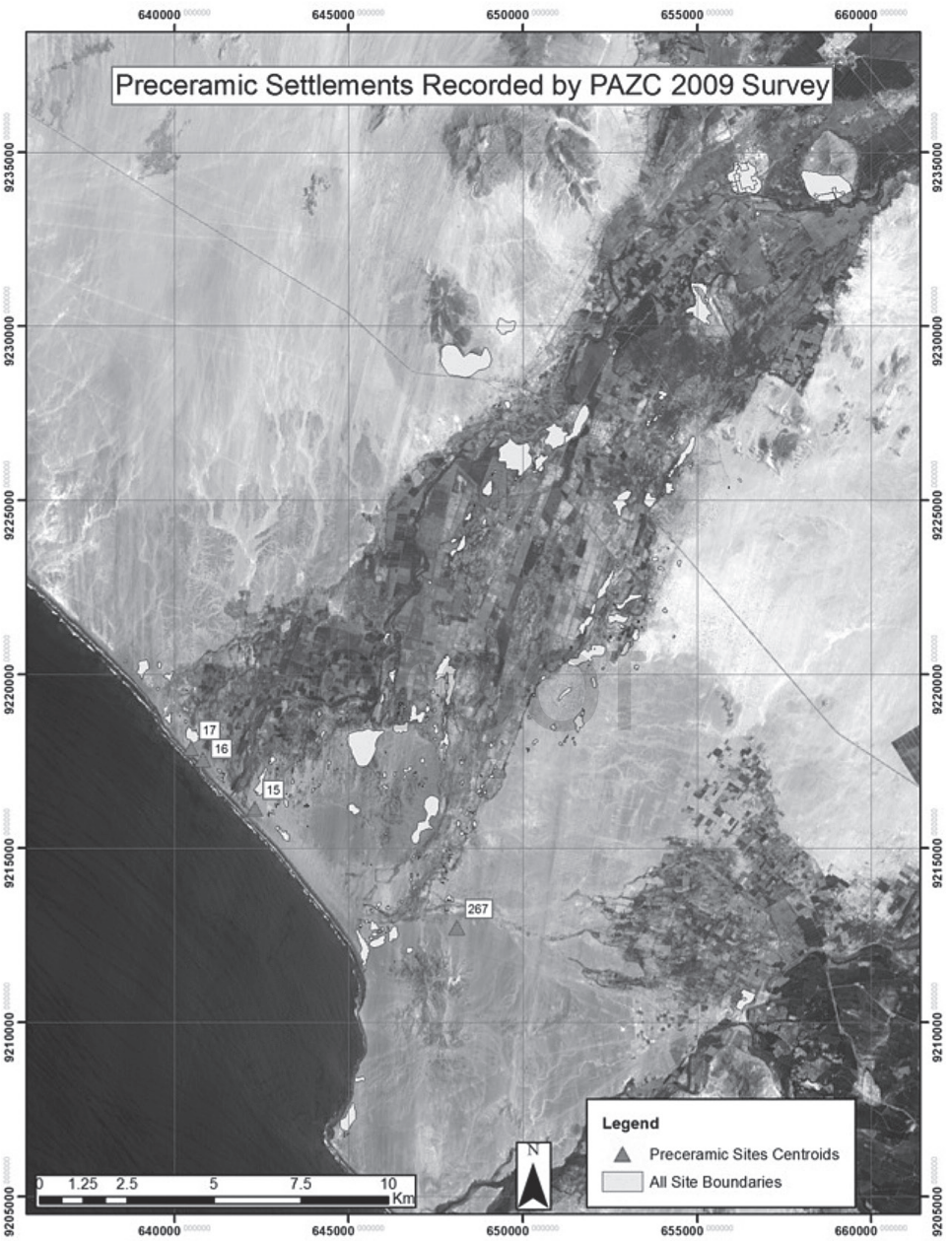


Figure 14.2. Preceramic Period settlements (provided by the authors).

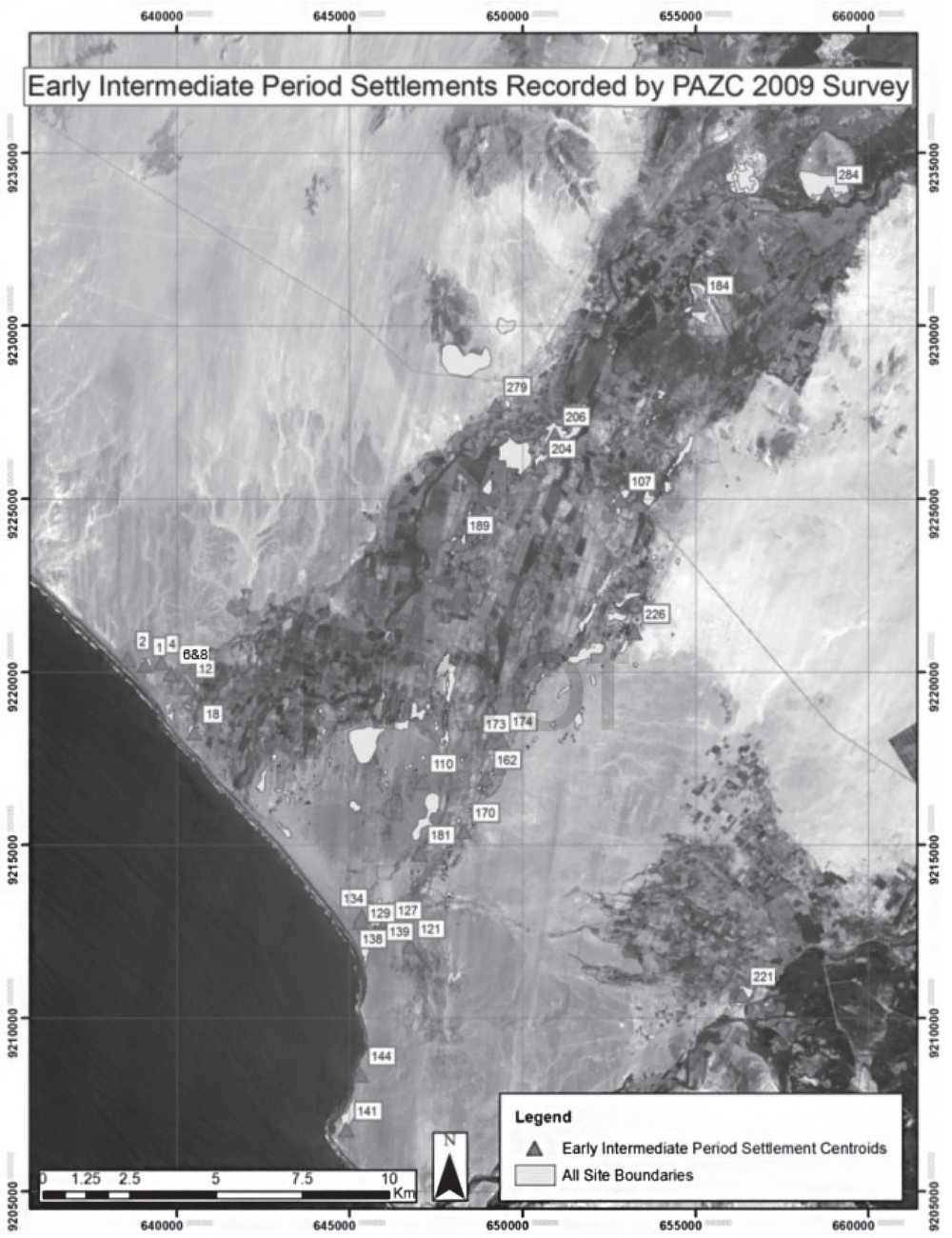


Figure 14.3. Early Intermediate Period settlements (provided by the authors).

(Figure 14.4). Within the floodplain and along its margins, sites align with canal systems, which were expanded beyond their Early Intermediate Period boundaries on both banks of the valley during Middle and Late Sicán/Lambayeque times (circa 950 to 1330 CE). Continuities in domestic ceramic assemblages between Middle Sicán and Inka times make smaller sites with limited numbers of fineware on their surfaces difficult to date to precise subperiods, but the disperse pattern of agricultural settlement continues. New sites appear along the valley's left-bank canal systems, and new administrative centers are erected atop or nearby previous outposts.

Within the settlement data, there do not appear to be significant lines of cleavage between littoral and inland settlements in late pre-Hispanic times—that is, "empty spaces" between settlement clusters that scholars working in other regions have interpreted as indices of territorial boundaries (Sanders et al. 1979; Tschauner 2001: 297–305; Willey 1953: 375–388). This pattern suggests that sociopolitical and ethnic distinctions between fishing and agricultural populations, however defined, were not articulated through marked territorial divisions—a pattern that accords with Ramírez's (1985) description of authority among Early Colonial *cacicazgos* as being based on dense networks of obligation rather than physical boundaries.[2]

The survey data also indicate that, during the course of the sixteenth century, settlement patterns in the lower Zaña and Chamán valleys underwent drastic transformation. While identifying mid-sixteenth century occupations is challenging due to the continuity of domestic assemblages between late pre-Hispanic and Early Colonial times, the construction of *reducciones, hacienda* infrastructure, and the *villa* of Zaña makes late sixteenth century patterns more salient. Here, the data demonstrate both a drastic decrease in the total area and number of sites occupied within the valley and a marked increase in median settlement size. When we add a 50 percent random sample of generic late-period sites to the Chimú-Inka settlement sample and compare it to the Early Colonial Period sample, the decrease in total site area is 83 percent (315.74 ha vs. 53.51 ha), and it is 91.4 percent in site numbers (Figure 14.4). Within the same time frame, median settlement size increases from 1.1 ha to just over 6 ha. We argue that, while the decrease in settled area reflects population loss, the increase in site size reflects settlement nucleation due to *reducción*, and the relative similarity of size among *reducciones* (8.95 ha, 10.14 ha, and 18 ha) indexes the administration's attempts to resettle indigenous populations into sites of similar dimensions (Matienzo 1967; Toledo 1986).

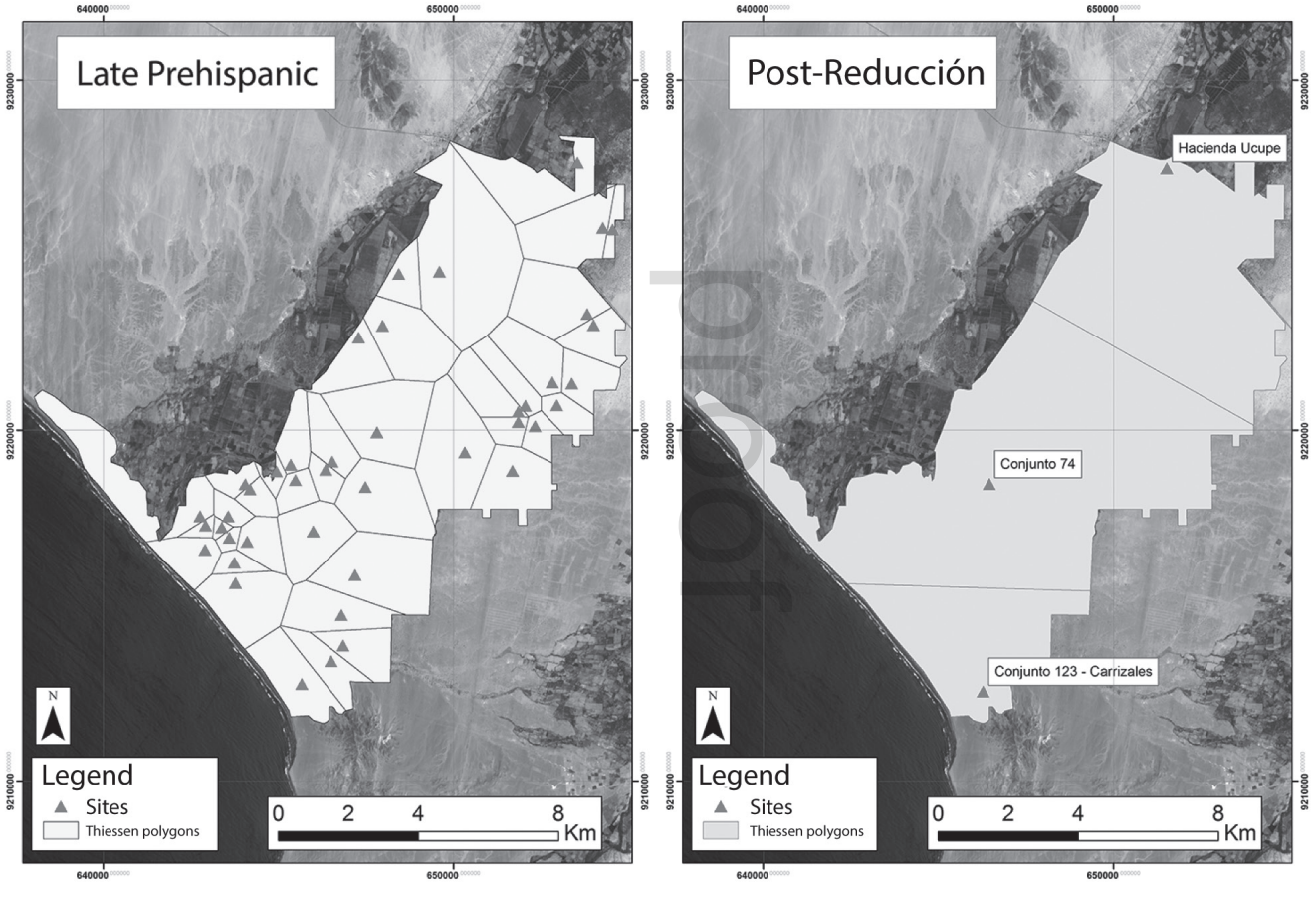


Figure 14.4. Late Intermediate and Post-Reducción settlements (provided by the authors).

Site-Level Investigations: Carrizales

Following a regional survey, we selected one settlement for further excavation—Carrizales, an archaeological landscape covering nearly 1 sq km alongside the Pacific Ocean, at the mouth of the seasonal Río Carrizal. Within this landscape, the survey recorded a series of domestic sites and cemeteries dating from Formative through Early Colonial times (Figure 14.5). With its continuous history of occupation and horizontal stratigraphy, Carrizales presents the archaeologist with a unique opportunity to examine long-term transformations in maritime domestic life.

In 2012, we initiated horizontal excavations at two locales within the Carrizales landscape—Conjunto 123, a *reducción* whose remains indicate that it was abandoned before the end of the sixteenth century; and Conjunto 125, an adjacent late pre-Hispanic domestic site. Pedestrian and geophysical survey at Conjunto 123 identified several features characteristic of *reducción* planning—the remains of a humble chapel, a central area of low magnetic activity and surface ceramic density (likely a plaza), and series of rectilinear house foundations indexed by linear patterns of differential moisture on the ground surface (VanValkenburgh et al. 2015). Test excavations confirmed that the site's remains date exclusively to the late sixteenth century and that linear features visible on the surface correspond to shallow trenches dug at the base of *quincha* (wattle and daub) walls.

Nearby, survey Conjuntos 125, a concentration of Late Sicán Period ceramic materials, is located atop an elevated terrace 700 m to the west of Conjunto 123. Excavations in these two locales were designed to provide a pre-*reducción* point of comparison for contextualizing the organization of domestic space and the character of foodways at Carrizales. In 2012 and 2014, the Proyecto Arqueológico Zaña Colonial PAZC opened up eight excavation units in Conjunto 123—three in middens (Units 123-002, 123-006, and 123-009), three in the church precinct (123-001, 123-003, and 123-011), and two broad horizontal excavations of houses (123-005 and 123-007) (Figure 14.6). At Conjunto 125, excavations focused on a single, 350 sq m excavation trench in an area that includes both domestic structures and middens. Finally, we conducted one test excavation in a shell midden adjacent to the primary domestic area of Conjunto 125 (Unit 131-001). The results of further excavations and analysis conducted in the 2015 and 2016 field seasons are beyond the scope of this essay and are discussed in VanValkenburgh (2017) and Kennedy et al. (forthcoming).

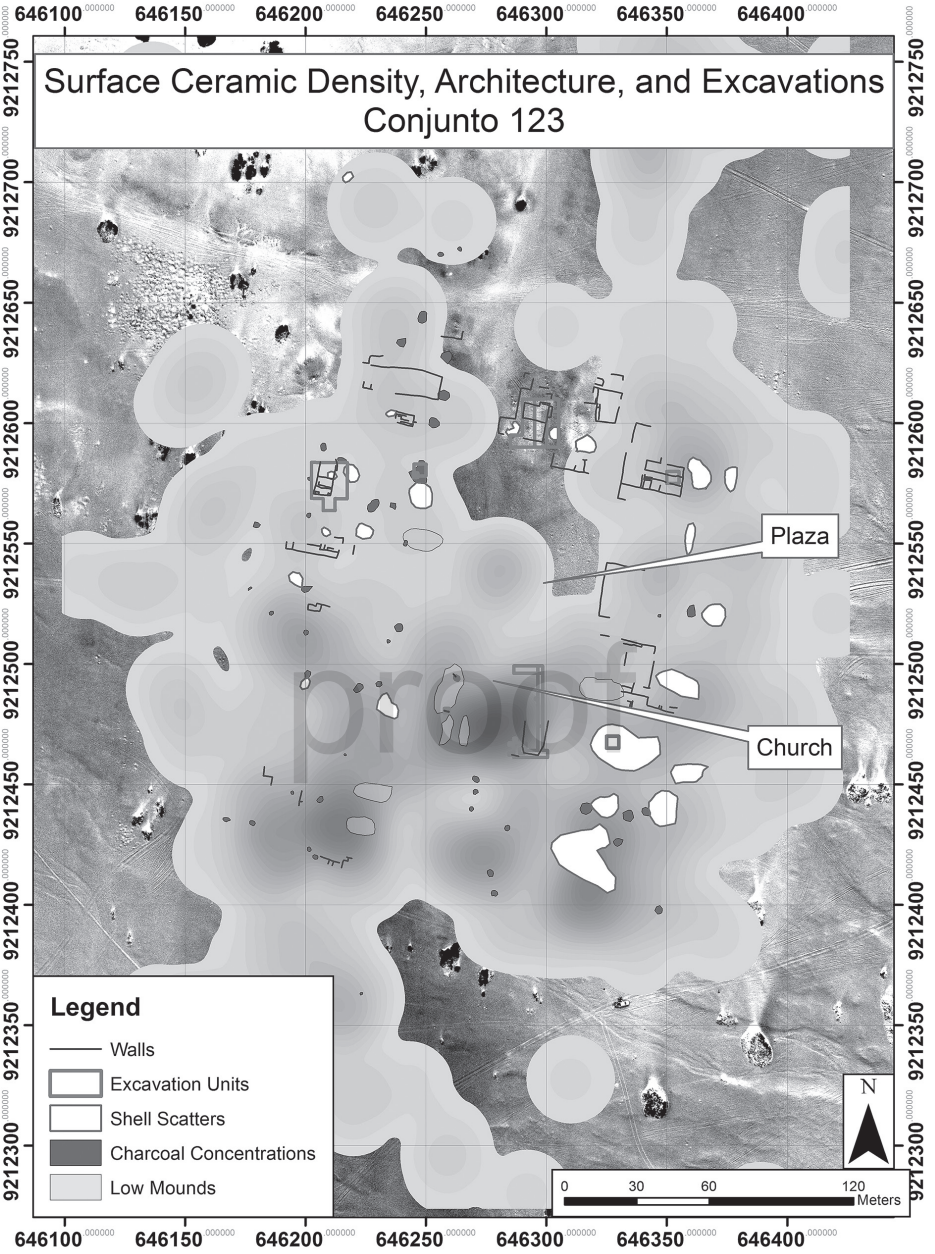


Figure 14.5. Surface ceramic, density, architecture, and excavations, Conjunto 123 (provided by the authors).

Figure 14.6. Orthophoto of base of unit 123-007, assembled from pole aerial photographs (provided by the authors).

In both of these sets of excavations, sampling strategies were designed to recover substantial amounts of faunal and botanical material. Due to their relatively shallow stratigraphy (30–150 cm below surface), the complexity of overlapping domestic features, and our desire to record spatial differentiation in household activities, we employed a single-context recording system, sampling deposits, levels, cuts, and structures with a high degree of spatial precision (Harris 1979). During excavation, team members field-screened all excavated soils and sediments using 1/16-inch sieves and collected 5 L bulk samples from all nonsuperficial contexts. During the 2014 field season, we increased bulk sample size to 20 L for zooarchaeologically

Table 14.1. Calibrated radiocarbon dates from Conjunto 125

Sample ID	Locus	Material	Uncalibrated Age with 1-σ range	Calibrated Age with 2-σ range	Calendar Dates with 2-σ range
PAZC123-32-1	123-0032	Maiz	830 ± 30 BP	790–690 BP	1160–1260 CE
PAZC125-32-2	123-0032	Algarrobo	800 ± 30 BP	760–680 BP	1190–1270 CE
PAZC125-59-l	123-0059	Maize	760 ± 30 BP	730–670 BP	1220–1280 CE
PAZC125-59-2	123-0059	Algarrobo	850 ± 30 BP	800–690 BP	1160–1260 CE

Compiled by the authors.

rich contexts, in order to maximize our recovery of material for zooarchaeological analysis. We processed each bulk sample in the field lab using 4.0 mm, 2.0 mm, 1.0 mm, and 0.5 mm sieves. Select samples exported to the United States for botanical analysis were further processed using bucket flotation (0.50 mm mesh) and resifted through standard USDA geological sieves.

At Conjunto 123, horizontal excavations in the town sector revealed what we term "architecture in negative"—a series of superimposed *quincha* foundation trenches, which correspond to at least two separate building episodes; pits dug to accommodate storage vessels, of varying depths; and three large pit hearths within one structure. By comparison to the adjacent Late Sicán occupation at Conjunto 125, refuse deposits are much more disperse at Carrizales—more than two dozen individual concentrations of charcoal and food trash were scattered in the margins of domestic structures.

Excavations at Conjunto 125 revealed a similar series of architectural features, which correspond to at least two separate building episodes. Two hearths and a series of storage pits outline the remains of agglutinated household structures, with entrances in their northeast sectors and thick beams reinforcing their southern walls against offshore winds. Accumulations of trash, where visible on the surface, are concentrated in a large, dense area to the north of the exposed housing structures. Four radiocarbon dates (Beta 366921 to 366924) obtained from maize kernels and wood charcoal from the site date to between 1160 and 1280 Cal AD, including 2 σ error ranges, place the occupation squarely in Late Sicán times (Table 14.1).

Zooarchaeological Analysis at Carrizales

Following excavation, materials analysis has concentrated on the study of zooarchaeological and paleobotanical remains. Analysis of vertebrate specimens, carried out by Sarah Kennedy, has recorded taxa, skeletal elements, portions, side, degree of fusion, and taphonomic markers and calculated MNI, NISP, weight, and age profiles. Paleoethnobotanical analysis, carried out by Gabriel Hassler, has examined samples in a dissecting microscope with 6.7–40x magnification and identified them according to taxa. Due to relatively small sample sizes and the goals of this article (to present major contrasts between late pre-Hispanic and Early Colonial foodways), our analysis concentrates on inter- rather than intrasite comparisons.

Cross-site comparisons of vertebrate remains demonstrate different trajectories for marine and terrestrial fauna. At Conjunto 125, the sample of vertebrate remains we have studied reflects a domestic economy based largely on marine fishing, supplemented with a small number of wild and domestic mammals. Based on excavations in 2012 and 2014, faunal analysis identified 19 species of fishes, rays, and sharks at Conjunto 125, including several varieties of drums and croakers, mackerel, anchovies, sardines, sea catfish, eagle rays, hound shark, blue shark, needle fish, and weakfish, with a total MNI of 214 (Table 14.2). In comparison, the Colonial sample from Conjunto 123 only included 10 species of fish, sharks, and rays, including 8 also found in the pre-Hispanic assemblage. To date, slight differences in the distribution of marine habitats are also discernable. Among the Early Colonial remains, there are fewer far-shore, oceanic pelagic, and sandy bottom species than in the Late Sicán sample and a substantial increase in fish from the neritic pelagic zone (Figure 14.7). Overall, the analysis also demonstrates a drop in the presence of bony and cartilaginous fish species (from 19 to 10) and diversity (from Shannon-Wiener index [H'] values of 2.037 to 1.877, and Inverse Simpson's index [1/D] values of 2.478 to 2.628) at Conjunto 123, as compared to Conjunto 125. We interpret these results as evidence for increased emphasis on nearshore fishing during the Colonial Period at Carrizales.

In addition, the Colonial population of Conjunto 123 seems to have consumed a wider range of terrestrial animals than the Late Sicán residents of Conjunto 125 (Figure 14.8). The sample at Conjunto 125 includes a small percentage of Andean domesticates, such as camelids and guinea pigs, as well as fox, rodent, snake/lizard, and bird remains—specifically, shearwater, cormorant, dove, and booby. In contrast, the sample from Conjunto 123

Table 14.2. Fish species recovered in Conjunto 125 and Carrizales sites

Species Name	Common Name	Conunto 125	Carrizales	Habitat
Trachurus murphyi	Jack mackerel	X		Neritic (shallow, between low tide and continental shelf) Pelagic Zone
Scomber japonicus peruanus	Pacific chub mackerel	X		Neritic (shallow, between low tide and continental shelf) Pelagic Zone
Cynoscion analis	Peruvian weakfish	X		Sandy bottoms along the coast
Sarda chilensis	Pacific bonito	X		Neritic (shallow, between low tide and continental shelf) Pelagic Zone
Sciaena deliciosa	Lorna drum	X		Sandy bottoms, near rocky coastal areas
Stellifer minor	Minor star drum	X		Sandy bottoms along the coast
Prionace glauca	Blue shark	X		Oceanic Pelagic Zone
Paralonchurus peruanus	Peruvian banded croaker	X	X	Sandy bottoms along the coast
Cilus gilberti	Corvina drum	X	X	Sandy bottoms, near rocky coastal areas
Engraulidae	Anchovy	X	X	Neritic (shallow, between low tide and continental shelf) Pelagic Zone
Clupeidae, *Sardinops sagax*	Sardine, herring	X	X	Neritic (shallow, between low tide and continental shelf) Pelagic Zone
Galeichthys peruvianus	Sea catfish	X	X	Sandy bottom areas, coastal muddy areas
Carcharhinus sp.	Shark, generaI	X	X	Oceanic Pelagic Zone
Myliobatidae	Eagle ray	X	X	Coastal benthopelagic zone (near the bottom, just above the sea floor, in areas close to the coast)
Mugil cephalus	Mullet		X	Coastal benthopelagic zone (near the bottom, just above the sea floor, in areas close to the coast)

Compiled by the authors.

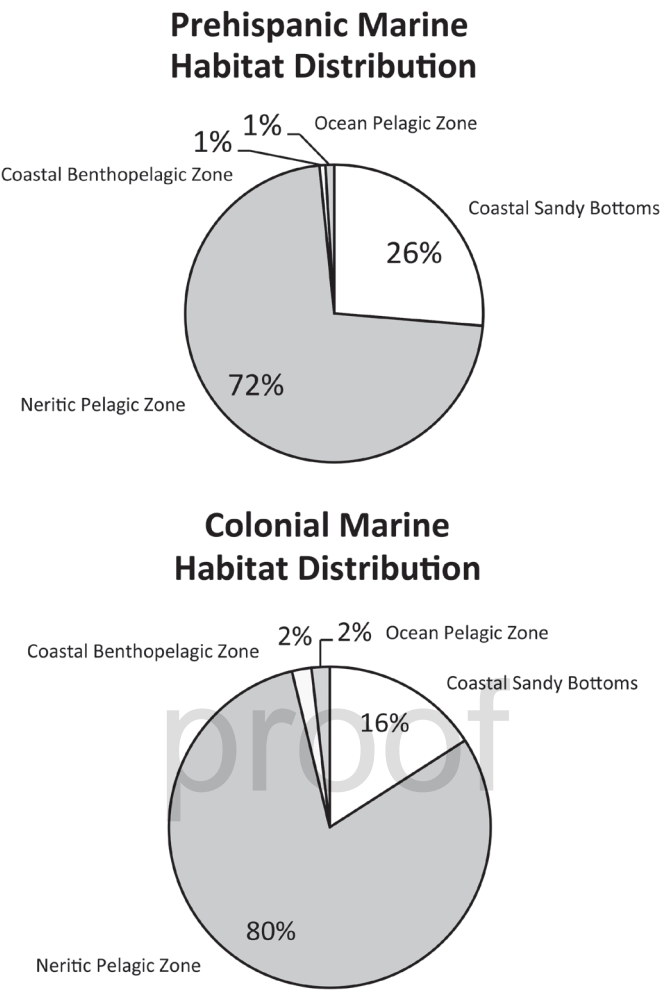


Figure 14.7. Comparison of fish consumption between Late Pre-Hispanic and Colonial sites (provided by the authors).

contains very few remains of Andean domestic animals (MNI=2; NISP=5), but a large variety of Eurasian domesticates—chicken, duck, goose, pig, sheep/goat, cattle, and horse. Bird bones also appear in much greater volume at Carrizales, represented by both wild (pelican, cormorant, booby, penguin, ibis, and dove) and domestic species (chicken, duck, goose). These results suggest a greater emphasis on bird hunting during Colonial times (an activity that was likely carried out with rocks and slings), as well as increased emphasis on bird husbandry.

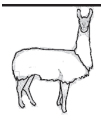
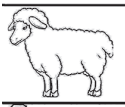
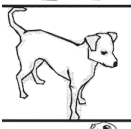
Image	Species Name	Common Name	Pre-Hispanic	Colonial
	*Cavia porcellus*	Domestic guinea pig	X	
	Camelidae	Camelid	X	
	Tayassuidae	Peccary	X	
	Procellariiformes	Shearwater	X	
	Lycalopex sp.	Fox	X	X
	Phalacrocorax bougainvillii	Cormorant	X	X
	Muridae	Rodents	X	X
	Squamata	Snake/lizard	X	X
	Sula sp.	Booby	X	X
	Ciconiiformes	Ibis		X
	*Gallus gallus*	Chicken		X
	*Anser anser*	Domestic goose		X
	*Sus scrofa*	Pig		X
	Caprinae	Sheep/goats		X
	*Canus lupus familiaris*	Dog		X
	Pinnipedae	Sea lion/seals		X
	Cetacea	Whale		X

Figure 14.8. Mammal, bird, and reptile presence and absence at Carrizales site (provided by the authors).

The presence of small amounts (MNI=3; NISP=36) of marine mammal remains (sea lion/seal, whale) in the Colonial sample suggests shoreline scavenging during Colonial times. Indeed, historical records refer to whale scavenging among north coast communities in Colonial times, which targeted carcasses rich in oil and blubber (Flores Galindo 1981: 159–165; Santillán et al. 2004). Such activities would have supplemented fishing, shellfish collecting, and terrestrial food production without requiring detailed knowledge of new technologies.

Overall, terrestrial species presence (26 vs. 13) and diversity (Shannon-Wiener index [H'] values of 2.929 vs. 2.386; Inverse Simpson's index [1/D] values of 8.148 and 7.219) is higher in the Colonial sample, suggesting a wider range of terrestrial subsistence activities among the population of Carrizales and a remarkable openness to introduced animal species. Notably, many of the introduced domesticates are relatively small bodied, desert-adapted animals that would have been much less costly to raise in the arid Andean coastal region than domesticates first developed in the wetter Andean highlands (deFrance 2003)—a factor that may have made them attractive substitutes for earlier livestock.

Calculation of total lengths of fish specimens, based on the analysis of otoliths (*Sagittae*)[3] recovered from Conjuntos 125 and 123, helps to outline the nature of fishing practices during Late Sicán times. At Conjunto 125, total lengths calculated from the otoliths of 119 Peruvian banded croakers (*Paralonchurus peruanus*) possess a mean of 375.7 mm, with a minimum of 103 .36mm and a maximum of 525.29 mm. The size frequency for Conjunto 125's total length estimates is represented in Figure 14.9. Here, the wide range of total lengths suggests that the population is the product of net fishing, which led fishermen to collect schools of fish of distinct ages (Béarez 2000). The bimodal distribution of total lengths may point to seasonal exploitation of the Peruvian banded croaker, and/or differences in net sizes and capture methods.[3]

In comparison, the sample from Conjunto 123—consisting of only five *Paralonchurus peruanus* otoliths—has a mean calculated total length of 407.82 mm, with minimal and maximal lengths of 242.3 mm and 456.41 mm. None of the estimated lengths of *Paralonchurus peruanus* from Conjunto 123 fits into the first mode of distribution in the Conjunto 125 sample, suggesting that Colonial fishermen may have pursued distinct fishing strategies. Still, the Conjunto 123 otolith sample is exceedingly small, and a t-test of the two samples shows that the difference between their mean total lengths is not statistically significant (t=0.5). Further samples are needed.

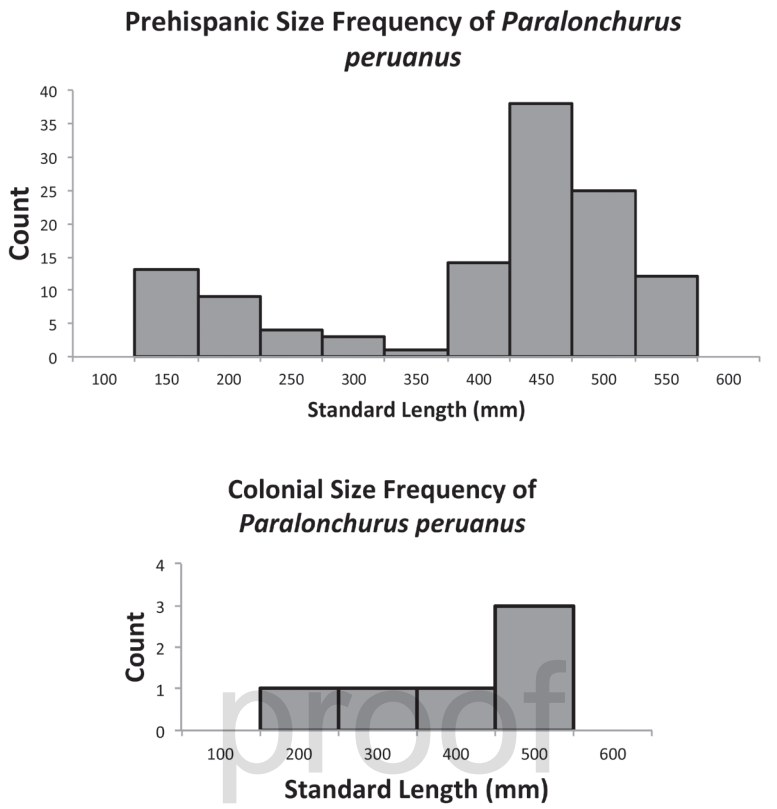


Figure 14.9. Pre-Hispanic size frequency of *Paralonchorus peruanus* during pre-Hispanic and Colonial times (provided by the authors).

Discussion and Conclusion

Together, food remains from Conjunto 123 demonstrate several marked differences in comparison to those from Conjunto 125, which we interpret as reflections of behavioral responses to the pressures of Spanish tributary requirements, resettlement, and demographic decline. In comparison to Conjunto 125, remains from Conjunto 123 manifest a drop in marine species diversity, and changes in habitat distribution suggest that Colonial populations may have been spending greater time scavenging the shoreline for marine mammals and less time fishing in deep waters—results previously discussed in Kennedy and VanValkenburgh (2016).

In contrast, the increased diversity and density of terrestrial mammal, bird, and botanical remains at Conjunto 123 outline greater labor

investment in productive activities that would have generated the wide variety of tribute demanded by the *encomendero* of Chérrepe. The presence of pigs, caprids, and a greater volume and variety of bird remains in the sample, as well as greater numbers of cotton and *algarrobo* seeds (all specifically listed in the 1564 Chérrepe tribute list), may index the increased extraction of these resources in order to meet tributary requirements. Cutmarks on caprid and pig bones recovered at Carrizales show that these products were also consumed at the site, but the complete absence of wheat suggests that not all products demanded for tribute were part of indigenous foodways. Wheat may also simply have been produced by a distinct residential unit within the *repartimiento* of Chérrepe—or demographic change between 1564 and 1572 may have made it untenable for the indigenous people of Chérrepe to produce wheat, which did not appear in any of the bulk samples analyzed by Hassler. Indeed, the mere existence of our copy of their 1564 tributary list is a product of the fact that the Cherrepanos were struggling to render the tribute to which their *encomendero*, Francisco Perez de Lezcano, claimed he was entitled. It survives as a transcription of the original, folded into a legal claim by Lezcano's widow to tribute she claimed he was still owed.

This demographic decline is found in other lines of evidence. As we outline above, the settlement survey indicates an 83 percent decline in site area within the valley between the Late Intermediate Period and the late sixteenth century—a trend complemented by Colonial census data, which suggest that population loss in the *repartimiento* of Chérrepe reached 90 percent by the mid seventeenth century (Ramírez-Horton 1978). Moreover, analysis of human remains recovered from the chapel at Carrizales (MNI=42) suggests that the local population suffered a great deal of nutritional and labor stress. In his examination of the collection, Dr. Haagen Klaus recovered numerous signs of poor health: teeth with high rates of linear enamel hypoplasias (evidence of acute childhood stress); long bones with severe porotic hyperostosis (evidence of chronic childhood anemia); periostisis in tibiae (suggesting adult infections); and degenerative joint disease (indicating a very active and demanding lifestyle for at least some individuals among the population) (Klaus 2010, personal communication).

We interpret shifts in economic emphases at Carrizales as vital responses to the challenges posed to native lifeways by demographic decline, resettlement, and increasing tributary requirements. As populations were decimated by introduced diseases and hammered with tributary requirements that they were continually unable to meet, the residents of Carrizales

adjusted their economic activities to put food on the table in time-saving ways. Seen in this light, the legal testaments on which Rostworowski's maritime specialization model rest served a similar function. They are not neutral transcripts of economic life, but interested statements by leaders who were struggling to insulate their communities from a tidal onslaught of death and destruction, while also seeking to secure their own rights to social privileges. By claiming that they were exclusively fishermen, coastal elites sought to reduce the burden of producing a wide variety of terrestrial products for tribute, while also asserting their independence from inland caciques and securing their rule over coastal *parcialidades*. Examinations of social and economic dynamics in late pre-Hispanic and Early Colonial maritime communities should therefore be cautious in the application of the maritime specialization model and seek to understand diversity in coastal lifeways as products of political strategy and tactics.

Acknowledgments

We would like to thank Gabriel Prieto and Daniel Sandweiss for the invitation to contribute to this volume, as well as the following individuals and institutions: the National Endowment for the Humanities for a Collaborative Research Grant (Grant RZ-51748-14); the National Geographic Foundation for a Committee for Research and Exploration grant (Grant 9334-13); the Wenner Gren Foundation for a post-PhD Research Grant; Natalia Guzmán (Ministerio de Cultura, Lima); Arturo Rivera (PUCP); Dr. Philippe Béarez (MNHN); Dr. Susan deFrance (University of Florida); Dr. David Steadman (University of Florida); Dr. Victor Pacheco; Dr. Rodolfo Salas-Gismondi; Letty Salinas and Ali Altamirano (Museo de Historia Natural, Lima); Dr. Alfredo Altamirano Enciso (Universidad Nacional Mayor de San Marcos/ Universidad Nacional Federico Villarreal); Miguel Romero (IMARPE); Dr. Ruth Shady and Luis Miranda (Proyecto Arqueológico Caral); Isabel Salvatierra; Carlos Osores; Karen Durand; Miguel Ccoa; Noah Corcoran-Tad; and the many student volunteers who assisted in data collection and analysis.

Notes

1. Here, we use the term "Early Colonial" to refer to a roughly bounded historical period, dating from the first years after the Spanish invasion of Peru, in 1532 CE, through the first decades of the seventeenth century.

2. Unfortunately, no similar record exists for littoral settlements, but the greater variability of freshwater sources and maritime resources along the coast (as compared to the relative continuity of agricultural fields and canals in valley-bottom areas) likely led to greater nucleation in littoral zones.

3. We estimated the total length (TL) of fish specimens listed here using measurements collected by Dr. Philippe Béarez from eight Paralonchurus peruanus comparative specimens from northern Peru, ranging from 321 mm to 510 mm (P. Béareaz, personal communication). We used these measurements to determine constants for the allometric equation y = a*x^b, representing the relationship between otolith length and total body length in fish (Le Cren 1951; Reitz and Cordier 1983). Here, the y-intercept (a) is a constant and the proportional change in length is indicated by the slope (b) of the line (Reitz et al. 1987). The dependent variable (y) represents the total length (mm), and the independent variable (x) represents the lengths of the otoliths (mm) from our archaeological sample. Paralonchurus peruanus otolith lengths from both Conjunto 125 and Carrizales were then entered into the equation to estimate total lengths for the assemblage.

References Cited

ADL Cor 280/3583

Don Juan Aguaguaman Cacique Principal del Repartimiento de Xequetepeque contra Joan Poemape, Cacique del repartimiento de Pacasmayo sobre una petición, 1568. Archivo Departamental de Lambayeque, Sección Corregimiento 280/3583. Trujillo.

AGI Patronato 97A R.4 15–17v

Información de los méritos y servicios de Miguel Pérez de Villafranca y Francisco Pérez de Lezcano, conquistadores y pobladores que fueron de Perú con don Francisco Pizarro, Archivo General de Indias, 1550, Patronato Real 97A R.4, 15-17v. Sevilla

AGI Justicia 461 1578v

Residencia tomada al doctor Gregorio Gonzalez de Cuenca, oidor de la Audiencia de Lima, y a sus oficiales, del tiempo que fue visitador de la provincia de Trujillo, por el licenciado Pedro Sanchez de Paredes, tambien oidor en la misma audiencia, 1573, Archivo General de Indias (en adelante AGI), Justicia 459, f. 3062v. Sevilla.

Aguirre, Carlos

2005 Breve historia de la esclavitud en el Perú. Fondo Editorial del Congreso, Lima.

Angulo, Domingo

1920 Fundación y Población de La Villa de Zaña. *Revista del Archivo Nacional del Perú* 2: 280–299.

Béarez, Philippe

2000 Archaic Fishing at Quebrada de Los Burros, Southern Coast of Peru, Reconstruction of Fish Size Using Otoliths. *Archaeofauna* 9: 29–34.

Bowser, Frederick P.

1974 *The African Slave in Colonial Peru, 1524–1650*. Stanford University Press, Stanford, CA.

Cieza de León, Pedro de

1986 Crónica del Perú. Primera Parte. 2nd edición. Colección Clásicos Peruanos. Pon-

tificia Universidad Católica del Perú, Fondo Editorial y Academia Nacional de Historia, Lima.

Cock, Guillermo

1986 *From the Powerful to the Powerless: The Jequetepeque Valley Lords in the 16th Century*. M.A. thesis, Department of Anthropology, University of California, Los Angeles.

Cook, Noble David

1981 *Demographic Collapse, Indian Peru, 1520–1620*. Cambridge Latin American Studies 41. Cambridge University Press, Cambridge, UK.

Le Cren, Eric D.

1951 The Length-Weight Relationship and Seasonal Cycle in Gonad Weight and Condition in the Perch (Perca Fluviatilis). *Journal of Animal Ecology* 20(2): 201–219.

Cummins, Thomas B. F.

2002 Toasts with the Inca: Andean Abstraction and Colonial Images on Quero Vessels. *History, Languages, and Cultures of the Spanish and Portuguese Worlds.* University of Michigan Press, Ann Arbor.

Danius, Sara, and Stefan Jonsson

1993 An Interview with Gayatri Chakravorty Spivak. *Boundary 2* 20(2): 24–50.

deFrance, Susan D.

2003 Diet and Provisioning in the High Andes: A Spanish Colonial Settlement on the Outskirts of Potosi, Bolivia. *International Journal of Historical Archaeology* 7(2): 99–125.

Flores Galindo, Alberto

1981 La Pesca y Los Pescadores En La Costa Central (Siglo 18). *Histórica* 5(2): 159–165.

De la Gama, Sebastián

1975 Visita Hecha En El Valle de Jayanca (Trujillo) Por Sebastián de La Gama. Historia Y Cultura (Lima) 8: 215–228.

Harris, Edward C.

1979 Principles of Archaeological Stratigraphy. *Studies in Archaeological Science*. Academic Press, London.

Hayashida, Frances M.

2006 The Pampa de Chaparri: Water, Land, and Politics on the North Coast of Peru. *Latin American Antiquity* 17(3): 243–263.

Huertas Vallejos, Lorenzo

1987 Ecología e Historia: Probanzas de Indios y Españoles Referentes a Las Catastróficas Lluvias de 1578. In Los Corregimientos de Trujillo y Saña. CES Solidaridad, Chiclayo, Perú.

Kennedy, Sarah J., Katherine J. Chiou, and Parker VanValkenburgh

Forthcoming Inside the Reducción: Crafting Colonial Foodways at Carrizales and Mocupe Viejo, Zaña Valley, Peru (1570–1700). *International Journal of Historical Archaeology*.

Kennedy, Sarah J., and Parker VanValkenburgh

2016 Zooarchaeology and Changing Food Practices at Carrizales, Peru Following the Spanish Invasion. *International Journal of Historical Archaeology* 20(1): 73–104.

Kosok, Paul
1965 *Life, Land and Water in Ancient Peru: An Account of the Discovery, Exploration, and Mapping of Ancient Pyramids, Canals, Roads, Towns, Walls, and Fortresses of Coastal Peru with Observations of Various Aspects of Peruvian Life, Both Ancient and Modern*. Long Island University Press, New York.

Lechner, Juan
1989 El Concepto de Policía y Su Presencia En La Obra de Los Primeros Historiadores de Las Indias. *Revista de Indias* 41(165–166): 395–409.

Leone, Mark P.
1984 Interpreting Ideology in Historical Archaeology: Using the Rules of Perspective in the William Paca Garden in Annapolis, Maryland. In *Ideology, Power and Prehistory,* edited by Daniel Miller and Christopher Tilley, pp. 25–35. Cambridge: Cambridge University Press.

Leone, Mark P., Parker B. Potter, Paul A. Shackel, Michael L. Blakey, Richard Bradley, Brian Durrans, Joan M. Gero, G. P. Grigoriev, Ian Hodder, Jose Luis Lanata, Thomas E. Levy, Neil A. Silberman, Robert Paynter, Mario A. Rivera and Alison Wylie
1987 Toward a Critical Archaeology. *Current Anthropology* 28(3): 283–302.

De Lizárraga, Reginaldo
1908 *Descripción y Población de Las Indias*, edited by Carlos Alberto Romero. Imprenta Americana, Lima.

Marcus, Joyce, Jeffrey D. Sommer, and Christopher P. Glew
1999 Fish and Mammals in the Economy of an Ancient Peruvian Kingdom. *Proceedings of the National Academy of Sciences* 96(11): 6564.

Matienzo, Juan de
1967 Gobierno del Perú (1567), edited by Guillermo Lohmann. Ouvrage publie avec le concours du Ministère des Affaires Étrangères, Paris.

McGuire, Randall H.
1992 *A Marxist Archaeology*. Academic Press, New York.

Mumford, Jeremy
2012 *Vertical Empire: The General Resettlement of Indians in the Colonial Andes.* Duke University Press, Durham, NC.

Netherly, Patricia
1977 *Local Level Lords on the North Coast of Peru*. Unpublished PhD dissertation, Department of Anthropology, Cornell University, Ithaca, NY.
1993 The Nature of the Andean State. In *Configurations of Power: Holistic Anthropology in Theory and Practice*, edited by John S. Henderson and Patricia Netherly. Cornell University Press, Ithaca, NY.

Newson, Linda A.
1995 *Life and Death in Early Colonial Ecuador*. University of Oklahoma Press, Norman.

Noack, Karoline
1996 *Die Visitation Des Gregorio González de Cuenca (1566/67) In Der Nordregion Des Vizekonigreiches Peru*, Lang, Bern, Switzerland.
2004 Las Representaciones Del Poder Político En La Sociedad Colonial Del Siglo XVI,

Costa Norte Del Perú. In *Desarrollo Arqueológico, Costa Norte Del Perú*, edited by Valle Álvarez, Luis, pp. 115–124. Ediciones SIAN, Trujillo, Perú.

2007 Relaciones Políticas Y la Negociación de Una "Nueva" Sociedad Colonial En El Valle de Pacasmayo, Costa Norte Del Perú (Siglo XVI). In *Culturas En Movimiento: Contribuciones a La Transformación de Identidades* Étnica *Y Culturas En América*, edited by Wiltrud Dresler, Beyer Fähmel, Bernd Walter, Karoline Noak, and Ursula Thiemer-Sachse, pp. 243–264. Universidad Nacional Autónoma de México, Instituto de Investigaciones Antropológicas, México, DF.

O'Toole, Sarah

2012 *Bound Lives: Africans, Indians, and the Making of Race in Colonial Peru*. University of Pittsburgh Press, Pittsburgh, PA.

Preucel, Robert W.

2008 *Archaeological Semiotics*. Blackwell, Malden, MA.

Preucel, Robert W., and Alexander A. Bauer

2001 Archaeological Pragmatics. *Norwegian Archaeological Review* 34(2): 85–96.

Prieto, Oscar Gabriel

2011 Las Fiestas Anuales Y Quincenales de La Virgen Candelaria Del Socorro de Huanchaco: Expresión Religiosa de Los Pescadores de La Costa Norte Del Perú. *Arqueología y Sociedad* 23: 193–221.

Ramírez, Susan E.

1996 *The World Upside down: Cross-Cultural Contact and Conflict in Sixteenth-Century Peru*. Stanford University Press, Stanford, CA.

2007 It's All in a Day's Work: Occupational Specialization on the Peruvian North Coast, Revisited. In *Craft Production in Complex Societies: Multicraft and Producer Perspectives*, edited by Izumi Shimada, pp. 262–280. Foundations of Archaeological Inquiry. University of Utah Press, Salt Lake City.

Ramírez-Horton, Susan E.

1978 Chérrepe En 1572: Un Análisis de La Visita General Del Virrey Francisco de Toledo. *Historia Y Cultura* 11: 79–121.

1981 La Organización Económica de La Costa Norte: Un Análisis Preliminar Del Periodo Prehispánico Tardío. In *Etnohistoria Y Antropología Andina*, edited by Amalia Castelli, Marcia Koth de Paredes, and Mariana Mould de Pease, pp. 281–297. Jornada Del Museo Nacional de Historia, 2. Museo Nacional de Historia, Lima.

1985 Social Frontiers and the Territorial Base of Curacazgos. In *Andean Ecology and Civilization: An Interdisciplinary Perspective on Andean Ecological Complementarityy*, edited by Izumi Shimada and Craig Morris, pp. 423–442. University Press of Tokyo, Tokyo.

Reitz, Elizabeth J., and Dan Cordier

1983 Use of Allometry in Zooarchaeological Analysis. In *Animals and Archaeology* 2, edited by C. Grigson, and J. Cutton-Brock, pp. 237–253. BAR International Series, 183. Oxford, UK.

Reitz, Elizabeth J., Irvy R. Quitmyer, Stephen Hale, Sylvia J. Scudder, and Elizabeth S. Wing

1987 Application of Allometry to Zooarchaeology. *American Antiquity* 52: 304–317.

Rostworowski de Diez Canseco, María
1970 Mercaderes Del Valle de Chincha En La Época Prehispánica: Un Documento Y Unos Comentarios. *Revista Española de Antropología Americana* 5: 135–184.
1975 Algunos Comentarios Hechos a Las Ordenanzas Del Doctor Cuenca. *Historia Y Cultura (Lima)* 9: 126–154.
1977 Etnía Y Sociedad: Costa Peruana Prehispánica. 1st ed. *Historia Andina 4*. Instituto de Estudios Peruanos, Lima.
Saito, Akira
2012 Las reducciones indígenas: ¿instrumento de etnocidio o espacio de etnogénesis? Paper presented to the Simposium: La política de reducciones y sus impactos sobre la sociedad indígena en los dominios españoles de Sudamérica. 54th International Congress of Americanists, Vienna, June 15–20.
Sanders, William T., Jeffrey R. Parsons, and Robert S. Santley
1979 The Basin of México: Ecological Processes in the Evolution of a Civilization. *Studies in Archaeology*. Academic Press, New York.
Sandweiss, Daniel
1992 The Archaeology of Chincha Fishermen: Specialization and Status in Inka Peru. *Bulletin of Carnegie Museum of Natural History* 29: 161.
Santillán, Luis, Milena Roca, Manuel Apaza, Larissa Rosa de Oliveira, and Karina Onton
2004 New Record of Mother-Calf Pair of Southern Right Whale. *American Journal of Aquatic Mammals* 3(1): 83–84.
Toledo, Francisco de
1986 *Francisco de Toledo: Disposiciones Gubernativas Para El Virreinato Del Perú*, edited by Guillermo Lohmann Villena. Publicaciones de La Escuela de Estudios Hispano-Americanos de La Universidad de Sevilla.
Trouillot, Michel-Rolph
1995 *Silencing the Past: Power and the Production of History*. Beacon Press, Boston, MA.
Tschauner, Hartmut
2001 *Socioeconomic and Political Organization in the Late Prehispanic Lambayeque Sphere, Northern North Coast of Peru*. Department of Anthropology, Harvard University, Cambridge, MA.
VanValkenburgh, Parker
2012 Building Subjects: Landscapes of Forced Resettlement in the Zaña and Chamán Valleys, Peru, 16th–17th Centuries C.E. Unpublished PhD dissertation, Harvard University, Cambridge, MA.
2017 Unsettling Time: Persistence and Memory in Spanish Colonial Peru. *Journal of Archaeological Method and Theory* 24(1): 117–148.
VanValkenburgh, Parker, Chester P. Walker, and Jennie O. Sturm
2015 Gradiometer and Ground-Penetrating Radar Survey of Two Reductio Settlements in the Zaña Valley, Peru. *Archaeological Prospection* 22(2): 117–129.
Wernke, Steven
2013 *Negotiated Settlements: Andean Communities and Landscapes under Inka and Spanish Rule*. University Press of Florida, Gainesville.

Willey, Gordon R.
1953 Prehistoric Settlement Patterns in the Virú Valley, Peru. *Smithsonian Institution Bureau of American Ethnology Bulletin*, 155. U.S. Govt. Printing Office, Washington, DC.

Zuloaga Rada, Marina
2012 *La conquista negociada: guarangas, autoridades locales e imperio en Huaylas, Peru (1532-1610)*, edited by the Instituto de Estudios Peruanos and Instituto Francés de Estudios Andinos, Lima.