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## **Pernil Alto: an agricultural village of the Middle Archaic Period in Southern Peru**

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# 11 Faunal Remains

The faunal remains recovered at Pernil Alto can be subdivided into remains of vertebrates and invertebrates. The vertebrates remains were analyzed by Enrique Angulo and Carmen Rosa Cardoza of Museo de Arqueología de San Marcos (Casona) in Lima, Peru. The invertebrates remains were analyzed by Manuel Goritti Manchego.

## 11.1 Vertebrates remains

Based on the recovered bones (NISP<sup>22</sup>), the minimum number of individuals (MNI) of the vertebrates was re-

constructed and a reconstruction of a diachronic distribution is possible (Table 52).

The majority of the 834 vertebrates remains is from bones and teeth of animals. In two cases the determinations were based on the remains of skin and hair (sk./hr. in the list). Some problems arose in the determination of the vertebrates remains. First, the remains were in general small and not well preserved, leading to the result that a lot of animals were only determinable to a certain degree without good information on their concrete species. Thus, the determinations were led in many cases

Class	Family	Genus/Species	common name	NISP	MNI	Phase					
						0	1	2	3	4	5
amphibia	Leptodactylidae	<i>Batrachophrynus</i> sp.	big frog	1	1						1
	nd		frog?	3	1		1				
aves	bird of prey		bird of prey (eagle?)	64	1		1				
			bird of prey?	Uncount.	1						1
	psittacidae		parrot	77	2				1	1	
	nd		bird	134	14	1	2	3	2	6	
			bird?	4	2				1		1
			small bird	8	2					2	
		probably bird	29	2					1	1	
mammalia	cervidae	<i>Odocoileus virginianus</i>	White-tailed deer	2	1	1					
		<i>Odocoileus virginianus</i> or <i>Hippocamelus antisensis</i>	White-tailed deer or Taruca	25	2	2					
	camelidae		Guanaco?	1	1			1			
			camelid	3	2		1				1
	nd		big mammal	53	4		1			2	1
	canis		dog	79	1				1		
			dog?	25 + sk./hr.	3				1	2	
	caviidae	<i>Cavia</i> sp.	guinea pig	20	8		2	1	1	3	1
		probably <i>Cavia</i> sp.	probably guinea pig	1	1				1		
		nd	cavy	106	20		1		6	13	
	rodentia		mouse	20	3		1		1	1	
			mouse?	12 + sk./hr.	2				1	1	
			rodent	19	8	3	1			4	
			rodent (rat?)	17	3				1	2	
	nd		small mammal	52	2					2	
hominidae	<i>Homo sapiens</i>	human	2	1						1	
piscis	nd		fish	1	1					1	
nd			nd	80	8	1	1	2		2	2
<b>total</b>			<b>26</b>	<b>834</b>	<b>96</b>	<b>8</b>	<b>12</b>	<b>7</b>	<b>16</b>	<b>45</b>	<b>8</b>

Table 52: NISP and MNI of vertebrates in absolute and by Phase

only to the family or class of the animals. 9.6% of the remains (or 8.3% of the MNI) were not determinable at all. Second, in general because of similarities in their osteological remains, it is very difficult to distinguish between guanacos, vicuñas, llamas, and alpacas by faunal remains because they are all camelids (Aldenderfer 1998: 100; Wing 1980).

Regardless, the analysis of the vertebrates gives an important insight into the subsistence economy of Pernil Alto. The simple structure of the faunal remains provides important information. It is necessary to distinguish between animal remains which represent the potential remains of food, and remains of other, not eaten animals.

In the latter group one can count the remains of the birds of prey and parrots. The remains of these were found in large numbers, but indicated only 4 individuals in total, which were found in more or less intact anatomy. The relevance of the birds of prey is unknown, possibly some ritual aspects were involved as well. However, eagles are eaten still today in the highland zone of the working area and are consumed as soups. Thus, some exceptional eating of these animals is also possible. The parrots, on the other hand, do not represent exotic animals, as *loro* parrots live wild today in the *yunga desértica* at altitudes of about 2000 m in the working area. As the vegetation zones were differently distributed during the Middle Archaic occupation of Pernil Alto (see Chapter 4.3), they probably found an adequate habitat close to the site during that time and were thus local. Today—as the author saw and was informed about at Collanco, a small village at about 1750 m on the road between Palpa and the highlands—tamed wild *loros* are sometimes kept as pets. The remains of parrots can thus be interpreted as tamed pets, that were not for consumption. The few remains of humans furthermore do not represent consumption or even cannibalism, but probably represent material from a disturbed burial.

More problematic in terms of distinguishing between consumed and not consumed animals are the remains of dogs. The remains of one determinable immature dog were found in an animal deposition (Feature 4082) indicating a special treatment of the animal. This can be interpreted as representing an animal that was not consumed, but was a pet or working animal. Furthermore, no cut marks or burnt bones were identifiable which makes consumption improbable. The other remains of dogs were, on the one hand, very few (25 small fragments of bones and some skin and hair remains) and, on the other hand, insecure in their determination.

They could represent remains of dogs, but it cannot be excluded that they might represent remains of other animals of comparable size. However, dogs seem to appear on the site in Phases 3 and 4.

Furthermore, the interpretation of rodents that are not caviids is problematic. Small rodents are usually “considered of little or no subsistence significance” (Wing 1980: 150). They probably do not represent consumed animals but rather small rodents which were attracted by the food waste on the site. Their diachronic distribution (Figure 108) can therefore be used as a further indicator for the increasing importance of plant food on the site. It seems to indicate that rodents were more frequent on the site in later phases, when—as shown before—plant production was increasing. The majority of rodents ( $n=8$ ) is thus associated with Phase 4.

The other animal remains of camelids, cervids, caviids, birds, frogs, and fish can be interpreted as representing subsistence remains. Within this group of consumed animals there are animals which seem to have been important and others which were obviously not important for subsistence.

The consumption of fish is only indicated by one single otolith which suggests that fish consumption was not important at Pernil Alto. However, fish bones do not preserve as well as terrestrial animal bone. In comparison to sites where fish consumption was evident, like La Paloma on the Central Peruvian coast within which thousands of fish bones were recovered (Reitz 1988), it is clear that fish at Pernil Alto might have been occasionally consumed on the site but had no significant importance in subsistence. The same is to be said for the remains of frogs. Only two individuals were distinguishable from four remains.

Of some subsistence importance were thus big animals such as camelids and cervids, and small animals such as caviids or guinea pigs and birds. Their remains represent 67.7% of the MNI and 46.28% of the animal remains.<sup>23</sup> This amount shows that hunting was not very important at Pernil Alto.

The remains of three cervids are represented by 27 remains, out of which 18 are remains of antlers and the remaining 9 smaller bone fragments. In one case it was possible to determine the remains as *Odocoileus virginianus*, or white-tailed deer. In the other two cases the distinction between white-tailed deer or *Hippocamelus antisensis*, commonly known as *taruca*, was not clearly possible. However, deer is generally found in the coastal river valleys of Peru (Parsons 1970: 295) and is well

23 The calculation includes remains of undetermined birds, cervidae, camelidae, undetermined big animals, and caviidae.

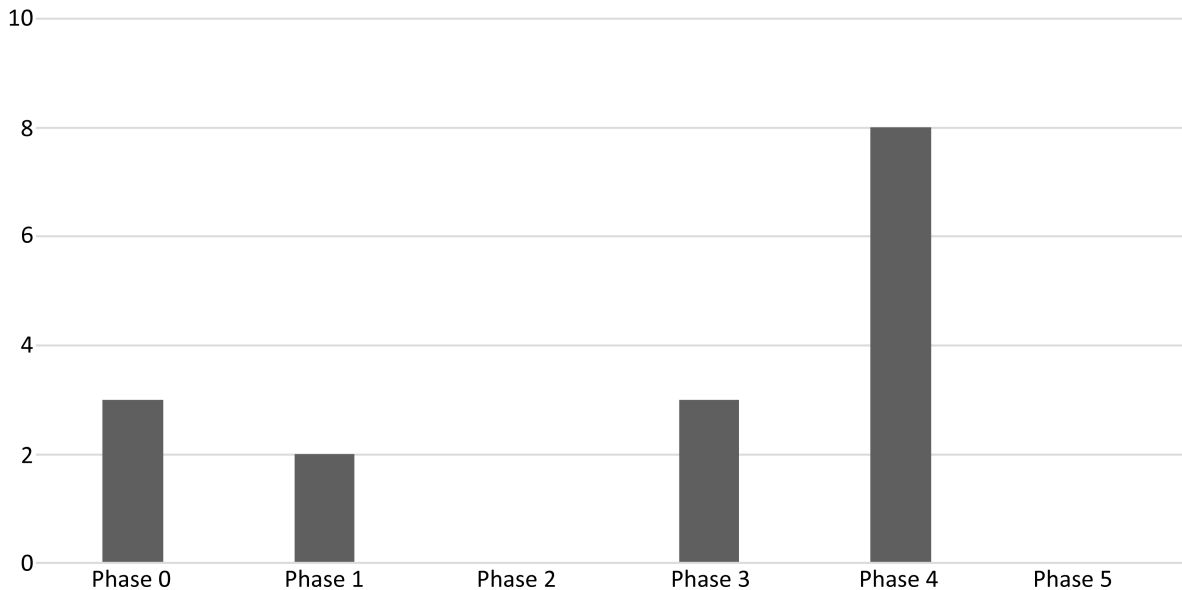


Figure 108: Diachronic distribution of rodent MNI.

known in coastal sites from the Archaic Period of the Central Andes like La Paloma (Reitz 1988) and even the Quebrada de los Burros (Lavallée et al. 1999a, 1999b). Thus, the remains found at Pernil Alto represent local capturing or hunting of these animals in the proximity of the site. Next to the riparian forest, the grass steppe around Pernil Alto can be assumed to have been the area for hunting these animals. However, deer hunting at Pernil Alto is only clearly evident from Phase 0, from which all remains originated. In the later occupation phases, there are remains of four big mammals which were not further determinable. It is possible that deer hunting continued, but it is not clearly represented by the faunal remains.

The very few remains of camelids ( $n = 4$ ) represented 3 animals of this group. Only one individual was determinable as possibly being a guanaco. It was determined as a young individual. The remain was a burnt, right metatarsus. These sparse remains make clear that Pernil Alto was definitively not involved in camelid domestication or herding. The domestication of camelids took place contemporaneously with the Middle Archaic occupation of Pernil Alto in the Central Andean highlands between 6000 and 5500 BP, and camelid herding started at about 5500 BP (Lavallée 1990; Lavallée et al. 1985; Kuznar 1989; Wheeler 2003; Wing 1978). The information on the domestication of llamas and alpacas from wild camelids is based on ratios between deer and camelids, age structures and morphological differences. However, this highland development had obviously not reached Pernil Alto. The camelids were probably hunted when they moved from the highlands towards the coastal lomas (compare Chapter 4). The lookout shed made on

the mountain top directly north of Pernil Alto (compare Figure 16) indicates that it was an ideal position to spot such herds when they were crossing the river valley.

Additional camelid individuals are visible at Pernil Alto in form of artifacts made of bone (see Chapter 9.2). In general it is unclear how those remains found their entrance into the archaeological record on the site. How long were they in use? Were they passed through generations? Did they originate from one single animal (which would be possible) or does each represent another individual? Were they taken from found animal remains or from hunted game? Were they exchanged with other groups specialized in hunting? All these questions problematize the question of whether the artifacts made of bone could be taken as indicators for hunting. These artifacts cannot be taken as such and have been excluded from the analyses of the economy.

The remains of big animals as indicators for game are, in general, very few. They represent only 10 big animals, leaving only 84 remains in total. Even though the faunal remains were recovered *in situ*, the low quantity is evident, especially when compared to the quantities of big animals remains (deer and camelids) that were encountered in Archaic highland sites of comparable size. For example, in the Uchcumachay cave in the Junín area over 12,000 remains of such animals were recovered (Wheeler Pires-Ferreira et al. 1976), in the Telarmachay cave in the same area, thousands of remains were found (Lavallée et al. 1985), and even in Asana, in Southern Peru several thousand—even though very fragmented—remains were found (Aldenderfer 1998). The remains from the Guitarrero Cave were relatively few at 250 (Wing 1980), but still were distinctly greater in number

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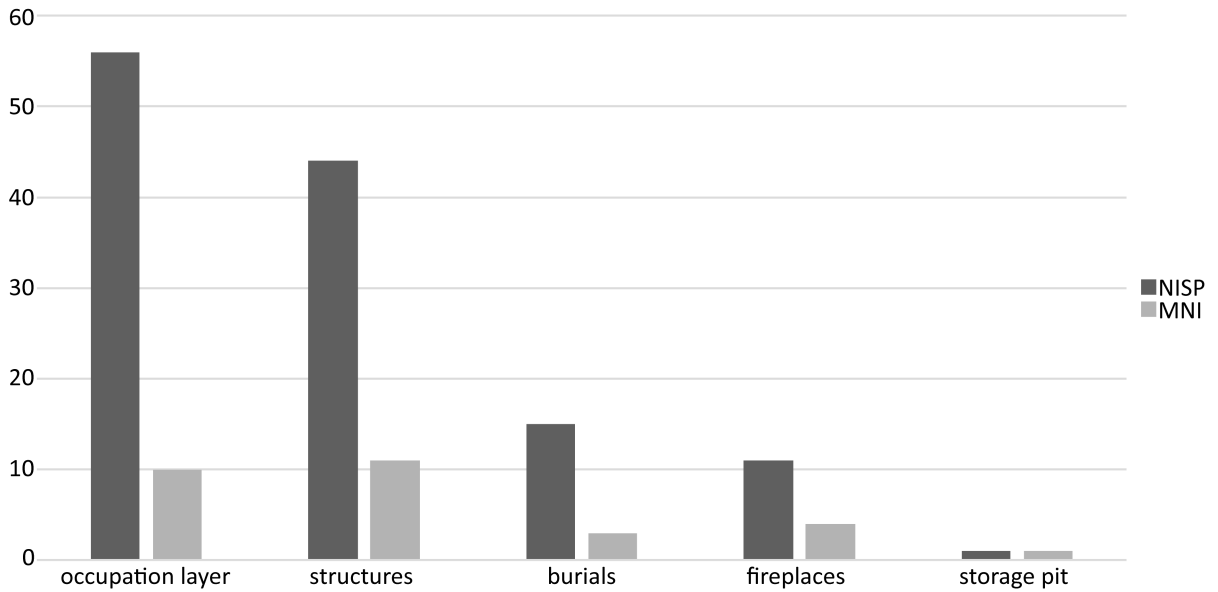


Figure 109: Context correlation of cavy remains.

than those found at Pernil Alto. All the mentioned sites can be characterized as hunting sites and later herding camps. They demonstrate that high quantities of hunted big animals can be expected when hunting or herding was an important practice. Given that the quantity found at Pernil Alto was so low in comparison to other sites, hunting or herding within the economy can be excluded as a primary subsistence activity. This is furthermore supported by the low amounts of artifacts (especially projectile points) on the site.

In contrast to the highland hunting sites, the quantities of big animals at comparable Archaic coastal sites like La Paloma seems to have been low (Reitz 1988). However, even on the coast—where the exploitation of marine resources prevailed—sites like the Quebrada de los Burros on the extreme South coast of Peru brought 452 remains of guanacos and 13 remains of deer from the middle Holocene occupation there (Rodríguez-Loredo 2012), indicating that hunting of big terrestrial animals was sometimes even more important in economies depending on marine resources than it was at Pernil Alto. Overall it can be stated that hunting of big terrestrial animals was conducted by the inhabitants, but that it was altogether of low importance.

In no case was it possible to determine the genus or species of birds which were not parrots or birds of prey. The remains total 175 fragments, representing 20 birds. But the determination includes remains which were identifiable as only probably (MNI=2, n=29) or maybe (MNI=2, n=4) remains, and are thus not very certain. However, it can be assumed that birds were caught and consumed by the inhabitants. The riparian forest is assumed as the catching area, which has a rich avian fau-

na. Even today, some wild birds are caught and consumed in *Prosopis* forests in the north of Peru, where the consumed bird species include doves, tinamous, coqui herons, and ducks (Velásquez Milla 2003: 236). The close-meshed nets recovered from the site (see Chapter 9.5.3) could have been used to catch these animals. This bird-catching required less investment in labor, skills, planning, and organization than the hunting of big animals. It would have been possible to catch birds in the direct surroundings of the site. Furthermore, it could have been necessary to protect the cultivation fields. Thus, this low-investment food gathering as opposed to the high-investment hunting is interpreted as an indicator of a higher concentration on the site rather than longer site-leaving activities. It can also be interpreted as an indicator for increasing field sizes, as larger fields attracted more birds that could be caught. The amount of birds increases during the occupation phases and thus reflects a higher concentration on the site and probably increasing field sizes. This indicator corresponds with the increasing importance of cultivated edible plants (compare Chapter 17.2), and the increase of activities indicating a higher concentration on the site and an increasing importance of plant processing (compare Chapter 14).

Bird catching was common in the Preceramic period of the Central Andes. However, in coastal sites the amount of (principally sea-) birds is relatively low, like in Huarmey PV35-6 (Bonavia et al. 1993), PV35-106 (Bonavia et al. 2001), and La Paloma (Reitz 1988). In the latter case, however, Engel (1980) lists various bird species, without indicating their amount. In some early Preceramic coastal sites like the Quebrada Tacahuay (Keef-

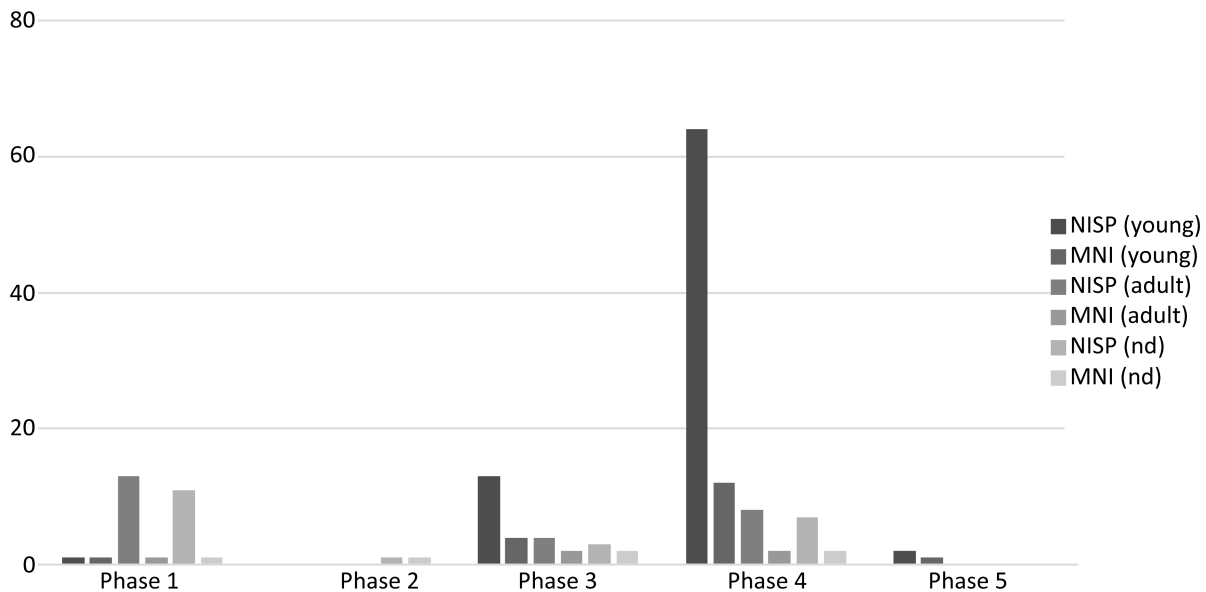


Figure 110: Diachronic development of cavy remains.

er et al. 1998) and the Quebrada de los Burros (Rodríguez-Loredo 2012) the amounts of birds were apparently higher, representing thousands of remains in the latter site. This could indicate that exploitation of the marine resources on the Central Andean coast was initially more varied before a higher concentration or specialization on marine mammals, fish and mollusks occurred in the late Early or Middle Archaic Period. However, birds were not only caught on the coast but also played an important role in hunter-gatherer subsistence economies of the highlands, as indicated by the numerous bird remains found at the Panalauca site (Rick/Moore 1999).

The next important animal food source at Pernil Alto is represented by the remains of cavy. This is an animal subfamily which includes guinea pigs. Only parts of the 127 bone fragments were determinable as originating from *Cavia* sp., or guinea pig. It is unclear if the remains are from domesticated *Cavia porcellus* or wild *Cavia tschudii*. Guinea pigs are known from archaeological contexts in the Andean highlands since about 9000 BP, and domestication might have started as early as about 7000 BP, but they definitively appear domesticated by about 4500 BP in the highlands (Bonavia 1991: 116–117; Sandweiss/Wing 1997; Wing 1978). Wild animals “inhabit a wide variety of habitats ranging from rocky regions to savannas, swamps and the forest fringes” (Festing 1976: 229; cited after Sandweiss/Wing 1997: 47). Guinea pigs were domesticated in the highlands roughly contemporaneous to the Archaic occupation at Pernil Alto, but wild guinea pigs could have inhabited the area around Pernil Alto as well. It is therefore probable that the remains from Pernil Alto were of wild guinea

ea pigs. The domestication of guinea pigs is explained by the attraction of wild animals to human settlements for food waste. The animals were then accepted, tamed, and finally domesticated (Gade 1967: 215). This behavior—comparable to that of other rodents—could explain the cavies recovered from Pernil Alto, and be interpreted as an indicator for a higher plant production which would have led to more plant waste and a higher concentration on the site. The diachronically increasing amount of cavies which is evident on the site (Figure 110) thus indicates an increasing plant productivity and is roughly parallel to the increasing amounts of cultivated plants and activities concerning plant use. The cavies were probably caught on the site or in the direct surroundings, and can be interpreted as a low-investment activity requiring even less effort than for catching of birds. Wild guinea pigs are still caught today using slingshots (Gade 1967: 213), but even simpler techniques such as thrown stones or the dense-meshed nets could have been used at Pernil Alto.

Even though guinea pigs were domesticated elsewhere and the preserved remains from Pernil Alto do not provide enough morphological information about their state of domestication, there are some manifestations on the site that could indicate a breeding of the animals. First, a large amount of the identified remains (34.64%) and of the MNI (37.93%) originated from the interiors of structures (Figure 109). As guinea pigs cannot climb, they are kept today for sleeping and bearing in cubbyholes, so called *cuyeros*, from which they cannot escape (Gade 1967: 220f.). The cavies could have been kept within the semi-subterranean dwellings, from which they would not have been able to escape.

Second, the majority of the remains (62.99 %) and of the MNI (62.07 %) were of young individuals and the amount of young individuals diachronically increases (Figure 110—no remains were recovered from Phase 0). An increase in the amount of young individuals is usually interpreted as an indicator for herding or domestication of camelids (Wheeler 1999). More generally, a deviation from an expected natural age distribution is seen as an indicator for incipient domestication (Uerpmann 2008). The increase of young cavy individuals at Pernil Alto could indicate a keeping of the animals in *cuyeros*. This assumption is furthermore supported by the age distribution of the remains found in the structures. 43 % of all remains from young cavy individuals were found in structures, but only 8 % of the remains of adult individuals. This distribution is in accordance with the interpretation of keeping the animals in the structures, where they reproduced. Thus, less remains of adult individuals were left in the structures than of young ones.

Nevertheless, it should be emphasized that the remains were not determinable in their species and in most cases not even in their genus, but only in their family. Furthermore, the remains were not well preserved enough to determine their state of domestication. In total, 127 remains are too few to yield precise calculations. Only the reconstruction of some trends is possible. Future genetic investigations on the cavy remains can help to answer the question if the animals were kept or domesticated.

Another, simpler assumption is possible to explain the amount of young individuals at Pernil Alto: Younger individuals are most probably far easier to catch than adult ones, even though less attractive because they have less meat. Thus, in conclusion, it has to be assumed that the cavy remains at Pernil Alto are of wild, rather than domesticated, animals.

Cavies play an important role in rituals and medicine of the Andes (Gade 1967; Horkheimer 1960: 42).

The anatomical articulation of guinea pigs was interpreted as an archaeological indicator for rituals as the animals were, given specific injuries, probably killed and sacrificed (Sandweiss/Wing 1997). At Pernil Alto no cavies were found anatomically articulated. Therefore, a ritual use or sacrifices of cavies cannot be assumed for the site. Even the low amount of cavies within burials (11.81 % of remains; 13.79 % of MNI) indicates that the animals were not important in rituals at Pernil Alto.

## 11.2 Invertebrates remains

Another group of possible subsistence remains is represented by invertebrates remains. Those were analyzed by Manuel Goritti. Unfortunately, some problems occurred during the analysis, leading to the result that for many findings no weights or numbers of fragments were reported. Thus, the MNI is used in this evaluation. The artifacts made of shell—beads, bracelets, and necklaces—are excluded in the evaluation in the same manner and for the same reason as was done with the bone artifacts. They indicate contacts to the littoral but do not definitively reflect subsistence.

In total, 86 invertebrates were recovered at Pernil Alto (Table 53). The majority (n = 51; 59.3 %) were invertebrates from the sea, thus with an origin at the littoral. They were composed of six species of bivalves, one limpet species, two sea snail species, and the remains of sea urchins (see Table 53 for details). All found species are from the intertidal zone of the littoral.

A smaller part of the invertebrates remains (n = 35; 40.7 %) were from *Cryphiops caementarius*, a fresh water shrimp (sometimes mistakenly referred to as crayfish) which is distributed in the coastal rivers of Peru and are still caught and consumed today in the working area (compare Chapter 4.1.1).

Species	Class	total MNI	MNI by Phase						
			0	1	2	3	4	5	
	sea								
<i>Argopecten purpuratus</i>	bivalve	3					1	2	
<i>Aulacomya ater</i>	bivalve	1					1		
<i>Choromytilus chorus</i>	bivalve	21		3	3	2	3	8	2
<i>Mesodesma donacium</i>	bivalve	5					2	3	
<i>Mulinia edulis</i>	bivalve	1					1		
<i>Mytilidae Family</i>	bivalve	4					2	2	
not determined bivalve	bivalve	2		1				1	
<i>Protothaca thaca</i>	bivalve	1						1	
<i>Fissurella sp.</i>	limpet	1							1
Echinoidea Class	sea urchin	9			1	1	1		6
<i>Acanthina crassilabrum</i>	snail	1			1				

Species	Class	total MNI	MNI by Phase					
<i>Tegula atra</i>	snail	1			1			
not determined sea snail	snail	1		1				
<i>total sea invertebrates</i>		51	4	6	4	11	23	3
<b>river</b>								
<i>Cryphiops caementarius</i>	fresh water shrimp	35	6	5	3	8	12	1
<b>total</b>		86	10	11	7	19	35	4
% sea		59.30	40.00	54.55	57.14	57.89	65.71	75.00
% river		40.70	60.00	45.45	42.86	42.11	34.29	25.00

Table 53: Invertebrates remains.

The amount of 51 MNI remains of invertebrates at Pernil Alto is extremely low. This is clear when compared to Preceramic sites located directly on or close to the littoral: In the Huaca Prieta (13,700–4000 BP) on the Northern Peruvian coast, “Marine species dominate throughout all time periods, with fish and shellfish being the most abundant and diverse remains.” (Dillehay et al. 2012b: Suppl.: 7). In the Quebrada de los Burros on the Southern Peruvian coast (Lavallée/Julien 2012a) dating from 9900–6800 BP (Fontugne 2012), hundreds of thousands of shells were recovered from small areas totaling to 320 m<sup>2</sup> (Lavallée/Béarez 2012: 125). They contributed the major part of the diet (Lavallée et al. 1999a). It was possible at the Quebrada de los Burros to determine the time of collecting the mollusks based on analyses of growth rates (Carré et al. 2009). The result was that mollusks were collected in an earlier period during austral spring and summer, whereas the collecting time was expanded to begin three months earlier during the Middle Holocene. In only two units (B and D) of the Ring Site on the Southern Peruvian coast (Sandweiss et al. 1989), dating from 9100–5800 BP (Sandweiss 2005a: 20), the remains of 3596 shells were recovered (Richardson et al. 1990: 151). All the mentioned sites predate Pernil Alto, with the exception of Huaca Prieta which is partly contemporaneous. They are located more or less directly on the littoral and are characterized by mounds.

Even in more or less comparable, contemporaneous sites composed of dwellings, distinctly more shells were found than in Pernil Alto. Thus, in a probability sample from La Paloma taken from only 38 m<sup>2</sup> of the site, 1065 MNI of invertebrates were recovered (Reitz 1988: 314, Tab. 1), and from grab samples from the same site 4297 MNI of invertebrates were found (Reitz 1988: 315, Tab. 2). The amount of mollusks from Chilca 1 is not directly mentioned, but Engel (1987a: 54) states that marine products constituted the basis of the alimentation at the site. Even in contemporaneous sites of the Northern Peruvian coast, like PV35-106 (about 7000–5000 BP), numerous shells and distinctly more species were recov-

ered (Bonavia et al. 2001). Already at the time of monumental architecture on the Central Peruvian coast, in Southern Peru shell mounds were developed, like in Carizal, dating to 5000–3500 BP (Wise 1989, 1997).

All the aforementioned sites are examples of the common trait that marine resources were always used when available. However, the high amounts of mollusks in coastal sites in comparison to Pernil Alto reveal that mollusks were not important there.

The site Cementerio de Nanchoc in the Zaña valley in Northern Peru is dated to 8000–6200 BP and is located on 450 m a.s.l. (Dillehay et al. 1989). Following the river valley, the littoral is at a distance of about 70 km (author’s measurement). The location of the site is thus comparable with Pernil Alto. The site covers a space of about 2 ha and a few mollusk remains were found there. Dillehay (1989: 750,) writes: “Sporadic long-distance movements and/or contacts are indicated by fragments of 11 species of seashell”.

The few remains from Pernil Alto can thus be interpreted in exactly the same way: as indicators for contacts with or movements to the littoral. A hypothetical route following the Río Grande towards the coast as contact line or movement way is supported by two sites: Las Brujas in the lower valley of the Río Grande (Vogt 2007; Vogt 2008; Vogt 2011), which is located half along the way between Pernil Alto and the littoral, and Santa Ana on the estuary of the Río Grande (Engel 1963b, 1987a, 1981). Both sites are Archaic or—in the case of Las Brujas—have Archaic layers. Las Brujas has layers dating to 5800–5400 BP (Vogt 2011: 308) and was thus at least partly contemporaneous with Pernil Alto. The dating of Santa Ana is not very clear, but the site is preceramic. Given that beans were found there, Engel (1981: 21) assumed that “the settlers controlled some fields higher up, in the middle drainage. Perhaps they bartered fish against beans.” A contact in this sense could explain the shell remains from the littoral at Pernil Alto.

When the ratio between river and sea resources from Pernil Alto is taken as an indicator for the intensity of



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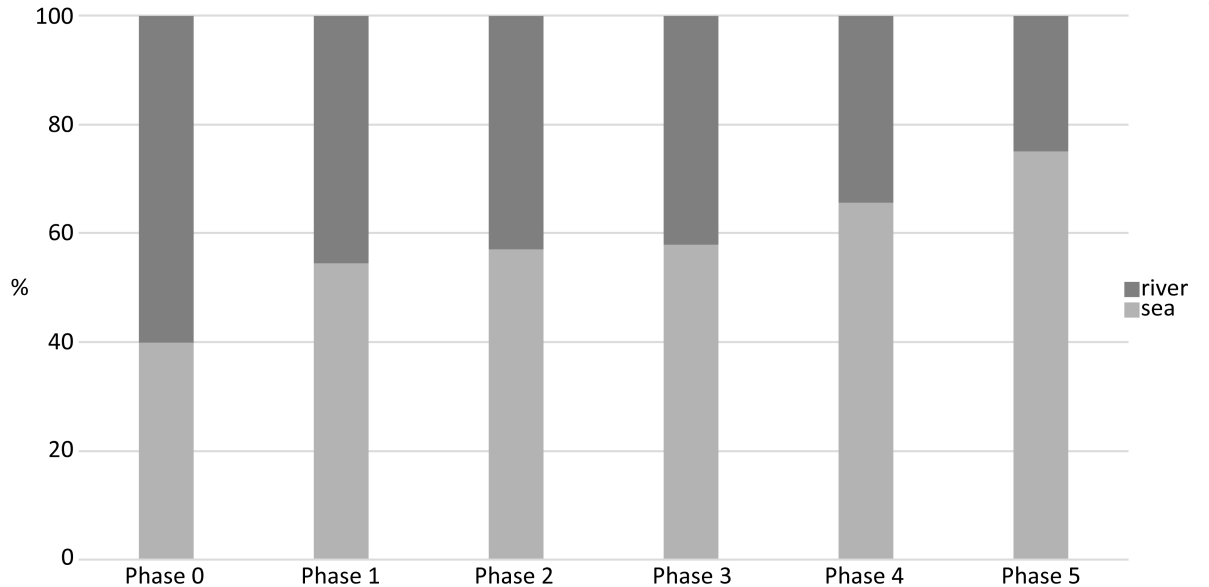


Figure 111: Ratios of invertebrates from the river and the sea.

the contacts or movements to the littoral, an increase in this intensity can be assumed (Figure 111: Ratios of invertebrates from the river and the sea.). The percentage of marine resources within the invertebrates increases from 40% in Phase 0, where river resources were still more frequently found, to 75% in Phase 5. It should be mentioned that the invertebrates remains from Phases 2 (n = 7) and 5 (n = 4) are very few. However, it seems that a trend of intensifying contacts between the middle Río Grande section and the estuary of the Río Grande took place during the Middle Archaic occupation of Pernil

Alto. This would mean that some kind of stabilization within the contacts of this route took place.

Marine resources were in general not important for the subsistence of the inhabitants of Pernil Alto. It is possible that sometimes mollusks were consumed, but it seems that they were more important for the production of the abundant beads.

The fresh water shrimp, on the other hand, indicate that even these resources were sometimes used, but were, as indicated by the relative comparison of remains, less important than hunted animals.