

# Animal utilization of the Epi-Jomon and Okhotsk cultures in Sakhalin: A zooarchaeological analysis of the Nobuo Ito Collection

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## Introduction

The Okhotsk culture thrived along the southern coast of the Sea of Okhotsk from the fifth to the twelfth century CE. In addition to the remains of fish and marine mammals, large fishhooks, fishing weights and harpoon heads have also been excavated from Okhotsk culture sites. These show that the people of the Okhotsk culture mainly subsisted on fishing and the hunting of marine mammals. Furthermore, they raised dogs and pigs, which is a notable feature of the livelihood of Okhotsk culture humans (Nishimoto 1984).

Regional differences in pottery types and burial practices of the Okhotsk culture have been revealed (Nishimoto 1984, Takabatake 2003, Naito et al. 2010), and there are also discernable regional differences in terms of animal utilization. Nishimoto compared faunal remains from the Kafukai 1 Site in Rebun Island and the Onnemoto Site in Nemuro, and he pointed out that whereas there was a marked dependence on fishing in the northern part of Hokkaido (hereafter referred to as Northern Hokkaido), the hunting of marine and terrestrial mammals was more prominent in the eastern part of Hokkaido (hereafter referred to as Eastern Hokkaido). Meanwhile, Uchiyama reported that more domestic animal remains were excavated from the Promyslovoye II Site in central Sakhalin than sites in Hokkaido (Uchiyama 2002).

It is essential to collect data from each region in order to elucidate regional differences in subsistence strategies. In Northern Hokkaido, several studies have been done on faunal remains excavated from the Kafukai 1 Site and other

sites, and these have yielded a large amount of data. In addition, there are also numerous reports on faunal remains from sites in Eastern Hokkaido, such as the Moyoro Shell Mound. On the other hand, there is very little information on faunal remains from sites in Sakhalin, except for the Promyslovoye II Site. In fact, almost no quantitative data on remains in Southern Sakhalin, the region where the Okhotsk culture formed, have been reported so far. Therefore, this study aims to provide basic information on zooarchaeological studies of Okhotsk culture sites by reporting on a collection of faunal remains excavated in Sakhalin. These research materials, titled the “Nobuo Ito Collection,” are currently in storage at Tohoku University.

## Research Materials

Southern Sakhalin (Japanese name: Karafuto) was a Japanese territory between the years 1904 and 1945, so quite a few archaeologists and ethnologists came to the area to conduct fieldwork during this period. Nobuo Ito, who collected the research materials this study focuses on, was one of them. In 1933, Ito became a lecturer at the Second Senior High School, the precursor to the present-day Tohoku University. In the summer of the same year, he explored archaeological sites on the east coast of Sakhalin and along Aniva Bay under the commission of the local government, and the following year, he explored sites on the west coast of the island. Ito established the chronological order of unearthed pottery in Sakhalin at this time and added some of

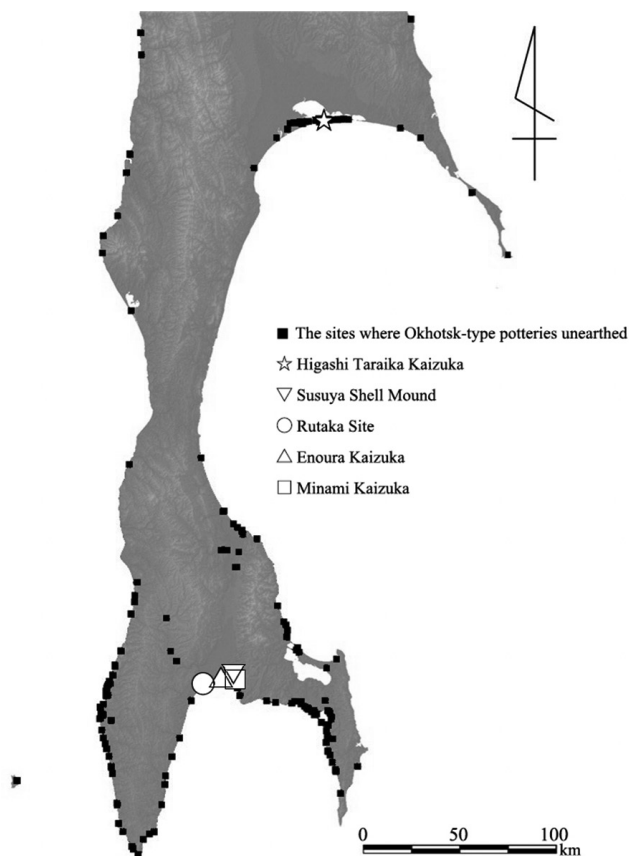


Fig. 1. Sites of the final period of the Epi-Jomon era and the Okhotsk culture period in the southern Sakhalin

his own amendments and corrections in subsequent years. This order is still useful today. We believe the materials this study focuses on are from the 1933 investigation because they were excavated from the Higashi Taraika Kaizuka (Promyslovoye-1 Shell Mound) located on the east coast of Sakhalin, as well as four sites located on Aniva Bay: the Susuya Shell Mound (Susuya-1), the Minami Kaizuka (Solovievka Site), the Rutaka Site (Rutaka-Luoga Site) and

the Enoura Kaizuka (Ozeretskoye Site) (See Fig. 1). With the exception of materials from the Rutaka Site, Ito marked all of these remains in his chronology, and, therefore, it may be possible to estimate the approximate time period of the faunal remains due to being stored with pottery and stone implements. An outline of the sites is listed below and in Table 1.

#### Susuya Shell Mound (Susuya-Kita Kaizuka, Susuya-1)

The Susuya Shell Mound is located at the southern tip of Sakhalin, on the left bank of the estuary where the Susuya River flows into Aniva Bay (See Fig. 2). To avoid confusion with the Minami Kaizuka, which means “Southern Shell Mound” in English, it is also known as the Kita Kaizuka, or “Northern Shell Mound.” Beginning with Shogoro Tsuboi’s work in 1907, various Japanese and Russian archaeologists have continued to study this site over the years (Baba 1940, Niioka & Utagawa 1990). Most of the pottery unearthed from this site belongs to the Susuya type. Some researchers consider this type of pottery to come from the Okhotsk culture, but this study considers this type of pottery to be that of the Susuya period, the latter period of the Epi-Jomon era (third to fourth century CE).

#### Rutaka Site (Rutaka-Lutoga Site)

The Rutaka Site is located on the left bank of the estuary of the Lyutoga River, about two km upstream. As many as thirty to forty pit dwellings can be seen within this site, with five shell mounds scattered among them (Wada 1943, Niioka & Utagawa 1990). Pottery collected with the faunal remains include examples of the Susuya type and Towada type (third to sixth century CE) (Vasilyevsky et al. 2006).

#### Enoura Kaizuka (Ozeretskoye Site)

The Enoura Kaizuka lies along Aniva Bay, about eight km east of the Lyutoga River (Sakazume 1956). This shell mound is located on a sandbank in a wetland. Both Enoura A and B type pottery were excavated from this site (Vasilyevsky et al. 2006). Therefore, most of the research materials from this site also likely belong to the mid to late Okhotsk culture period (seventh to ninth century CE).

Table 1 Outlines of Sites

Site	Pottery type	Age	NISP
Susuya Shell Mound	Susuya type	3-4C A.D.	178
Rutaka Site	Susuya type / Towada type	3-6C A.D.	8
Enoura Kaizuka	Enoura B type / Enoura A type	7-9C A.D.	165
Minami kaizuka	Minami Kaizuka type	10-12C A.D.	13
Higashi Taraika Kaizuka	Higashi Taraika type / Minami Kaizuka type	10-12C A.D.	13

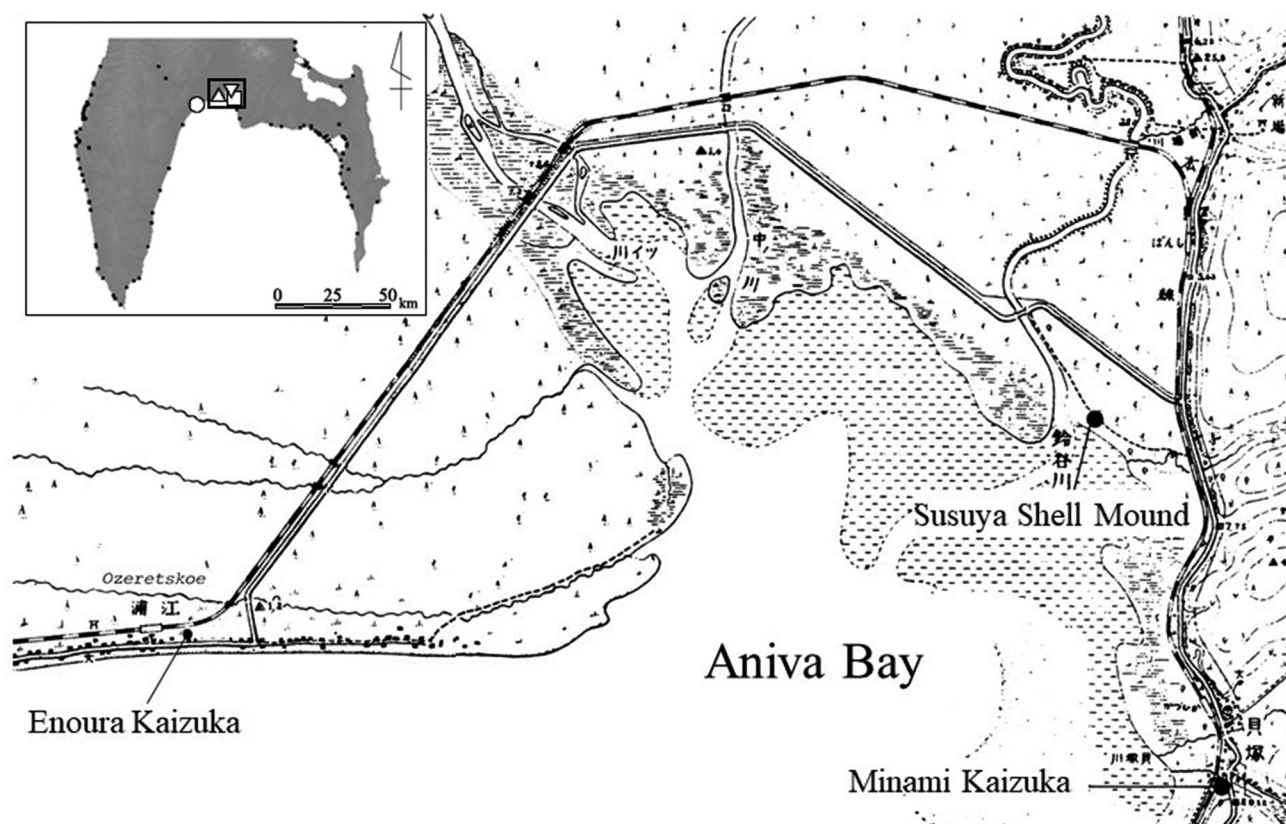


Fig. 2. Sites of the final period of the Epi-Jomon era and the Okhotsk culture period located around the Aniva Bay

#### Minami Kaizuka (Solovievka Site)

Isao Iijima discovered the Minami Kaizuka in 1905, and it is a shell mound located on the terrace of the left bank near the mouth of the river. It also has pit dwellings and the moat of a *chashi* (an Ainu fortification) (See Fig. 2). Ito classified pottery unearthed from this site as the Minami Kaizuka type of the late Okhotsk culture period (tenth to twelfth century CE).

#### Higashi Taraika Kaizuka (Promyslovoye-1 Shell Mound)

The Higashi Taraika Shell Mound is in Central Sakhalin, on the long and narrow sandbank that separates Lake Nevskoye from the Gulf of Terpenya (Gulf of Patience, or Taraika Wan in Japanese). The shell mound extends to approximately 250 m × 40 m and mainly comprises remains of Pacific oyster, a species which no longer lives in this area (Oka & Baba 1938, Kouno 1938, Nomura 1990, Uchiyama

2002). Most of the pottery unearthed from this site belongs to the Higashi Taraika type or Minami Kaizuka type in terms of Ito's classification. Therefore, this site likely formed in the late Okhotsk culture period (tenth to twelfth century CE) (Ito 1942, Uchiyama 2002).

Fedorchuk's investigations in 1994 and 1995 provided details on faunal remains, which include mammals (Uchiyama 2002), birds (Пантелеев 1997), and fish (Сафронов et al. 2001). Reports dating back to before World War II also mention the excavation of large quantities of both pig and dog remains and, according to Uchiyama's studies, the MNI (minimum number of individuals) came to sixty-seven dogs and thirty-four pigs. Other studies found that both species made up a large proportion of the mammal remains at 67.4% (Oka & Baba 1938, Kouno 1938, Baba 1940, Okuyama 1941, Nomura 1990, Uchiyama 2002). In addition to dogs and pigs, there was also an MNI of forty-two earless seals, which amounted to 28% of the mammal

remains, and the remains of a few other mammals, such as reindeer, eared seals, brown bears, and foxes, were unearthed with an MNI of only one or two each. The reindeer may have been domestic animals, but it is unlikely that people of the Okhotsk culture raised these animals as it is possible the remains come from reindeer with antlers that shed naturally in the summer (Uchiyama 2002). Although there was a small number of unearthed bird remains, species included albatross, pelagic cormorant, swan goose, black-tailed gull, spectacled guillemot, and thick-billed murre (Пантелеев 1997). Unearthed fish remains were mainly that of coastal fish, such as Pacific herring and saffron cod, and it appears the people used resources to catch brackish lake fish, such as pike, Japanese dace, and starry flounder (Сафронов et al. 2001).

### Analysis Methods

We identified animal species and parts of the bones through macroscopic comparisons with modern skeletal collections that belong to the Department of Archaeology and Ethnology at Keio University. We counted the number of identified specimens (NISP) and also estimated the minimum number of individuals (MNI) for each identified taxon. We considered the actual body parts, whether a given part came from the left or right side of an individual animal, and the age of each specimen while estimating the MNI. In principle, we measured bones and teeth according to the methods of Driesch (1976). The measurements of pig teeth were followed the method of Anezaki (2003).

### Results

Table 2 shows the species and number of animal remains excavated at each site. The raw data are listed in appendix 1 to 4.

#### Susuya Shell Mound (Late Epi-Jomon, third to fourth century CE, Fig. 3)

##### 1) Species and NISP

Terrestrial mammals: Hare (3), Dog (80), Canidae (5), Otter (1), Pig (2), Deer (1), Brown bear (3).

Marine mammals: Northern fur seal (4), Eared seal (22), Spotted seal (2), Ringed seal (2), Ribbon seal (1), Bearded seal (8), Earless seal (10), Whale (14).

Birds: Subfamily Duck (3), Swan (4), Crane (1), ?Raptor (1).

Fishes: Salmon shark (4), Flatfish (2).

Shellfish: Pacific oyster (5).

##### 2) Characteristics of faunal remains

We identified a total of 178 specimens. The majority of these were mammal remains with 158 specimens, and there

were nine bird, six fish and five shellfish remains. Among the mammals, there were eighty dog remains, with an MNI of nine consisting of infant, juvenile, and adult individuals, while there were only two remains from infant pigs. In regard to wild mammals, meanwhile, there were twenty-three earless seal family remains, twenty-six eared seal family remains, fourteen cetacean (whale) remains, three each of brown bear and hare remains, and one specimen of otter remains. It is possible that some of the eared seal family remains that could not be identified as a species are those of sea lions or Steller's sea lions. Of the seven cetaceans in the order, one was from a large cetacean and six were from a small cetacean.

Among the birds, we identified four swan remains, three from the duck subfamily, one specimen of crane remains, and one specimen of raptor remains. The three remains from the duck subfamily were about the same size as a black duck (*Melanitta nigra*), larger than a mallard duck (*Anas platyrhynchos*), smaller than a mandarin duck (*Aix galericulata*), and slightly smaller than a tufted duck (*Aythya fuligula*). All four swans were smaller than a mule swan (*Cygnus olor*). The cranes were juvenile birds about the same size as a red-crowned crane (*Grus japonensis*), and thus, the hunting season was likely summer. There are no cranes in Sakhalin at present, so it is possible that the cranes entered or were introduced to Sakhalin through habitat changes or via coastal areas of Hokkaido (according to Dr. Eda's instructions). We determined there were remains of a raptor based on the specimen size and morphology, but we could not identify the species.

#### Rutaka Site (Late Epi-Jomon to early Okhotsk culture, third to sixth century CE, Fig. 3)

##### 1) Species and NISP

Terrestrial mammals: Dog (4), Pig (1).

Marine mammals: Grey seal (1), Earless seal (1), Whale (1).

##### 2) Characteristics of faunal remains

We identified eight specimens. These included four dog remains, one specimen of pig remains, two earless seal family remains, and one specimen of small cetacean remains. We estimated an MNI of two dogs and there appeared to be one juvenile and one adult. We determined the specimen of pig remains was from a juvenile as both the proximal and distal epiphyseal closures were incomplete.

#### Enoura Kaizuka (Mid to late Okhotsk culture, seventh to ninth century CE, Figs. 4 and 5)

##### 1) Species and NISP

Terrestrial mammals: Dog (7), Pig (45), Brown bear (1).

Marine mammals: Eared seal (2), Spotted seal (16), Ringed seal (9), Ribbon seal (1), Bearded seal (21), Earless

Table 2 NISP and MNI of research materials

Taxa	Susuya Shell Mound		Rutaka Site		Enoura Kaizuka		Minami Kaizuka		Higashi Taraika Kaizuka	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
Shellfish (Mollusca)										
Bivalve (Bivalvia)										
Pacific oyster ( <i>Crassostrea gigas</i> )	5	1			1	1				
Bivalvia indet.	7				1					
Total number of shellfish	12	1			2	1				
Vertebrate (Vertebrata)										
Cartilaginous fish (Chondrichthyes)										
Salmon shark ( <i>Lamna distropis</i> )	4	1								
Bony fish (Osteichthyes)										
Flatfish (Pleuronectiformes indet.)	2	1			1	1				
Osteichthyes indet.	2				1					
Total number of fishes	8	2			2	1				
Bird (Aves)										
Loon (Gaviidae indet.)					1	1				
Swan ( <i>Cygnus</i> sp.)	4	1								
Duck subfamily (Anatinae indet.)	3	1								
Crane (Gruidae indet.)	1	1								
?Raptor (?Accipitriformes)	1	1								
Aves indet.	8									
Total number of birds	17	4			1	1				
Mammal (Mammalia)										
Hare ( <i>Lepus</i> sp.)	3	1								
Brown bear ( <i>Ursus arctos</i> )	3	1			1	1				
Dog ( <i>Canis lupus familiaris</i> )	80	9	4	2	7	2	3	1	1	1
Canid (Canidae indet.)	5	1								
Otter ( <i>Lutra lutra</i> )	1	1								
Northern fur seal ( <i>Callorhinus ursinus</i> )	4	2								
Eared seal (Otariidae indet.)	22	1			2	1	1	1		
Spotted seal ( <i>Phoca largha</i> )	2	1			16	7	1	1		
Ringed seal ( <i>Pusa hispida</i> )	2	1	1	1	9	2				
Ribbon seal ( <i>Phoca fasciata</i> )	1	1			1	1				
Bearded seal ( <i>Erignathus barbatus</i> )	8	3			21	5			1	1
Earless seal (Phocidae indet.)	10	1	1	1	42	2				
Pinniped (Pinnipedia indet.)					7					
Pig ( <i>Sus scrofa domesticus</i> )	2	1	1	1	45	4	8	1	5	1
Reindeer ( <i>Rangifer tarandus</i> )									3	1
Deer (Cervidae indet.)	1	1							1	1
Whale (Cetacea indet.)	14	1	1	1	18	1			2	1
Terrestrial Mammalia indet.	15				17					
Marine Mammalia indet.	28		1		47		1			
Mammalia indet.	34		1		17		1		11	
Total number of mammals	235	26	10	6	250	26	15	4	24	6
Total number of vertebrates	260	32	10	6	253	28	15	4	24	6



seal (42), Pinniped (7), Whale (18).

Birds: Loon (1).

Fishes: Flatfish (1).

Shellfish: Pacific oyster (1).

## 2) Characteristics of faunal remains

We identified 165 specimens and 162 of these were from mammals. The remaining three specimens consisted of one shellfish, one fish, and one bird. Among the mammal remains, there were forty-five pig remains and seven dog remains. Most of the excavated pig remains were from juvenile and adult individuals, with just a few infants. It is worth noting that there was a remarkable imbalance in the NISP of both domestic species. In addition, we found a large number of marine mammal remains. Specifically, we identified eighty-nine remains from four species of the earless seal family, as well as two eared seal remains and eighteen cetacean remains. This suggests that Okhotsk culture humans actively hunted marine mammals. In regards to terrestrial mammals, meanwhile, we identified one specimen of brown bear remains.

In addition to the faunal remains listed above, we also collected one specimen each of fish, bird and shellfish remains. We identified the specimen of bird remains as being a radius of a loon (red-throated loon or related species) which was larger than that of a Pacific loon (*Gavia pacifica*).

### Minami Kaizuka (Late Okhotsk culture, tenth to twelfth century CE, Fig. 6)

#### 1) Species and NISP

Terrestrial mammals: Dog (3), Pig (8).

Marine mammals: Eared seal (1), Ringed seal (1)

## 2) Characteristics of faunal remains

We identified thirteen mammal remains including eight pig remains, three dog remains, one specimen of spotted seal remains, and one specimen of eared seal remains. The pig bones may have all come one juvenile pig with unfused epiphyseal plates.

### Higashi Taraika Kaizuka (Late Okhotsk culture, tenth to twelfth century CE, Fig. 7)

#### 1) Species and NISP

Terrestrial mammals: Dog (1), Pig (5), Reindeer (3), Deer (1)

Marine mammals: Bearded seal (1), Whale (2)

## 2) Characteristics of faunal remains

We identified thirteen specimens of faunal remains, including one specimen of dog remains, five pig remains, three reindeer remains, one specimen of deer remains, one specimen of bearded seal remains, and two cetacean

remains. One specimen of pig remains consisted of a maxilla from a one-year-old infant, with complete eruption of the first molar and the second molar alveolus beginning to open. The specimens identified as coming from reindeer were all antlers, and we could identify traces of human processing.

## Discussion

We identified a total of 577 faunal remains from the Nobuo Ito Collection. Most of these came from mammals, with a total of 535 specimens. However, this may be the result of overlooking small animals while collecting with the naked eye. Therefore, we should not view these materials as being representative of the Okhotsk culture on Sakhalin as a whole, even more so given the likelihood that materials were not collected as comprehensively from the three sites that had very little material (Higashi Taraika Kaizuka, Rutaka Site, and Minami Kaizuka). Nevertheless, it is worth discussing the utilization of animals on Sakhalin based on the faunal remains identified in this study, even if the record is fragmentary.

First, it is noteworthy that domestic animals (pigs and dogs) accounted for a large proportion of the fauna excavated at all the sites. This confirms the conventional view that livestock rearing was prevalent in the Okhotsk culture of Southern Sakhalin.

Secondly, differences between the Susuya and the Okhotsk culture periods are also noteworthy. By paying close attention to the species of domestic animals, more dog remains than pigs have been found in the Susuya Shell Mound and Rutaka Site, which date from the Epi-Jomon period to the early stages of the Okhotsk culture; while there were more pigs than dogs in the Enoura Kaizuka and Minami Kaizuka, which date from the middle to late Okhotsk culture (See Figs. 8 and 9). This suggests a close relationship between the development of pig farming and the development of the Okhotsk culture.

Comparing the faunal assemblages of the Susuya Shell Mound and the Enoura Kaizuka reveals that the Enoura Kaizuka had a higher proportion of marine mammals. This demonstrates that the maritime adaptation of the inhabitants of Southern Sakhalin may have been advanced during the Okhotsk culture period. Smaller terrestrial mammals, such as hares and otters, were also identified at the Susuya Shell Mound, whereas only one brown bear and one red-throated loon were identified at the Enoura Kaizuka. Although there may have been a sampling bias, these remains suggest that there were likely differences in hunting strategies between the Epi-Jomon and Okhotsk cultures.

Furthermore, the Enoura Kaizuka had a greater number of earless seals than eared seals, while the Susuya Shell Mound had almost the same number of eared and earless

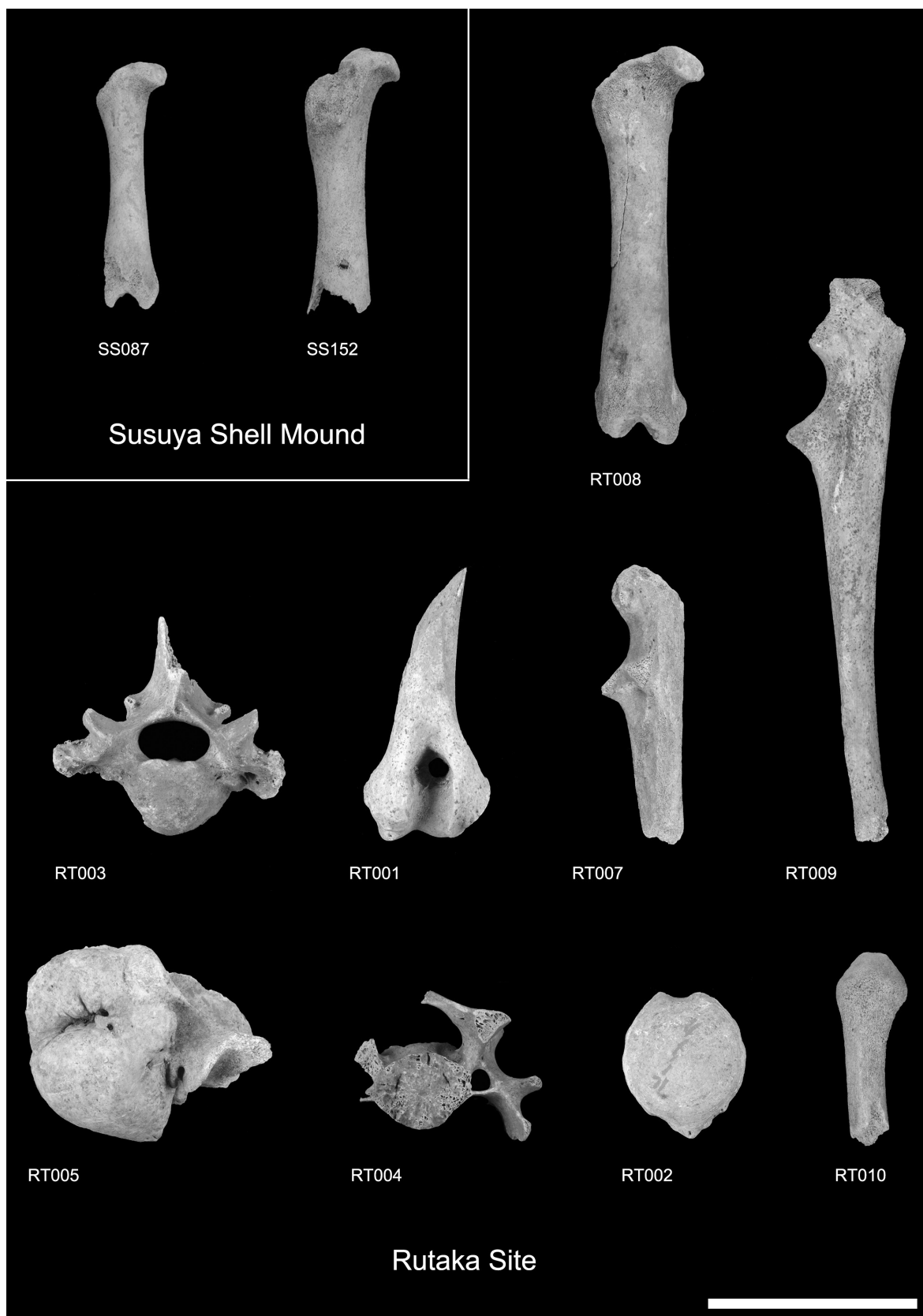


Fig. 3. Animal remains from the Susuya Shell Mound and Rutaka Site (Scale bar is 5 cm)

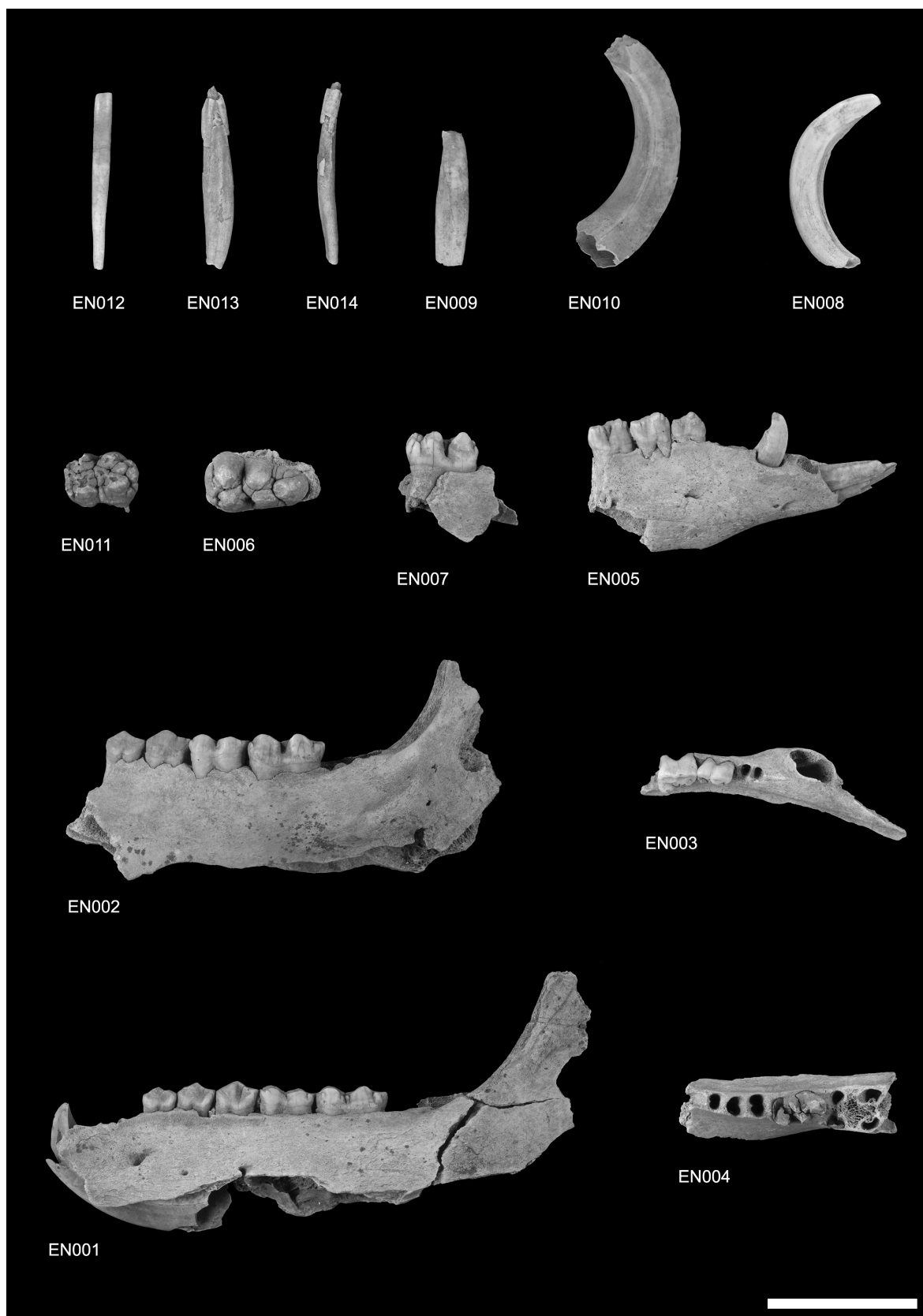


Fig. 4. Animal remains from the Enoura Kaizuka (1) (Scale bar is 5 cm)



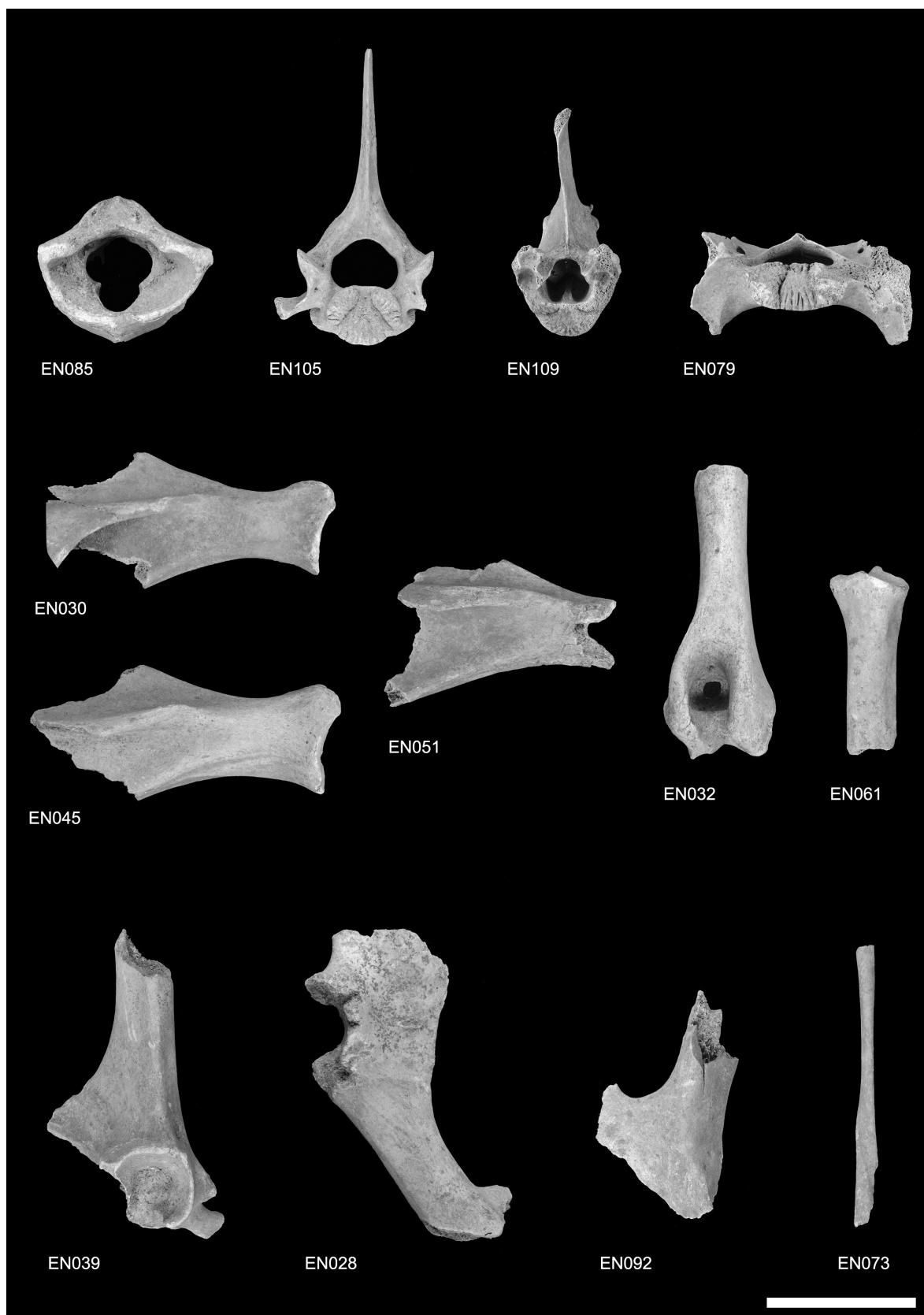


Fig. 5. Animal remains from the Enoura Kaizuka (2) (Scale bar is 5 cm)

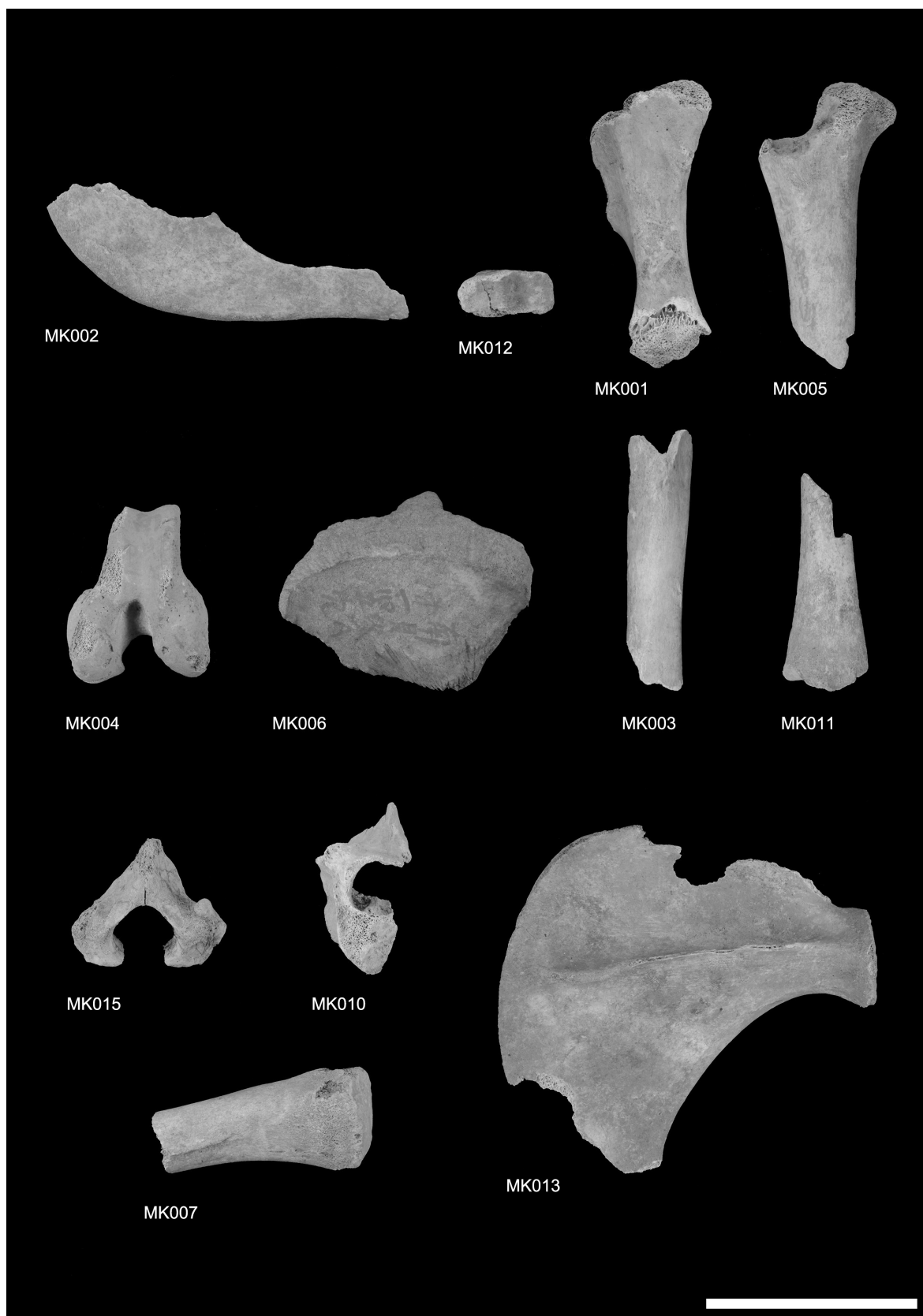


Fig. 6. Animal remains from the Minami Kaizuka (Scale bar is 5 cm)

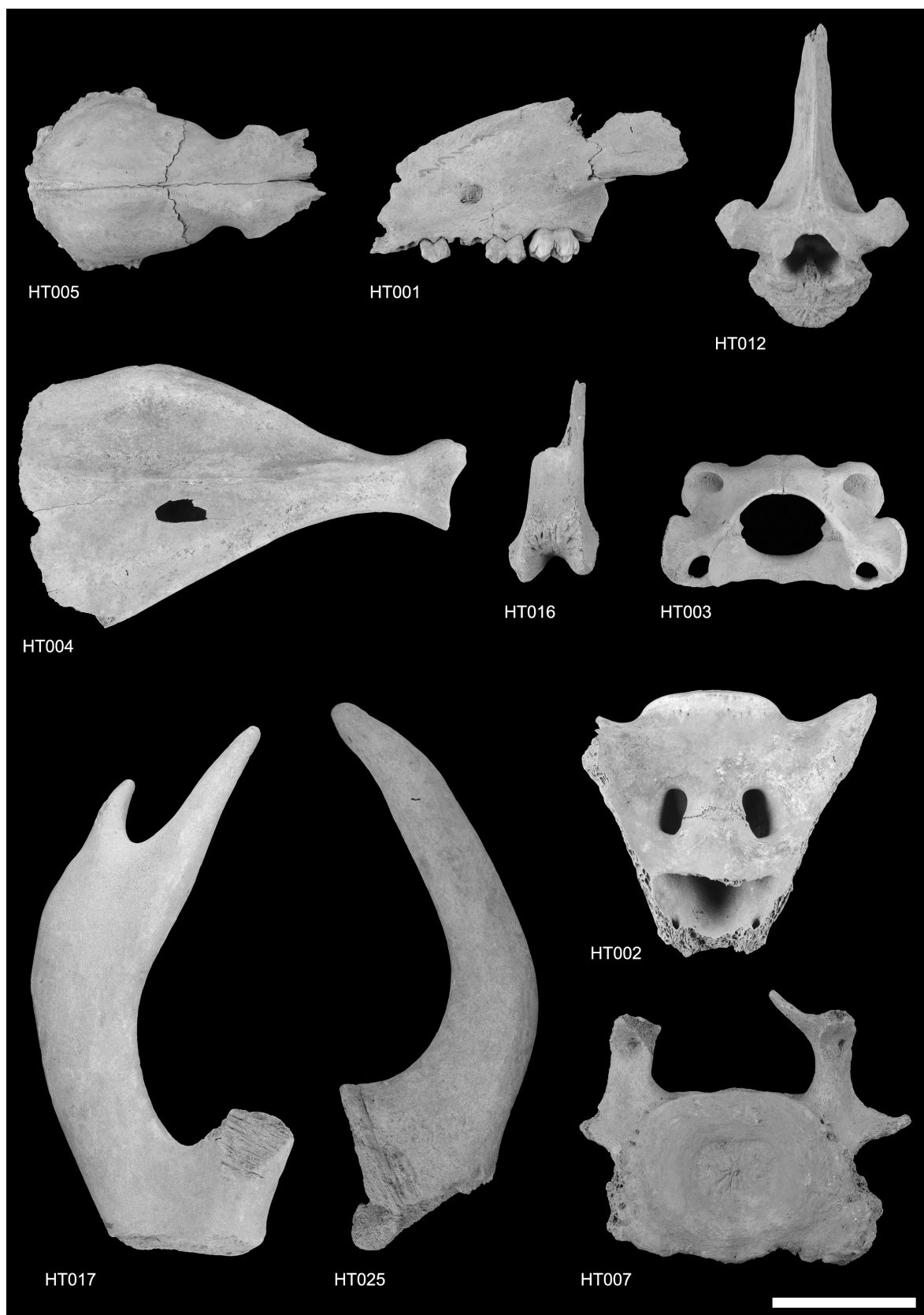


Fig. 7. Animal remains from the Higashi Taraika Kaizuka (Scale bar is 5 cm)

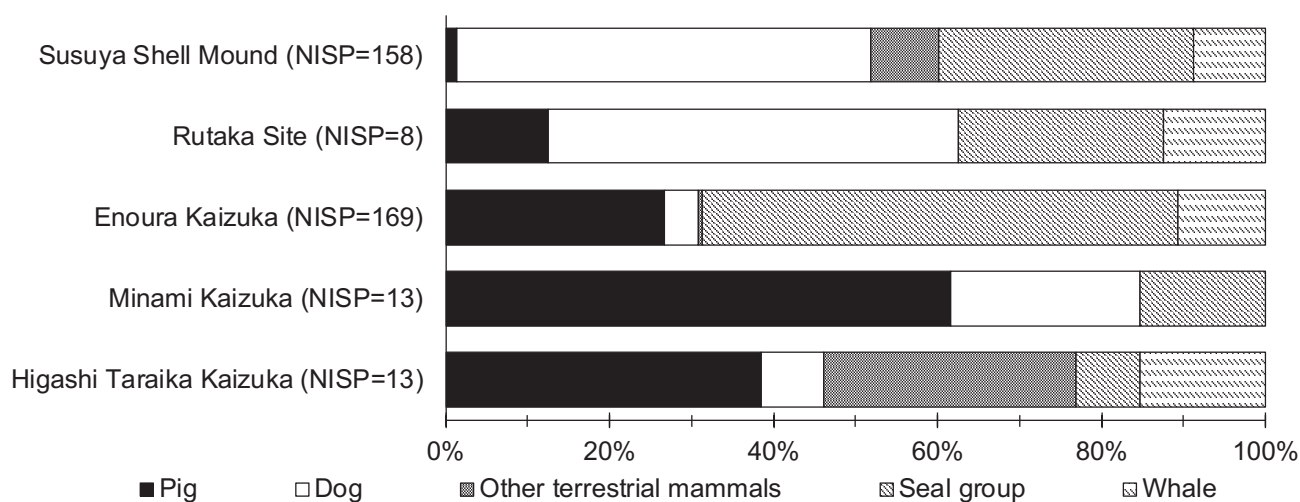


Fig. 8. Species composition of mammals based on NISP of materials identified to order

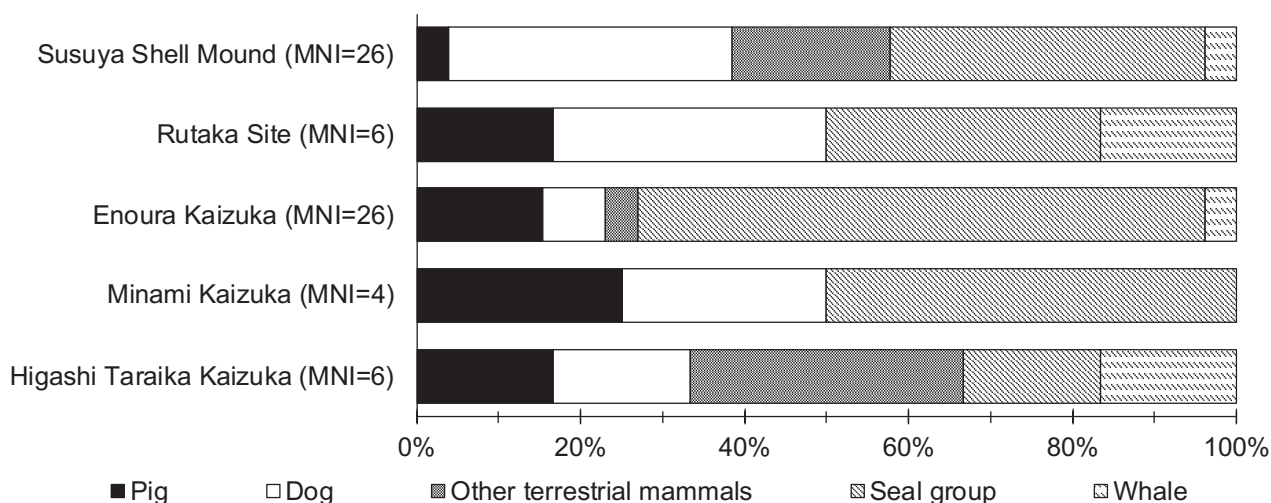


Fig. 9. Species composition of mammals based on MNI of materials identified to order

seals. This indicates that Okhotsk culture groups in Southern Sakhalin may have specifically targeted earless seals over other marine mammals. According to Uchiyama, reports from the Promyslovoye II Site also show overwhelmingly more earless seals than eared seals. Therefore, it appears that Okhotsk culture groups in Sakhalin developed hunting methods that targeted earless seals (Uchiyama 2002).

## Conclusion

This analysis partially clarified the nature of animal utilization by the Okhotsk culture in Southern Sakhalin. Specifically, an increasing dependence on pigs and a corresponding decrease on dogs from the late Epi-Jomon era to the Okhotsk culture period appears to have been a trend in Sakhalin. The presence of shell mounds from which more pigs were excavated than dogs has been pointed out in the past (Uchiyama 2005 etc.), and the results of our analysis confirm this. This study also proved that human

adaptation to the ocean is a feature of the Okhotsk culture, as past researchers have also pointed out, and it clarified that the relative prevalence of marine mammals increased toward the mid Okhotsk culture period with a focus on earless seals. However, given the paucity of research on animal remains in Sakhalin, there are many points that remain unclear such as whether this is a phenomenon widely observed in Southern Sakhalin. Therefore, further research with a larger number of samples is required.

Finally, we would like to mention that in addition to our research, we owe a great deal to the late Professor Nobuo Ito, who actively engaged in the collection of faunal remains as well as artifacts, for providing a background to animal utilization in Sakhalin. Much of what we learned from him appears in the explanation in this report. The authors would like to pay tribute to the late Professor Ito who laid the foundation of archaeology on Sakhalin with his meticulous research.

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## Appendix 1. Taxonomic identification of faunal remains

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
EN001	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible (with C, P2-4 and M1-3)	L	M3 is unerupted. Subadult. Male.
EN002	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible (with P3-4 and M1-3)	R	M3 is unerupted. Subadult.
EN003	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible (with I1-2, C and P2-4)	R	Female.
EN004	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible (with P4)	R	Male.
EN005	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Maxilla (with P2-3)	R	Female.
EN006	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Maxilla (with M3)	R	Adult.
EN007	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible (with M2)	L	
EN008	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (LC)	L	Female.
EN009	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (LI2)	R	
EN010	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (LC)	R	Male.
EN011	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (UM2)	L	
EN012	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (LI1)	L	
EN013	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (LM2)	L	
EN014	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Tooth (LI2)	R	
EN015	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Proximal phalanx		
EN016	Enoura Kaizuka	Cetacea indet.	Vertebra		
EN017	Enoura Kaizuka	Phocidae indet.	Tooth (lower molar)	L	
EN018	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Metacarpal	R	
EN019	Enoura Kaizuka	Phocidae indet.	Cranium (both frontal bones and right parietal bone)		
EN020	Enoura Kaizuka	Phocidae indet.	Cranium fragment		
EN021	Enoura Kaizuka	Phocidae indet.	Talus	R	
EN022	Enoura Kaizuka	<i>Phoca largha</i>	Humerus (distal)	R	Distal end is unfused. Infant/subadult.
EN023	Enoura Kaizuka	<i>Pusa hispida</i>	Humerus	R	Both ends are unfused. Infant/subadult.
EN024	Enoura Kaizuka	Phocidae indet.	Metatarsal		Both ends are unfused. Infant/subadult.
EN025	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	L	Both ends are unfused. Infant/subadult.
EN026	Enoura Kaizuka	<i>Erignathus barbatus</i>	Humerus	R	Both ends are unfused. Infant/subadult.
EN027	Enoura Kaizuka	Phocidae indet.	Metatarsal		Proximal end is unfused and distal end is fused. Subadult. ? <i>Erignathus barbatus</i> .
EN028	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Coxal bone	R	Cut mark.
EN029	Enoura Kaizuka	Phocidae indet.	Metatarsal		Proximal end is unfused and distal end is fused. Subadult. ? <i>Erignathus barbatus</i> .
EN030	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Scapula	R	Glenoid cavity is fused. Cut mark.
EN031	Enoura Kaizuka	<i>Phoca largha</i>	Radius (proximal)	L	Proximal end is unfused. Infant/subadult.
EN032	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Humerus (distal)	R	Distal end is fused.
EN033	Enoura Kaizuka	Cetacea indet.	Rib		
EN034	Enoura Kaizuka	Phocidae indet.	Fibula	R	Both ends are unfused. Infant/subadult.
EN035	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN036	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	R	
EN037	Enoura Kaizuka	Gaviidae indet.	Radius	L	Both ends are fused. Adult.
EN038	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tibia (proximal)	L	Proximal end is unfused. Infant/subadult.
EN039	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Coxal bone	R	
EN040	Enoura Kaizuka	Cetacea indet.	Rib		
EN041	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	L	
EN042	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	R	
EN043	Enoura Kaizuka	<i>Phoca largha</i>	Tympanic bulla	R	
EN044	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	L	
EN045	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Scapula	R	Glenoid cavity is fused.
EN046	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	L	
EN047	Enoura Kaizuka	<i>Pusa hispida</i>	Tympanic bulla	L	
EN048	Enoura Kaizuka	<i>Pusa hispida</i>	Tympanic bulla	L	
EN049	Enoura Kaizuka	Phocidae indet.	Talus	L	
EN050	Enoura Kaizuka	<i>Phoca largha</i>	Tibia (proximal)	L	Proximal end is unfused. Infant/subadult.
EN051	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Scapula	R	
EN052	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	R	
EN053	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	R	
EN054	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	R	
EN055	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	L	
EN056	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	L	
EN057	Enoura Kaizuka	<i>Pusa hispida</i>	Coxal bone	R	
EN058	Enoura Kaizuka	<i>Phoca largha</i>	Tympanic bulla	R	
EN059	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	L	
EN060	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tibia	R	
EN061	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Radius (proximal)	R	Proximal end is fused.
EN062	Enoura Kaizuka	<i>Pusa hispida</i>	Femur (proximal)	R	Proximal end is unfused. Infant/subadult.
EN063	Enoura Kaizuka	<i>Erignathus barbatus</i>	Radius (proximal)	R	Proximal end is unfused. Infant/subadult.
EN064	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Metatarsal	R	

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
EN065	Enoura Kaizuka	Phocidae indet.	Fibula (distal)	R	Distal end is unfused. Infant/subadult.
EN066	Enoura Kaizuka	<i>Pusa hispida</i>	Tibia (proximal)	R	Proximal end is unfused. Infant/subadult.
EN067	Enoura Kaizuka	Pinnipedia indet.	Scapula fragment		
EN068	Enoura Kaizuka	<i>Phoca largha</i>	Ulna (distal)	L	Distal end is unfused. Infant/subadult.
EN069	Enoura Kaizuka	Phocidae indet.	Coxal bone	R	
EN070	Enoura Kaizuka	Terrestrial Mammalia indet.	Rib		
EN071	Enoura Kaizuka	Phocidae indet.	Fibula (distal)	L	Distal end is unfused. Infant/subadult.
EN072	Enoura Kaizuka	Pinnipedia indet.	Rib		
EN073	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Fibula	L	
EN074	Enoura Kaizuka	Pleuronectiformes indet.	First interhaemal spine		
EN075	Enoura Kaizuka	Phocidae indet.	Fibula	L	
EN076	Enoura Kaizuka	Pinnipedia indet.	Rib		
EN077	Enoura Kaizuka	Cetacea indet.	Vertebra		
EN078	Enoura Kaizuka	Cetacea indet.	Vertebra		
EN079	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Sacrum		Unfused. Infant/subadult.
EN080	Enoura Kaizuka	<i>Erignathus barbatus</i>	Femur	R	Both ends are unfused. Infant/subadult.
EN081	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Axis		
EN082	Enoura Kaizuka	<i>Pusa hispida</i>	Atlas		
EN083	Enoura Kaizuka	<i>Erignathus barbatus</i>	Atlas		
EN084	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tympanic bulla	L	
EN085	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Atlas		
EN086	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Lumber vertebra		Unfused. Infant/subadult.
EN087	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Frontal bone	L	
EN088	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Temporal bone (zygomatic process)	R	
EN089	Enoura Kaizuka	<i>Pusa hispida</i>	Femur	L	Both ends are fused. Adult.
EN090	Enoura Kaizuka	Phocidae indet.	Ulna (proximal)	L	Proximal end is unfused. Infant/subadult.
EN091	Enoura Kaizuka	Cetacea indet.	Vertebra		Small whale.
EN092	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Coxal bone	L	
EN093	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		Infant.
EN094	Enoura Kaizuka	Phocidae indet.	Scapula	L	Glenoid cavity is unfused. Infant/subadult.
EN095	Enoura Kaizuka	Phocidae indet.	Radius (proximal)		Proximal end is unfused. Infant/subadult.
EN096	Enoura Kaizuka	<i>Erignathus barbatus</i>	Femur (proximal)	R	Proximal end is unfused. Infant/subadult.
EN097	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Metatarsal	L	Both ends are fused.
EN098	Enoura Kaizuka	<i>Phoca largha</i>	Tibia (proximal)	R	Proximal end is unfused. Infant/subadult.
EN099	Enoura Kaizuka	<i>Erignathus barbatus</i>	Humerus	L	Both ends are unfused. Infant/subadult.
EN100	Enoura Kaizuka	<i>Phoca largha</i>	Tibia (proximal)	L	Proximal end is unfused. Infant/subadult.
EN101	Enoura Kaizuka	<i>Phoca largha</i>	Ulna	R	Both ends are unfused. Infant/subadult.
EN102	Enoura Kaizuka	Phocidae indet.	Thoracic vertebra		
EN103	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		Infant.
EN104	Enoura Kaizuka	Phocidae indet.	Talus	R	
EN105	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Thoracic vertebra		Unfused. Infant/subadult.
EN106	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		
EN107	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Thoracic vertebra		
EN108	Enoura Kaizuka	Phocidae indet.	Femur (proximal)	L	Proximal end is unfused. Infant/subadult.
EN109	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Thoracic vertebra		Unfused. Infant/subadult.
EN110	Enoura Kaizuka	Phocidae indet.	Lumber vertebra		
EN111	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	L	
EN112	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tibia	L	
EN113	Enoura Kaizuka	<i>Erignathus barbatus</i>	Mandible (coronoid process and condylar process)	L	
EN114	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Frontal bone	L	
EN115	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	L	
EN116	Enoura Kaizuka	Marine Mammalia indet.	Rib	R	
EN117	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN118	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		Infant.
EN119	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Scapula fragment	R	
EN120	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN121	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN122	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		
EN123	Enoura Kaizuka	Phocidae indet.	Humerus (head)	R	Unfused. Infant/subadult.
EN124	Enoura Kaizuka	Phocidae indet.	Atlas fragment		
EN125	Enoura Kaizuka	Phocidae indet.	Thoracic vertebra		Unfused. Infant/subadult.
EN126	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		
EN127	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible fragment		
EN128	Enoura Kaizuka	Phocidae indet.	Atlas fragment		
EN129	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
EN130	Enoura Kaizuka	<i>Phoca fasciata</i>	Tibia	L	
EN131	Enoura Kaizuka	Phocidae indet.	Phalanx		
EN132	Enoura Kaizuka	Phocidae indet.	Coxal bone	R	
EN133	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		
EN134	Enoura Kaizuka	Phocidae indet.	Metatarsal	R	
EN135	Enoura Kaizuka	Phocidae indet.	Radius (proximal)	L	Proximal end is unfused. Infant/subadult.
EN137	Enoura Kaizuka	Pinnipedia indet.	Cervical vertebra fragment		
EN138	Enoura Kaizuka	Otariidae indet.	Lumber vertebra		Unfused. Infant/subadult.
EN139	Enoura Kaizuka	Phocidae indet.	Phalanx		
EN140	Enoura Kaizuka	Terrestrial Mammalia indet.	Tympanic bulla		
EN141	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	R	
EN142	Enoura Kaizuka	<i>Pusa hispida</i>	Ulna (distal)	L	Distal end is unfused. Infant/subadult.
EN143	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible fragment	R	
EN144	Enoura Kaizuka	Cetacea indet.	Bone fragment		Material for bone tool.
EN145	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN146	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN147	Enoura Kaizuka	Pinnipedia indet.	Vertebra fragment		
EN148	Enoura Kaizuka	Mammalia indet.	Scapula fragment		
EN149	Enoura Kaizuka	Phocidae indet.	Thoracic vertebra		
EN150	Enoura Kaizuka	Marine Mammalia indet.	Sacrum fragment		
EN151	Enoura Kaizuka	Cetacea indet.	Bone fragment		Material for bone tool.
EN152	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN153	Enoura Kaizuka	Marine Mammalia indet.	Vertebra fragment		
EN154	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN155	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN156	Enoura Kaizuka	Pinnipedia indet.	Atlas fragment		
EN157	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Coxal bone	R	
EN158	Enoura Kaizuka	Phocidae indet.	Metacarpal	R	
EN159	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN160	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN161	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Scapula	R	Glenoid cavity is unfused. Infant/subadult.
EN162	Enoura Kaizuka	Marine Mammalia indet.	Bone fragment		
EN163	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN164	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Scapula	fr.	
EN165	Enoura Kaizuka	Cetacea indet.	Vertebra		
EN166	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN167	Enoura Kaizuka	Phocidae indet.	Cervical vertebra		
EN168	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Mandible		Infant.
EN169	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN170	Enoura Kaizuka	Cetacea indet.	Vertebra fragment		
EN171	Enoura Kaizuka	Cetacea indet.	Vertebra		Large whale.
EN172	Enoura Kaizuka	<i>Erignathus barbatus</i>	Tibia (proximal)	L	Proximal end is unfused. Infant/subadult.
EN173	Enoura Kaizuka	<i>Ursus arctos</i>	Lumber vertebra		Unfused. Infant/subadult.
EN174	Enoura Kaizuka	Cetacea indet.	Caudal vertebra		
EN175	Enoura Kaizuka	Cetacea indet.	Bone fragment		Material for bone tool.
EN176	Enoura Kaizuka	Cetacea indet.	Phalanx		
EN177	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Maxilla fragment		
EN178	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Thoracic vertebra (spinous process)		
EN179	Enoura Kaizuka	Cetacea indet.	Bone fragment		Material for bone tool.
EN180	Enoura Kaizuka	Terrestrial Mammalia indet.	Ulna fragment		
EN181	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN182	Enoura Kaizuka	Cetacea indet.	Bone fragment		Material for bone tool.
EN183	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Coxal bone	R	
EN184	Enoura Kaizuka	Marine Mammalia indet.	Bone fragment		
EN185	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN186	Enoura Kaizuka	Cetacea indet.	Bone fragment		Material for bone tool.
EN187	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN188	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN189	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN190	Enoura Kaizuka	Otariidae indet.	Thoracic vertebra		
EN191	Enoura Kaizuka	Cetacea indet.	Vertebra		
EN192	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN193	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Ulna (proximal)	R	Proximal end is fused.
EN194	Enoura Kaizuka	<i>Canis lupus familiaris</i>	Ulna (proximal)	R	Proximal end is fused.
EN195	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Mandible	R	

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
EN196	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN197	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN198	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Rib		
EN199	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN200	Enoura Kaizuka	Terrestrial Mammalia indet.	Rib		
EN201	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN202	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN203	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN204	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN205	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN206	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN207	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN208	Enoura Kaizuka	Terrestrial Mammalia indet.	Rib		
EN209	Enoura Kaizuka	<i>Phoca largha</i>	Tibia	L	
EN210	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN211	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN212	Enoura Kaizuka	Mammalia indet.	Rib		
EN213	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN214	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN215	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN216	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN217	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN218	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN219	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN220	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN221	Enoura Kaizuka	Marine Mammalia indet.	Vertebra fragment		
EN222	Enoura Kaizuka	Terrestrial Mammalia indet.	Rib		
EN223	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN224	Enoura Kaizuka	Phocidae indet.	Thoracic vertebra		
EN225	Enoura Kaizuka	Terrestrial Mammalia indet.	Rib fragment		
EN226	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN227	Enoura Kaizuka	Marine Mammalia indet.	Coxal bone fragment		
EN228	Enoura Kaizuka	<i>Sus scrofa domesticus</i>	Nasal bone		
EN229	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN230	Enoura Kaizuka	Marine Mammalia indet.	Rib fragment		
EN231	Enoura Kaizuka	Marine Mammalia indet.	Rib fragment		
EN232	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN233	Enoura Kaizuka	Marine Mammalia indet.	Rib		
EN234	Enoura Kaizuka	Mammalia indet.	Scapula fragment		
EN236	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN237	Enoura Kaizuka	Phocidae indet.	Radius (shaft)	L	
EN238	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN239	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN240	Enoura Kaizuka	Terrestrial Mammalia indet.	Bone fragment		
EN241	Enoura Kaizuka	Pinnipedia indet.	Radius (head)		Unfused. Infant/subadult.
EN242	Enoura Kaizuka	Mammalia indet.	Scapula fragment		
EN243	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN244	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN245	Enoura Kaizuka	Osteichthyes indet.	Bone fragment		
EN246	Enoura Kaizuka	<i>Crassostrea gigas</i>	Shell fragment		
EN247	Enoura Kaizuka	Marine Mammalia indet.	Rib fragment		
EN248	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN249	Enoura Kaizuka	Marine Mammalia indet.	Vertebra fragment		
EN250	Enoura Kaizuka	Marine Mammalia indet.	Rib fragment		
EN251	Enoura Kaizuka	Mammalia indet.	Zygomatic bone (arch fragment)		
EN252	Enoura Kaizuka	Mammalia indet.	Rib		
EN253	Enoura Kaizuka	Bivalvia indet.	Shell fragment		
EN254	Enoura Kaizuka	Terrestrial Mammalia indet.	Humerus fragment		
EN255	Enoura Kaizuka	Mammalia indet.	Bone fragment		
EN256	Enoura Kaizuka	Mammalia indet.	Rib		
EN257	Enoura Kaizuka	Mammalia indet.	Bone fragment		
HT001	Higashi Taraika Kaizuka	<i>Sus scrofa domesticus</i>	Maxilla (with dm1-dm4 and M1-2)	L	M2 is unerupted. Infant.
HT002	Higashi Taraika Kaizuka	Cervidae indet.	Sacrum		?Rangifer tarandus.
HT003	Higashi Taraika Kaizuka	<i>Erignathus barbatus</i>	Atlas		
HT004	Higashi Taraika Kaizuka	<i>Sus scrofa domesticus</i>	Scapula	R	Glenoid cavity is fused.



Sample No.	Site	Taxon	Skeletal part	LR	Remarks
HT005	Higashi Taraika Kaizuka	<i>Canis lupus familiaris</i>	Cranium		
HT007	Higashi Taraika Kaizuka	Cetacea indet.	Cervical vertebra		
HT009	Higashi Taraika Kaizuka	Cetacea indet.	Vertebra		
HT010	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT011	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT012	Higashi Taraika Kaizuka	<i>Sus scrofa domesticus</i>	Thoracic vertebra		Unfused. Subadult.
HT013	Higashi Taraika Kaizuka	Mammalia indet.	Scapula fragment		
HT014	Higashi Taraika Kaizuka	<i>Sus scrofa domesticus</i>	Lacrima bone	L	
HT015	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT016	Higashi Taraika Kaizuka	<i>Sus scrofa domesticus</i>	Femur (distal)		Distal end is unfused. Subadult.
HT017	Higashi Taraika Kaizuka	<i>Rangifer tarandus</i>	Antler		Material for bone tool.
HT018	Higashi Taraika Kaizuka	<i>Rangifer tarandus</i>	Antler		Material for bone tool.
HT019	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT020	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT021	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT022	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT023	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT024	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
HT025	Higashi Taraika Kaizuka	<i>Rangifer tarandus</i>	Antler		Material for bone tool.
HT026	Higashi Taraika Kaizuka	Mammalia indet.	Bone fragment		
MK001	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Ilium	R	Infant.
MK002	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Mandible fragment	R	
MK003	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Tibia	L	Infant.
MK004	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Femur (distal end)	L	Unfused. Subadult.
MK005	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Femur (proximal)	R	Proximal end is unfused. Subadult.
MK006	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Parietal bone	L	
MK007	Minami Kaizuka	Otariidae indet.	Rib		
MK009	Minami Kaizuka	Marine Mammalia indet.	Bone fragment		
MK010	Minami Kaizuka	<i>Canis lupus familiaris</i>	Thoracic vertebra		
MK011	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Tibia (distal)	R	Distal end is unfused. Infant.
MK012	Minami Kaizuka	<i>Sus scrofa domesticus</i>	Radius (proximal)	R	Proximal end is unfused. Infant.
MK013	Minami Kaizuka	<i>Phoca largha</i>	Scapula	R	Glenoid cavity is unfused. Infant/subadult.
MK014	Minami Kaizuka	Mammalia indet.	Scapula fragment		
MK015	Minami Kaizuka	<i>Canis lupus familiaris</i>	Vertebra (spinous process)		Unfused. Infant/subadult.
MK016	Minami Kaizuka	<i>Canis lupus familiaris</i>	Vertebra (spinous process)		Unfused. Infant/subadult.
RT001	Rutaka Site	<i>Canis lupus familiaris</i>	Humerus (distal)	R	Distal end is fused.
RT002	Rutaka Site	Cetacea indet.	Lumber vertebra		Small whale.
RT003	Rutaka Site	<i>Canis lupus familiaris</i>	Thoracic vertebra		
RT004	Rutaka Site	Phocidae indet.	Cervical vertebra		Infant.
RT005	Rutaka Site	<i>Pusa hispida</i>	Tympanic bulla (phocidae)	R	
RT006	Rutaka Site	Mammalia indet.	Bone fragment		Burned bone.
RT007	Rutaka Site	<i>Canis lupus familiaris</i>	Ulna (proximal)	L	Proximal end is unfused. Subadult.
RT008	Rutaka Site	<i>Sus scrofa domesticus</i>	Femur	R	Both ends are unfused. Infant.
RT009	Rutaka Site	<i>Canis lupus familiaris</i>	Ulna (proximal)	L	Proximal end is unfused. Subadult.
RT010	Rutaka Site	Marine Mammalia indet.	Rib		
SS001	Susuya Shell Mound	<i>Erignathus barbatus</i>	Tympanic bulla	R	
SS002	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with P4)	R	
SS003	Susuya Shell Mound	<i>Lepus</i> sp.	Mandible	L	
SS004	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Axis		
SS005	Susuya Shell Mound	Gruidae indet.	Tibiotarsus	R	Infant/subadult.
SS006	Susuya Shell Mound	Phocidae indet.	Tympanic bulla	L	
SS007	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Humerus	R	Both ends are unfused. Infant.
SS008	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Cervical vertebra		
SS009	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dc and dm2-3)	L	Infant.
SS010	Susuya Shell Mound	Otariidae indet.	Thoracic vertebra (arch)		
SS011	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Zygomatic bone and maxilla fragment	L	
SS012	Susuya Shell Mound	Phocidae indet.	Tympanic bulla	R	
SS013	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with dm4)	L	Infant.
SS014	Susuya Shell Mound	Marine Mammalia indet.	Bone fragment		Material for bone tool.
SS015	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dc and dm2-4)	L	Infant.
SS016	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla	L	
SS017	Susuya Shell Mound	Otariidae indet.	Scapula	L	
SS018	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla	L	
SS019	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS020	Susuya Shell Mound	<i>Lamna distropis</i>	Vertebra		

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
SS021	Susuya Shell Mound	Mammalia indet.	Rib		
SS022	Susuya Shell Mound	Otariidae indet.	Rib		
SS023	Susuya Shell Mound	Otariidae indet.	Scapula fragment	L	
SS024	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Parietal bone	L	
SS025	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Frontal bone	L	
SS026	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Parietal bone	L	
SS027	Susuya Shell Mound	Aves indet.	Bone fragment		
SS029	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Ulna (proximal)	L	Proximal end is unfused. Infant.
SS030	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS031	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius (distal)		Distal end is unfused. Infant.
SS032	Susuya Shell Mound	Terrestrial Mammalia indet.	Femoral head fragment?		
SS033	Susuya Shell Mound	Mammalia indet.	Scapula fragment		
SS034	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS036	Susuya Shell Mound	Aves indet.	Bone fragment		
SS037	Susuya Shell Mound	Otariidae indet.	Rib	R	
SS038	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS039	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS040	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS041	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS042	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS045	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS046	Susuya Shell Mound	Cetacea indet.	Bone fragment		
SS047	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS048	Susuya Shell Mound	Cetacea indet.	Bone fragment		
SS049	Susuya Shell Mound	Cetacea indet.	Bone fragment		
SS050	Susuya Shell Mound	Cetacea indet.	Bone fragment		Material for bone tool.
SS051	Susuya Shell Mound	Cetacea indet.	Bone fragment		Material for bone tool.
SS052	Susuya Shell Mound	Marine Mammalia indet.	Bone fragment		
SS053	Susuya Shell Mound	Marine Mammalia indet.	Bone fragment		
SS054	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with P4 and M1)	L	
SS055	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with P2-4 and M1-2)	R	
SS056	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with P3 and M1)	L	
SS057	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with P4 and M1-3)	R	Adult.
SS058	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with C, P3-4 and M1)	R	
SS059	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Coxal bone	R	
SS060	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Coxal bone	L	
SS061	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius (distal)	L	Distal end is fused.
SS062	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Atlas		
SS063	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Femur (proximal)	R	Proximal end is fused.
SS064	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Humerus	R	Both ends are fused. Adult.
SS065	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Ulna (proximal)	L	Proximal end is fused.
SS066	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia	L	Both ends are fused. Adult.
SS067	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dm2)	L	Infant.
SS068	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia (distal)	L	Distal end is fused.
SS069	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia (proximal)	R	Proximal end is fused.
SS070	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Atlas		
SS071	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Ulna (proximal)	R	Proximal end is fused.
SS072	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Ulna	L	
SS073	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia (distal)	R	Distal end is fused.
SS074	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with dm2)	L	Infant.
SS075	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dm3 and dm4)	L	Infant.
SS076	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tooth (UM1)	L	
SS077	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius (proximal)	L	Proximal end is fused.
SS078	Susuya Shell Mound	<i>Erignathus barbatus</i>	Tympanic bulla	L	
SS079	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Scapula	L	Glenoid cavity is fused.
SS080	Susuya Shell Mound	<i>Pusa hispida</i>	Tympanic bulla	R	
SS081	Susuya Shell Mound	<i>Erignathus barbatus</i>	Tympanic bulla	L	
SS082	Susuya Shell Mound	<i>Phoca largha</i>	Ulna	L	Both ends are unfused. Infant/subadult.
SS083	Susuya Shell Mound	<i>Erignathus barbatus</i>	Mandible	R	
SS084	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Mandible (with P3)	L	
SS085	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with M1 and M2)	R	
SS086	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Femur (proximal)	L	Proximal end is fused.
SS087	Susuya Shell Mound	<i>Sus scrofa domesticus</i>	Femur	R	Both ends are unfused. Infant/subadult.
SS088	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius (proximal)	R	Proximal end is unfused. Infant/subadult.
SS089	Susuya Shell Mound	<i>Cygnus</i> sp.	Femur (proximal)	R	Proximal end is fused.

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
SS090	Susuya Shell Mound	Otariidae indet.	Scapula	R	Glenoid cavity is unfused. Infant/subadult.
SS091	Susuya Shell Mound	<i>Ursus arctos</i>	Calcaneus	L	Proximal end is fused.
SS092	Susuya Shell Mound	Cetacea indet.	Vertebra (arch)		Large whale.
SS093	Susuya Shell Mound	<i>Cygnus</i> sp.	Humerus	R	
SS094	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius (proximal)	R	Proximal end is fused.
SS095	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius	L	Both ends are fused. Adult.
SS096	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla	L	Infant.
SS097	Susuya Shell Mound	<i>Callorhinus ursinus</i>	Radius	R	Male.
SS098	Susuya Shell Mound	<i>Cygnus</i> sp.	Ulna (distal)	R	Distal end is fused.
SS099	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS100	Susuya Shell Mound	<i>Lepus</i> sp.	Tibia	R	
SS101	Susuya Shell Mound	<i>Lutra lutra</i>	Ulna	R	
SS102	Susuya Shell Mound	Otariidae indet.	Humerus	R	
SS103	Susuya Shell Mound	Phocidae indet.	Fibula	R	
SS104	Susuya Shell Mound	<i>Erignathus barbatus</i>	Femur	L	Both ends are unfused. Infant/subadult.
SS105	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Radius (proximal)	L	Proximal end is fused.
SS106	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Lumber vertebra		
SS107	Susuya Shell Mound	Phocidae indet.	Cervical vertebra		
SS108	Susuya Shell Mound	Phocidae indet.	Lumber vertebra		Unfused. Infant/subadult.
SS109	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Thoracic vertebra		
SS110	Susuya Shell Mound	<i>Pusa hispida</i>	Femur (proximal)	L	Proximal end is unfused. Infant/subadult.
SS111	Susuya Shell Mound	Phocidae indet.	Thoracic vertebra		Unfused. Infant/subadult.
SS112	Susuya Shell Mound	Phocidae indet.	Lumber vertebra		
SS113	Susuya Shell Mound	Cetacea indet.	Vertebra		Small whale.
SS114	Susuya Shell Mound	Cetacea indet.	Vertebra		Small whale.
SS115	Susuya Shell Mound	Cetacea indet.	Vertebra		Small whale.
SS116	Susuya Shell Mound	Cetacea indet.	Vertebra		Small whale.
SS117	Susuya Shell Mound	Cetacea indet.	Vertebra		Small whale.
SS118	Susuya Shell Mound	Cetacea indet.	Vertebra		Small whale.
SS119	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tooth (UP4)	R	Uncompleted root.
SS120	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Metatarsal	R	Both ends are fused.
SS121	Susuya Shell Mound	Anatinae indet.	Humerus	R	
SS122	Susuya Shell Mound	Otariidae indet.	Rib		
SS123	Susuya Shell Mound	Otariidae indet.	Metacarpal or phalanx		Unfused. Infant/subadult.
SS124	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Metatarsal	L	Both ends are fused.
SS125	Susuya Shell Mound	Otariidae indet.	Metacarpal or phalanx		Unfused. Infant/subadult.
SS126	Susuya Shell Mound	<i>Lamna distropis</i>	Vertebra		
SS127	Susuya Shell Mound	<i>Lamna distropis</i>	Vertebra		
SS128	Susuya Shell Mound	<i>Lamna distropis</i>	Vertebra		
SS129	Susuya Shell Mound	Otariidae indet.	Metacarpal	R	Both ends are fused.
SS130	Susuya Shell Mound	Otariidae indet.	Humerus fragment		
SS131	Susuya Shell Mound	<i>Ursus arctos</i>	Cervical vertebra		Infant.
SS132	Susuya Shell Mound	Cetacea indet.	Bone fragment		
SS133	Susuya Shell Mound	Aves indet.	Bone fragment		
SS134	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS135	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Ulna (distal)	L	Distal end is fused.
SS136	Susuya Shell Mound	Aves indet.	Bone fragment		
SS137	Susuya Shell Mound	Otariidae indet.	Thoracic vertebra		
SS138	Susuya Shell Mound	?Accipitriformes	Radius (distal)	R	Distal end is fused.
SS139	Susuya Shell Mound	Otariidae indet.	Vertebra		
SS140	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Occipital bone		
SS141	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dm3 and dm4)	L	Infant.
SS142	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Thoracic vertebra		
SS143	Susuya Shell Mound	Cervidae indet.	Atlas fragment		
SS144	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Occipital bone (right condyle)		
SS145	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Coxal bone	L	
SS146	Susuya Shell Mound	Canidae indet.	Tympanic bulla	L	
SS147	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Occipital bone (left condyle)		
SS148	Susuya Shell Mound	Otariidae indet.	Phalanx		
SS149	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dm3 and dm4)	R	Infant.
SS150	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Temporal bone (zygomatic process)	L	
SS151	Susuya Shell Mound	Otariidae indet.	Scapula fragment	R	
SS152	Susuya Shell Mound	<i>Sus scrofa domesticus</i>	Femur (proximal)	R	Proximal end is unfused. Infant/subadult.
SS153	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Atlas		
SS154	Susuya Shell Mound	Terrestrial Mammalia indet.	Tympanic bulla fragment		

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
SS155	Susuya Shell Mound	Canidae indet.	Femur (head fragment)		Proximal end is fused.
SS156	Susuya Shell Mound	<i>Callorhinus ursinus</i>	Femur	R	Female or subadult/infant.
SS157	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS158	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS159	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tooth (UC/LC)		
SS160	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with dm2-4)	L	Infant.
SS161	Susuya Shell Mound	Canidae indet.	Temporal bone (zygomatic process)	L	
SS162	Susuya Shell Mound	<i>Erignathus barbatus</i>	Tibia	R	
SS163	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Maxilla (with P4)	L	
SS164	Susuya Shell Mound	<i>Phoca largha</i>	Ulna (distal)	R	Distal end is unfused. Infant/subadult.
SS165	Susuya Shell Mound	<i>Callorhinus ursinus</i>	Ulna (proximal)	L	Proximal end is fused. Male.
SS166	Susuya Shell Mound	<i>Callorhinus ursinus</i>	Radius (distal)	R	Distal end is unfused. Infant/Subadult. Male.
SS167	Susuya Shell Mound	<i>Ursus arctos</i>	Humerus (distal)	L	Distal end is fused.
SS168	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia (proximal)	L	Proximal end is fused.
SS169	Susuya Shell Mound	Terrestrial Mammalia indet.	Rib		
SS170	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia	L	
SS171	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Sacrum		
SS172	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Metatarsal	R	Both ends are unfused. Infant/subadult.
SS173	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Sacrum		
SS174	Susuya Shell Mound	<i>Phoca fasciata</i>	Tibia	R	Both ends are unfused. Infant/subadult.
SS175	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Lumber vertebra		
SS176	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Humerus	R	
SS177	Susuya Shell Mound	Otariidae indet.	Rib		
SS178	Susuya Shell Mound	Phocidae indet.	Tibia	L	
SS179	Susuya Shell Mound	Otariidae indet.	Carpal	L	
SS180	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS181	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Metacarpal	R	Both ends are fused.
SS182	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Vertebra (body)		
SS183	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Metacarpal	L	Both ends are unfused. Infant/subadult.
SS184	Susuya Shell Mound	Marine Mammalia indet.	Vertebra fragment		
SS185	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS186	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS187	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS188	Susuya Shell Mound	Aves indet.	Bone fragment		
SS189	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS190	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS191	Susuya Shell Mound	Canidae indet.	Vertebra fragment		
SS192	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS193	Susuya Shell Mound	Phocidae indet.	Femur (distal fragment)	R	
SS194	Susuya Shell Mound	Otariidae indet.	Scapula fragment		
SS195	Susuya Shell Mound	Terrestrial Mammalia indet.	Tympanic part fragment		
SS196	Susuya Shell Mound	Anatinae indet.	Femur (proximal)	R	Proximal end is fused.
SS197	Susuya Shell Mound	Marine Mammalia indet.	Vertebra fragment		
SS198	Susuya Shell Mound	Anatinae indet.	Femur	L	Both ends are fused. Adult.
SS199	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS200	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS201	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS202	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS203	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia (distal)	L	Distal end is unfused. Infant/subadult.
SS204	Susuya Shell Mound	Marine Mammalia indet.	Vertebra fragment		
SS205	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tibia	L	
SS206	Susuya Shell Mound	Marine Mammalia indet.	Vertebra fragment		
SS207	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS208	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS209	Susuya Shell Mound	Mammalia indet.	Cranium fragment		
SS210	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS211	Susuya Shell Mound	Canidae indet.	Coxal bone fragment		
SS212	Susuya Shell Mound	Phocidae indet.	Femur (distal fragment)		
SS213	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS214	Susuya Shell Mound	Otariidae indet.	Scapula fragment		
SS215	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS216	Susuya Shell Mound	Mammalia indet.	Cranium fragment		
SS217	Susuya Shell Mound	Cetacea indet.	Rib		Large whale.
SS218	Susuya Shell Mound	<i>Cygnus</i> sp.	Humerus	L	
SS219	Susuya Shell Mound	Terrestrial Mammalia indet.	Rib		

Sample No.	Site	Taxon	Skeletal part	LR	Remarks
SS220	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS221	Susuya Shell Mound	Otariidae indet.	Thoracic vertebra		
SS222	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS223	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS224	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS225	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS226	Susuya Shell Mound	Aves indet.	Bone fragment		
SS227	Susuya Shell Mound	<i>Lepus</i> sp.	Femur	R	
SS228	Susuya Shell Mound	Aves indet.	Bone fragment		
SS229	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS230	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS231	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS232	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS233	Susuya Shell Mound	Terrestrial Mammalia indet.	Tympanic bulla fragment		
SS234	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS235	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS236	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS237	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS238	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS239	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS240	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS241	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS242	Susuya Shell Mound	Mammalia indet.	Rib		
SS243	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS244	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS245	Susuya Shell Mound	Marine Mammalia indet.	Bone fragment		
SS246	Susuya Shell Mound	Marine Mammalia indet.	Rib		
SS247	Susuya Shell Mound	Aves indet.	Bone fragment		Cut mark.
SS248	Susuya Shell Mound	Terrestrial Mammalia indet.	Rib		
SS249	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS250	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Incisor	L	
SS251	Susuya Shell Mound	Terrestrial Mammalia indet.	Bone fragment		
SS252	Susuya Shell Mound	Marine Mammalia indet.	Vertebra fragment		
SS253	Susuya Shell Mound	<i>Canis lupus familiaris</i>	Tooth (LM3)	L	
SS254	Susuya Shell Mound	Marine Mammalia indet.	Bone fragment		
SS255	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS256	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS257	Susuya Shell Mound	Marine Mammalia indet.	Vertebra fragment		
SS258	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS259	Susuya Shell Mound	<i>Crassostrea gigas</i>	Shell fragment		
SS260	Susuya Shell Mound	Marine Mammalia indet.	Bone fragment		
SS261	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS262	Susuya Shell Mound	<i>Crassostrea gigas</i>	Shell fragment		
SS263	Susuya Shell Mound	<i>Crassostrea gigas</i>	Shell fragment		
SS264	Susuya Shell Mound	<i>Crassostrea gigas</i>	Shell fragment		
SS265	Susuya Shell Mound	<i>Crassostrea gigas</i>	Shell fragment		
SS266	Susuya Shell Mound	Bivalvia indet.	Shell fragment		
SS268	Susuya Shell Mound	Pleuronectiformes indet.	Vertebra		
SS269	Susuya Shell Mound	Pleuronectiformes indet.	Vertebra		
SS270	Susuya Shell Mound	Osteichthyes indet.	Bone fragment		
SS271	Susuya Shell Mound	Osteichthyes indet.	Bone fragment		
SS272	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS273	Susuya Shell Mound	Mammalia indet.	Scapula fragment		
SS274	Susuya Shell Mound	Mammalia indet.	Bone fragment		
SS281	Susuya Shell Mound	<i>Erignathus barbatus</i>	Tympanic bulla	L	
SS282	Susuya Shell Mound	<i>Erignathus barbatus</i>	Humerus	L	Both ends are unfused. Infant/subadult.
SS283	Susuya Shell Mound	Otariidae indet.	Phalanx		



Appendix 2. Dental measurements of *Sus scrofa domestica* (mm)

Sample No.	Upper/Lower	LR	dm4M	dm4D	P2W	P3W	P4W	M1M	M1D	M2M	M2D	M3W	M3L
EN001	Lower	L			5.50	7.20	9.23	12.00	12.36	15.80	15.42		
EN002	Lower	R				6.83	8.87	12.02	12.34	15.76	15.43		
EN003	Lower	R			5.35	7.04	9.40						
EN004	Lower	R					10.05						
EN005	Upper	R			6.66	9.97							
EN006	Upper	R										19.57	31.25
EN007	Lower	L								14.53	14.65		
EN013	Upper	L									18.36		
HT001	Upper	L	11.60	12.27				14.21	13.71				

Appendix 3. Dental measurements of *Canis lupus familiaris* (mm)

Sample No.	Upper/Lower	LR	dm3L	dm3B	dm4L	dm4B	P3L	P3B	P4L	P4GB	P4B	M1L	M1B	M2L	M2B
SS002	Upper	R							20.58	9.95	7.78				
SS009	Upper	L	10.43	4.65											
SS013	Lower	L			11.66	4.63									
SS015	Upper	L	10.65	4.34	7.78	8.89									
SS054	Lower	L							10.81		5.28	20.47	8.50		
SS055	Lower	R					10.08	4.32	10.32		4.80	20.13	8.61	8.03	5.36
SS056	Lower	L					9.08	3.58				19.21	8.04		
SS057	Lower	R					10.16	4.03	10.84		4.72	19.38	8.26	7.40	5.38
SS058	Lower	R					10.05	4.49	11.85		5.67	20.65	8.57		
SS075	Upper	L	10.72	4.56	6.96	8.39									
SS076	Upper	L										17.78	12.17		
SS084	Lower	L					10.42	4.60							
SS085	Upper	R										9.86	12.36	4.86	7.60
SS119	Upper	R								10.92					
SS141	Upper	L	10.42	4.42	7.14	8.27									
SS149	Upper	R	10.64	4.13	7.67	8.85									
SS160	Upper	L	9.95	4.62	7.82	8.62									
SS163	Upper	L							18.30		9.76				

## Appendix 4. Bone measurements of mammal and bird remains

Sample No.	Taxon	Skeletal part	LR	Measurements (mm)
EN016	Cetacea indet.	Vertebra		HFcr 29.6; BFcr 34.3
EN022	<i>Phoca largha</i>	Humerus	R	SD 11.12
EN023	<i>Pusa hispida</i>	Humerus	R	SD 10.6
EN025	<i>Phoca largha</i>	Tibia	L	Bp 28.8
EN026	<i>Erignathus barbatus</i>	Humerus	R	Bp 39.4; SD 16.2
EN030	<i>Sus scrofa domesticus</i>	Scapula	R	SLC 22.3; LG 31.0; BG 18.6
EN032	<i>Sus scrofa domesticus</i>	Humerus	R	Bd 35.8; BT 27.5
EN037	Gaviidae indet.	Radius	L	GL 159.9; Bd 13.1
EN038	<i>Erignathus barbatus</i>	Tibia	L	Bp 39.7
EN039	<i>Sus scrofa domesticus</i>	Coxal bone	R	LA 26.7; LAR 30.5
EN045	<i>Sus scrofa domesticus</i>	Scapula	R	SLC 24.8; LG 34.51; BG 23.5
EN050	<i>Phoca largha</i>	Tibia	L	Bp 27.4
EN051	<i>Sus scrofa domesticus</i>	Scapula	R	SLC 22.5
EN061	<i>Sus scrofa domesticus</i>	Radius	R	Bp 26.8
EN062	<i>Pusa hispida</i>	Femur	R	SD 14.4; Bp 28.6
EN080	<i>Erignathus barbatus</i>	Femur	R	SD 22.5; Bp 46.0
EN081	<i>Canis lupus familiaris</i>	Axis		LCDe 51.4; LAPa 57.6; BFcr 33.2; BPacd 33.9; SBV 24.9; BFcd 20.8; H 43.2
EN082	<i>Pusa hispida</i>	Atlas		GL 38.3; BFcr 53.4; BFcd 41.0; LAd 19.2; H35.0
EN083	<i>Erignathus barbatus</i>	Atlas		GB 94.0; GL 46.1; BFcr 66.1; BFcd 53.5; LAd 23.3; H 48.9
EN085	<i>Sus scrofa domesticus</i>	Atlas		LAd 17.7; H 47.6
EN089	<i>Pusa hispida</i>	Femur	L	Bp 46.4; DC 18.1; SD 21.7
EN090	Phocidae indet.	Ulna	L	BPC 19.0
EN094	Phocidae indet.	Scapula	L	LG 25.5
EN096	<i>Erignathus barbatus</i>	Femur	R	Bp 41.0; SD 22.8
EN098	<i>Phoca largha</i>	Tibia	R	Bp 28.3
EN099	<i>Erignathus barbatus</i>	Humerus	L	Bp 34.0; SD 15.8; Bd 47.3
EN101	<i>Phoca largha</i>	Ulna	R	BPC 13.7
EN108	Phocidae indet.	Femur	L	SD 17.2
EN161	<i>Sus scrofa domesticus</i>	Scapula	R	SLC 15.9
EN171	Cetacea indet.	Vertebra		HFcr 135.1; BFcr 170.3
EN172	<i>Erignathus barbatus</i>	Tibia	L	Bp 46.3
EN174	Cetacea indet.	Caudal vertebra		HFcr 64.7; BFcr 75.2
EN193	<i>Canis lupus familiaris</i>	Ulna	R	DPA 28.2; SDO 21.9; BPC 19.6
EN194	<i>Canis lupus familiaris</i>	Ulna	R	BPC 18.8
HT002	Cervidae indet.	Sacrum		BFcr 44.9; HFcr 21.5
HT003	<i>Erignathus barbatus</i>	Atlas		GB 84.3; GL 44.2; BFcr 71.1; BFcd 50.3; LAd 20.1; H 46.0
HT004	<i>Sus scrofa domesticus</i>	Scapula	R	SLC 20.3; LG 31.0; BG 21.4
HT005	<i>Canis lupus familiaris</i>	Cranium		(7) 74.3; (23) 61.5; (26) 47.1; (28) 15.1; (29) 56.0; (31) 28.9; (32) 38.2; (33) 27.5; (40) 46.5
HT007	Cetacea indet.	Cervical vertebra		HFcr 59.9
HT009	Cetacea indet.	Vertebra		BFcr 78.7
MK013	<i>Phoca largha</i>	Scapula	R	SLC 20.8; LG 22.9; BG 16.8
SS002	<i>Canis lupus familiaris</i>	Maxilla	R	(16) 30.6
SS003	<i>Lepus</i> sp.	Mandible	L	(3) 22.0
SS004	<i>Canis lupus familiaris</i>	Axis		LCDe 56.1; LAPa 59.0; BFcr 34.4; BPacd 35.3; BPtr 49.7; SBV 25.0 BFcd 21.9
SS005	Gruidae indet.	Tibiotarsus	R	Bd 24.3; Dd 21.4
SS020	<i>Lamna distropis</i>	Vertebra		HFcr 30.3; BFcr 33.1
SS029	<i>Canis lupus familiaris</i>	Ulna	L	BPC 14.8
SS054	<i>Canis lupus familiaris</i>	Mandible	L	(19) 31.98
SS055	<i>Canis lupus familiaris</i>	Mandible	R	(8) 65.3; (9) 60.7; (10) 32.6; (11) 33.7; (12) 29.0; (19) 25.1; (20) 20.1
SS056	<i>Canis lupus familiaris</i>	Mandible	L	(11) 33.5; (12) 29.6; (20) 20.0
SS057	<i>Canis lupus familiaris</i>	Mandible	R	(1) 121.2; (4) 105.9; (7) 67.2; (9) 51.1; (10) 30.7; (19) 24.9; (20) 17.8
SS058	<i>Canis lupus familiaris</i>	Mandible	R	(1) 138.9; (3) 129.7; (4) 123.4; (5) 113.9; (7) 74.8; (10) 31.6; (18) 55.1; (19) 28.8; (20) 20.2
SS059	<i>Canis lupus familiaris</i>	Coxal bone	R	LA 22.5; SH 20.2
SS060	<i>Canis lupus familiaris</i>	Coxal bone	L	LA 18.5; SH 17.7
SS061	<i>Canis lupus familiaris</i>	Radius	L	Bd 24.2; BFcd 20.6
SS062	<i>Canis lupus familiaris</i>	Atlas		GB 69.6; GL 38.3; BFcr 34.0; BFcd 26.8; LAd 10.8
SS063	<i>Canis lupus familiaris</i>	Femur	R	Bp 35.3; DC 18.8
SS065	<i>Canis lupus familiaris</i>	Ulna	L	LO 20.2; DPA 27.4; BPC 20.3
SS066	<i>Canis lupus familiaris</i>	Tibia	L	Bd 22.5; Dd 17.3
SS068	<i>Canis lupus familiaris</i>	Tibia	L	Bd 24.4; Dd 17.8
SS069	<i>Canis lupus familiaris</i>	Tibia	R	Bp 28.7
SS070	<i>Canis lupus familiaris</i>	Atlas		BFcr 41.7; BFcd 33.7; LAd 18.1
SS071	<i>Canis lupus familiaris</i>	Ulna	R	LO 18.0; DPA 27.2; SDO 22.8; BPC 18.8
SS072	<i>Canis lupus familiaris</i>	Ulna	L	DPA 23.7; BPC 15.6

Sample No.	Taxon	Skeletal part	LR	Measurements (mm)
SS073	<i>Canis lupus familiaris</i>	Tibia	R	Bd 22.0; Dd 16.4
SS077	<i>Canis lupus familiaris</i>	Radius	L	BP 17.7
SS079	<i>Canis lupus familiaris</i>	Scapula	L	SLC 25.0; GLP 28.7; BG 16.81
SS082	<i>Phoca largha</i>	Ulna	L	BPC 13.9
SS086	<i>Canis lupus familiaris</i>	Femur	L	DC 17.2
SS089	<i>Cygnus</i> sp.	Femur	R	Bp 23.6
SS090	Otariidae indet.	Scapula	R	SLC 38.9; LG 42.2; BG 32.7
SS091	<i>Ursus arctos</i>	Calcaneus	L	GB 57.7
SS094	<i>Canis lupus familiaris</i>	Radius	R	BP 16.7
SS095	<i>Canis lupus familiaris</i>	Radius	L	GL 140.3; BP 14.8; Bd 23.4; Bfd 18.6
SS098	<i>Cygnus</i> sp.	Ulna	R	Did 20.5
SS101	<i>Lutra lutra</i>	Ulna	R	BPC 8.9
SS104	<i>Erignathus barbatus</i>	Femur	L	SD 22.4
SS105	<i>Canis lupus familiaris</i>	Radius	L	BP 16.2
SS110	<i>Pusa hispida</i>	Femur	L	SD 13.9
SS113	Cetacea indet.	Vertebra		HFcr 30.3; BFcr 34.9
SS114	Cetacea indet.	Vertebra		HFcr 31.2; BFcr 34.1
SS115	Cetacea indet.	Vertebra		HFcr 30.8; BFcr 33.4
SS116	Cetacea indet.	Vertebra		HFcr 32.1; BFcr 36.4
SS117	Cetacea indet.	Vertebra		HFcr 33.7; BFcr 37.8
SS118	Cetacea indet.	Vertebra		HFcr 32.8; BFcr 38.8
SS121	Anatinae indet.	Humerus	R	Bp 18.1
SS126	<i>Lamna distropis</i>	Vertebra		HFcr 29.6; BFcr 30.4
SS127	<i>Lamna distropis</i>	Vertebra		HFcr 30.5; BFcr 31.8
SS128	<i>Lamna distropis</i>	Vertebra		HFcr 44.5
SS138	?Accipitriformes	Radius	R	Bd 12.5
SS140	<i>Canis lupus familiaris</i>	Occipital bone		(25) 34.5; (27) 18.1; (28) 12.7
SS145	<i>Canis lupus familiaris</i>	Coxal bone	L	LA 19.7
SS153	<i>Canis lupus familiaris</i>	Atlas		BFcr 35.1; BFcd 31.8; LAd 14.8
SS156	<i>Callorhinus ursinus</i>	Femur	R	SD 17.9
SS165	<i>Callorhinus ursinus</i>	Ulna	L	DPA 64.2; SDO 54.2; BPC 45.0
SS166	<i>Callorhinus ursinus</i>	Radius	R	Bd 59.3
SS167	<i>Ursus arctos</i>	Humerus	L	Bd 91.2; BT 63.4
SS174	<i>Phoca fasciata</i>	Tibia	R	Bp 35.9
SS196	Anatinae indet.	Femur	R	Bp 10.2
SS198	Anatinae indet.	Femur	L	GL 41.0; Lm 36.6; Bp 9.6; Bd 9.2
SS282	<i>Erignathus barbatus</i>	Humerus	L	Bp 28.0; SD 12.0

The symbols for the measurement items were according to Driesch (1976).