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Supplementary Materials for

The evolution of dog diet and foraging: Insights from archaeological canids in Siberia

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The PDF file includes:

Supplementary Text
Legends for datasets S1 to S3
References

Other Supplementary Material for this manuscript includes the following:

Datasets S1 to S3

Supplementary Text

Siberian Archaeological Site Descriptions

Archaeological site descriptions are provided below in two groups. The first set are those sites where stable isotope composition data is available, and the second set includes sites where only body mass information is available. Sites are described below in the order in which they appear in Supplementary Dataset 1, which are ordered by sub-region of Siberia. Age estimations are provided in Supplementary Datasets S1 and S2, with the calibrated age ranges indicated in the text below. All radiocarbon dates were calibrated with Oxcal 4.4 using the IntCal20 calibration curve (80).

Sites with Canid Stable Isotope Data

Uspenovka II

Uspenovka II is an Early Medieval (pastoralist) kurgan mortuary complex located on the left bank of the Alei River in the steppe zone of the Altai region (81). This site is associated with the Srostinsk culture. Three kurgans were found but only kurgan # 3 was excavated. This kurgan is an oval earthen mound that is 17 m in diameter. It contained three human burials on its central platform. The dog sample came from the north-eastern portion of a trench surrounding this kurgan and is directly radiocarbon dated to 1065 to 930 cal. BP. Body mass estimation is available for one dog from the site (26).

Berezovaia Luka

Berezovaia Luka is an Early Bronze Age (pastoralist) settlement located in the Aleisk district of the Altai region, on the Upper Ob' River (82). Excavations at this settlement produced thousands of faunal remains, the majority belonging to domestic ungulates (83, 84). This site is associated with the Elunin culture. Over 200 dog specimens were found at Berezovaia Luka. Many of them were isolated elements, but a few were relatively complete skeletons. It has been proposed that at least some dog bodies were used for a spiritual and protective purpose at this settlement. This is suggested by their disposition above or in the fillings of the house waste and ash pits. All dogs analyzed for stable isotope composition were directly radiocarbon dated, with ages ranging between 4345 to 3835 cal. BP. Body mass estimates are available for three dogs (26). Three wolves from the site were also analyzed for stable isotopes but none are directly dated.

Inia I

Inia I is an Early Medieval (pastoralist) kurgan cemetery located on the shores of the Inia River, a tributary of the Ob' River in the Shelabolikhin district of the Altai region. This cemetery contained 29 kurgans and 37 features associated with the Srostinsk culture (85). Eleven kurgans had remains of dog skeletons, all of which were found directly above human graves, near these graves, or as separate burial features. Many of the dogs were laying on their left sides facing the same directions as the humans buried nearby. In some cases, dogs were buried together with horses. All dogs analyzed for stable isotope composition were directly radiocarbon dated, with dates ranging from 1885 to 1060 cal. BP. Body mass estimations are available for three individuals (26).

Firsovo XIV

Firsovo XIV is a pastoralist cemetery located in the Pervomaisk district of the Altai region. This cemetery was created during the Developed Bronze (Andronovo culture) and Early Iron ages (Staroaleisk culture) (86). The dog sample came from human grave # 165, which was excavated in 1994 and assigned to the Staroaleisk culture. The grave contained the remains of a young adult laying on his or her side and in a flexed position. The dog skeleton was also lying on its right side and next to the human's head. It is directly radiocarbon dated to 2310 to 2010 cal. BP. No body mass estimates are available.

Rublevo VI
Rublevo VI is a Late Bronze settlement located in the Mikhailov district of the Altai Region. This pastoralist settlement contained the remains of dwellings, ash pits, and numerous domestic animals (87). This site is associated with the Sargarin–Alekseevsk cultures of this region, which are considered to date to 10-8th centuries BCE. Several dog skeletons were uncovered at this location, the majority found within the fill of excavated dwellings. The single dog utilized in this study is directly radiocarbon dated to 2750 to 2495 cal. BP. No body mass estimations are available.

Balin I
Balin I is the Iron Age pastoralist habitation site located in the Kuda River region of Cis-Baikal. This site was occupied by several pastoralist groups from the 3rd centuries BCE to 15th centuries CE (88). The faunal assemblage was composed of 607 specimens, and the majority were identified as domestic animals, including horse, large bovids, caprines, and one dog, the latter represented by a few cranial fragments in the uppermost cultural layer of this site. The dog is directly radiocarbon dated to 550 to 500 cal. BP but was too fragmentary for body mass estimation.

Shamanka II
Shamanka II is a large Early Neolithic and Early Bronze age forager cemetery located on the south shore of Lake Baikal. Note that Neolithic in Siberian contexts refers to foragers with pottery and ground stone technologies rather than food producing societies. The dog analyzed here was a complete burial found in grave #26, which also contained remains five human individuals, all dating to the Early Neolithic Kitoi mortuary tradition (89). The dog is an adult male and is directly radiocarbon dated to 7425 to 7280 cal. BP. The genetics of this dog have been previously described (6), and the dog's body mass has been estimated (26).

Lokomotiv
This Mesolithic and Early Neolithic forager cemetery is located in the modern city of Irkutsk on the Angara River in Cis-Baikal. The single canid analyzed from this site is a wolf found buried with a disarticulated human head and other scattered human remains (89). The wolf is directly radiocarbon dated to 8325 to 7980 cal. BP. The mtDNA of the wolf has been previously described (89).

Ust'-Khaita
This forager habitation site is located at the confluence of the Khaita and Belaia rivers in Cis-Baikal. A partial skeleton of a juvenile canid was found at the site within a stratum dating to the terminal Pleistocene (90). The canid is directly dated to 12480 to 12000 cal. BP. The remains

exhibited partially healed fractures in the cranium and os coxa. The canid was tentatively identified as a probably early dog (90) but this has yet to be confirmed by genetic or morphological analyses.

Ust'-Belaia
Ust'-Belaia is located on the Angara River in Cis-Baikal downstream from the modern city of Irkutsk. The site consists of a forager habitation site and small cemetery, mostly from the Neolithic period. All four analyzed for stable isotope composition dogs were largely complete skeletons, and at least one of the three was a formal burial (90). All are directly dated, with ages ranging from 7250 to 6300 cal. BP. The mtDNA of two of the specimens have been analyzed (90). Body mass estimates were made for dogs 1, 2, and 4 (26).

Pad' Kalashnikova
This forager site is located on the Angara River downstream from Lake Baikal in Cis-Baikal, and downstream from the Ust'-Belaia site described above. Both of the analyzed dogs from this site are formal burials of complete skeletons, and both dogs are directly radiocarbon dated, with ages ranging from 7160 to 6800 cal. BP (90). The genetics of both dogs have been analyzed and their body masses estimated (6, 26).

Bugul'deika II
This forager and pastoralist habitation site is located on the southwestern shore of Lake Baikal in Cis-Baikal. The dog remains from the site consist of isolated skeletal elements from a single individual, and the mandible analyzed here is directly radiocarbon dated to 3330 to 3075 cal. BP (90). Domestic ungulates appear in the site 1-2 centuries following the death of the dog, and it is assumed that the dog was associated with occupation of the site by foragers. The specimen was too fragmentary for body mass estimation.

Uliarba II
Uliarba II is located on the western shore of Lake Baikal in Cis-Baikal. The site is an Early Bronze Age forager cemetery, and the dog remains analyzed were found in the upper sections of a human grave (25). This partial skeleton is directly radiocarbon dated to 4410 to 4155 cal. BP, and its body mass has been estimated (26).

Ulan-Khada
Ulan-Khada is a forager habitation site on the western shore of Lake Baikal in Cis-Baikal. The dog remains analyzed were isolated skeletal elements from the Early Bronze Age and are directly radiocarbon dated to 4525 to 4155 cal. BP (90). The mtDNA of the dog has been previously described (90). The remains were too fragmentary for body mass estimation.

Shamanskii Mys
This Middle Holocene forager habitation site and cemetery is located on Ol'khon Island near the western shore of Lake Baikal in Cis-Baikal. All three of the dogs analyzed from Shamanskii Mys are burials dating to the Early Neolithic period; two of the three are directly dated, with ages ranging from 7605 to 7320 cal. BP (90). One was interred in a small pit, and the other two were buried alongside an Early Neolithic human burial. Only very small fragments from these burials could be found, and none were complete enough for body mass estimation.

Todakta I
The Todakta I site is a Late Iron Age pastoralist cemetery on Ol'khon Island near the western shore of Lake Baikal in Cis-Baikal. The dog remains analyzed consist of a nearly complete articulated skeleton found with a juvenile cattle skull and its distal limb elements (90). Both animals may derive from sacrifices occurring in conjunction with mortuary rites for nearby human burials of the same age. The dog is directly radiocarbon dated to 1055 to 925 cal. BP, but no body mass estimations were possible.

Sagan-Nuge III
Sagan-Nuge III is located on the western shore of Lake Baikal in Cis-Baikal. This site consists of deflated stone constructions created during the Iron Age by pastoralists (90). The dog sample analyzed consisted of isolated elements found in one of these structures; it is directly dated to 1055 to 920 cal. BP. The dog's mtDNA has been previously described (57). No body mass estimations are available.

Khotoruk
Khotoruk is located on the western shore of Lake Baikal in Cis-Baikal. The canid remains analyzed from this site were found in the upper portions of a grave typologically dated to the Early Neolithic. However, the canid, which consisted of highly fragmented skeletal remains, was directly dated to the Early Iron Age. The mtDNA of the remains were analyzed, identifying the specimen as a wolf (90).

Bolshaia Kanga I
This forager habitation site is located on the Argun River in eastern Trans-Baikal. The remains of three dogs were studied, all found as isolated skeletal elements; all three are directly radiocarbon dated to 7920 to 7435 cal. BP (22). The site has both Neolithic and Bronze Age occupations, but all three dogs are clearly associated with the Neolithic period. Body mass estimates were made for two of the dogs (2013-BK-1 and 2) (26). No quality control data is available for the isotope data for this site so these data were excluded from all analyses. The isotope data are nonetheless provided in Dataset S2 for the sake of completeness.

Aryn Zhalga
This forager habitation site and cemetery is located on the Onon River in eastern Trans-Baikal. The remains of a poorly preserved dog burial were found at the site (22). The dog is estimated to have been 6-12 months of age at death and is directly radiocarbon dated to 7425 to 7270 cal. BP. No body mass estimates are available. No quality control data is available for the isotope data for this site so these data were excluded from all analyses. The isotope data are nonetheless provided in Dataset S2 for the sake of completeness.

Ivolgin
Ivolgin is a fortified Iron Age town on the Selenga River and in the outskirts of the modern city of Ulan-Ude, Trans-Baikal. The site is associated with the Xiongnu pastoralist culture (91), and most of the site's faunal remains are composed of domestic animals. The site also has produced remains of cultivated millet, barley, and wheat. The dog remains were found as isolated elements in various contexts within the settlement and are likely from dogs that were eaten (22). The five

dog remains analyzed for stable isotope composition are all directly dated, with ages ranging from 2340 to 1885 cal. BP. All dated specimens have had their body masses estimated, and body mass estimates are also available for 12 additional dogs at the site (26). Some dog remains from the site have been analyzed using geometric morphometrics (92).

Proezzhaia I
This site is a fortified Iron Age settlement on the Shilka River in eastern Trans-Baikal. The site faunal assemblage consists of a mix of domestic ungulates and wild fauna, and millet cultivation seems to have been occurring in the general area (52, 93). Dog remains were found as scattered skeletal elements within and near houses at the site, and others consist of whole but disarticulated skeletons within pits of house floors. The three dogs analyzed for stable isotope composition are not directly dated, but three others at the site are dated, as are the remains of both wild and domestic ungulates at the site (93). Modelling of these dates indicates occupation of the site between ~1121 and 967 cal. BP. Body mass estimates were made for three dogs (26).

Nizhniaia Berezovka
This forager habitation site is located on the Selenga River near the modern city of Ulan-Ude in Trans-Baikal. The dog analyzed from this site was from an Early Neolithic burial; only portions of the dog's skeleton could be located (22). Artifacts found in contemporaneous deposits at the site show some similarities to those in Cis-Baikal. The dog is directly radiocarbon dated to 7425 to 7270 cal. BP, and its body mass has been estimated (26).

Zhindo
This site is a Neolithic forager cemetery on the Chikoi River in southern Trans-Baikal. One grave at the site contained an adult human skeleton with a poorly preserved skeleton of a 4-5 month old dog positioned near his or her right hip (22). Both the human and the dog are directly radiocarbon dated to 7780 to 7585 cal. BP. The dog remains were too fragmentary for body mass estimation.

Tolbaga
This Pleistocene forager habitation site is located in Trans-Baikal on the Khilok River. Remains of one wolf were analyzed for stable isotope composition, and these were directly dated to 34340 to 33195 cal. BP (22). The remains were found as isolated skeletal elements.

Ust'-Polui
This is an Iron Age multi-community ritual and habitation site on the lower Ob' River in the Iamal-Nenets region of Northwestern Siberia. The site has produced remains of at least 125 dogs, most represented by isolated skeletal elements, but a few whole burials are also present (22, 50, 94). Ust'-Polui was utilized by foraging groups who kept small numbers of domestic reindeer. The dog remains at the site carry a significant freshwater reservoir effect when radiocarbon dated; the dog remains examined for stable isotopes are not directly dated. Age assessments for the site are based on dendrochronology and modeling of numerous radiocarbon dates on ungulate remains and charcoal; when modelled, occupation of the site spans from ~2216 to 1669 cal. BP. The dog remains have been identified using geometric morphometrics and aDNA (25, 92). Body mass estimation are available for 52 dogs from the site (26). Stable isotope values also are available for one wolf from the site.

Boisman II
Boisman II is a Neolithic forager coastal habitation and burial site located on the shore of Boisman Bay in Primorye. This site consists of several shell midden mounds and a few human burials associated with the Boisman foraging culture. Based on multiple radiocarbon dates, Boisman II was occupied between ~8500 and 5000 cal. BP (30). The analyzed dog remains were found within middens at this site, with two of those analyzed for stable isotopes being directly dated. The dates on dogs at the site span from ~6930 to 5925 cal. BP. The mtDNA of one of the Boisman II dogs has been described (57). Body mass estimates were only possible for one dog at Boisman II (26); the remainder were too fragmentary.

Russkii I
Russkii I is a coastal habitation site on Russki Island within the modern city of Vladivostok in Primorye. The site is associated with the Iankov culture from the Early Iron Age (95). This culture is in general characterized by both foraging (including for marine food resources) and small-scale agriculture and animal keeping. However, dogs are the only confirmed domesticates at the site, and as such we characterize Russkii I here as a forager settlement. The dog remains were all found as isolated skeletal elements, and five of the specimens analyzed for stable isotopes were directly radiocarbon dated. Dates on all dated dogs at the site range from 3205 to 2750 cal. BP. Body mass estimates were only possible for one specimen (26).

Pospelova I
Pospelova I is an Early Iron Age coastal site in the modern city of Vladivostok in Primorye. This site consists of a shell midden and a ritual platform containing a human burial (96). The excavated materials from Pospelova I are from the Iankov culture. As with Russkii I above, the only confirmed domesticates at the site are dogs, and Pospelova I is characterized here as a forager settlement. The dog remains were found as isolated skeletal elements, and only one of the specimens analyzed for stable isotope composition was directly dated. Four other dogs from the site are directly dated, and all are consistent in age with the Iankov culture (52). Dates on dog remains at the site span from ~3055 to 2745 cal. BP. Body mass estimates were made for two dogs at the site (26).

Nazimova I
Nazimova I is an Early Iron Age coastal habitation site located in the modern city of Vladivostok in Primorye. Extensive excavations at this site produced over 27,000 artifacts and faunal remains, the majority of which were found in the central part of the shell midden and its surrounding cultural sediments (96). Faunal remains are dominated by molluscs, but remains of marine fish and various mammals also were found. The latter were predominantly suids and dogs. Nazimova I is assigned to the Iankov culture, and like the two other Iankov sites mentioned above, the only clearly domestic animals at the site are dogs; the site is classified here as a forager settlement. One of the two dogs analyzed for stable isotope composition is directly radiocarbon dated, but two other dogs at the site are directly dated; together these dates range from 2955 to 2745 cal. BP (52). No body mass estimates are available.

Cherniatino II

Cherniatino II is an agricultural/pastoral habitation site located ~80 km from the modern city of Vladivostok in the interior of Primorye on the Razdolnaia River. This site was occupied over several periods from the Bronze Age to Early Iron Age, but also during the medieval period, when the site is associated with the Mokhe and Bokhai archaeological cultures (97). The dogs analyzed derive from the Early Iron Age and medieval periods. These periods at the site are characterized by the presence of domestic cattle, horses, and pigs, and numerous remains of dogs, the latter showing some evidence of butchery, presumably for human consumption. The remains of several domestic plants from Mokhe-Bokhai contexts have been identified, including broomcorn and foxtail millet (98). Four of the dogs analyzed for stable isotope composition were directly dated, and four other dogs also were directly dated (52). Together, these dates range from 1385 to 790 cal. BP. Body mass estimates are available for ten dogs from the site (26).

Ekven
This site is a marine forager cemetery and habitation site on the Bering Strait coast of Chukotka. The dog remains appear to derive from house 18, which is located at the periphery of the settlement and the most well studied house at the site (99). The house appears to be associated with the Birnirk and Punuk cultures. Preservation at this site is remarkable due to permafrost with skins, baleen, and wood preserved. Artifacts include variable hunting tools, especially harpoons, images of marine mammals such as seals and whales, and numerous other objects. The dogs are not directly dated, and the stable isotope composition of the samples was described by (100). Body mass estimations are available for eight other dogs at the site, all of which date between ~1450 and 960 cal. BP (26).

Cherepakha 13
This is an Early Iron Age habitation site and cemetery on the coast of Primorye on Ussuri Bay northeast of the modern city of Vladivostok. The site assemblage consists of a mix of terrestrial and marine species, and domestic pigs are present (51). Both broomcorn and foxtail millet seeds were identified in the site deposits. Six dogs and two wolves were analyzed for stable isotope composition by (51), and all were assigned to the Iankov culture; none are directly dated. Given the presence of millet and domestic pigs at the site, we classify it here as agricultural-pastoral. No body mass estimations are available. The age range reported for the site spans from ~3360 to 2880 cal. BP (51).

Preobrazhenka 6
This site is located in the forest-steppe zone of southwest Siberia on the Om River. The site was intermittently occupied over several periods during the Holocene. The single dog analyzed was assigned to the Neolithic period, or the Middle Holocene, which indicates the dog was associated with foragers (101). The dog was not directly dated but the reported age of the site is ~6220 to 5990 cal. BP (101). Stable isotope values for the dog were published by (101). No body mass estimations are available.

Kamenniy Ostrov
This pastoralist site is associated with the Karasuk culture and is located in southwest Siberia in the Minusinsk Basin. The dog is not directly dated, but the site's reported age is ~3500 to 2900 cal. BP (31). The dog's stable isotope composition is reported in (102). No body mass estimations are available.

Bolshaya Erba II
This pastoralist site is associated with the Tagar culture and is located in southwest Siberia just to the north of the Minusinsk Basin. The dog is not directly dated, but the site's reported age is ~2900 to 1600 cal. BP (31). The dog's stable isotope composition is reported in (102). No body mass estimations are available.

Chernoye Ozero I
This pastoralist site is associated with the Tagar culture and is located in southwest Siberia in the Minusinsk Basin. The four dogs analyzed are not directly dated, but the reported age range for the site is ~2900 to 1600 cal. BP (31). The dogs' stable isotope composition is reported by (102). No body mass estimations are available.

Ostrov Listvenichnyi
This is a Middle Holocene forager habitation site on the northern Angara River just to the north of the modern town of Ust'-Ilimsk. The analyzed dog remains were found as disarticulated skeletal elements (103). One of the three analyzed dogs was directly dated to 8970 to 8595 cal. BP, and the remaining two were from strata with associated radiocarbon dates spanning from ~9540 to 7500 cal. BP (103). The stable isotope values were reported by (103). No body mass estimations are available.

Siberian Holocene Archaeological Sites with Dog Body Mass Data Only
Maiakovskogo 2
This forager habitation site is located within the modern city of Irkutsk in Cis-Baikal. Fragments of the mandibles, cranium, and several long bones from a single dog were found scattered at the site. The remains are directly dated (UA51191) to 5750 +/- 33, or 6645 to 6450 cal. BP (Middle Neolithic); no stable isotope data is available (26).

Zharkovo III
This pastoralist habitation site is located in the Kuludin steppe of the Altai region and dates to the Late Bronze Age (104). The single dog mandible analyzed for body mass estimation was found isolated within an ash pit. The remains are directly dated (UA49365) to 3172 +/- 34, or 3455 to 3275 cal. BP; no stable isotope data is available (26).

Zhokov
This forager habitation site is located on Zhokov Island in the Arctic. The site has produced multiple dogs dating to ~9000 years cal. BP (24). Body mass estimates were made for four of the dogs, and none of the four are directly dated (26). The aDNA of several of the Zhokov dogs has been analyzed (105). No stable isotope data is available.

Aachim Mayak
This forager habitation site is located on the Arctic coastline of western Chukotka (24). Two of the dogs from the site are directly dated to ~1725 to 1545 cal. BP (24), and body mass estimations were made for two dogs (26). No stable isotope data is available.

Tiutei-Sale I
This forager habitation site is located on the western coast of the Iamal Peninsula in the northwest Siberian Arctic (106). The period of site occupation with dog remains analyzed spans from ~700 to 500 cal. BP (106), but the single dog analyzed is not directly dated. The analyzed dog consisted of isolated skeletal elements (26) and was subjected to aDNA analyses (25). No stable isotope data is available.

Ust'-Voikar
Ust'-Voikar is a medieval town located on the Gornyi Ob River in the southern portion of the Iamal-Nenets region of northwest Siberia. This town was primarily occupied between ~400 and 100 years ago (63). Most faunal remains found belong to reindeer, but arctic fox, hare, dogs, and other species also were present. Dog remains were found throughout the excavated area and belong mostly to adult individuals. Body mass estimates were made for 23 dogs (26). One dog was sequenced for aDNA and was directly dated (UA47730) to 857 +/- 30, or 900 to 695 cal. BP (25). Given that dogs in Northwest Siberia have been shown to exhibit a significant old carbon offset when radiocarbon dated (94), it is likely this radiocarbon date is several centuries too old. No stable isotope data is available.

Peregrebnoe I
This site is a medieval town on the Ob River in the northern portion of the Khanty-Mansi region of northwestern Siberia. The site dates to ~700 to 600 years ago and its faunal assemblage is predominantly composed of hunted animals, but remains of horses and cattle also are present (107). None of the dog remains analyzed for body mass are directly dated. Body mass estimations were made for five dogs, all of which appear to have consisted of isolated skeletal elements (26). Fragmented remains of another dog at the site were directly dated to 1093 +/- 31 (UA47726), or ~1060 to 930 cal. BP. Dogs in Northwest Siberia have been shown to exhibit a significant old carbon offset when radiocarbon dated (94), and it is likely this radiocarbon date is several centuries too old. No stable isotope data is available.

Katravozh I
This forager habitation site is located on the Sob' River south of the modern city of Salekhard and in the village of Katrovozh in northwest Siberia (108). The site was occupied over various periods of the Late Holocene, presumably during the Iron Age. Two dogs from the site were analyzed for body mass, and one of the two was directly radiocarbon dated to 2683 +/- 30 (UA47739), or ~2850 to 2750 cal. BP. Dogs in Northwest Siberia have been shown to exhibit a significant old carbon offset when radiocarbon dated (94), and it is likely this radiocarbon date is several centuries too old. No stable isotope data is available.

Endyrskoe I
This Early Iron age and Medieval settlement is located on the Endyr' River, a tributary of the Ob River, in the Khanty-Mansi region of northwestern Siberia. It is thought to have been occupied over two periods, from ~1300 to 1100 years ago, and from 800 to 200 years ago (109). None of the eight dogs analyzed for body mass were directly dated. One other dog at the site was directly dated to 1460 +/-30 (UA47728), or 1385 to 1300 cal. BP. Dogs in Northwest Siberia have been shown to exhibit a significant old carbon offset when radiocarbon dated (94), and it is likely this radiocarbon date is several centuries too old. No stable isotope data is available.

Kanisak
This forager habitation site is located on the Bering Strait coast of Chukotka to the south of Ekven. The dogs analyzed from Kanisak derive from various periods within the last 2000 years (26, 110). None are directly dated. Body mass estimates were made on 19 individuals (26). No stable isotope data is available.

Paipelghak
This forager habitation site is located on the northwestern coast of Chukchi Peninsula in Chukotka. The dogs analyzed from Paipelghak derive from various periods within the last 1500 years, all of which were assigned to the Birnirk or Birnirk-Punuk cultures (26, 110). None are directly dated. Body mass estimates were made on 22 individuals (26). No stable isotope data is available.

Data S1. (separate file)
Stable isotope data for Pleistocene and Holocene wolves. Stable isotope laboratory information is provided only for values first presented in this study, with laboratory-specific methods listed in the main text.

Data S2. (separate file)
Stable isotope data for Holocene dog and wolves. Stable isotope laboratory information is provided for only for values first presented in this study, with laboratory-specific methods listed in the main text.

Data S3. (separate file)
Data used in body mass estimates for European Holocene dogs. Column headings and contents are those used in the original data source (27). Note that the data is organized by element not by individual.

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