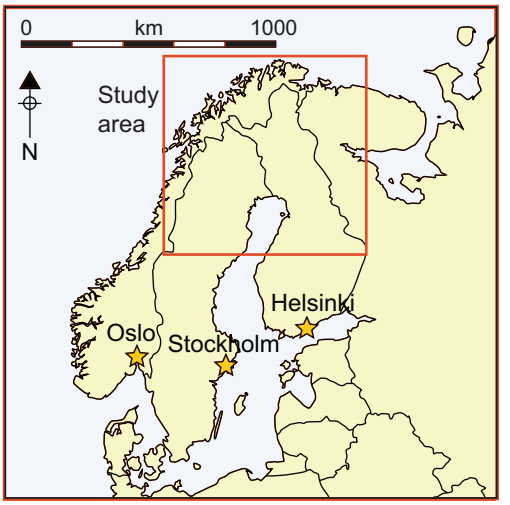
Tradition and transformation in Sámi animal-offering practices

Anna-Kaisa Salmi[1,*], Tiina Äikäs[1], Marte Spangen[2], Markus Fjellström[3] & Inga-Maria Mulk[4]



Archaeological evidence for ritual animal offerings is key to understanding the formation and evolution of indigenous Sámi identity in Northern Fennoscandia from the Iron Age to the seventeenth century AD. An examination of such evidence can illuminate how major changes, such as the shift from hunting to reindeer pastoralism, colonialism by emerging state powers and Christianisation, were mediated by the Sámi at the local level. To explore the chronology of, and local variations in, Sámi animal-offering tradition, we provide a synthesis of archaeozoological data and radiocarbon dates from 17 offering sites across Norway, Sweden and Finland. Analysis reveals new patterns in the history of Sámi religious ritual and the expression of Sámi identity.

Keywords: Fennoscandia, Sámi, animal offering, archaeozoology, ritual, religion

Introduction

This paper examines the archaeological evidence for long-term change and local variation in the animal-offering tradition of the Sámi—the indigenous people populating the northern parts of Norway, Sweden and Finland, and the Kola Peninsula in Russia. We analyse archaeozoological assemblages and extant and new radiocarbon dates from 17 offering sites in Norway, Sweden and Finland in order to track continuity and change in Sámi religious

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and ritual practice from the sixth century AD to the present day. Investigation of the archaeological evidence for the rituals practised at these sacred places enables examination of local identities and traditions as expressed through Sámi commitment to maintaining a good relationship with the land via offerings given at sacred sites. These identities and traditions also offer a means to assess the local mediation of major shifts in the wider society. These changes include the transition from hunting to reindeer pastoralism, the colonialism of emerging state powers and the impact of Christianisation on the Sámi.

The indigenous Sámi religion was characterised by the idea of a reciprocal relationship between human and non-human powers. For example, the Sámi perceived the landscape as a living entity in active relation to humans and animals, with the land and places linked to activities, experiences, stories, rituals, social interactions and memories (Helander-Renvall 2010). The landscape was therefore an important constituent of identity for the Sámi (Karjalainen 2006; Helander-Renvall 2010). People communicated with deities and the spirits of the land and animals by giving offerings at sacred sites, which could, for example, be natural landscape features or sacred stones. Offerings at sacred sites were intended to maintain good relationships with the land, animals and spirits, and were practical methods to ensure success in everyday activities (Äikäs *et al.* 2009). Offerings were also made in the hope of future success in various activities: animals and animal body parts, metal objects, alcohol and tobacco were given as offerings for all of these purposes (Serning 1956; Manker 1957; Zachrisson 1984; Mebius 2003: 148–53; Äikäs 2011; Äikäs & Salmi 2015; Salmi *et al.* 2015).

The remains of these ritual practices are considered to be a key material expression of Sámi identity, and the archaeology of offering sites therefore features prominently in discussion of the formation of Sámi identity from the Late Iron Age onwards (e.g. Hansen & Olsen 2014: 31). Research has, however, concentrated on the metal offerings, practised mainly at individual sites in northern Sweden *c.* AD 800–1300, or at a few sites within a single country (Hallström 1932; Zachrisson 1984; Hedman 2003; Okkonen 2007; Äikäs *et al.* 2009; Mulk 2009; Äikäs & Salmi 2013; Salmi *et al.* 2015). While these individual studies provide important information on Sámi offering practices, they lack a comparative perspective, especially across current state borders, and therefore do not highlight long-term change, continuity or variability in offering traditions across Fennoscandia.

Archaeological assemblages

The present study analyses faunal material from 17 Sámi offering sites spread across the interior of Northern Fennoscandia (Figures 1 & 2; Table 1). For Finland, we collated data from all archaeological excavations of Sámi offering sites that have produced evidence for ancient faunal remains, with the exception of two sites reported by Okkonen (2007) and Harlin and Ojanlatva (2008). For Sweden, we gathered information archived at the Statens Historiska Museet, excluding Swedish sites reported by Gejvall (1956)—the archive for which is incomplete—and for Norway, we collected data on excavations archived at the Tromsø University Museum. The 17 sites include offering stones and natural landscape features (Table 1). We have excluded finds from circular offering sites, as these structures have recently been reinterpreted as wolf traps (Spangen 2016). Due to historical gaps in

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Table 1. Archaeological sites.

Site number	Country	Municipality/ province	Site	Site ID	Site type	NISP	References	Faunal analysis
1	Sweden	Norrkaitum, Gällivare	Holmajärvi Saivarova	L626d	group of five stones	17	Manker 1957	Salmi 2013
2	Norway	Kautokeino	Bealjašvarre	L1263	large boulder with two cracks	7	Manker 1957	Salmi 2013
3	Sweden	Karesuando	Seitesuolo	SHM 30705	headland/island	435	Hallström 1932; Manker 1957	Salmi 2016
4	Sweden	Jukkasjärvi, Kiruna	Viddjavárri	SHM 13886	beneath a large boulder	1765	Hallström 1932; Manker 1957; Mulk 2009	Eriksson 1996
5	Sweden	Jukkasjärvi, Kiruna	Paddusas	SHM 30666	hill	2898	Hallström 1932; Manker 1957	Salmi 2016
6	Sweden	Jokkmokk	Jervas vid Karats	SHM 30703		10	Manker 1957	Salmi 2016
7	Sweden	Jokkmokk	Haltetieva/ Haltetievva	SHM 30702	hill	4	Manker 1957	Salmi 2016
8	Sweden	Jokkmokk	Utdjäure	SHM 30696	bog headland	39	Manker 1957	Salmi 2016
9	Sweden	Gällivare	Sitasjaure	SHM 30675	offering stone	15	Manker 1957	Salmi 2016
10	Sweden	Gällivare	Unna Saiva	SHM 31281	metal deposit	3547	Hallström 1932; Manker 1957	Salmi *et al.* 2015
11	Sweden	Vilhelmina	Meselefors	SHM 30693	offering stone	10	Manker 1957	Salmi 2016
12	Sweden	Tärnaby/ Dearna, Storumans	Laisholm	SHM 30699	crevice	4	Manker 1957	Salmi 2016
13	Finland	Kittilä	Taatsi	KM 37853	offering stone	258	Äikäs 2011	Salmi *et al.* 2011
14	Finland	Enontekiö	Näkkälä	KM 37851	offering stone	50	Äikäs 2011	Salmi *et al.* 2011
15	Finland	Utsjoki	Sieiddakeädgi	KM 37852	offering stone	107	Äikäs 2011	Salmi *et al.* 2011
16	Finland	Inari	Koskikaltiojoen suu		offering stone	430	Äikäs 2011	Salmi *et al.* 2011
17	Finland	Inari	Ukonsaari: -68	KM18349	island	99	Sarvas 1968	Salmi *et al.* 2011

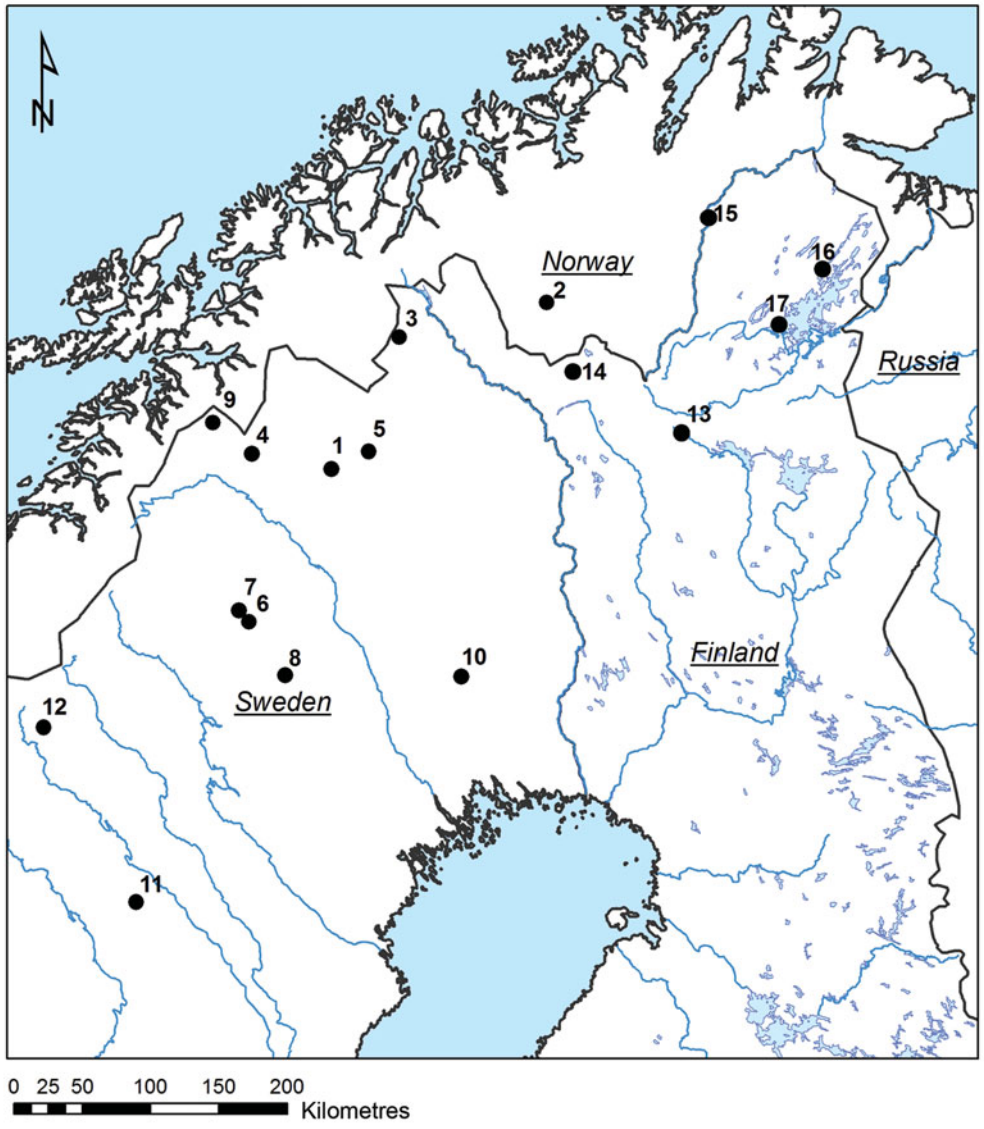


Figure 1. Map of Sámi offering sites: 1) Saivarova; 2) Baeljasvarre; 3) Seitesuolo; 4) Viddjavárri; 5) Paddusas; 6) Jervas vid Karats; 7) Haltetieva; 8) Udtjäure; 9) Sitasjaure; 10) Unna Saiva; 11) Meselefors; 12) Laisholm; 13) Taatsi; 14) Näkkälä; 15) Sieiddakeädgi; 16) Koskikaltiojoen suu; 17) Ukonsaari.

research, no comparable archaeological data exist from offering sites located in coastal Norway, present-day Russia and the South Sámi area in central Sweden and Norway.

Sites 3–5, 10 and 17 were excavated in the first half of the twentieth century, while sites 13–16 were examined in 2008–2010 (Hallström 1932; Manker 1957; Sarvas 1968; Äikäs 2011; Salmi *et al.* 2011). The remaining sites are known only through small-scale surface sampling (Manker 1957). Assemblages from sites 4, 10 and 13–17 have been

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Figure 2. The sieidi *stone of Näkkälä by Lake Näkkäläjärvi is located on a small hill. Photograph by T. Äikäs.*

published (Mulk 2009; Salmi *et al.* 2011, 2015). Unpublished osteological reports exist for the remaining assemblages (Eriksson 1996; Salmi 2013, 2016). The results from these 17 sites are compared to those reported by Gejvall (1956), Okkonen (2007) and Harlin and Ojanlatva (2008). These three datasets could not be combined with our dataset due to missing information in the 1956 faunal report and the preference of the authors responsible for the 2007 and 2008 data. Although we relied in part on faunal analyses and radiocarbon dates published by other researchers, all the analyses included in the dataset were performed using comparable methods. Moreover, the radiocarbon dates were obtained from only three laboratories in Sweden and Finland using comparable methods.

The animal species identified include reindeer (*Rangifer tarandus*), sheep (*Ovis aries*) or goat (*Capra hircus*) (ovicaprids), cattle (*Bos taurus*), birds (such as wood grouse (*Tetrao urogallus*) and swan (*Cygnus* sp.)), fish, and various wild mammals, such as brown bear (*Ursus arctos*) and beaver (*Castor fiber*). Reindeer dominate all assemblages (Figure 3; see Supplement 1 in the online supplementary material (OSM)), and based on tooth eruption and wear, the material relates mostly to adult individuals aged 4–10 years (i.e. individuals of reproductive age) (Figure 4A; see Supplement 2 in the OSM). The reindeer remains are comprised predominantly of antlers, cranial bones and uppermost vertebrae, but at most sites, all body parts—including the long bones and extremities—are represented (Figure 4B; see Supplement 3 in the OSM). Most of the assemblages include reindeer long bones, freshly broken for the extraction of marrow. Sex and size estimations reveal that most of the mandibles belong to male individuals of considerable size. In contrast, the long bones belong both to male and female individuals in equal proportions (Salmi 2013, 2016; Salmi *et al.* 2015). Few of the ovicaprid bones are distinguishable to a particular species. In the majority of the assemblages, ovicaprid body parts are represented in roughly equal proportions, with most individual animals being less than one year of age. Brown bear bones comprise cranial fragments and teeth, whereas all the body parts of other wild mammals, as well as birds and fishes, are represented.

Chronology

Wild animal offerings from AD 500–1200

Radiocarbon dates for the animal bones range from AD 540 to the present day, with a clear peak in dated samples between *c.* AD 1200 and 1700 (Figure 5A; see Supplement 4 in the OSM). The oldest dates, AD 540–1200, are from wild species: pike (*Esox lucius*),

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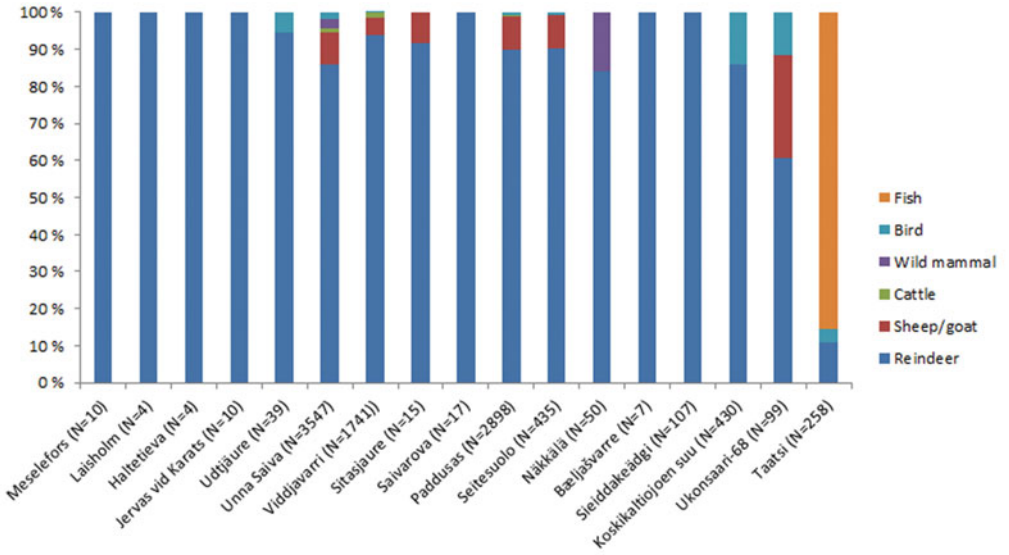


Figure 3. Species frequencies as number of identified specimens (NISP).

swan and brown bear. The bear sample from Unna Saiva pushes back the beginning of animal offerings to the sixth to eighth centuries (Salmi *et al.* 2015). This date is earlier than those for previously published animal remains, dated to *c.* AD 800–1000, and substantiates the idea that these sites were in use prior to the commencement of metal offerings at the turn of the millennium (Hallström 1932: 131; Manker 1957: 52; Zachrisson 1984: 23). A possible reason for the scarcity of dates earlier than AD 800 may be a bias in the selection of sites for excavation. Most of the sites that have been investigated are associated with enduring oral traditions, and are located in areas where the landscape has remained in use through to the present (cf. Hedman 2003). It is therefore possible that older sites, located in mountainous areas used purely for hunting and subsequently abandoned when reindeer pastoralism became the main source of livelihood, are under-represented.

The ritual significance of wild species in early offerings probably reflects the importance of wild resources for subsistence; ethnographic accounts attest that economy and religion were deeply intertwined in the Sámi worldview (e.g. Äikäs *et al.* 2009). Intensified trade with cultural groups from southern Scandinavia and present-day Russia during the Viking and Early Middle Ages (*c.* AD 800–1200) increased the importance of products such as furs and reindeer hides (Hansen & Olsen 2014: 127–31). This led to an escalation in wild reindeer hunts, as testified by the increased number of hunting pits in the interior of Fennoscandia (Mulk 1994; Ramqvist 2007; Hansen & Olsen 2014: 81–82). This may have led to a greater concern with the success of hunts and subsequently enhanced the importance of rituals related to them. These rituals may also have acted as a method of regulating the accumulation of wealth in a traditionally egalitarian society (Mulk 1994, 1996). Our review of the dating

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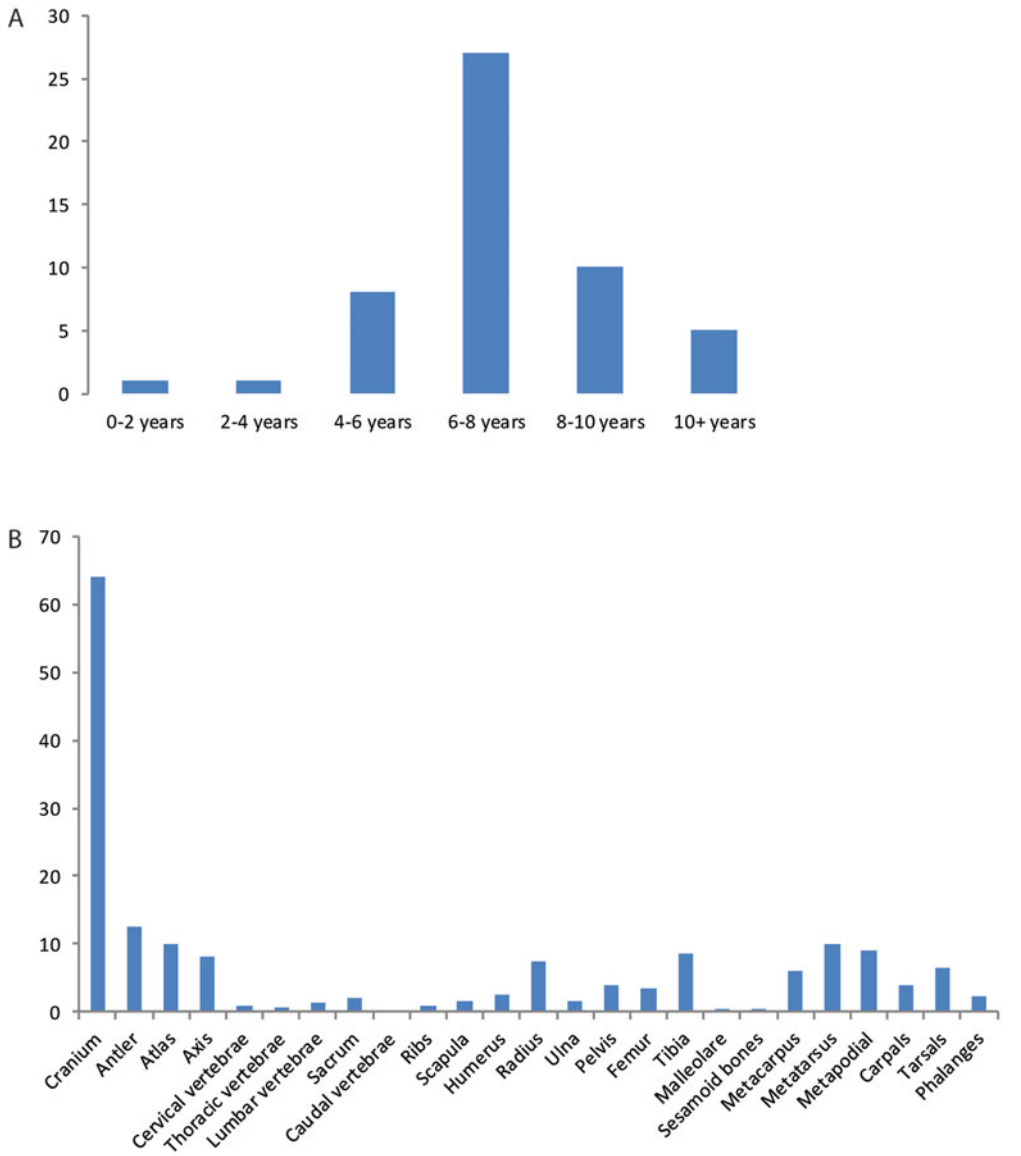


Figure 4. A) Reindeer age estimations based on tooth eruption and wear as numbers of individuals assigned to each age group (Miller 1974; Nieminen et al. *1981). Data from Viddjavárri is excluded due to missing information in the osteological report. B) Reindeer skeletal frequencies as modified anatomical units (MAU). Data from Viddjavárri is excluded due to missing minimum numbers of elements (MNE) in the osteological report.*

of wild animal bones from Sámi offering sites, combined with the spatially distinct distribution of the earliest dates (Figure 6), suggests that the increased economic importance of hunting was reflected in a religious concern with hunting rituals across inland Fennoscandia.

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Figure 5. Radiocarbon dates calibrated with OxCal 4.2. (Bronk Ramsey & Lee 2013), atmospheric data from Reimer et al. *(2013). A) Sums of probability distributions arranged by species; B) sums of probability distributions arranged by site.*

Reindeer offerings and the shift to pastoralism from AD 1200–1700

Research has suggested that the spread of reindeer pastoralism began in the mountain and forest areas of Sweden as early as AD 800–1050 (Hedman 2003; Bergman *et al.* 2013). Alternatively, this evidence might indicate the taming of reindeer for use as hunting decoys and draft animals within a more market-oriented hunting society (Mulk 2009: 123–29). Despite these differing opinions on the exact timing of the emergence of reindeer husbandry in Northern Fennoscandia, growing archaeological and genetic evidence indicates the increased importance of reindeer pastoralism in the late medieval period, especially from AD 1400–1500 onwards (Wallerström 2000; Mulk 2009; Sommerseth 2011; Bjørnstad *et al.* 2012; Bjørklund 2013; Hansen & Olsen 2014: 195–206). Reindeer bones first appear as offerings *c.* AD 1200–1300, and reach a clear peak between 1400 and 1650 (Figure 7). These offerings reflect the growing importance of reindeer in ritual practices and probably

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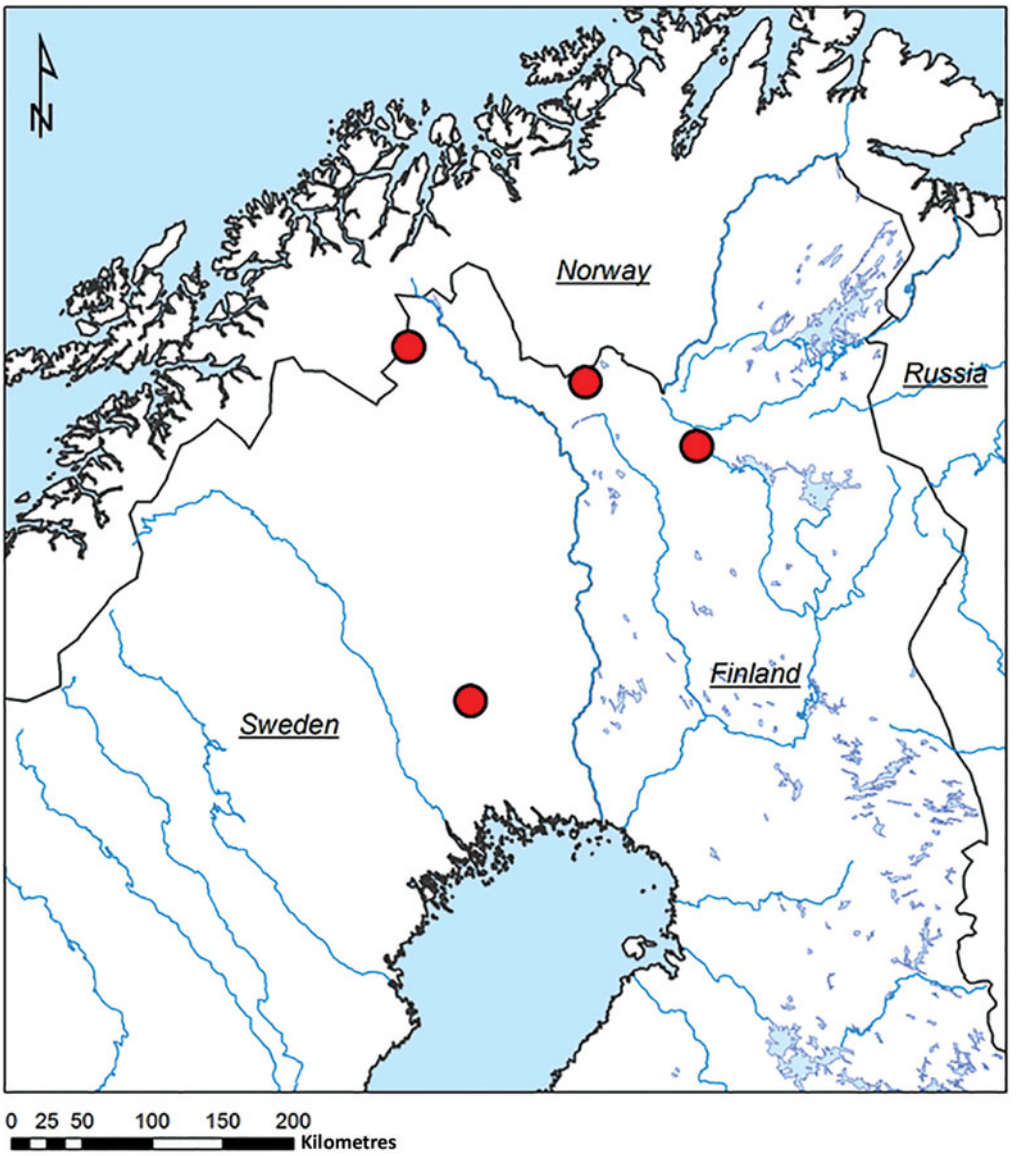


Figure 6. Sites with early (c. AD 500–1200) wild animal bone dates.

relate to the increased demand for hides and furs created by trade with Novgorod and the Hanseatic League (through Scandinavian intermediaries, the *birkarlar*) (Hansen & Olsen 2014: 146–55; Bergman & Edlund 2016).

The chronological peak of reindeer from Sámi offering sites is therefore contemporaneous with a marked increase in the economic role of the species; the religious importance of reindeer evidently grew at the same time as their changing economic role (Äikäs & Salmi 2015; Salmi *et al.* 2015).

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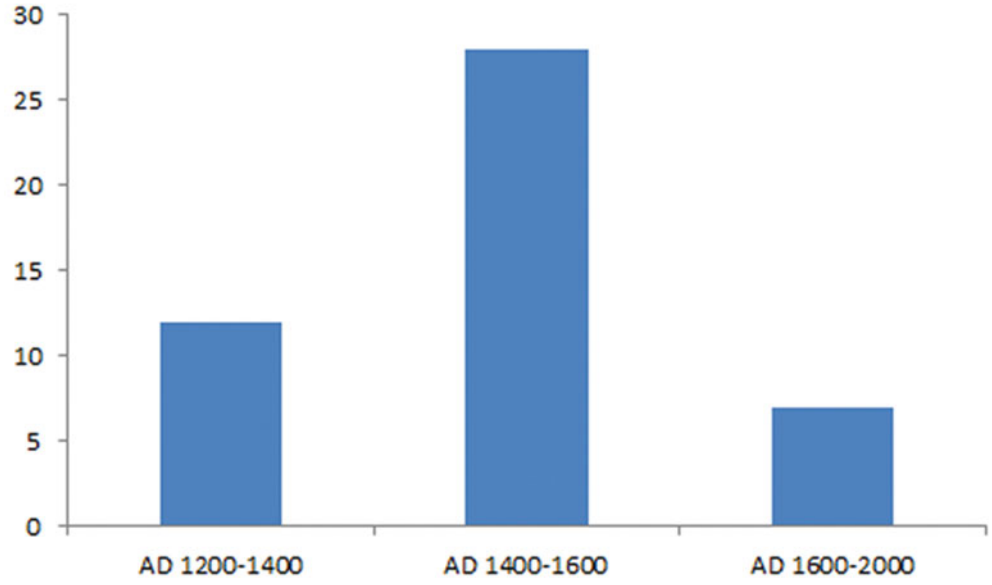


Figure 7. Number of reindeer bones dating to different periods.

The identification of domesticated (rather than wild) reindeer based on faunal remains is challenging. Human intervention in the reindeer life cycle was limited, making it difficult to link specific skeletal morphologies with domestication (e.g. Helskog 2011). Stable isotope evidence, however, may suggest that some of the animals offered between AD 1400 and 1650 were domesticated (Salmi *et al.* 2015), further emphasising that the intensification of reindeer offerings was linked with the development of reindeer pastoralism.

The shift towards reindeer pastoralism was probably set in motion by a complex interplay of economic, social and ecological factors. These may include the development of local hierarchies to organise and control the resources and technologies needed in the wild reindeer hunt (Hansen & Olsen 2014: 203–14), economic pressures created by globalising trade relationships, and increased taxation (e.g. Wallerström 2000). Sámi societies were increasingly interlinked with Hanseatic trade via Swedish and Norwegian intermediaries. The Swedish crown tightened its grip on northern areas by founding marketplaces and churches. These were first established in the fourteenth century, on the coast of the Gulf of Bothnia, at the mouths of major rivers. Then, from the early seventeenth century onwards, marketplaces and churches were built in the interior (Wallerström 2000). Trade with both the Hanseatic League and local farmer-merchants, and taxation by the emerging states in Norway and Sweden, exerted pressure on the Sámi to produce more furs and hides than previously (Hansen & Olsen 2014: 152–66). By the beginning of the sixteenth century, in the Swedish mountain area, the transition from hunting and gathering to pastoralism was complete; society was now based on the private ownership of reindeer and the consolidation of socially and economically autonomous kin-based *sijda* groups (Bergman *et al.* 2013). (A *sijda* is a Sámi community with its own territory, formed of

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several, often related, nuclear families (Näkkäläjärvi 2000)). It must be noted, however, that the shift to reindeer pastoralism was probably gradual and was certainly a very variable process across Fennoscandia as a whole (Tegengren 1952; Wallerström 2000; Mulk 2009; Sommerseth 2011; Bjørklund 2013; Hansen & Olsen 2014: 195–206). For example, domesticated reindeer seem to have become important as a subsistence resource only in the seventeenth and eighteenth centuries in Finnmark in northern Norway (e.g. Vorren 1979: 255, 1998; Hansen & Olsen 2014: 267). Recent research, however, suggests that reindeer herding was combined with hunting possibly as early as the eleventh century, at least in eastern Finnmark (Hedman *et al.* 2015). Across most of the Finnish area (present-day Finland), reindeer pastoralism remained small scale and was complemented by fishing, hunting and gathering until the nineteenth century (Tegengren 1952). Regardless of such variability within our area of investigation, the religious importance of reindeer seems to have grown simultaneously alongside the economic importance of pastoralism (Figure 8).

Effects of Christianisation from AD 1700 onwards

It has been argued that the Sámi animal-offering tradition ceased in the eighteenth century and resurfaced only recently (Äikäs & Salmi 2015). This break partly corresponds with a period of intensified Lutheran missionary activity, particularly in the seventeenth and eighteenth centuries, and increased state control over Northern Fennoscandia (Kylli 2012). Our analysis, however, shows that 12 of the reindeer bone samples date approximately to between AD 1700 and the present day, including several clearly modern dates from Taatsi and Näkkälä (Figure 5B). Moreover, nineteenth-century coins and bottle glass, and twentieth- to twenty-first-century coins and other items have been recovered from several sites (Äikäs & Salmi 2015; Äikäs & Spangen 2016). These finds clearly demonstrate that some of the sites remained in use throughout recent centuries, regardless of the Christianisation and colonisation processes, even if the small number of animal bones indicates a shift away from animal offerings at this time. Nevertheless, the archaeological finds and written records reveal that, for example, coin offerings at *sieidi* stones continued into the twentieth century (e.g. Paulaharju 1932; Kjellström 1987: 24–33). Contemporary offerings at *sieidi* sites include slices of meat, alcohol, candles and pieces of quartzite. They bear similarities both to the ancient offering tradition and to contemporary neo-pagan rituals, hence signalling ritual continuity and creativity (Äikäs *et al.* in press). Recent deposits at (perceived) Sámi offering sites should also be seen in relation to the Sámi cultural and political revival of the last 40 years, including the reclamation of traditional religion and rituals (Äikäs & Spangen 2016; Spangen 2016).

Local variations in offering practices

To assess the potential spatial and cultural variability in Sámi offerings, we compare species diversity, the presence of different reindeer body parts and the ages of the individual reindeer selected for offerings. We compare the data from individual sites and then

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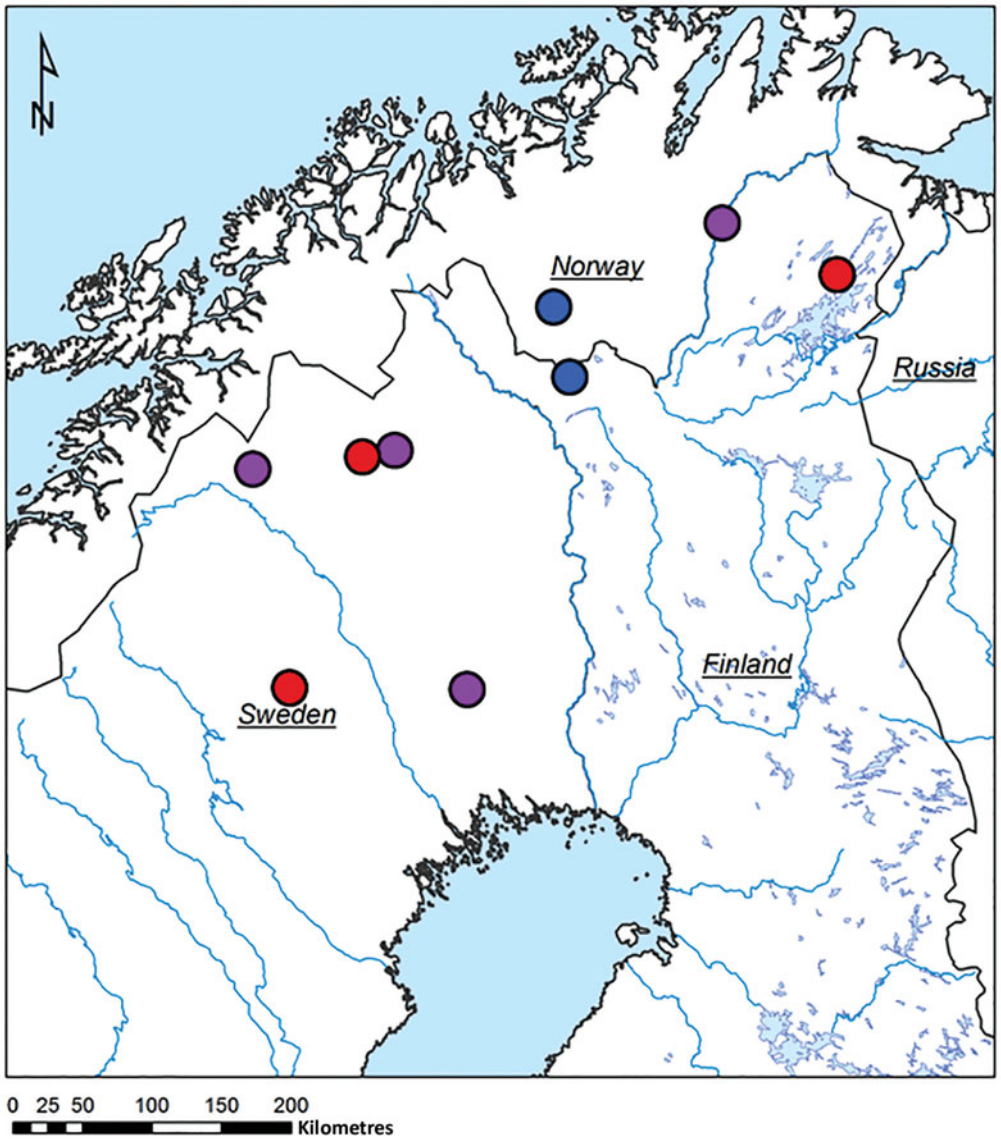


Figure 8. Sites with early (c. AD 1200–1300) and peak-time (c. AD 1400–1650) reindeer bone dates. Blue: only early dates; purple: early and peak dates; red: only peak dates.

group the sites according to the four Sámi languages (Ume, Lule, North and Inari Sámi) spoken in the areas where the sites are located. Languages can be used roughly to delineate Sámi cultural areas (Pentikäinen 1971); these are similar to the local historical administrative divisions of Ume, Lule and Torne Laplands (Korpijaakko 1989: 82–84) (see Supplements 1–3 in the OSM). The analysis shows no notable differences in reindeer offerings in terms of animal age or the frequencies of skeletal elements between

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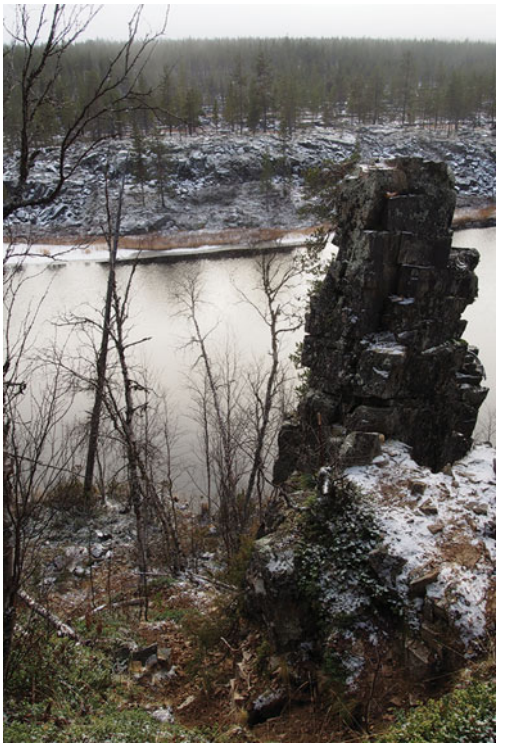


Figure 9. The sieidi *of Taatsi is located near to Lake Rotkojärvi. Photograph by T. Äikäs.*

individual sites or between language areas. There are, however, some inter-site differences in species diversity and in the dates of offerings, dependent on site biography and local history.

The radiocarbon results show that the dates of the offerings varied considerably between sites (Figure 5B; see Supplement 4 in the OSM). Of the sites with several dated samples, the Näkkälä *sieidi* stone was used for animal offerings for a relatively short period between AD 1150 and 1300. At many sites, such as Unna Saiva, Viddjavárri, Taatsi, Seitesuolo and Paddusas, however, the radiocarbon dates of animal bone span hundreds of years. At Sieiddakeädgi and Koskikaltiojoen suu, for example, animal offerings began in the twelfth and thirteenth centuries and continued until the seventeenth and eighteenth centuries, respectively; at Sieiddakeädgi, the offering tradition then continued with coins and bottle glass (possibly an alcohol offering). Thus, there was remarkable continuity in the offering tradition at many sites, over generations and centuries, as well as some variation between different sites.

Once introduced, reindeer dominate virtually all the faunal assemblages (Figure 3; see Supplement 1 in the OSM), an exception being the Taatsi offering site (Figure 9), where fish bone represents the most common faunal category. Lake fishing was an important means of subsistence for the Sámi in many areas in the interior of Northern Fennoscandia (e.g. Itkonen 1948: 536–40; Hansen & Olsen 2014: 192–95), including Kittilä, where Taatsi is located. As well as reindeer, ovicaprid bones have been found at sites in Sweden and Finland, and cattle bones at three sites in Sweden. Agriculture, including cattle and sheep husbandry, was introduced to the Sámi in Norway during the medieval period, and was widely practised in fertile river valleys from the eighteenth century onwards. Sheep and goats may have been kept by the mobile pastoralist Sámi from the Viking period onwards, and more certainly by the Early Middle Ages (Aikio *et al.* 2000; Hansen & Olsen 2014: 177, 190–200; Hedman *et al.* 2015). As well as domesticated animals, the bones of wild birds and mammals have been identified at several sites in Sweden and Finland. Bear bones are present in the Näkkälä and Unna Saiva assemblages, and are also reported from several other sites in Sweden and Finland (Gejvall 1956; Manker 1957; Okkonen 2007).

The varying sample sizes from each site complicate the identification of species frequency and diversity patterns (Lyman 2008: 159–60). To address the issue of species richness, and

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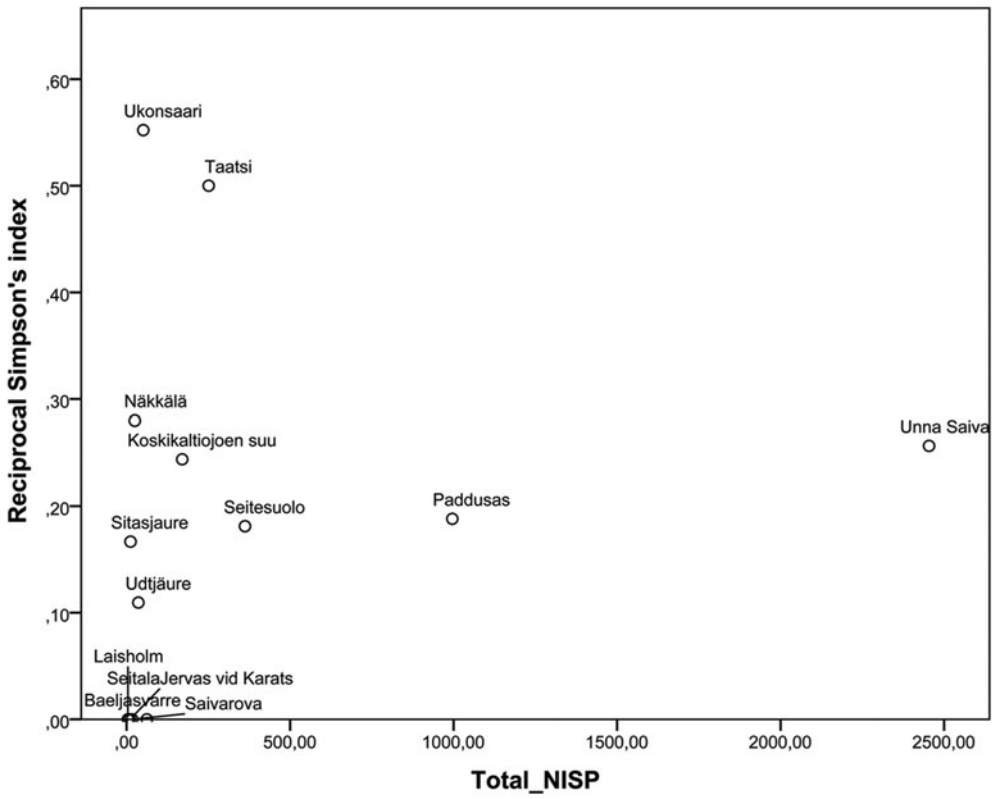


Figure 10. Reciprocal Simpson's Index plotted against sample size.

to assess the variable economic and religious importance of different species at different sites, we employ a biodiversity metric. The Simpson's Index of diversity is a measure of heterogeneity, based on the number of species and their relative abundance in assemblages (Magurran 2004: 102). The calculated reciprocal Simpson's Index does not correlate ($r = 0.153$, $p = 0.571$) with the total number of identified specimens, indicating that there are other factors influencing species richness and evenness. Assemblages with a low reciprocal Simpson's Index value (Figure 10) are dominated completely by reindeer bones, while assemblages with mid-range values are dominated by reindeer, but with other species represented. At the other end of the spectrum, assemblages with high reciprocal Simpson's Index values comprise a number of different species with no one species dominant over the others. Sites mostly or completely dominated by reindeer offerings are located throughout the interior of Northern Fennoscandia. The two sites with the highest values for species diversity and evenness—Taatsi and Ukonsaari (Figure 1)—are situated in the eastern part of the Sámi area. Here, reindeer pastoralism traditionally played a minor role in comparison with hunting and fishing (Tegengren 1952), apparently in both economic and religious senses.

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Conclusion

Our results reveal remarkable continuity in the Sámi animal-offering tradition, from the sixth to the seventeenth centuries AD, and on to even the present day. Some sites were used continuously for hundreds of years; at other sites, animal offerings were made over a shorter period of time. Additional types of offerings, such as coins, were sometimes made during later periods. These sites retained their sacred significance, as evidenced by the oral traditions attached to them. Although there was spatial and temporal variation in the species chosen for offerings, and their relative abundance, there were also continuities and shared elements in the ritual practice across the study area. Major shifts in the dominant species selected for religious offerings occurred roughly simultaneously over most of the Sámi area, despite much regional variation in their economic and social organisation. This suggests that the offering rituals were a part of wider Sámi identity, as expressed through relations to the land and its spirits. Land, perceived as a living and active entity, was an important constituent of Sámi identity (Helander-Renvall 2010). The relationship between land and identity was mediated through activities, experiences, stories, rituals, social interactions and memories (Helander-Renvall 2010; Näkkäläjärvi 2013). Sacred sites and animal offerings were an integral part of the network of places relating to varied subsistence activities (Äikäs *et al.* 2009; Äikäs 2011: 90–108). The remains of earlier rituals, often left visible at the offering sites (Salmi *et al.* 2011), were probably a means of social memory. The continuities and similarities documented here suggest that the Sámi groups within the study area have shared a means, for more than a millennium, of maintaining relationships with the land and with spirits, through the practice of animal-offering rituals. Moreover, this was probably an important factor in shaping both individual identities and group integration.

The major changes in Sámi society and human-animal interactions from the Late Iron Age onwards are reflected clearly in the animal-offering tradition. There were changes in the principal species of ritual focus, and these were intertwined with wider shifts in economy, subsistence and colonial history. The beginning of the tradition was tied to shifts in trade connections during the Late Iron Age, when the Sámi became increasingly integrated into trade networks that connected different parts of Fennoscandia. At that time, the economic importance of hunting was reflected in the offering of wild animals. The gradual transition from the hunting of wild reindeer to reindeer pastoralism was another major transformative factor. Reindeer pastoralism was initiated by a complex interplay of colonial and economic policies by the emerging states to the south, and by internal processes within Sámi communities. Reindeer became the principal species for offerings as the religious focus apparently shifted from seeking success for the hunt to ensuring the reproduction and well-being of reindeer herds. Moreover, Christianisation affected ritual practice as the focus shifted from animal offerings to coins, personal items and possibly alcohol and tobacco. Making offerings at *sieidi* stones today signifies both a continuation of ancestral traditions and new spiritual, as well as mundane, practices—in part related to overarching socio-political issues in current Sámi societies. The development of local Sámi religion and ritual practice was therefore connected with broader historical trajectories, such as economic history, state formation and colonialism.

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There was variation in the range of species used for offerings, dependent on the complex interplay between ecological and economic factors, individual site history and the different communities concerned. Although there were no significant differences in animal offerings between areas where different Sámi languages were spoken, it is clear that the assemblages from each site reflect the changing needs and choices of individuals and groups. Reindeer dominate the majority of the assemblages; notably, the sites with most variation in the species offered are found in lake areas in Finland, where fishing, hunting and gathering remained of greater importance than reindeer pastoralism. Domesticates such as cattle and sheep were sometimes offered, and wild animals continued to be offered at many sites even after the transition to reindeer pastoralism. Moreover, a small number of animal offerings date to the post-Christianisation period. Such variation probably indicates that some Sámi offering sites were used by the whole community, whereas others were visited only by certain individuals and families (Paulaharju 1932: 10–21; Itkonen 1948: 311; Rydving 1993: 104–106; Mebius 2003: 141). Both communities and individuals sought to express different concerns and desires when they visited the offering sites to communicate with non-human powers. They also adopted different strategies to engage with wider shifts in subsistence and economy, and in relation to colonial powers. The animal bone assemblages from offering sites reflect this variability of practice, and further studies of offering sites may therefore offer valuable insights into the social, political and religious trajectories of the Sámi communities.

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Supplementary material

To view supplementary material for this article, please visit https://doi.org/10.15184/aqy.2018.20

References

Äikäs, T. 2011. *Rantakiviltä tuntureille—Pyhät paikat saamelaisten rituaalisessa maisemassa*. Rovaniemi: Pohjois-Suomen Historiallinen Yhdistys. Available at: http://www.sarks.fi/masf/masf_5/masf_5.html (accessed 29 January 2018).

Äikäs, T. & A. Salmi. 2013. 'The *sieidi* is a better altar/the *noaidi* drum's a purer church bell'—long-term changes and syncretism at Sámi offering sites. *World Archaeology* 45: 64–82. https://doi.org/10.1080/00438243.2012.759510

– 2015. North/south encounters at Sámi sacred sites in northern Finland. *Historical Archaeology* 49: 90–109. https://doi.org/10.1007/BF03376974

Äikäs, T. & M. Spangen. 2016. New users and changing traditions—(re)defining Sami offering sites. *European Journal of Archaeology* 19: 95–121. https://doi.org/10.1179/1461957115Y.0000000009

Äikäs, T., A. Puputti, M. Núñez, J. Aspi & J. Okkonen. 2009. Sacred and profane livelihood. Animal bones from *sieidi* sites in northern Finland. *Norwegian Archaeological Review* 42: 109–22. https://doi.org/10.1080/00293650903289641

Äikäs, T., T. Fonneland, S. Thomas, W. Perttola & S.E. Kraft. In press. 'Traces of our ancient religion': meaning-making and shamanism at Sámi offering places and at the Isogaisa festival, northern Norway, in J. Leskovar (ed.) *Archaeological sites as space for modern spiritual practice*. Cambridge: Cambridge Scholars.

© Antiquity Publications Ltd, 2018

https://doi.org/10.15184/aqy.2018.20 Published online by Cambridge University Press

Aikio, S., K. Näkkäläjärvi & J. Pennanen. 2000. Maatalous saamelaiselinkeinoksi 1700-luvulla, in J. Pennanen & K. Näkkäläjärvi (ed.) *Siiddastallan: Siidoista kyliin: Luontosidonnainen elämäntapa ja sen muuttuminen*: 68–69. Oulu: Pohjoinen.

Bergman, I. & L.-E. Edlund. 2016. Birkarlar and Sámi—inter-cultural contacts beyond state control: reconsidering the standing of external tradesmen (*birkarlar*) in medieval Sámi societies. *Acta Borealia* 33: 52–80. https://doi.org/10.1080/08003831.2016.1154676

Bergman, I., O. Zackrisson & L. Liedgren. 2013. From hunting to herding: land use, ecosystem processes, and social transformation among Sami AD 800–1500. *Arctic Anthropology* 50: 25–39. https://doi.org/10.3368/aa.50.2.25

Bjørklund, I. 2013. Domestication, reindeer husbandry and the development of Sámi pastoralism. *Acta Borealia* 30: 174–89. https://doi.org/10.1080/08003831.2013.847676

Bjørnstad, G., O. Flagstad, A. Hufthammer & K.H. Roed. 2012. Ancient DNA reveals a major genetic change during the transition from hunting economy to reindeer husbandry in Northern Scandinavia. *Journal of Archaeological Science* 39: 102–108. https://doi.org/10.1016/j.jas.2011.09.006

Bronk Ramsey, C. & S. Lee. 2013. Recent and planned developments of the program OxCal. *Radiocarbon* 55: 720–30. https://doi.org/10.1017/S0033822200057878

Eriksson, M. 1996. Osteologisk analys av horn—och benmaterialet från offerplatsen vid Rautasjaure, Jukkasjärvi sn., Lapland. Unpublished excavation report prepared for the Ájtte Museum.

Gejvall, N. 1956. Osteologisk analys av skelettmaterialet från ett antal lapska grav—och offerplatser. Unpublished osteological report prepared for the Swedish History Museum.

Hallström, G. 1932. Lappska offerplatser, in N. Edén (ed.) *Arkeologiska studier tillägnade H.K.H. Kronprins Gustaf Adolf*: 111–31. Stockholm: Norstedt.

Hansen, L.I. & B. Olsen. 2014. *Hunters in transition: an outline of early Sami history*. Leiden: Brill.

Harlin, E. & E. Ojanlatva. 2008. Inarin Ukonjärven Ukon kenttätutkimus 2007. Unpublished excavation report prepared for the National Board of Antiquities.

Hedman, S. 2003. *Boplatser och offerplatser. Ekonomisk strategi och boplatsmönster bland skogssamer 700–1600 AD.* Umeå: Umeå University.

Hedman, S., B. Olsen & M. Vretemark. 2015. Hunters, herders and hearths. Interpreting new results from hearth row sites in Pasvik, arctic Norway. *Rangifer* 3: 1–24. https://doi.org/10.7557/2.35.1.3334

© Antiquity Publications Ltd, 2018

Helander-Renvall, E. 2010. Animism, personhood and the nature of reality: Sami perspectives. *Polar Record* 46: 44–56. https://doi.org/10.1017/S0032247409990040

Helskog, K. 2011. Humans and reindeer. *Quaternary International* 238: 1–3. https://doi.org/10.1016/j.quaint.2011.03.018

Itkonen, T.I. 1948. *Suomen lappalaiset vuoteen 1945. Volume I.* Porvoo: WSOY.

Karjalainen, P.T. 2006. Topobiografinen paikan tulkinta, in S. Knuuttila, P. Laaksonen & U. Piela (ed.) *Paikka: Eletty, kuviteltu, kerrottu* (Kalevalaseuran vuosikirja 85): 83–92. Helsinki: Suomalaisen Kirjallisuuden Seura.

Kjellström, R. 1987. On the continuity of old Saami religion, in T. Ahlbäck (ed.) *Saami religion: based on papers read at the symposium on Saami religion held at Åbo, Finland, on the 16th–18th of August 1984* (Scripta Instituti Donneriani Aboensis XII): 24–33. Stockholm: Almqvist & Wiksell International.

Korpijaakko, K. 1989. *Saamelaisten oikeusasemasta Ruotsi-Suomessa. Lapin korkeakoulun oikeustieteellisiä julkaisuja. Sarja A, 3*. Helsinki: Lakimiesliiton kustannus.

Kylli, R. 2012. *Saamelaisten kaksi kääntymystä: Uskonnon muttuutminen Utsjoen ja Enontekiön lapinmailla 1602–1905*. Helsinki: Suomalaisen Kirjallisuuden Seura.

Lyman, R.L. 2008. *Quantitative palaeozoology*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511813863

Magurran, A.E. 2004. *Measuring biological diversity*. Malden: Blackwell.

Manker, E. 1957. *Lapparnas heliga ställen. Kultplatser och offerkult I belysning av nordiska museets och landsantikvariernas fältundersökningar* (Acta Lapponica XIII). Uppsala: Gebers.

Mebius, H. 2003. *Bissie. Studier i samisk religionshistoria*. Östersund: Jengel.

Miller, F.L. 1974. *Biology of the Kaminuriak population of barren-ground caribou. Part 2. Dentition as an indicator of sex and age: composition and socialization of the population* (Canadian Wildlife Service Report Series Number 31). Ottawa: Environment Canada, Wildlife Service.

Mulk, I-M. 1994. *Sirkas: ett samiskt fångstsamhälle i förändring Kr.f.-1600 e.Kr* (Studia archaeologica Universitatis Umensis 6). Umeå: Umeå Universitet.

– 1996. The role of the Sámi in fur trading during the Late Iron Age and Nordic medieval period in the light of the Sámi sacrificial sites in Lapland, northern Sweden. *Acta Borealia* 13: 47–80. https://doi.org/10.1080/08003839608580447

https://doi.org/10.15184/aqy.2018.20 Published online by Cambridge University Press

– 2009. From metal to meat. Continuity and change in ritual practices at a Saami sacrificial site, Viddjávarri, Lapland, northern Sweden, in T. Äikäs (ed.) *Máttut—máddagat. The roots of Saami ethnicities, societies and spaces/places*: 116–33. Oulu: Giellagas Institute.

Näkkäläjärvi, K. 2000. Siita eli lapinkylä yhteisöelämän perustana, in J. Pennanen & K. Näkkäläjärvi (ed.) *Siiddastallan. Siidoista kyliin*: 138–289. Oulu: Pohjoinen.

– 2013. Jauristunturin poropaimentolaisuus: kulttuurin kehitys ja tietojärjestelmä vuosina 1930–1995. Unpublished doctoral dissertation, University of Oulu.

Nieminen, M., M. Larmas & P. Saukko. 1981. Poron hampaat ja ikä. *Poromies* 48: 8–12.

Okkonen, J. 2007. Archaeological investigations at the Sámi sacrificial site of Ukonsaari in Lake Inari. *Fennoscandia Archaeologica* XXIV: 29–38.

Paulaharju, S. 1932. *Seitoja ja seidan palvontaa*. Helsinki: Suomalaisen Kirjallisuuden Seura.

Pentikäinen, J. 1971. Lappalaisten perinnealuejako, in H. Sihvo (ed.) *Vanhaa ja uutta Lappia. Kalevalaseuran vuosikirja* 51: 127–46. Helsinki: Kalevalaseura.

Ramqvist, P.H. 2007. Fem Norrland. Om norrländska regioner och deras interaktion. *Arkeologi i Norr* 10: 153–80.

Reimer, P.J., E. Bard, A. Bayliss, J.W. Beck, P.G. Blackwell, C. Bronk Ramsey, C.E. Buck, H. Cheng, R.L. Edwards, M. Friedrich, P.M. Grootes, T.P. Guilderson, H. Haflidason, I. Hajdas, C. Hatté, T.J. Heaton, D.L. Hoffmann, A.G. Hogg, K.A. Hughen, K.F. Kaiser, B. Kromer, S.W. Manning, M. Niu, R.W. Reimer, D.A. Richards, E.M. Scott, J.R. Southon, R.A. Staff, C.S.M. Turney & J. van der Plicht. 2013. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. *Radiocarbon* 55: 1869–87. https://doi.org/10.2458/azu_js_rc.55.16947

Rydving, H. 1993. *The end of Drum-Time. Religious change among the Lule Saami, 1670s–1740s.* Uppsala: Uppsala University.

Salmi, A. 2013. Animal bone finds from Kautokeino Láhppojohka, Neiden Ferdesmyra, Nordland Mørsvikbotten, Holmajärvi Saivarova, Kautokeino Bæljašvarre and Lakselv Nedrevatn. Unpublished osteological report prepared for the University of Oulu.

– 2016. Zooarchaeological analysis of animal bone assemblages from Sámi offering sites archived in the collections of the Statens Historiska Museet. Unpublished osteological report prepared for the University of Oulu.

Salmi, A., T. Äikäs & S. Lipkin. 2011. Animating rituals at Sámi sacred sites in northern Finland. *Journal of Social Archaeology* 11: 212–35. https://doi.org/10.1177/1469605311403962

Salmi, A., T. Äikäs, M. Fjellström & M. Spangen. 2015. Animal offerings at Sámi offering site Unna Saiva—changing religious practices and human-animal relationships. *Journal of Anthropological Archaeology* 40: 10–22. https://doi.org/10.1016/j.jaa.2015.05.003

Sarvas, A. 1968. 53 Inari Ukonsaari. Koekaivaus. Unpublished excavation report produced for the National Board of Antiquities.

Serning, I. 1956. *Lapska offerplatsfynd från järnålder och medeltid i de svenska lappmarkena*. Uppsala: Almqvist & Wiksell.

Sommerseth, I. 2011. Archaeology and the debate on the transition from reindeer hunting to pastoralism. *Rangifer* 31: 111–27. https://doi.org/10.7557/2.31.1.2033

Spangen, M. 2016. *Circling concepts. A critical archaeological analysis of the notion of stone circles as Sami offering sites.* Stockholm: Stockholm University.

Tegengren, H. 1952. *En utdöd lappkultur i Kemi Lappmark: Studier i Nordfinlands kolonisationshistoria*. Åbo: Åbo Akademi.

Vorren, Ø. 1979. Samisk bosetning på Nordkalotten, arealdisponering og ressursutnytting i historisk-økologisk belysning. *Håløygminne* 15: 233–63.

– 1998. *Villreinfangst i Varanger fram til 1600–1700 årene*. Tromsø: Nordkalott-Forlaget.

Wallerström, T. 2000. The Saami between east and west in the Middle Ages: an archaeological contribution to the history of reindeer breeding. *Acta Borealia*, 17: 3–39. https://doi.org/10.1080/08003830008580501

Zachrisson, I. 1984. *De samiska metalldepåerna år 1000–1350 i ljuset av fyndet från Mörträsket, Lappland*. Umeå: Umeå Universitet.

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