Inari Nukkumajoki 5, the Excavated History of a Sámi Winter Village

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Abstract

The excavation at Inari Nukkumajoki 5 was carried out in 2007 as part of the fieldwork of the project Home, Hearth and Household in the Circumpolar North (HHH). The main results of the excavation supported the earlier results of fieldwork at Nukkumajoki 2 in 1978–1985. The settlement is dated to the end of the 16th and the beginning of the 17th century. The main exploited animal at the site was reindeer that had been hunted but also domesticated on a minor scale. This study introduces an alternative interpretation to the discussion on the motivation of locations and the character of the sites at Nukkumajoki.

1 Introduction

The Nukkumajoki 5 (N5) site in in the municipality of Inari in Finnish Lapland (Fig. 1) is quite famous in the history of archaeology in Finland. It belongs to a chain of eight Sámi winter villages (Nukkumajoki 2-8, Lapinoja), which are located along and near the River Nukkumajoki, on both sides of the river (Carpelan 2003; Itkonen 1913). This narrow river flows towards Lake Inarijärvi in the north-east.

Extensive investigations of the Nukkumajoki sites were carried out in the 1970s and 1980s, while the latest excavation, at N5, took place in 2007. The largest excavations were conducted at Nukkumajoki 2 (N2) in 1978-1985 by Christian Carpelan, who has published their preliminary results (Carpelan 2003; Carpelan & Hicks 1995; Carpelan & Kankainen 1990; Carpelan & Lavento 1996; Carpelan et al. 1997). The final publication is still in progress. The results of the N5 excavation have previously been addressed only briefly (Halinen 2009; Halinen et al. 2013). On behalf of our research project (Home, Hearth and Household in the Circumpolar North, HHH), the present article tries to complement the lack of published results.

The Sámi winter villages form a coherent group of sites that are situated mainly in the northern part of Finnish Lapland, i.e. in the municipalities of Inari and Utsjoki, and have been dated from the 16th to the 17th century (Carpelan 2003:71). They have also been discovered in Näätämö, Sodankylä, Sompio Keminkylä and Kitka Siidas (Lapp Villages). The Lapp Villages are among the 16th–18th century historical villages of Sweden, Finland, Norway and Russia (see Wallerström 2017).

Site N5 was discovered in 1909 by Ilmari Itkonen, the son of a local clergyman who collected and recorded ethnographic and archaeological information regarding the parish of Inari (Carpelan 2003: 72; Itkonen 1913). The site consists of remains of several *goahtis* (8) (huts), fireplaces (7), and an oven (see Fig. 2). The most significant feature at the site is the linear organization of the structures. In this respect the organization resembles Árran (hearth-row) sites dating from the 8th to the 14th century in Northern Fennoscandia (Halinen et al. 2013; Hed-

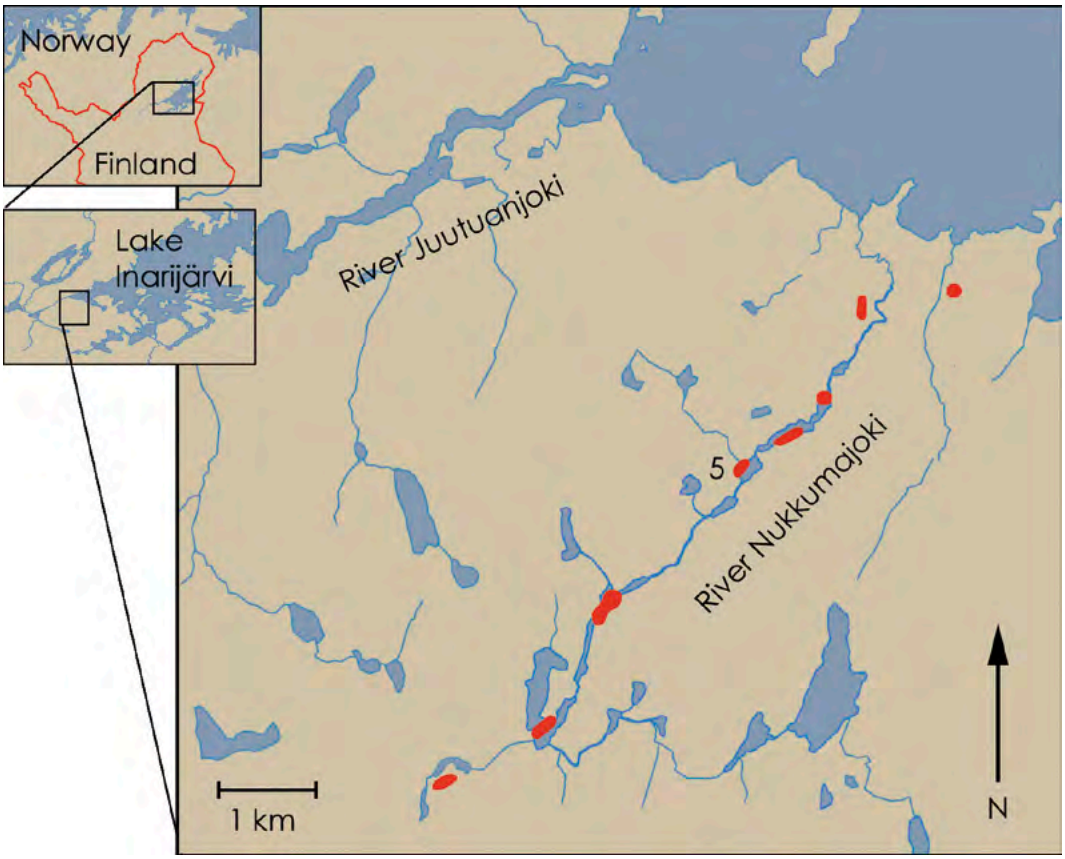


Figure 1. The location of the River Nukkumajoki sites, 5=Nukkumajoki 5 site, source: The Register of Ancient Monuments, The Finnish Heritage Agency. Drawing: T. Pirttimäki.

man 2003; Hedman et al. 2015; Hedman & Olsen 2009).

The site was mapped for the first time in 1913 by L. I. Itkonen, and he also excavated three goahti remains there (T.I. Itkonen 1948a: 199). Christian Carpelan mapped the site in 1981 and simultaneously conducted a trial excavation. The excavation conducted in 2007 by the author (Halinen 2007) concentrated on goahti no. 8 (original numbering according to Carpelan) and the surroundings.

2 Historical setting

The Sámi live in the northern parts of Fennoscandia, from Central Sweden and Norway to the Kola Peninsula. The Inari region has been an area, where the Inari, Skolt and North Sámi have lived in their own territories. The boundaries between these populations have most likely remained unchanged for a long time, including small and bigger changes over the course of time. In the 16th century the Inari region belonged to the Inari Lapp Village, which had almost the same boundaries as the present-day municipality of Inari. The siida (Lapp village) system was established during the 16th century, but its background probably lies in an older siida system, based on family territories. The centre of the siida and the Lapp village was the winter village, where people, families and extended families gathered to spend time together in the winter and then dispersed into smaller groups for the snowless time of the year inside the

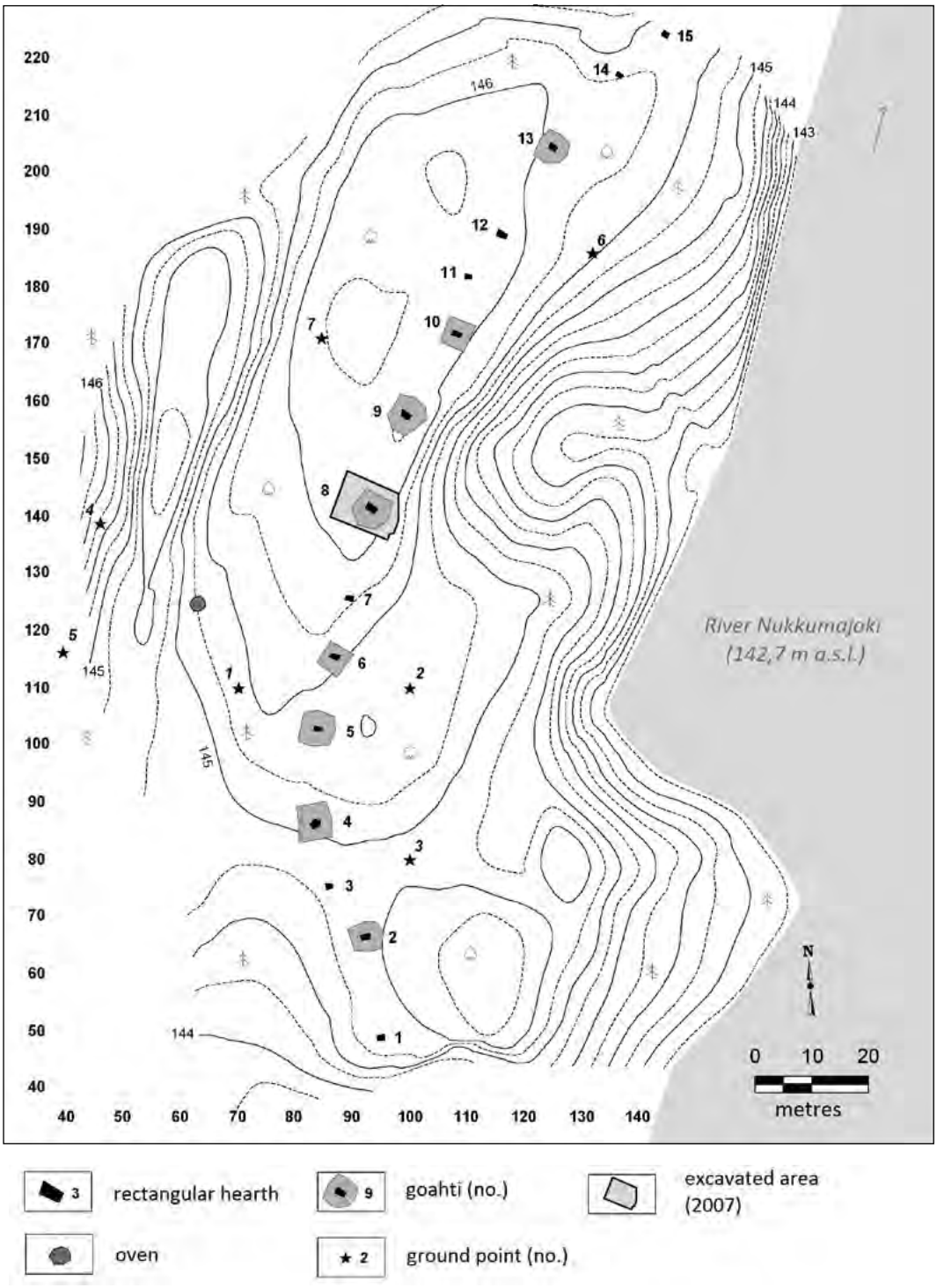


Figure 2. General view of the Nukkumajoki 5 site, contours at 25 cm intervals. Mapping: P. Halinen, K. Nordqvist, S. O'Ceallacháin, S. Sandell & J. Stenberg. Drawing: K. Nordqvist.

Figure 3. General view of the Nukkumajoki 5 site. Photo: P. Halinen.

siida territory. At the end of 16th century the crown wanted to gather the Sámi in villages in order to collect taxes. Christian Carpelan has proposed that the location of the winter village was regularized at the end of 16th century for the purpose of organizing taxation in Lapland. (Carpelan 2003: 71.) The intra-site organization of the villages was not regularized, and instead they developed independently, based on the traditions of the communities concerned. The winter-village system has recently been questioned (Eidlitz Kuoljok 2011; Wallerström 2017).

From the peace treaty of Pähkinäsaari/Nöteborg/Schlüsselburg between Sweden and Novgorod in 1323 and the treaty between Norway and Novgorod in 1326 the huge area in the north, from Lyngen Fjord to the River Ponoj, was shared by Norway, Sweden and Novgorod (Amundsen et al. 2003: 85; Hansen 2011: 356; Olsen 2011: 31). Even earlier these powers had military conflicts with each other. This area became a common taxation and trading area, where Bircarlians, Karelians, Novgorodians, Norwegians, Swedes and Finns were active in the Sámi territories. While the strength of influence of these actors varied, taxation and the pressure of trading activities were directed towards the Sámi area, *Sápmi*, at the beginning of 17th century. In different parts of the area, each actor made a variable contribution of activity.

At the turn of the 16th century, Duke Karl, later King Charles IX of Sweden, tried to organize the life of the people of Lapland. Sweden was at war with Denmark/Norway in Lapland and tried to expand its power and establish a system of tax collection and trade centres. For this purpose Sweden established marketplaces in Lapland, which were also a basis of secular and ecclesiastical administration: state rule extended to Lapland.

Inari has been considered an area that was influenced by three state powers during the 16th century. The Finns, and prob-

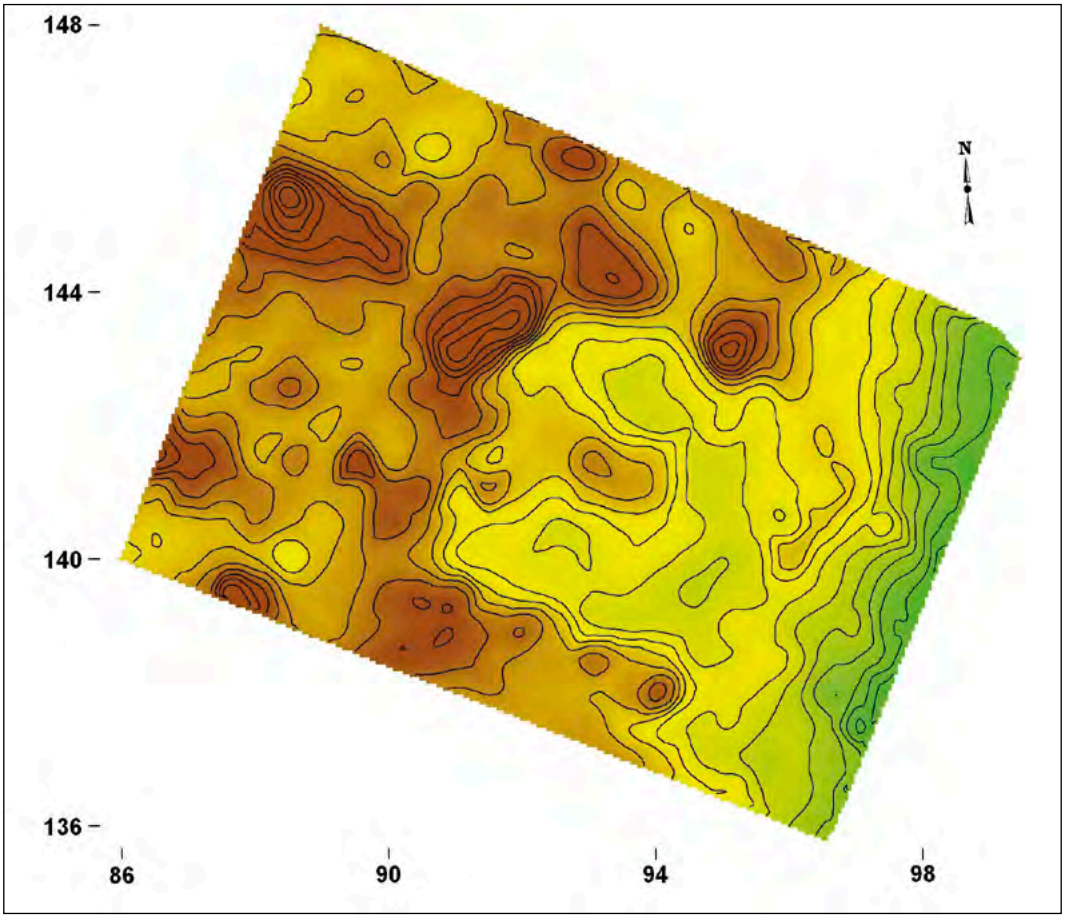


Figure 4. The surface altitude contours of goahti eight, contours at 5 cm intervals. Drawing: K. Nordqvist.

ably also the Swedes, engaged in an agricultural economy and hunting/fishing at the far end of the Gulf of Bothnia carried on trade and taxation with Sámi communities in Northern Lapland, including the Inari area (Halinen 2008; Hansen 2011: 356; Wallerström 1995; 2017). The earliest historical document regarding these Bircarlians is from 1328. In 1553 Gustavus Vasa, the king of Sweden (1523-1560), cancelled their right to tax the Sámi (Carpelan 2003: 71; Hansen 2011: 356), but the tradition of exploiting Sápmi continued in the 18th century (Wallerström 2017). The northern end of the Gulf of Bothnia was colonized by the Finns in the Late Iron Age or early medieval period, but when exactly the exploitation of Lapland was begun by the Finns is not certain (Koivunen 1985, Taavitsainen et al. 2009). Some of these colonies, inhabited by the Finns and Swedes, became towns during the 17th century, situated mainly in the river mouth areas. The largest towns gave names to sections of Lapland, such as Luleå Lapland, Umeå Lapland, Tornio Lapland and Kemi Lapland, which were formed according to the river system areas.

The Karelians exploited the northern regions during the Late Iron Age and medieval period, as well as the 16th century. They travelled along the waterways from the shores of Lake Ladoga to the northern end of the Gulf of Bothnia, Northern Sweden, Finland and Norway, and the Kola Peninsula in or-

Figure 5. The remains of goahti eight. Photo: P. Halinen.

der to trade and tax the Sámi and other local inhabitants. This exploitation was practised in close cooperation with and subordinate to the Novgorod city state. This interaction was partly violent and armed conflicts were common between Karelians/Novgorodians and Scandinavians. During the medieval period the Karelians tried to extend their influence to the coastal area of Finnmark, where the Catholic Church and Norwegian rule expanded towards the east. The fishing stations and the churches were built alongside each other to meet the demand of dried fish in Central Europe. In this respect, the northern natural resources were in great demand and sharing/exploitation meant competition between the powers concerned. (Halinen 2008; Hansen 2011; Wallerström 1995; 2017.)

3 The environmental setting

The Nukkumajoki area is located in a pine forest, the northern borderline is about 25 km to the northwest, in Muotkeduottar fjeld area. The River Nukkumajoki flows towards the northeast among low fells, tree-covered hills, rising between 120 and 160 m (c. 260-300 m a.s.l.) higher than the river valley (c. 140 m a.s.l.). The Muotkatunturi area and the Leammi fjeld areas (Márastatduoddarat and Vibosduoddarat) were treeless 1.000 years ago, but the treeless areas have expanded since then (Kultti et al. 2006: 388). About 1.000 years ago the Medieval Warm Period was as its warmest and after 1150 CE the temperature cooled by 1600, with the exception of some warmer short periods (c. 1400 and 1550) (Korhola et al 2000: 291; Matskovsky & Helama 2014: 1482; 2016: 444).

The profile of the Inari area is quite low – there are no high fjelds, which means that climate changes do not radically affect forest conditions. If the general temperature rises or declines, the overall picture of the composition of trees does not change inside the

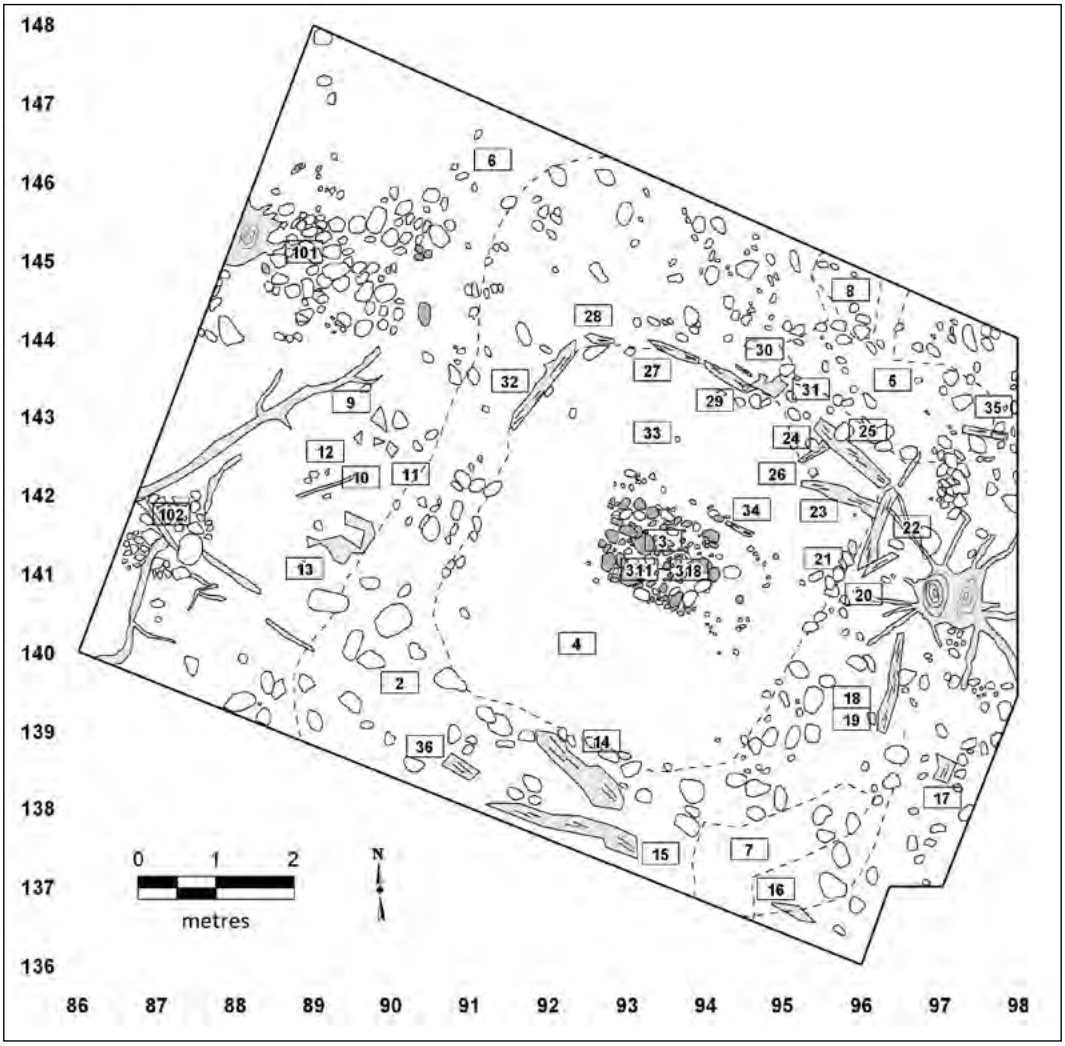


Figure 6. Units and constructions of goahti eight, 1=turf layer, 2=the wall, 3=the hearth (incl. 311-318), 4=the floor area, 6=the outside area (incl. 5, 7, 8 bone concentrations), 9-36=the wooden constructions, 101-102=the stone cairns. Drawing: A. Herva, V.-P. Herva & K. Nordqvist, digit.: L. Kunnas & K. Nordqvist.

forest area. However the treeline on the fjeld slopes rose or descended over time and in the process of climate change – the changes are slow and they are more visible close to the mountain areas. In the forest area, these changes can be observed as cooler temperatures, which meant that people had to prepare themselves better for the winter than previously.

At Nukkumajoki 5 the predominant species in the faunal material is reindeer (*Rangifer tarandus*). Reindeer lived in the area and was hunted. The morphology of the bones does not make it possible to determine whether the bones are of wild forest reindeer, wild mountain reindeer or domestic reindeer. In the Várjjat (Varanger) area it has been possible to identify forest reindeer bones from sites dating from as early as c. 2000 BCE as well as from the Late Iron Age and medieval period (Bjørnstad et al. 2012; Røed et al. 2018). Earlier it has been assumed that the post-glacial reindeer species was wild mountain reindeer (Hakala

Figures 7-10: Fig. 7. The turf layer removed. Fig. 8. The wall layer removed. Fig. 9. The bottom layer, with only the profile strip and hearth unexcavated. Fig. 10. The bottom layer, with only the hearth unexcavated. Photos: P. Halinen.

1997; Halinen 2005). In material from the Varanger area from c. 2000 BCE the reindeer could be observed to be larger than present-day mountain reindeer (Bjørnstad et al. 2012; Schanche 1994). This evidence implies that the forest reindeer was one of the primary reindeer species in the eastern part of northern Fennoscandia also in the 15th and 16th centuries. The bone material of winter sites in the Pasvik area indicates hunting near the site and/or the domestication of reindeer (Halinen et al. 2013; Hedman & Olsen 2009; Hedman et al. 2015). Because the DNA testing of the recovered bones at Nukkumajoki has not yet been carried out, the determination, however, is not definite. There is a more detailed discussion on the faunal material from N5 takes in the section on osteological analysis.

European elk is the other large mammal which lives in the area. It was hunted already in the Stone Age, and is still hunted (Halinen 2005). No elk bones have been recovered at the N5 site, but the environment is most suitable for it. There must be good reasons why people of N5 did not hunt elk – the same concerns N2, where altogether nine *goahti* were excavated (Carpelan 2003).

The natural forests of Inari consist mainly of pines hundreds of years old (Zetterberg et al. 1994). Living in these forests are smaller mammals such as hare, fox, wolverine and wolf and a large mammal, bear, which have been hunted for fur and food, for making world safer. The bear hunt was strictly regulated and followed set rituals. The forests were also the home of forest fowl / capercaillie. Beaver lives in the waters of the River Nukkumajoki water system and it was hunted for fur and food. In this water system, pike (*Esox lucius*) and whitefish (*Coregonus lavaretus*) are the most common fish species. They were fished and goose was hunted in the River Nukkumajoki area. It can be as-

Figure 11. The hearth, with the turf layer removed. Photo: P. Halinen.

Figure 12. The hearth, with the upper layer of stones removed. Photo: P. Halinen.

Figure 13. The hearth, with almost all the stones removed. Photo: P. Halinen.

sumed that the environmental change did not have much effect on the ratio of the species hunted over the course of time in medieval and Early Modern times.

4 An overview of the Nukkumajoki 5 site

Site N5 consists of 15 remains of goahtis. Eight of them are the remains of turf huts and seven of them are rectangular hearths with no trace of hut constructions and therefore are probably remnants of a more lightweight structure, the lávvu. Hut no. 8 was selected for excavation (Fig. 2). The dwelling remains are organized in a row parallel to the river, just like the rectangular árran hearths 300-700 years earlier. The site is on the north-west side of River Nukkumajoki, next to a widening of the river. The river bank rises 2–3 m to almost a flat terrace where the dwelling remains are situated. The forest of the area consists of pine, but in the site area, the *šillju*, the vegetation consists of birch, lingonberry and meadow grasses that has been influenced by humans (Fig. 3).

5 Excavation strategy and observations of the excavation

The excavated area consisted of the goahti area and small areas on the western and eastern side of the visible wall constructions (Fig. 4). On the surface, the roundish wall was visible as a low prominence along with the oblong rise of the fireplace in the middle of the round wall area (Fig. 5). The excavation was carried out with the stratigraphic method; seven stratigraphic units were identified. They consisted of the turf layer (Y1), the wall (Y2), the hearth (Y3), the floor (Y4), and the outside area (Y6). The stone cairns on the east side of the goahti were units Y101 and Y102. The wooden constructions were units Y9-Y36. The bone concentration areas were units Y5, Y7 and Y8. (See Fig. 6.)

The constructions of the goahti consisted of a hearth in the middle of the floor area, slightly bit higher wall circle with stones moved from the floor area, and the decayed remains of wall timbers within the wall (Figs. 7, 8, 9, 10). Outside the goahti, on the west side, there were two small piles of stones. The bigger one had been used as a fireplace in its early days, but had later been covered by stones, most probably for storing and later for heating in the hearth.

The hearth was almost rectangular (Fig. 11, 12), measuring 140x107x15 cm. The top layer consisted of small stones, 10-20 cm in diameter. Under the top layer there were larger stones inside, one in the east side of the hearth and another one almost in the centre. The eastern one was flat on the surface and its shorter end pointed to the middle of the hearth (Fig. 12, 13). The stones under the top layer were firecracked and the soil was full of charcoal and burnt bone fragments. Clearly the hearth had been used in high temperature and afterwards it had been covered again with new stones – which were not so badly damaged by fire. Also the flat stone, probably a baking or roasting stone, was covered with these new stones. Inside the hearth the finds consisted mostly of burnt and unburnt bones, and a flat metal ring piece of brasswork (Figs. 14, 15). Tinder flint was also found close to it.

The stones were cleared from the floor area, which was levelled almost to the horizontal plane. The eastern side of the floor was 15–20 cm lower than the western side (Fig. 4). There was no clear trace of a line of wood or stone that could indicate the intra-site division of the floor area into the *boassjo*, *uksa* and *luoito* respectively. On the north-eastern side of the hearth there were the approximately 50 cm long remains of wooden log/pole, laid north-west south-east – as the possible remains of a dividing floor construction between the boassjo and the luoito.

The wall area consisted of cleared stones, sand and wooden constructions (Figs. 6, 9-10). The wooden constructions were probably mostly wall constructions, because the

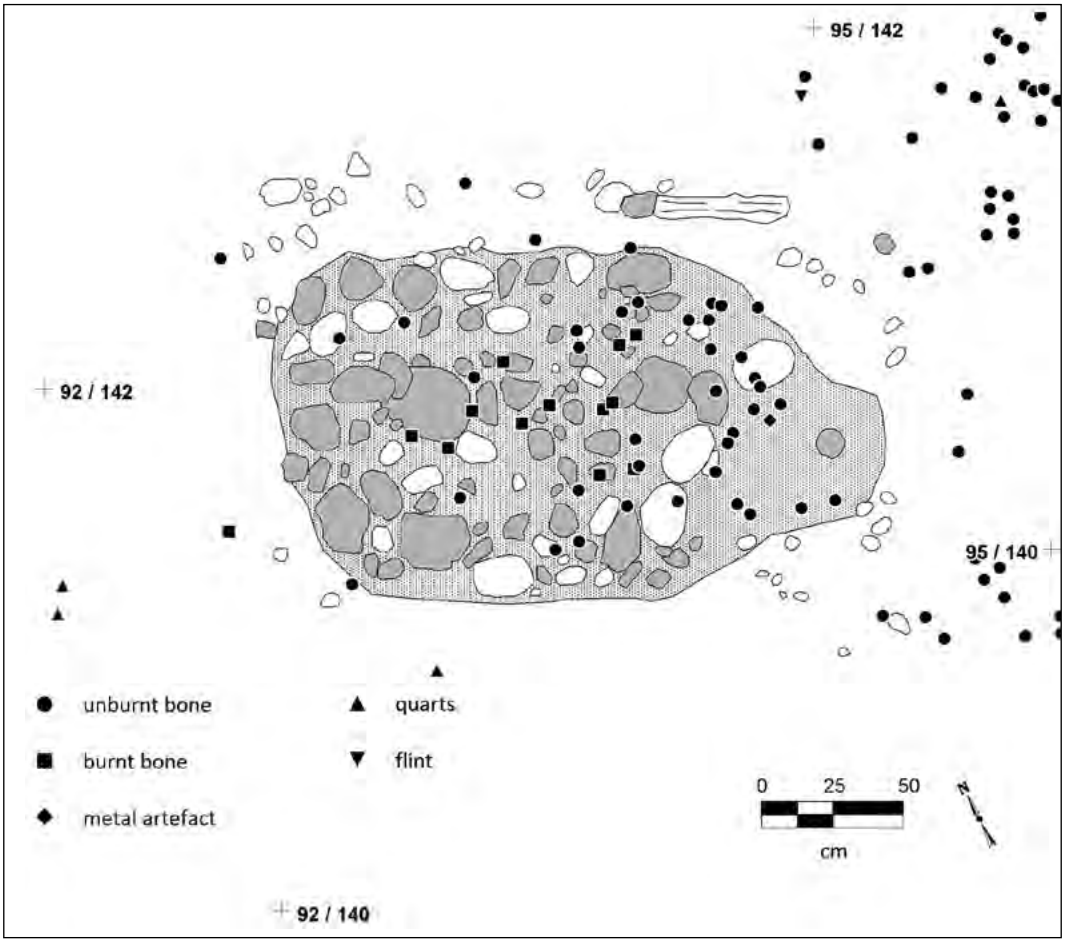


Figure 14. The hearth with finds, measured with total station. Drawing: K. Nordqvist.

floor area was surrounded by logs, shaping the hut and the floor area mainly into hexagon, but sometimes as an octagon (Carpelan 2003: 76; Halinen 2009: 104). It is also possible that the arches of the roof had collapsed and remained in the wall area. In addition, the wooden wall constructions had been covered by sand, probably taken from the floor area. There were no visible traces of a turf layer, but apparently the hut was covered by turf. The reconstruction of a turf hut includes a ditch which surrounded the hut but at N5 there were no traces of that kind of ditch. (Carpelan 2003: 76.)

In the south-east wall of the hut there were larger stones, which had moved af-

Fig. 15. The flat metal ring (KM 37149:353). Photo: T. Vaara.

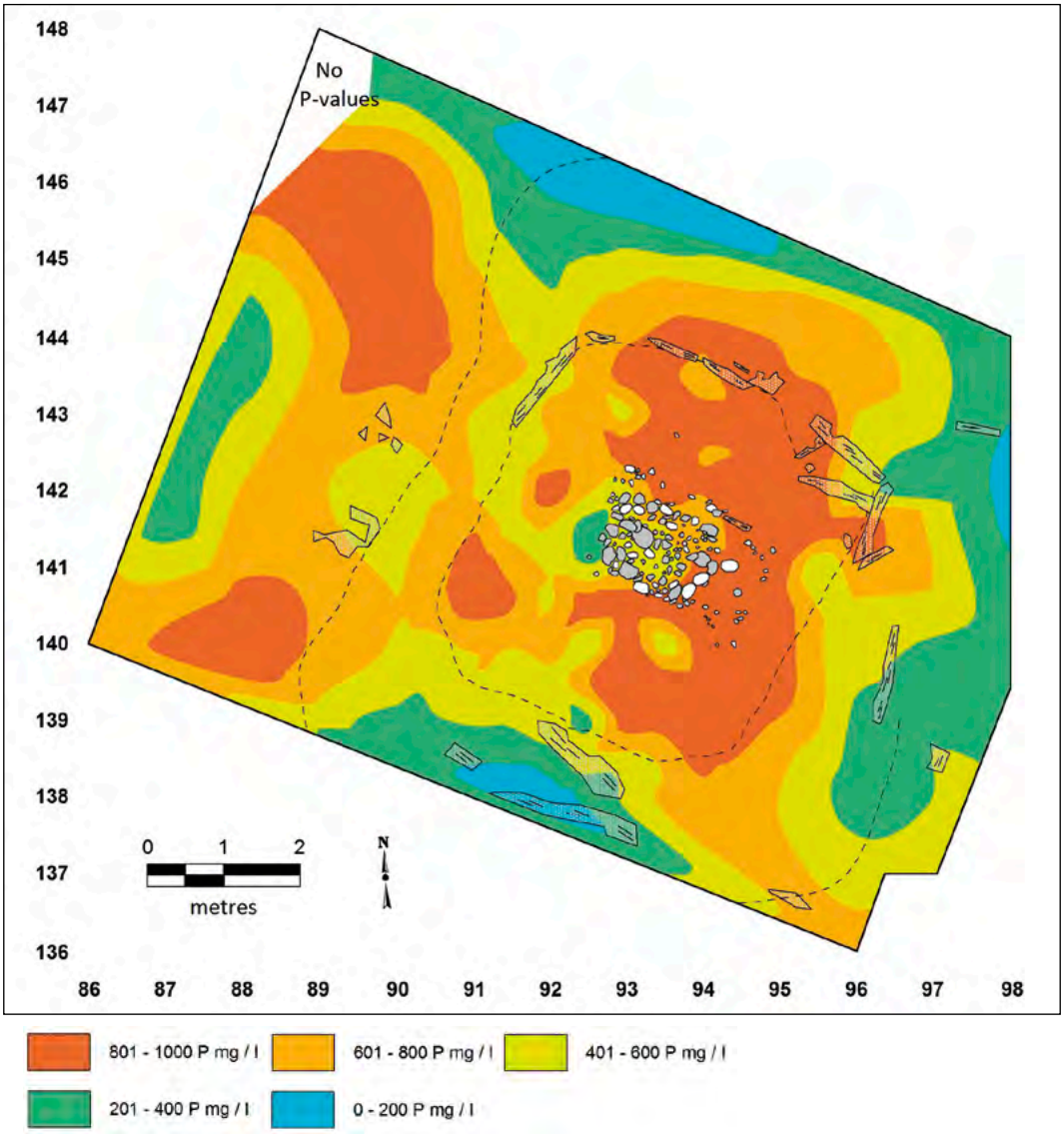


Figure 16. Soil phosphate map, diluted P-values. Drawing: K. Nordqvist.

terwards to their present location (Fig. 6). Under them there were a humus layer and finds from the period of use of the hut, i.e. the stones had probably been brought there after the bones had the discarded and the humus (wall) had developed. At the same spot there was a depression in the wall implying a doorway. On the west side there was a lower depression in the wall, which could as well imply a doorway (Fig. 4).

The soil phosphate values were highest on the eastern side of the hut floor area and on the western side of the hut (Fig. 16). The first area is the rear part, the boassjo and eastern side of the luoitos. The front, the uksa, and the eastern side of the hut have lower phosphate values. The higher phosphate values indicate more organic waste in the soil, probably implying an area of higher activity as well.

Figures 17-20: Fig. 17. An iron knife (KM 37149:8). Fig. 18. A fragment of knife (KM 37149:340). Fig. 19. A fragment of a knife (KM 37149:399). Fig. 20. A fragment of knife (KM 37149:1020). Photos: T. Vaara.

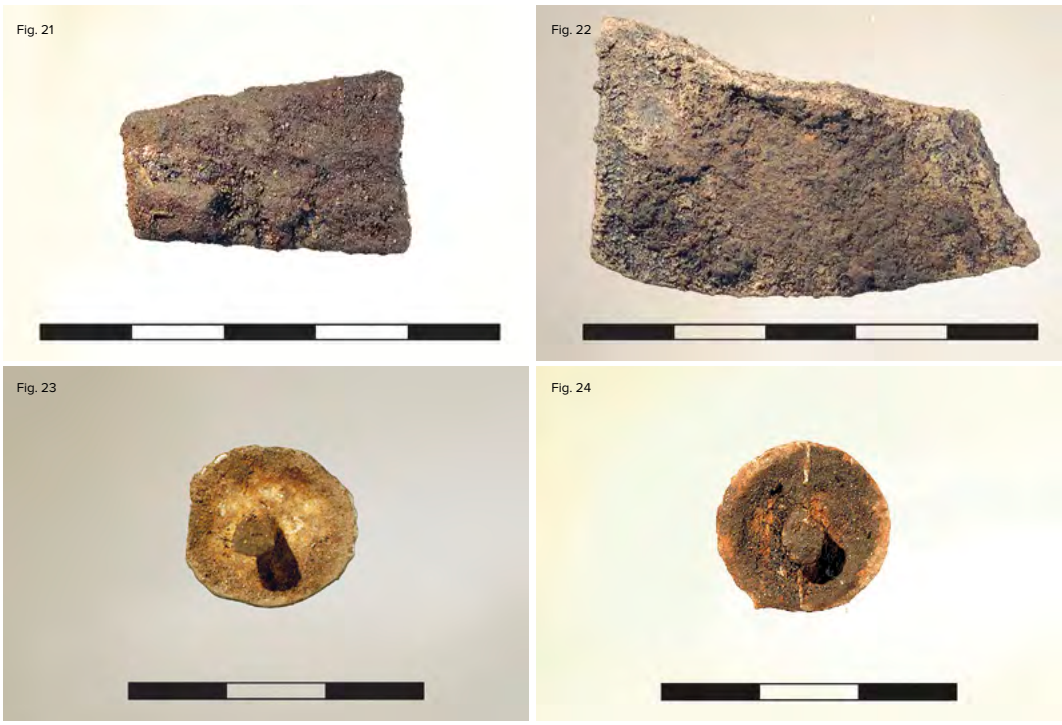
6 The finds

The find material was catalogued for the collections of the National Museum of Finland under the main number NM 37149. The metal artefacts from the site consist of blades or blade fragments of iron knives. They are few in number: only one complete iron knife (Fig. 17), four blade fragments of iron knives (Fig. 18-21), a fragment of an iron axe (Fig. 22), two round tin rivets (Fig. 23-24), a rectangular iron rivet (Fig. 25), a flat metal ring (Fig. 14), and a fragment of an iron nail (Fig. 26).

The knives resemble the earlier finds from Nukkumajoki 2. The complete iron knife is almost identical to the knife published by Carpelan (2003: 74). According to him, knives of this kind were made in Russia, Finland, Scandinavia and the Baltic countries. The blade fragment of an iron knife resembles the table knife found commonly at N2 and in other late medieval and Early Modern period sites in Southern Finland. Knives of this kind were imported from Central and/or Western Europe and they are dated to 16th and 17th centuries (Carpelan 2003: 74). Three fragments of iron knives (Figs 19-21) and iron axe (Fig. 22) are not identifiable or possible to date.

The tin rivets have a convex and a round surface, with a peg on the concave reverse side. The surfaces of the rivets are plain with no decoration. The main elements of the rivets are tin and lead (see Table 1). The form of the iron rivet is flat and rectangular with a peg on the reverse side. They are probably from the decorations of a belt or some other kind of leather artefact. The metal ring is a small flat ring, the function of which is unknown. It was probably a decoration for clothing clothes. The main elements of the ring were arsenic, copper, tin and lead (Table 1).

The knife, two fragments of knives, the



Figures 21-24: Fig. 21. A fragment of a knife (KM 37149:1024). Fig. 22. A fragment of an axe (KM 37149:239). Fig. 23. A tin rivet (KM 37149:987). Fig. 24. A tin rivet (KM 37149:1008). Photos: T. Vaara.

fragment of an iron nail, and the fragment of an iron axe as well another metal rivet and an iron rivet were found beside the wall (Fig. 27). The flat metal ring was found next to the east end of the hearth. The fragment of an iron knife (Fig. 19) was found in the floor area, on the north side of the hearth.

Eleven flakes each of flint and quartz were found. They were in the floor area and within the wall. Some of them were found also outside the goahti. Inside, the flint was found on the rear side and quartz on the front side. Outside most of the finds consisted of flint. (See Fig. 28) The quartz was probably used in the same way as flint; the flint was used for lighting the hearth with strike-a-lights. It is also possible that the quartz is a remnant of earlier, probably prehistoric, activities in the area.

The bone assemblage consisted of 19,477 (28,594 g) unburnt and 230 (31 g) burnt bone fragments. The identified animal species were reindeer, hare, beaver, goose, whitefish and pike.

Most of the bones were found outside the goahti, on its south-east and north-east sides (see Figs 29, 30 and 31). Some bones were found also inside the goahti, in its eastern part, and in the hearth. Most of the burnt bones were found inside the hearth. The hare (Fig. 32) and beaver bones were found outside the goahti: hare bones were found on the north side and the beaver bones were found on the south-east side of the goahti. The pike bones were found inside the hearth, except for three teeth, which were found on the north-east side of the goahti.

7 The chronology of the site

Site N2 has been dated to the end of 16th and the beginning of 17th century according to several radiocarbon dates, finds and stratigraphic observations (Carpelan 2003: 73;

Figures 25-26: Fig. 25. An iron rivet (KM 37149:1016). Fig. 26. A fragment of an iron nail (KM 37149:534B). Photos: T. Vaara.

Carpelan & Kankainen 1990). It has been assumed that the Nukkumajoki sites were not contemporary, but followed each other chronologically. As a matter of fact, some of the Nukkumajoki sites were occupied simultaneously from the 16th to the 17th century (Carpelan 2003: 71).

Two radiocarbon dates were analysed at site N5. Samples 32 and 35 were taken from the hearth and near the hearth, respectively. They were identified as deciduous tree charcoal; in this region the most likely tree species being birch (*Betula*) – in any case the leafy trees have a short life span, which does not make the old-wood effect plausible. Sample 32 was dated 385±25 BP (Hela 1667) and sample 35 was dated 325±25 BP (Hela 1666). In sample 32, 68,2 % probability gives 1510-1600, 1610-1640 CE, 95,4 % probability gives 1480-1650 CE. Sample 35: 68,2 % probability gives 1440-1510, 1600-1620 CE, and 95,4 % probability gives 1440-1530, 157-1630 CE. The radiocarbon dates (see Figs. 33 and 34) for site N5 imply the same life-span as at site N2. The finds also support this date.

8 Osteological analysis

The bone assemblage consisted of 19,477 (28,598 g) unburnt and 230 (31 g) burnt bone fragments. The predominant animal species was reindeer (*Rangifer tarandus*), which was identified in 1,809 fragments, but most likely the majority of identified large mammals, mammals, artiodactyls, ungulates and ruminants (2,691 fragments) are reindeer. The identified middle sized mammals were hare (*Lepus timidus*) and beaver (*Castor fiber*), but only single bone fragments of these species were identified. The same concerns greyland goose / bean goose (*Anser anser / Anser fabalis*), whitefish (*Coregonus lavaretus*), and cyprinids. Pike (*Esox lucius*) was identified in 17 fragments, but only one individual could be determined. (See Table 2.)

The osteological analysis of the bone material was carried out by Eeva-Kristiina Harlin, MA (2008). The description, references and the results are based on her report. The identification was done by comparing bones with bone material kept at the Finnish Museum of Natural History and by using several books as references (During 2003; Hillson 1992; Schmidt 1972). The age determination of the reindeer individuals was carried out by using the stage of ossification of the bones (Hufthammer 1995) and eruption of the teeth (Miller 1974). These methods can be used only when dealing with immature individuals. The age determination of full-grown animal teeth is based on four stages of description (unworn, somewhat worn, worn, highly worn). Sex determination was based on observation of features of iliac bone (Os ilium) (During 2003). (Harlin 2008: 33.)

artefact and its NM 37149 extension	Al %	Si %	P %	Mn %	Fe %	Ni %	Cu %	Zn %	As %	Se %	Sn %
metal ring (353, Fig. 14), a	1,67 ±0,263	0,51 ±0,084	2,53 ±0,058	0,00 ±0,006	1,03 ±0,025	0,04 ±0,008	28,74 ±0,299	1,68 ±0,030	49,27 ±3,961	0,03 ±0,010	7,85 ±0,002
metal ring (353, Fig. 14), b	1,78 ±0,326	0,37 ±0,094	2,17 ±0,065	0,00 ±0,008	0,94 ±0,029	0,06 ±0,012	62,42 ±0,362	2,16 ±0,041	13,96 ±1,682	0,02 ±0,010	7,00 ±0,136
tin rivet (987, Fig. 23), a					0,40 ±0,013		0,70 ±0,009		0,40 ±0,046		92,80 ±0,187
tin rivet (987, Fig. 23), b					0,44 ±0,013		0,72 ±0,009		0,49 ±0,049		91,82 ±0,185
tin rivet (1008, Fig. 24), a				0,04 ±0,011	1,11 ±0,018		0,08 ±0,004		0,48 ±0,140		37,03 ±0,140
tin rivet (1008, Fig. 24), b					0,40 ±0,014		0,16 ±0,006		0,45 ±0,124		59,80 ±0,183

artefact and its NM 37149 extension	Te %	Pb %	Bi %	Ti %	In %	Y %	Re %	Cr %	Ta %	Ir %
metal ring (353, Fig. 14), a	0,08 ±0,059	6,29 ±0,092	0,28 ±0,038							
metal ring (353, Fig. 14), b	0,00 ±0,012	9,02 ±0,088	0,12 ±0,034							
tin rivet (987, Fig. 23), a		5,28 ±0,092	0,08 ±0,004	0,28 ±0,054	0,06 ±0,017					
tin rivet (987, Fig. 23), b		6,13 ±0,098	0,09 ±0,005	0,23 ±0,053	0,08 ±0,018					
tin rivet (1008, Fig. 24), a		60,91 ±0,076		0,20 ±0,041		0,08 ±0,004	0,07 ±0,007			
tin rivet (1008, Fig. 24), b		37,45 ±0,064				0,10 ±0,004	0,07 ±0,008	1,30 ±0,036	0,04 ±0,010	0,23 ±0,009

Table 1. Percentage distribution of elements, two series – two sides of the artefact, time of measurements 30,5 s. PXRF analysis conducted by Ville Rohiola.

Species	MNI*	fragments
Lepus timidus (hare)	1	1
Castor fiber (beaver)	1	1
Rangifer tarandus (reindeer)	28	1 809
Artiodactyla (artiodactyls)		15
Ruminantia (ruminants)		1
Ungulata (ungulates)		11
Mammalia (mammals)		40
Megamammalia (big mammals)		2 624
Mesomammalia (middle sized mammals)**		1
Anser Anser/Anser fabalis (greylag goose/bean goose)	1	1
Coregonus lavaretus (whitefish)	1	1
Esox lucius (pike)	1	17
Cyprinidae? (cyprinids?)	1	1
Teleostei (bony fishes)		25
Frag. Indet. (unidentified)		14 929
Total	34	19 477

* Minimal number of individuals ** most likely beaver

Table 2. Number and minimal number of individuals (MNI) of bone fragments in goahti eight, based on Harlin 2008: 34-35.

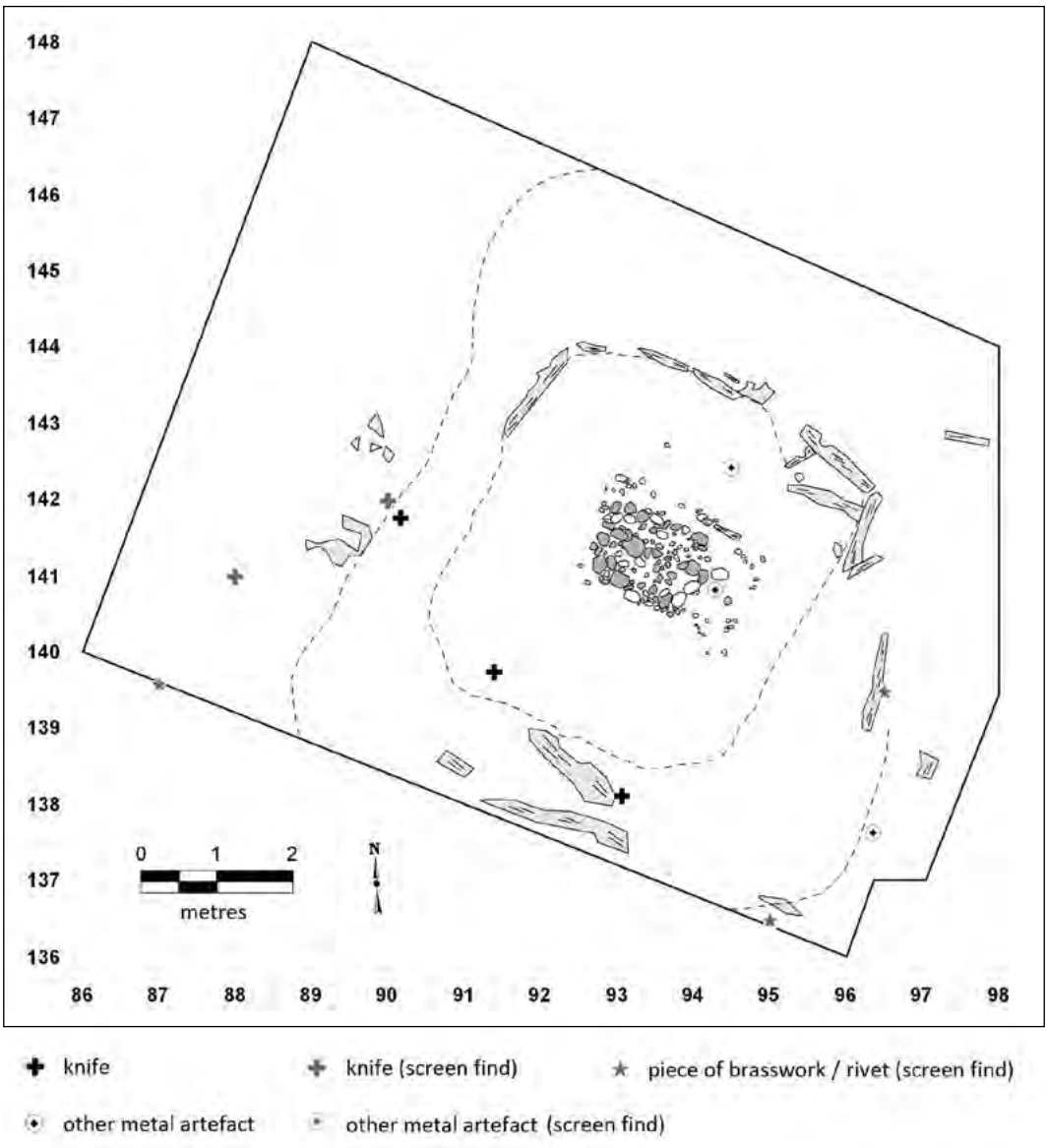


Figure 27. Distribution map of metal finds. Drawing: K. Nordqvist.

The analysis revealed a wide range of animal species, see table 2. The predominant species was reindeer. Most or rather all of the bones, which were determined as artiodactyls, ruminants, ungulates, mammals, and megamammals, should be identified as reindeer, because no other large mammals, such as European elk, were identified (Harlin 2008: 35). The rib bone of the mesomammal is most probably of a beaver. The number of bone fragments of hare and beaver, which are medium-sized mammals, the greylag goose/the bean goose, a large aquatic bird, the whitefish, and Cyprinidae, was only one fragment of each species. Seventeen bone fragments of pike were found.

The body part distribution of the bones of reindeer, and artiodactyls, ruminants,

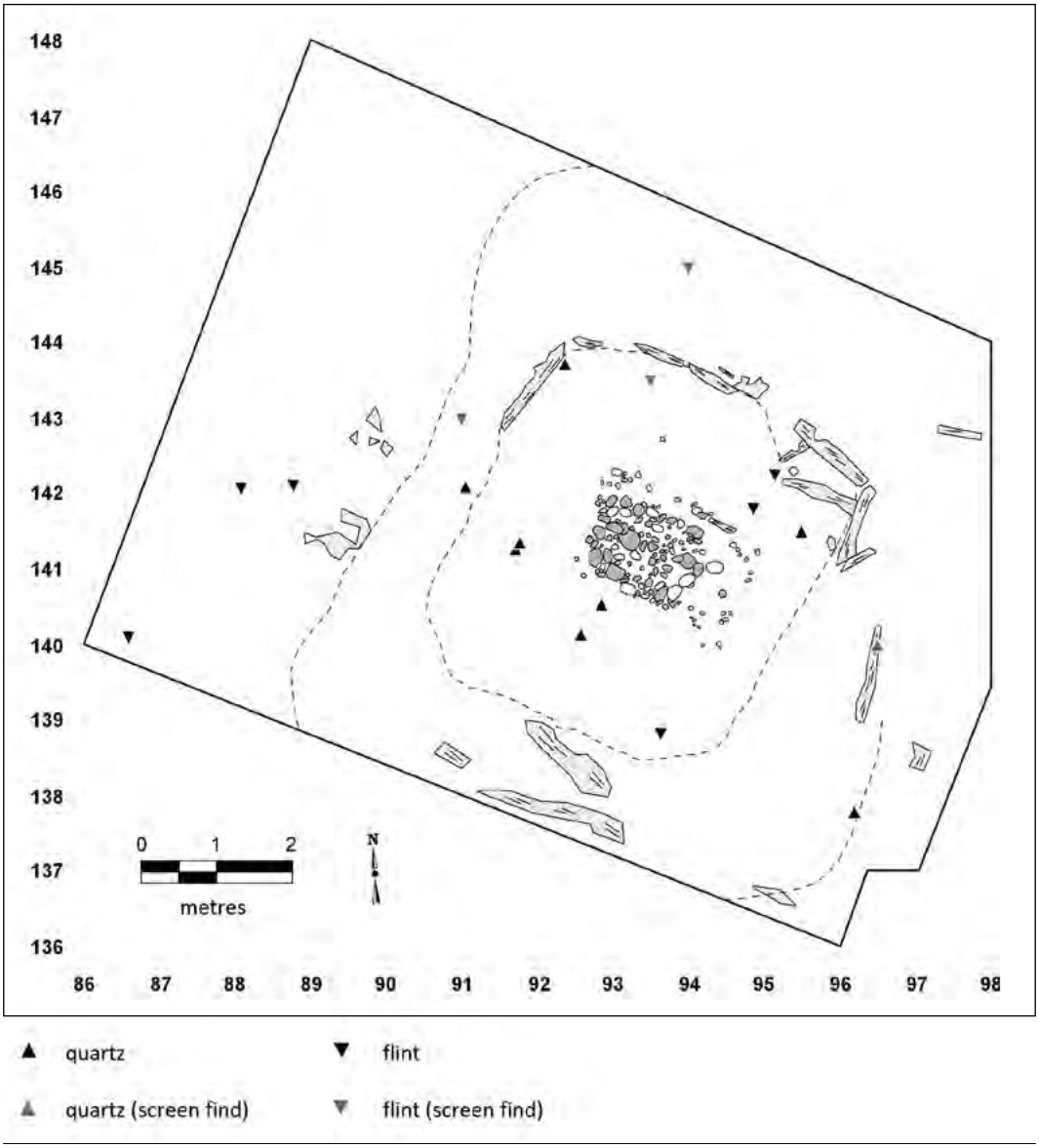


Figure 28. Distribution map of quartz and flint finds. Drawing: K. Nordqvist.

ungulates, mammals, and megamammals, is presented in Table 3. The general picture of the material shows that at least some of the carcases were brought whole to the site. The figure and the table show a clear emphasis caused by natural and human selection. Some of the bones were discarded before being brought to the site or they were transported from the site. For instance, bones of the upper leg (pelvis and femur) are partly missing. (Harlin 2008: 40.)

There were several traces of butchering on the bone surfaces. Bad preservation and the poor quality of the bones had the effect that the traces were not always visible. Owing to this, it was not possible to notice clearly any marks of skinning or dismembering the body. The analysis of processing the

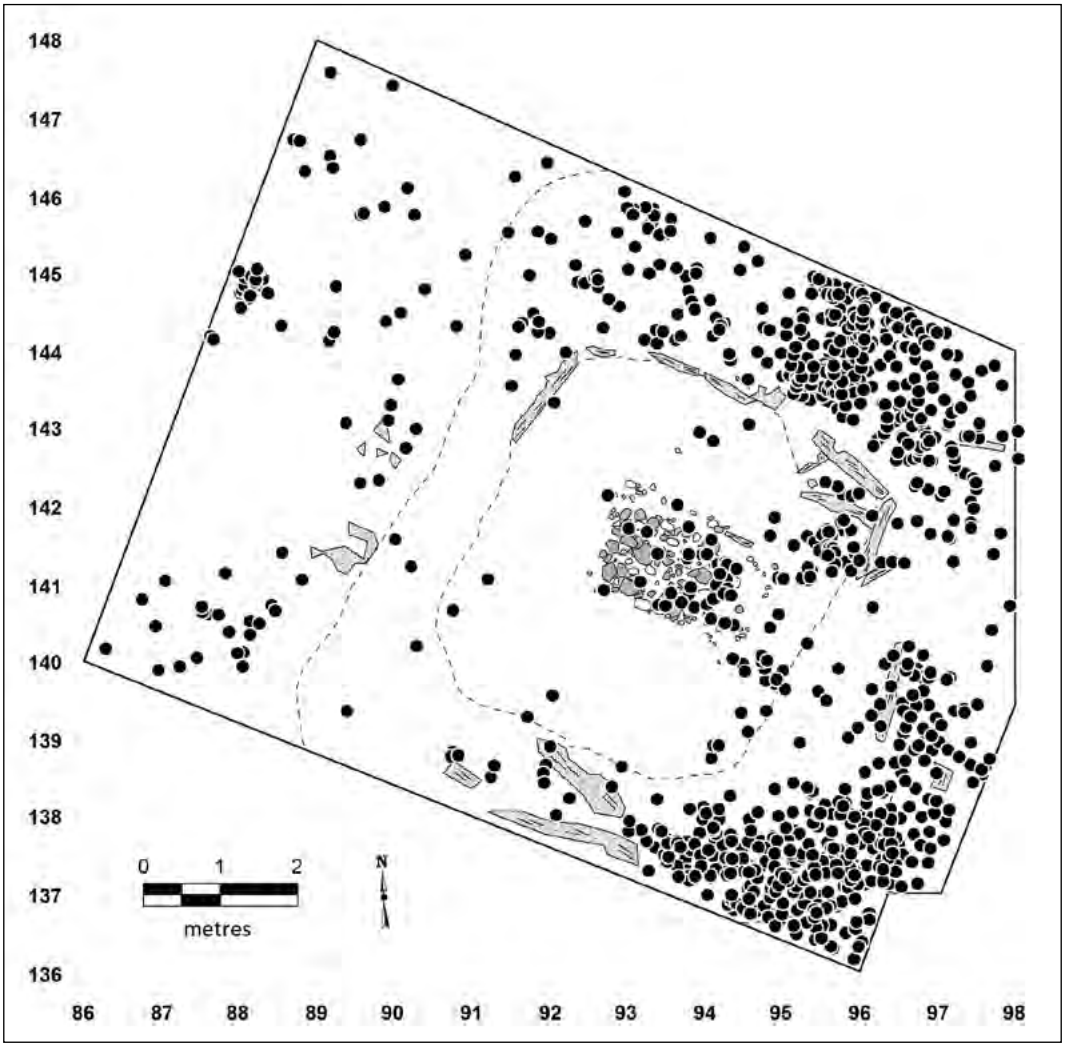


Figure 29. Distribution map of unburnt bones (measured with total station). Drawing: K. Nordqvist.

body was based on traces of extracting meat or marrow from bones. (Harlin 2008: 40.)

Traces of butchering were visible in following body parts: cranium, lower jaw, humerus, scapula, radius, ulna, pelvis (coxae), femur, tibia, metacarpal, metatarsal and digits. In these cases marrow was extracted by cleaving the bone with a knife. (Harlin 2008: 41-44.)

In the occipital bone, which was attached to the cervical vertebrae, cut marks were clearly visible. This indicates dismembering the skull, the cranium. Lower jaw bones had some cut marks, but some of them included marks of being broken. They were cut for extracting marrow and the delicious lip flesh. The trocklea of the distal end of the humerus was split in the middle of the bone. This implies probably dismembering the steak and knuckle from each other. There were several cut marks in the radius and ulna. The radius contain a lot of marrow, but the ulna only slightly. The tuber of the proximal ulna had been cut away in many cases. This indicates dismembering the steak and knuckle from each other – just like in the humerus. In these cases (humerus and ulna) the broken bones

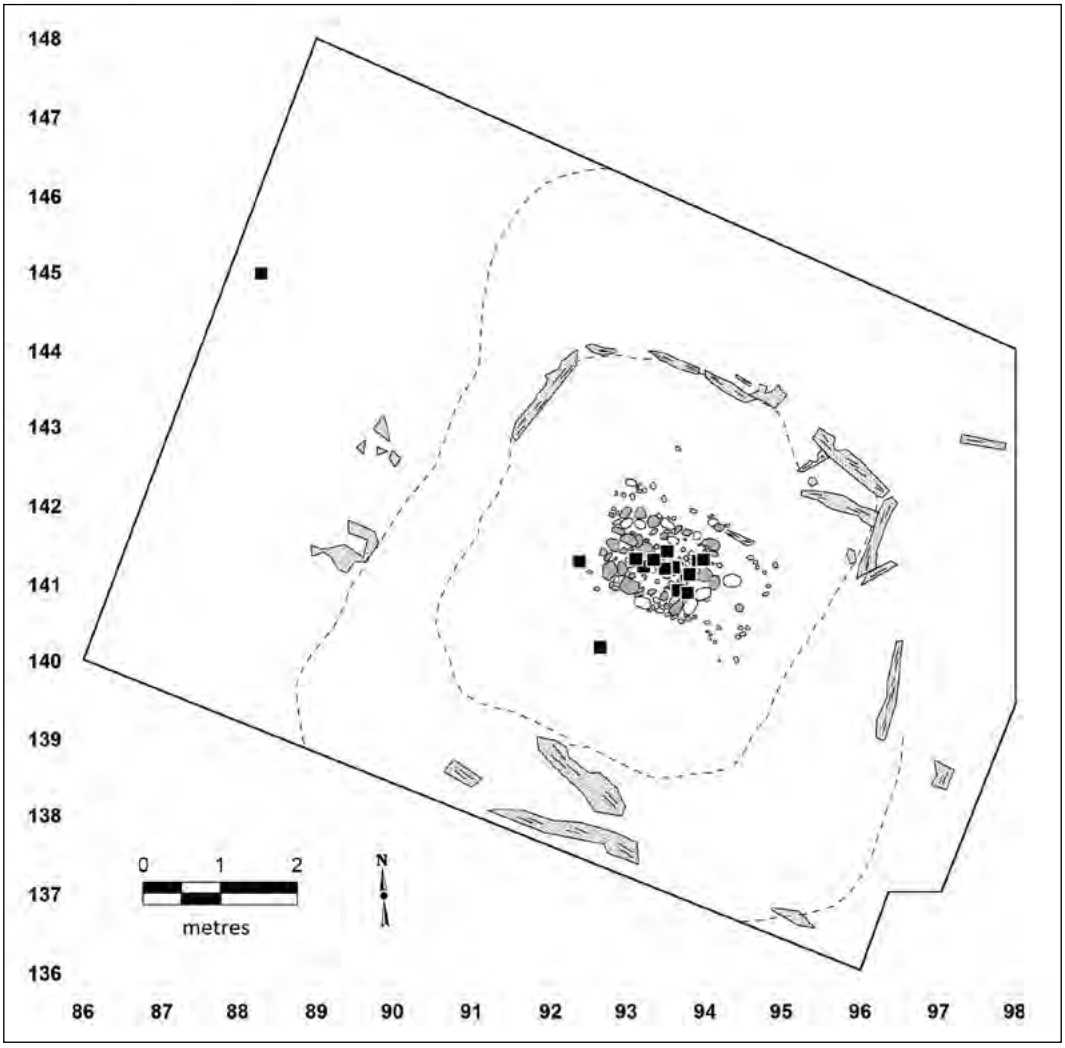


Figure 30. Distribution map of burnt bones (measured with total station). Drawing: K. Nordqvist.

imply that the carcase had been solid when the dismembering was carried out, or the traces can be connected to the exploitation of the bones in the cooking process later on. The pelvis (coxae) bones include several cut marks. Often they were near the acetabulum, or the articular cavity. Some of the cut marks may be from dismembering the rump steak from the carcase. For extracting marrow femur and tibia were cleaved with a knife in upper- and lower half of the proximal and distal ends. The tibia and attached flesh (back knuckle) are suitable for broth. The metatarsus and metacarpus contain a lot of marrow, which was extracted by striking a knife in the proximal end or diaphysis, or into both ends, one after another. The first and second, and sometimes also the third phalanges were cleaved horizontally or vertically for extracting marrow. (Harlin 2008: 41-44.)

The age determination of the reindeer was based on the analysis of ossified and unossified bones of adolescent individuals developed by Hufthammer (1995). The largest group of unossified bones were the distal ends of radius (see Table 4). Almost half of

Figure 31. Reindeer bones in the cleaning process. Photo: P. Halinen.

Figure 32. Hare bone. Photo: P. Halinen.

the identified distal ends of radius belonged to individuals under 36–48 months. According to phalanges bones, the youngest individual was less than 18 months old. (Harlin 2008: 36.)

The wear of teeth was observed in masticating surfaces of loose and attached teeth. It was observed whether the teeth were unworn, somewhat worn, worn or highly worn. According to this analysis the material tends to be from old animals, the teeth of which were mostly worn or highly worn (see Table 5).

There was only one iliac bone (Os ilium) in the material that permitted the determination of sex. The features of this particular bone are male. (Harlin 2008: 37.)

As a conclusion, the diet of the N5 people was based mainly on reindeer. Hunting reindeer is most favourable in autumn before the rutting period of males (in September), as they are fattest at the time. There is only a few mammal bones other than reindeer. The proportion of animal species is quite the same as in N2 (Söderholm 2000). The individuals that were brought to the site, were immature and full-grown, but the youngest was under 18 months, probably 3–5 or 10–15 months. Most of the immature animals were three years old. The majority of the animals were quite old, but there is a strange feature: only mandible bones of old individuals were brought to the site while there are bones of younger individuals. At least some of the carcases were brought whole to the site, but it is quite clear that bones attached to meat are partly missing. This might be connected to trading meat. The anklebone measurements indicate small and large-sized animals. It is unclear if the size difference can be connected to the age or sex of the animals. One possibility is that wild reindeer hunting and milking the reindeer were practised. (Harlin 2008: 46-47.) Reindeer herding included small herds, which were kept close to the site – the equally distributed pattern of body parts would also support the possibility of reindeer herding (Hedman et al. 2015: 14). In addition to herding, reindeer hunting was still practised.

The use season of the site was mainly winter, although autumn the most favourable hunting season for wild reindeer. The aim of autumn hunting to acquire a food supply for overwintering. Some bones of greylag goose / bean goose point rather to the snowless season. Waterfowl was hunted in spring, summer and autumn – it is not possible to determine the hunting season more accurately. One possibility is that both waterfowl and reindeer were hunted in autumn.

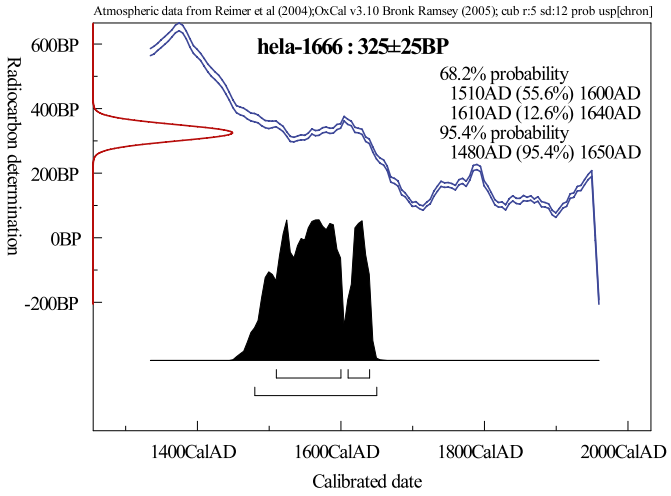


Figure 33 Date of sample 32.

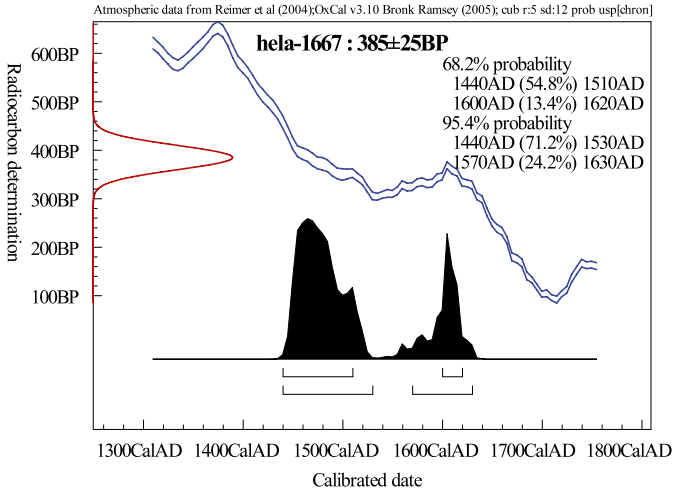


Figure 34. Date of sample 35.

9 Discussion

The remains of the goahti resemble the goahtis at the previously excavated site N2 (Carpelan 2003). In the case of N5 there was no ditch around the goahti, which means that the sand in the wall construction was taken from the inside section, not from outside ditches. The goahti is situated on a gentle slope (see Fig. 4) and the floor area was dug slightly deeper than the surrounding ground; the sand had drifted into the wall area, where the stones from the floor area had also been removed. The logs were placed in the margins of the floor area, just like in N2. They belong to the wall construction: they were usually laid hexagonally or octagonally on the sides of the floor and the sand was put outside the area marked by the logs. In N2 the logs have the floor area a hexagonal shape, but at N5 it was octagonal (see Figs. 8-9 and 15). Goahtis of this kind, or quadrangular ones, have ethnographic parallels in Inari and the Kola region dated to the beginning of 20th century, e.g. fishing huts at Munhaissaari in Inari, Evaska and Mihvel at Nuortijauri about 150 km east of Inari, and the spring hut of Kiuril Mošnikov at Njautsjauri (Paulaharju 1915a: figs 4-8; 1915b: figs. 23-27, 30-33, 42-46). The shapes of that floor area of these ethnographical parallels vary from quadrangles and pentagons, and from hexagons to octagons, with the base of the walls form made from two to four superimposed logs. The wall/roof constructions remain the same from the quadrangular to the octagonal floor area – the wall/roof construction cannot be proven from the archaeological record.

The ethnographic parallels from the beginning of the 20th century contain only one door, but earlier parallels from the 17th and 18th centuries also indicate a back door (Hansen & Olsen 2004; Ränk 1949; Yates 1989). This back door was only for males and females were restricted from using it. It was used for bringing the meat inside the goahti. Maria Inkiläinen (1999) has pointed out that the N2 material does not support this gender-based division as clearly as the

	MNI	MNE
Rangifer tarandus		
Os occipitale	5	
Os temporale	4	6
Maxilla	1	2
Mandibula et dentes P2-M1	9	15
Atlas (1.)	13	
Atlas (2.)	4	
Scapula	9	14
Humerus	12	18
Radius	18	30
Ulna	12	17
Vertebrae		66
Os ilium	3	4
Os iscium	5	8
Os pubis	4	6
Sacrum		1
Femur	4	4
Tibia	28	42
Malleolare	13	21
Patella	6	10
Telemetacarpus		8
Metacarpus	14	26
Pisiforme	2	3
Scaphoideum	16	25
Lunatum	9	16
Metatarsus	16	31
Calcaneus	17	30
Astragalus	26	49
Centrotarsale	22	34
Ecto+mesocuneiforme	7	11
Cuneiforme	7	10
Phal. 1		96
Phal. 2		53
Phal. 3		40
Mammalia		
Cranium		42
Maxilla/Mandibula		8
Vertebrae		639
Costae		144
Scapula		17
Coxae		3
Ossa longa		1787
Phalanges		18

Table 3. Distribution of body part, minimum number of individuals (MNI), and minimum number of elements (MNE), based on Harlin 2008: 38-39.

	number of elements	time of ossification in months
radius, distal sin.	5	36-48
ulna, proximal sin.	1	40-48
ulna, proximal dex.	1	40-48
femur, caput sin.	1	36-48
femur, caput dex.	2	36-48
femur, trochanter minor dex.	1	36-48
tibia distal sin.	1	18-30
tibia proximal sin.	1	38-42
tibia proximal sin.	1	18-30
calcaneus sin.	3	18-42
metacarpus, distal sin.	2	18-30
mc/mt distal	2	18-30
phal.1, proximal	1	18-30
phal.2, proximal	1	18-30

Table 4. Number of unossified bone elements, based on Harlin 2008: 36.

	unworn	somewhat worn	worn	highly worn
mandibula (sin) P			4	
mandibula (dex) P			7	
mandibula (sin) M			1	2
mandibula (dex) M			1	1
loose teeth	9	11	51	5

Table 5. The wear of teeth, based on Harlin 2008: 36-37.

ethnographic sources describe. In N2 there has been depression in the wall-circle, which has been interpreted as a door (Carpelan 2003: 72). The N5 goahti had a visible depression on the eastern side of the wall – but not on the same line as the rectangular hearth. There were three larger stones in the depression which had been put there after abandoning the goahti, but when the walls still were standing and visible. This doorway can be interpreted as the back door. This interpretation can be supported by comparing goahti N5 with the N2 goahtis, where the main door was on the west side. The River Nukkumajoki is to the east of the goahti (Carpelan 2003: 72). At Brodtkorbneset site in Northern Norway most of the bones were found in the boassjo or close to the assumed back door (Halinen et al. 2013: 159-161, 173-177; Hedman & Olsen 2009: 17). A look at the distribution map of unburt bone finds (Fig. 31) at N5 shows that most of the finds were found around the assumed back door. These details indicate that the front

door was situated on the west side and the back door on the east side of the goahti. Does closing the back door with stones at N5 imply a symbolic closing of the 'heathen' back door influenced by the Christianization of Lapland in the 17th century? The turf hut remained visible for several decades.

The find distribution, the soil phosphate values, the back door, the boassjo, the hearth and so on support the conclusion that the organization of domestic space was the same as in the goahtis mentioned in ethnographic sources from the 17th and 18th centuries. It is possible to observe the same features in both cases, in N5 and in the goahtis of 17th and 18th centuries, i.e. the hearth, the boassjo, the uksa, and the luoitos.

The hearth was almost rectangular and its size (140x107x15 cm) resembles that of the rectangular hearths dating back to the end of the Iron Age and the medieval period (Halinen et al. 2013; Hedman & Olsen 2009). There was one characteristic feature which is different in the N5 hearth and rectangular hearths, namely the boassjo stone(s), usually situated at the rear of the hearth. While the visible boassjo stone was not present in the N5 hearth, it is included in the rectangular hearths from the Late Iron Age and Early Medieval Period. The boassjo stone and its meaning have been described in ethnographic sources from 17th to 20th century as well (Ränk 1949: 103). It was usually a visible larger stone, covering the whole end of the hearth. The boassjo stone was situated between the boassjo and the hearth and it was a sign of the division of the floor area division: the boassjo is the sacred space of the hut (Fossum 2006; Yates 1989). The N5 hearth and the rectangular hearths were packed full of stones, but all the fire places / hearths with a boassjo stone from the 17th to the 20th century were not necessarily packed full. The boassjo stone was sometimes used in cooking or for helping in the cooking. The flat stone on the east side of the hearth (Fee figs. 10-12) was covered with roundish stones, but it was probably used for roasting or baking. According to the distribution of bones, the cooking took place, in the eastern, i.e. rear, part of the hut, and the baking/roasting stone is well suited to this context. The hearth at N5 was of almost the same construction, function and position as the Late Iron Age / early medieval period hearths and fire places of the 17th–20th centuries in Sápmi.

The osteological analyses of reindeer bones do not exclusively reflect reindeer hunting. Small-scale reindeer herding was also practised. Some of the carcases had been brought whole to the site, which means that hunting was practised quite close to it. Although the equal body part distribution can be observed, the bones attached to the meat are partly missing. This reflects probably meat production for commercial purpose. The reindeer bones and greylag goose / bean goose bones point to autumn and winter, but waterfowl also to the other snowless seasons of the year.

The find material consisted predominantly of reindeer bones, but there were also finds of some metal objects. These artefacts point to ordinary everyday life: eating and working with knives and axes, as well as wearing clothes and living. Some of the knives had been imported from Central Europe. The inhabitants of the site sold hides, meat and probably antler objects in turn. Trading was most likely of quite small scale, although at N2 the number of discovered objects was clearly higher than at N5. How does this fit the vision that the sites along the River Nukkumajoki were founded in order to collect tax by the crown (Carpelan 2003: 71)? Some rectangular hearth-row sites from the early medieval period are similar in nature to N 2 and N5, but some sites also differ from them (Halinen et al. 2013; Hedman & Olsen 2008; Hedman et al. 2015). These sites were used for everyday life: eating, sleeping, hunting, practising religious worship etc. How do they differ from the sites along the River Nukkumajoki? One could say that exclusively by virtue of the solid construction of the dwellings, since the structure of the site and find distribution are almost the same. So far, the Nukkumajoki type sites have been found only in Inari, Utsjoki and in some places in

Eastern Lapland. If sites of this kind were founded for collecting taxes, why have they not been found in the other parts of Sápmi that belonged to the Swedish crown? Therefore, there have to be other reasons as well.

The main use period of the rectangular hearth-row sites was 900–1200 CE, but they were used insignificantly also later – at N5 they have been recorded among the solid hut remains (see fig. 2). This was the main structure of these sites: in each hut the find material was different and there are observable differences between the huts (see e.g. Halinen et al. 2013; Hedman & Olsen 2009). The structure of the villages were formed by the life and means of livelihood of hunter-gatherer / small-scale reindeer herder societies. The use of hearth-row sites decreased during the 13th century when the Medieval Warm Period changed to colder conditions at the end of the 12th century (Matskovsky and Helama 2014: 1482). At the same time in Northern Scandinavia the larger scale reindeer herding economy started to take place and expand towards South and Eastern Fennoscandia, to the areas where *stallo* sites and hearth-row sites appeared earlier (Carpelan 2003; Halinen 2016; Hansen & Olsen 2004). In Scandinavia the hearth-row sites were replaced by sites that were more open and were dispersed in the landscape and which belonged to the reindeer herder societies (Halinen 2016; Mulk 1994). Large scale reindeer herding did not reach the Inari region before the 19th century. Instead, the economy of the area remained to be based on wild reindeer hunting. In broader perspective the bases of the society of Inari remained the same, only the now cooler climate placed demands on building constructions: the people of Inari built more solid huts for surviving colder winters better. This meant continuity in the way of life and in the economy.

10 Conclusions

Interpreting the Nukkumajoki 5 site is based on the excavation carried out in 2007. It belongs to a chain of winter dwelling sites along the River Nukkumajoki, which have all been dated to the end of the 16th and the beginning of the 17th century. The constructions observed at N5 clearly resemble those of N2. The goahtis have the same features in both sites, goahti no. 8 at N5 had a main door and a back door, which was later destroyed or at least covered. The floor shape of N5 is octagonal, which deviates from the hexagonal floor areas at N2. In broad outline, the organization of the domestic space of the Sámi goahtis remained the same from the 10th to the 18th century. On the other hand, the constructions of the goahtis clearly changed: from early medieval light goahtis to the 16th–17th century solid goahtis, and again to the light goahtis of the 17th–18th centuries. Although the constructions changed, the idea of dwelling sites remained the same in broad outline. There was a clear continuum from the early medieval period to the 16th–17th centuries: the idea of hearth-row sites, and its tradition, lived on at the Nukkumajoki -type dwelling sites. The hearths, the organization of domestic space, the organization of the site, and the means of livelihood remained the same. The tradition continued for over 500 years in Inari. The winter dwelling sites were there and the tax collecting by the Swedish crown was carried out on-site, but the sites were not necessarily founded for taxation.

11 Acknowledgements

We wish to thank MA/PhD Kerkko Nordqvist for producing all the maps, MA Eeva-Kristiina Harlin for osteological analysis, MA/PhD Paula Kouki for analysing the phosphate samples, MA Ville Rohiola for analysing the elements of the metal artefacts with PXRF-device, MA Santeri Vanhanen for analysing the macrofossil samples and tree species of the constructions and radiocarbon samples, PhD Pirjo Rautiainen for analysing vegetation of N5, the excavation group – the students, the apprentices, the volunteers and the staff of the Department of Archaeology – and the post-production group in Helsinki.

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