# An overview of Stone Age rock art in northernmost Europe-what, where and when?

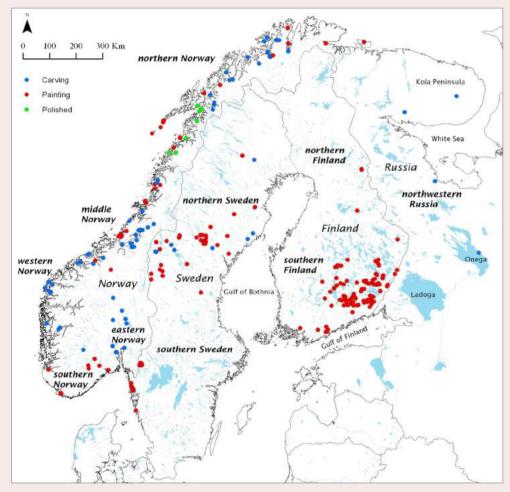
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# An overview of Stone Age rock art in northernmost Europe – what, where and when?

Jan Magne Gjerde

#### Introduction ———

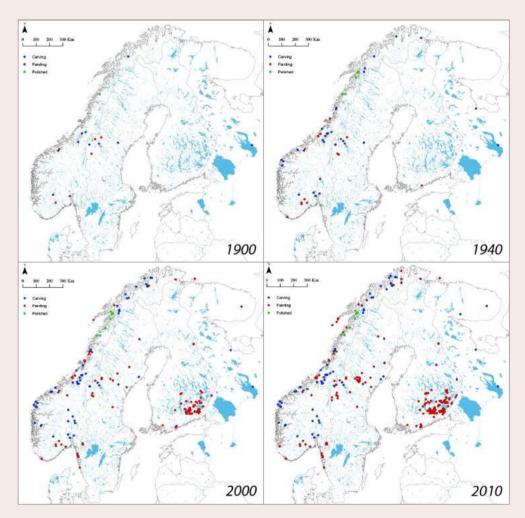
The aim of this paper is to present a preliminary overview of the Stone Age rock art areas and regions in northernmost Europe based on the current material record. The geographical area discussed in this paper is Fennoscandia, which includes Norway, Sweden, Finland and northwest Russia (Fig. 1).



| Fig. 1. Location of three types of rock art sites Fennoscandia with Stone Age rock art; carvings, paintings, polished.

The history of finds in this region shows that the geographical distribution of rock art has changed since distribution maps were made in the early 1900s, when merely 20

Stone Age rock art sites were known. We now know of more than 300 sites with Stone Age rock art in this area and this growth of material, especially in the last few decades, has shown that rock art was more common in prehistory than previously believed. A general presentation of the history of rock art discoveries may show why certain comparative aspects were presented and changed with new finds such as the Finnish paintings and the Alta site in northern Norway (Fig. 2).



I Fig. 2. Map with Stone Age rock art sites known by 1900, 1940, 2000 and 2010.

The material record displays great variation ranging from sites with one figure (for example at Rykkje in western Norway and Brennelv in northern Norway) to large rock art areas such as Alta, Nämforsen in northern Sweden and Vyg River in northwestern Russia with numerous panels and locations. These large areas/sites show rock art was made in the same places for millennia and people revisited these spots in the landscape to make rock art. Most of these large rock art areas are dated between c. 5500-5000 BC. This paper focuses on the rock art dated from the later phase of the Early Stone Age and

the Late Stone Age even though the creation of rock art continued into the early Bronze Age and even Iron Age.

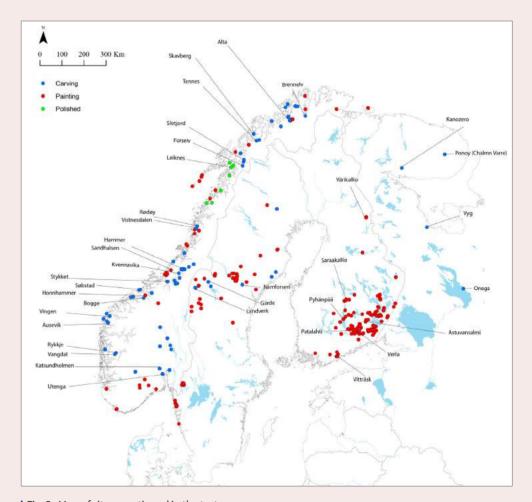
The most evident observation when studying rock art in northernmost Europe is the variation in the material record. A general analysis of animals' depictions in this region shows that while elk are found virtually everywhere, other animals dominate in numbers between areas such as swans at Onega Lake in northwest Russia or red deer in Vingen, western Norway.

The large rock art areas in northwest Russia show remarkable consistency, each distanced around 300km from one another. I suggest that attempting to create a map of the distribution of large rock art areas based on the current material record will allow us to better understand the Stone Age hunter-gatherer landscape. The natural setting of the large rock art areas shows how they could have worked as connecting places between communities. Most of these are situated in strategic places related to natural nodes or natural stopovers such as in Alta, Nämforsen or Vyg River. It is argued that the large rock art sites were meeting places for various interactions and communications.

#### Growth of material and the large rock art areas

When G. Hallström initiated his work mapping Stone Age rock art in northernmost Europe at the beginning of the 1900s, about 20 sites in Fennoscandia (Norway, Sweden, Finland and NW-Russia) were known altogether. Only two of the large rock art areas were known; Nämforsen in northern Sweden, and Onega Lake. The initial discovery of the Vingen (Bing 1912) and the first carvings at the Vyg River in 1926 (Linevskii 1939) later came to be known as some of the largest areas with rock art (Bøe 1932; Ravdonikas 1938). No rock art was known in Finland until the first discovery was made at Vitträsk in southern Finland in 1917 (Europaeus 1917, 1922). In the 1930s, large material publications of rock art presented the opportunity to get an overview of the material both in Norway (Bøe 1932; Engelstad 1934; Gjessing 1932, 1936; Hallström 1938) and northwest Russia (1936, 1938). The Nämforsen material was later published by Hallström (1960,) and the publication also included some of the material from northwest Russia. From 1930 until 1960, the known material grew from 46 to 70 sites. The number of sites increased from 70 to 178 sites between 1960 and 1990. New discoveries were made at the large sites such as the Zalavruga at Vyg River and in Vingen<sup>1)</sup>, thereby increasing the number of known rock art figures (Lødøen and Mandt 2012; Savvateev 1970). In northwest Russia, the carvings at Ponoy River and the paintings at the Fisher Peninsula made it evident that Russian material not only consisted of large rock art areas, but also smaller sites and paintings. At this time Finnish material grew and the large sites with rock paintings at Astuvansalmi (Sarvas 1969) and Saraakallio (Kivikäs 1990) in southern Finland were discovered. Furthermore, more than 50 new rock painting sites were found in southern Finland between 1960 and 1990. In 1973, the largest Stone Age rock art area in Fennoscandia was discovered in Alta (Helskog 1988, 2014). Between 1990 and 2010, 98 entirely new sites were discovered in addition to new discoveries made at previously known sites and rock art areas. Discovered in 1997, Lake Kanozero in northwest Russia was most likely the most major discovery during these decades. Since 2010, the material record has comprised of more than 300 sites although we do not know the exact number.

Looking at the rock art record today (Fig. 3), one can observe that the growth of material, not only in the number of new sites but new discoveries at previously known sites /rock art areas, has been extreme over the past few decades. At first glance, we have six large rock art areas in Fennoscandia from the Stone Age. These rock art areas have more than 1000 figures, and the majority of the sites show a long tradition of carving with the most extreme being Alta, where rock art was made for more than 5000 years. The Vingen site has about 2300 carvings (Bøe 1932; Lødøen and Mandt 2012) and Alta has more than 6000 carvings (Helskog 2014). Nämforsen has more than 2500 carvings (Larsson and Broström 2011), Kanozero Lake more than 1100 carvings (Kolpakov and Shumkin 2012), Onega Lake more than 1300 carvings (Poikalainen and Ernits 1998; Ravdonikas 1936) and Vyg River more than 2300 (Gjerde 2010: 286f; Ravdonikas 1938; Savvateev 1970).



I Fig. 3. Map of sites mentioned in the text.

The variation in the material record ranges from single, isolated small sites, concentrations of small sites and large rock art areas. This challenges the categorisation and methods of comparison of the sites. If the large sites had not undergone extensive recording like in Vingen and Alta or the excavations at Zalavruga (Vyg River), we would only know these rock art areas to be composed of a few hundred figures in a few panels or related locations. If other sites had undergone such intensive study, it is most likely that the number of the larger sites in Fennoscandia would be greater. New finds such as that at Kanozero Lake are good examples of what may be discovered in the future. The history of finds also shows that areas with no rock art early on, such as southern Finland in the early 1900s, now include the majority of known rock painting sites in Fennoscandia (Fig. 3).

#### Three types of technique for rock art in Fennoscandia ——

In general, there are three main types of rock art in Fennoscandia (Fig. 1); ground rock art (polished carvings), rock carvings and paintings (rock paintings). Ground rock art (Fig. 4) is made up of lines of about 2 cm in width. It was most likely made by grinding and rubbing a hard stone on the rock surface.



Fig. 4. The large ground rock art at Leiknes, northern Norway. One can see the killer whale measuring 7,62 m just above the centre of the photo. The site is dated to c. 8300 to c 7500BC. Photo: Jan Magne Gjerde.

Rock carving (Fig. 5) is the most common type of rock art in Fennoscandia. General consensus is that they were made through the application of the hammer and chisel technique. Successful experiments by Morten Kutschera help confirm this interpretation (Lødøen 2016). As seen in Figure 5, however, the carvings could have also been drilled with a chisel.



Fig. 5. Carvings most likely made with hammer and chisel. One can also see the outline of the figure had started by drilling small holes. Kåfjord, Alta, northern Norway. Dated to between c. 5000-4000 BC. The elk measures c. 30 cm. Photo: Jan Magne Gjerde.

Paintings (Fig. 6) are likely to consist of red ochre mixed with animal fat. The width of the figures often matches the average width of a human finger, suggesting they were applied with the finger. There are also a few sites where both paintings and carvings appear in the same panel such as, for example, at Sandhalsen in central Norway (Gjerde and Stebergløkken 2018).



Fig. 6. Paintings from Värikallio, northern Finland. The "horned" human figure in the middle of the figure measures c. 35 cm. Photo: Jan Magne Gjerde.

A distribution map of the three types of rock art shows that they are not represented all over Fennoscandia; ground rock art, for example, is only found in northern Norway (Fig. 1). While one finds carvings and paintings in Norway and Sweden, no carvings have been found in Finland to date. On the other hand, Finland has the richest record of rock paintings in Fennoscandia. The distribution of rock paintings between the border of Russia and Finland shows that no paintings were made on the Russian side. It seems like only a matter of time before the first paintings are found in Russian Karelia.

#### 

The brief overview given above on the current dates of Stone Age rock art focused on the large rock art areas in Fennoscandia where dating has been a primary focus. The overview will be supplemented with the presentation of a few other sites. Three main dating techniques have been applied to rock art in northernmost Europe; shoreline dating, based on geological data of land uplift, and stylistic dating, based on stylistic changes in adjacent settlements or other archaeological remains related to the rock art. Shoreline dating is by far the most applied method for rock art.

Most dating of rock art in northern Norway has been within the Ofoten (Gjerde 2010; Hesjedal 1994) and Alta areas (Gjerde 2010; Helskog 1983, 1988, 2000, 2014). Dating the Alta site questioned the short chronology that Simonsen (1978: 32-33) had originally put

forward stating that all rock art in the Northern Tradition dated to the Late Stone Age. The results of shoreline dating provided by Hesjedal (1990: 132; 1993, 1994) and Helskog (1983; 1989a: 99-101) strongly support a long chronology for this rock art. Recent dating suggestions based on shoreline dating in Alta suggest the carvings were made between about 5000 BC and 0 AD (Gjerde 2010: 246-255; Helskog 2014: 28-33).

Sognnes (2003) also dated the rock art in central Norway through shoreline dating and found the earliest rock art to be as old as c. 8200BC and the latest to be c. 2000BC. Stebergløkken (2016) recently analysed the old typology of styles in relation to shoreline dating. She found that there is no 1:1 correlation between style and shoreline dating in this region, but also determined the oldest rock art to date back to the latter part of the Early Stone Age. Based on excavations, Lødøen (2013) dates all the rock art to be from about 5400-4000 BC, but they are more likely from 4900-4200 BC or an even shorter timeframe within this period (Hjelle and Lødøen 2017: 206).

Shoreline dating of the coastal carvings in Eastern Norway was applied to stylistically date the inland carvings. Mikkelsen (1977) found the carvings to be dated to c. 5500-4000 BC. These dates are still deemed accurate for the few rock art sites in eastern Norway (Glørstad 2010: 220-222,) even though the earliest may be slightly older.

Forsberg (2000: 68f) dated the earliest carvings in northern Sweden at Gärde and Landverk to the Early Stone Age through a stylistic comparison with the ground rock art in northern Norway (Hesjedal 1994). These dates align with previous dates given by Hallström (1960). The large Nämforsen site was dated mainly based on shoreline and stylistic dating; the earliest rock art was found to date to 4200 BC and the latest to the early Bronze Age, around c. 1500BC (Baudou 1993; Forsberg 1993; Lindqvist 1994). With the aid of new shore displacement data and adjacent excavations, Gjerde (2010: 351-358) found the initial phase of the Nämforsen rock art to date to c. 5000-1500 BC.

An overview of the dating of Finnish paintings is presented by Lahelma (2008: 33-44) through shoreline dating, adjacent excavations and archaeological finds. According to Lahelma (2008: 40-41,) the first paintings in Finland were made c. 5000BC, followed by a more active period between 3600-2500BC and ending around c. 1500BC.

At Vyg River, the carvings were previously all dated to the Late Stone Age (Neolithic Period) based on adjacent settlements and shoreline dating by Savvateev (1988; Savvateev et al. 1978,) further supported by Lobanova (2007:134-135) and Zhulnikov (2006). The dating at Vyg River was re-evaluated more recently through the inclusion of more of the adjacent settlement record and new shoreline data. Gjerde (2010: 291-300) dated the carvings to be form c. 5300-2000BC, and Janik (2010: 94) dated the carvings to be from c. 4600-2000BC; the Vyg River rock art is therefore older than previously suggested.

Based on stylistic similarities with the rock art at Ponoy River, Onega Lake and Vyg River, the rock art at Kanozero Lake is generally dated to the Late Stone Age and the Early Metal Age (Kolpakov and Shumkin 2012; Kolpakov, Shumkin and Murashkin 2009: 300). A comparison to the Vyg River material made by Gjerde (2010: 327-33) came

to a similar result for the dates. Recent excavations adjacent to the rock art dated the carvings to be from the Late Stone Age (Neolithic) (Tarasov et al. 2014).

Lobanova (1995a, b) dates the rock art at Onega Lake to the late Stone Age based on the settlement record and elevation of the carvings at Onega Lake. Stolyar (2000) has suggested similar dates ranging from 4000-1500BC. Most recently, Lobanova (2014) suggested dating the initial phase of the Onega Lake carvings to c. 4200BC.

The chronology and dating of rock art remains a challenge to this day and shows that more research is needed. This brief overview of the current dating in different regions shows that only a few sites can be assigned to the earliest phases of the Early Stone Age. The best examples are found in central Norway, northern Norway and northern Sweden. Virtually all the large rock art areas in Fennoscandia show a remarkably similar initial phase at about 5500-5000BC (e.g. Alta, Vingen, Nämforsen, Onega Lake and Vyg River). I have previously named this the "rock art explosion" (Gjerde 2010: 394-401) due to the existence of large rock art areas where rock art seems to have been made for thousands of years (e.g. Alta and Vyg River) in addition to a substantial increase in the number of sites and a much greater variation in the motifs.

Agrarian rock art generally starts c. 2000BC in southern Scandinavia, thereby marking the end of hunter-gather rock art in this part of Fennoscandia. Hunter-gather art, however, is still found after 2000BC in northern Fennoscandia and even continues in Alta until c. 0AD.

# Elk everywhere – selective depictions and regional variations in Fennoscandia

Most often, discussions on rock art speak of their similarities. However, when looking at the more than 300 sites with Stone Age rock art in Fennoscandia, the variations between them become more apparent. There are also clear regional variations in rock art. This is best observed by the selective depictions of aggregations of animals at the large rock art centres. While there are similarities within panels, sites and regions, there are no two identical sites or panels in the record.

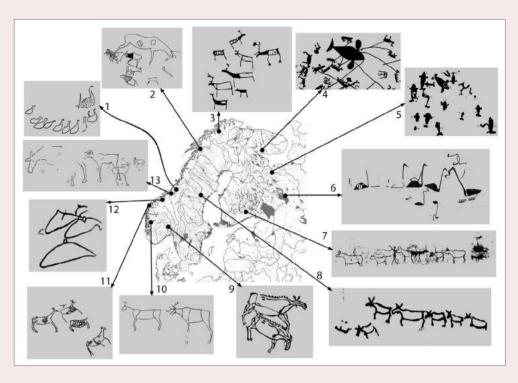


Fig. 7. Regional variation in rock art of Fennoscandia. After Gjerde 2010: figure 301.

A selection of the regional variation of animals in Late Stone Age rock art in Fennoscandia.

Animals in rock art in Fennoscandia: 1: Hammer 5A after Bakka (1988: iv); 2: Forselv, author's tracing; 3: Bergbukten 4, Hjemmeluft, Alta after Helskog (1988: 44); 4: Kamenniy 7, Kanozero Lake, authors tracing; 5: Besovy Sledki South, Vyg River after (1938: plate 32); 6: Besov Nos, Onega Lake after (Ravdonikas 1936: plate 27); 7: Verla after Miettinen (Pentikäinen and Miettinen 2003: 41); 8: Notön, Nämforsen after Hallström (1960: plate XXVI O:2); 9: Katsundholmen (Kløftefoss) after Engelstad (1934: Planche LIV); 10: Vangdal 2 after Mandt (1972: plate 38a); 11: Elva, Vingen after Hallström (1938: plate XXXVI); 12: Bogge 2 after Hallström (1938: plate 33); 13: Stykket after Sognnes (1981: figure 7). Illustration: Jan Magne Gjerde.

Large game animals are the dominating motifs in Stone Age rock art (for example, bear, elk, red deer, reindeer, swan or seal,) the most common being elk. Elk carvings appear in all regions; in the rock paintings in Finland, in the rock art of northern Sweden, eastern Norway and middle Norway. The dominating animals in the rock art also seem to refer to areas where such large game animals, and the largest aggregations of these species, are abundant in the landscape. This includes, for example, red deer in Vingen (Fig. 7), reindeer in the Alta region (Fig. 8), beluga whales at Vyg River (Fig. 9) and elk near Nämforsen (Fig. 10).



Fig. 7. Group of red deer. Section of the Brattbakken panel in Vingen. The large reindeer in the middle of the photo measures c. 80 cm. Photo: Jan Magne Gjerde.



Fig. 8. Reindeer and elk at Ole Pedersen 4, Alta, northern Norway. The elk figure in the right of the photo measures c. 40cm. Photo: Jan Magne Gjerde.



Fig. 9. Section of the Laxön panel at Nämforsen (Hallström, 1960, main group I, Subgroup G:1) The boat figure measure c. 1,75m. The rock carvings are filled in with red paint. Photo: Jan Magne Gjerde.



Fig. 10. Section of the Kammeniy 7 site at Kanozero Lake. Notice the large whale figure to the left of the middle and the elk at the bottom right. The whale measures c. 1m. Photo: Jan Magne Gjerde.

A simplified model of selective depictions and regional variations of favoured animals in the different regions of Fennoscandia can be found in 7. Sites may be dominated by one species such as the whale figures at Søbstad (Fig. 11) or elk figures at Stykket or

the halibuts / flounders at Kvennavika in middle Norway. The species depicted shows regional variation, in addition to variation between panels, such as at the paintings where a whole panel is devoted solely to salmon (Fig. 12) while other panels at the same site are depicting terrestrial animals (Linge 2014).



Fig. 11. Photo of parts of the Søbstad (Søbstadklubben site). One can see the three whales in the middle of the photo. The largest whale measures c. 1m. Photo: Jan Magne Gjerde.



Fig. 12. Photo of the rock painting at Hunnhammar. The salmon measure between c.1m and 1,2m Photo: Jan Magne Gjerde

Another aspect of variation between the rock art sites is the size of the panels with images. Some sites include only one or a few figures while other panels include several hundred figures with a number of scenes and compositions, such as the Bergbukten 1 panel at the Bergbukten site within the Alta rock art area containing more than 300 figures (Fig.13).



Fig. 13. Photo of the majority of figures at the Bergbukten 1 panel located within the Bergbukten site, Hjemmeluft, in the Alta rock art area. The photo covers more than 10 m of the panel. Photo: Jan Magne Gjerde.

#### Nodes in the landscape – rock art aggregations as meeting places –

Large aggregations of rock art sites become common features in Fennoscandia's landscape around 5500-5000BC. Most of these sites are located in places revisited by people for thousands of years for the production of rock art. The largest, with approximately 6000 figures, is found in Alta which has been dated to between c. 5200BC-0AD. The large rock art areas have been interpreted as central locations for social activities that could be related to the rock art aggregations (For example, Fuglestvedt 2017; Gjerde 2010; Gjessing 1945: 313; Hagen 1976: 127-130; Hallström 1960; Hood 1988; Malmer 1975; Stolyar 2001). The unique geographical locations of aggregation sites, such as Alta, Nämforsen or Vyg River, take a advantage of the natural landscape features in particular in the relation to the communication between the communities and individuals.

Communication expressed in the imagery shared by the sites was suggested by Hallström (1960: 317) he pointed the similarity between the large rock art sites of Nämforsen and Onega Lake to be the elk head boat carvings. The east-west contact was rejected by Tilley (1991:13) in his study on the Nämforsen rock art. In light of boat carving discoveries in southern Finland, including the sites of Astuvansalmi (Sarvas 1969) and Sarakallio (Kivikäs 1990,) similar to those in Nämforsen, Sweden, the idea of connections and the use of the elk-headed boats proposed by Hallström has been re-examined. When mapping the elk head boats, they can clearly be seen to have a

northeastern distribution and all show striking similarities with one another (Gjerde 2010: 396-400; 2017: 126-129). Individuals or groups of people journeyed to and from nodes the hunter-gatherer landscape. Many of the boats are depicted engaged in various marine activities such as halibut fishing in Alta or whale hunting at Vyg River (Gjerde 2013, 2016) (Fig. 14). Moreover, boats with more than 10 people can indicate other marine activities as indicated in more recent Umiak boats of the Inuit. These ethnographic examples of large boats could hold more than one ton of cargo and between 5 to 10 persons (Ames 2002: 29; Chappelle 1994: 174). That is, groups of people could move between settlement sites and meeting places taking large amounts of equipment with them. Marine journeys and stories of the voyages including rituals related to launching and landing the boats have been part of the "long" journeys.

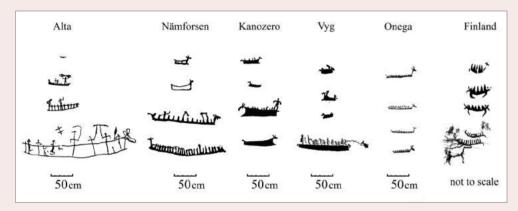


Fig.14. Examples of elk head boats from the north dated to the Late Stone Age. Boats from Alta, after Helskog (1989b: fig. 4). Boats from Nämforsen after Hallström (1960). Boats from Kanozero Lake, northwest Russia after author's tracings. Boats from Onega Lake, after Hallström (1960: plate XXVIII) and Ravdonikas (1936: plates 1 and 13). Boats from Finland from the following site, listed from top to bottom: Patalahti, Saraakallio, Saraakallio, Pyhänpää after Lahelma (2005: fig. 1). The Pyhänpää boat figure is depicted as the antlers of an elk and is included in this overview to show the link between the elk and the boat. Illustration: Jan Magne Gjerde.

The three large rock art areas in north-western Russia show similarities insofar that they are all situated at major communication lines and appear at nodes in the landscape that are natural places to stopover. The distance between the Onega Lake site and the Vyg River site is about 300km as the crow flies. The distance between the Vyg River site and the Kanozero Lake site is about 280km as the crow flies. I expect minor sites between these large rock art areas in north-western Russia to be discovered in future, mirroring the rest of Stone Age Fennoscandia.

Amongst circumpolar groups of hunter-gatherers, ethnographic and historical data show they meet at specific places during certain times of the year in relation to their migration pattern. Some most likely lived in these areas most of the year while others periodically journeyed to these sites at specific times of year. It is difficult to generalize over such large geographical areas at regional or inter-regional levels. The

macro topography is different, thereby leading to difference in landscapes conditions and land use. The coastal mountain landscape of northern Norway holds different lines or patterns of movement than a generally flat landscape with major rivers of Russian Karelia and the Stone Age archipelago and lake systems of southern Finland, which would also guide use of the landscape.

During hunting, mainly for reindeer, the Nganasan can wander between 600 to 700km (Popov 1966: 21) while the minor hunting trips are about 100-150km (Popov 1966: 31). Further still, the Nenets cover several hundred kilometres in their annual migration patterns (Zvelebil 1997: 36f). With large Russian rock art sites frequenting every c. 300km in addition to ethnographic and historical information on hunter-gatherer land use suggesting nomads in the area to have territories of several hundred kilometres, I propose the radius of large rock art areas in Fennosnadia to have a radius of c. 200km.

Land use in the different areas are likely to vary due to its use and the difference in macro topography. However, this schematic presentation of the large rock art areas with initial dates between c. 5500-5000BC show that distances between the aggregation sites presented above cover large parts of Fennoscandia. This model despite being very general, still presents how the large rock art areas may have acted as meeting places or nodesin the landscape between groups of people located at major communication ores with the best examples at Kanozero Lake (10), Onega Lake (8) and Vyg River (9), Nämforsen (6) and Alta (Fig. 15). The tentative map shows the large rock art areas, while some of the centres are more obvious, such as the sites in Alta (1), the Vingen/Ausevik (4), Nämforsen (6), Onega Lake (8), Vyg River (9) and Kanozero Lake (10,) others require further detail and research. The Ofoten (2) has no one large site, however holds the large sites at Forselv with c. 200 carvings on one panel adding to several other adjacent sites (e.g. Sletjord (Herjangen)) within c. 25km. Within central Norway, Beitstad Fjord features several rock art sites, the largest with 17 panels of rock art at Hammer. Similarly, eastern Norway (5) contains the three sites with few figures at Skogerveien, Utenga and Åskollen within c. 10 km of Drammen Fjord and Kløftefoss (Geithus,) which could be smaller "centres"; that said, there is also no one large site. Southern Finland solely consists of paintings and two large sites, Astuvansalmi and Saraakallio, stand out.

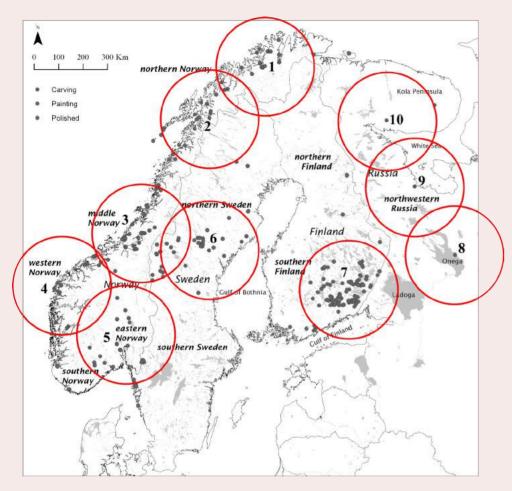


Fig. 15. Map of Stone Age rock art in Fennoscandia with rock art centres or nodesmarked in red. The encircled areas all have a 200km radius which together cover large parts of Fennoscandia. 1: Alta; 2: Ofoten area; 3: Beitstad-fjord area; 4: Vingen/Ausevik; 5: eastern Norway; 6: Nämforsen; 7: southern Finland; 8: Onega Lake; 9: Vyg River, 10: Kanozero Lake.

There are also sites that hold more similarities than differences, as discussed above, but it goes beyond the scope of this chapter and is a part of the future analysis and publication.

#### Concluding remarks ————

This brief overview of Stone Age rock art in northernmost Europe shows how the history of discovery has guided or characterized rock art research and previous publications. About a century ago, only a few sites with Stone Age rock art were known in northernmost Europe. Gradually, through more research and systematic recording, we have acquired new rock art sites and depictions that are more common and more widely distributed than previously argued. Between 5500-5000BC, virtually

simultaneously across northernmost Europe, large rock art centres were established and were revisited by people making rock art for thousands of years. The most evident example is at Alta where people made rock art for more than 5000 years. Revisiting these places to produce rock art most likely implies there were key to the hunter-gatherer landscape of the Stone Age.

The rock art also shows more variation than previously argued with sites varying from 1 figure to, for example, the large panels in Alta where more than 300 figures seem to make up one or several compositions. In terms of depicted motifs, the elk is the most common animal while others vary in frequency depending on the site, such as the swans at Onega Lake or red deer in Vingen. While the general map (Fug. 22) shows the large rock art areas (as nodes in the landscape, at strategic locations related to lines of communication.

#### Acknowledgements —

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# 얀 마그네 피제르

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최북단 유럽의 석기 시대 암각화에 대한 개요 – 언제, 어디서, 무엇을?

An overview of Stone Age rock art in northernmost Europe – what, where and when?



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**지원** 이현정

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