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# The World Heritage Rock Art in Alta

The World Heritage Rock Art in Alta is a rich cultural monument consisting of several areas of carvings and rock paintings localized in the inner parts of the Altafjord in Finnmark, Norway. The rock art in Alta was made over a long period of time, from 4200 B.C. to 200 A.D. Within this period we can see both continuity and changes.

In this article we will give a short presentation of the rock art; the inscribing on the World Heritage List, dating, the images, and commonalities and differences between the various panels and areas. More detailed descriptions can be found elsewhere (for example Helskog 1984, 1988, 1999, 2004, Helskog and Høgtun 2004, Søborg 2006).

The main emphasis in this article will be on the way in which the World Heritage is managed and preserved, which has changed a great deal since the rock art was first discovered. Today many of the management tasks are gathered in the new institution The World Heritage Rock Art Centre – Alta Museum (WAM). We will especially focus on some of the most important management tasks and how these can contribute to new knowledge about the rock art, which will be an advantage to management/preservation, research, and dissemination.

**The inscribing on the World Heritage List**

The rock art in Alta was inscribed on the UNESCO World Heritage List on December 3rd 1985. The World Heritage consists of four areas of rock carvings (Hjemmeluft, Storsteinen, Kåfjord, and Amtmannsnes), and one area of rock paintings (Transfarelv), which are all located in the inner parts of the Altafjord. In the nomination the number of figures was estimated to be more than 3000. Since the rock art was inscribed on the list the amount has been doubled, and today 6000 figures have been registered spread over 100 panels.


*Fig. 1 The World Heritage Areas in Alta. K.Tansem, WAM.*

The Directorate for Cultural Heritage in Norway suggested the nomination of the rock art based on criterion III, which is that the rock art should "…bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared". What is unique about the rock art in Alta? It is the largest collection of rock carvings made by hunter-gatherers in Northern Europe. There are

*Fig. 2 A miniature landscape, with lakes, fjords, valleys and mountains. From the modern beach in Hjemmeluft. K. Tansem, WAM.*

many unique scenes, such as reindeer fences and bear hunting, humans wearing snowshoes and humans dancing. The rock carvings have a high level of artistic execution. They were made over a long period of time within a small area, which is a unique chronological situation nationally and internationally. There are large areas of settlements from the same period close to the rock carvings in Kåfjord, Hjemmeluft, and Amtmannsnes. The rock carvings have been very well preserved, rendering the different production techniques visible. The rock paintings in Transfarelvdalen are an integrated part of the same cultural system as the rock carvings, and are therefore grouped with them.

**Dating**

The age of the rock carvings in Alta is determined using prehistoric shorelines, a commonly used method in Norway. This method is based on the presumption that the rock carvings were made close to the ocean, although it is often emphasized that this only gives a maximum age for when the carvings might have been made. Based on the elevation above sea level and stylistic and statistical analysis, Knut Helskog (for example 1984, 2000) has suggested a chronology for the rock carvings in Alta which dates them to 4200 B.C. – 200 A.D., divided into five phases. We have chosen to use these phases in our discussion of the Alta material.

Practical reasons, such as lack of vegetation or proximity to areas of activity, have been used to explain why the rock carvings were made close to the shore (for example Bakka 1975, Mikkelsen 1977). Helskog (1999) connects the rock carvings in Alta to the shoreline in a different way. He sees the shoreline as a transitional zone where sky, land and ocean meet, and where three cosmic worlds meet: the upper world (in the sky), the middle world (on earth), and the lower world (under water/under ground). The shoreline can have been viewed as a powerful place appropriate for communication between humans and gods and spirits in the other worlds.

The rock carvings in Alta are located at different elevations, from 8-26 m.a.s.l., and the rock carvings are different from level to level, both in style and in content. Because there are several thousand rock carvings within a limited geographic area that reveal a striking pattern of similarities and variations, it is possible to come to the conclusion that these patterns are not coincidental. The only possible explanation must be that the rock carvings were made on rocks and bedrocks close to the shore. As the land rose,

rocks lower in the landscape and closer to the sea were used. Each style has a difference in elevation of only a few meters (up until ca. 4 meters).

The shore is a transitional zone between land and ocean, and is characterized by repeated variations in temperature, moisture and salt concentration, depending on local conditions and the part of the zone. In the upper parts of the zone there is usually no vegetation, and this is where the conditions were ideal for rock carvings. Today this area is from 0.5 to more than 2 meters above the high tide level in Hjemmeluft and on Amtmannsnes. The width of the areas depends on local conditions for growth for the various types of lichen. The areas higher up in the landscape tend to be overgrown with lichen and other vegetation, and have not been suitable for rock carvings. In the lichen-free zone the natural colors of the rock surfaces become apparent; there are also depressions in the rocks that are filled with water and create miniature landscapes with mountains, valleys, lakes and rivers. This might have been one of the reasons why the area above the high tide level was chosen for the rock carvings. A result of the choice of locations back then is that we can find different styles concentrated to specific levels above the ocean, and that this is repeated in panels that are up to several kilometers apart, such as Kåfjord and Hjemmeluft.

Proximity to water appears to have been a factor in the localization of rock paintings in Norway as well, although some panels are so high up in the landscape that the contact with water must have been of a visual kind (Norsted 2006:33). Rock paintings have commonly been dated to the last two thousand years B.C. (Mandt and Lødøen 2004:23-24). In the last few years it has been suggested that the rock paintings in Transfarelv may be older, perhaps as much as 5-8000 years, based on shoreline dating (Andreassen 2008:50-54) and comparison with dating of rock paintings in Northern Sweden (Mandt and Lødøen 2004:24). The panels in Transfarelv are between 20 and 52 m.a.s.l., but there is no clear connection between elevation above sea level and style such as there is with the rock carvings in Alta.

**The World Heritage areas**

**Hjemmeluft**

The rock carvings in Hjemmeluft were discovered in 1973. It is the largest of the World Heritage areas, and the only one which is adapted for the public with paths and painting of the carvings. The World Heritage Rock Art Centre – Alta Museum is located here. From Hjemmeluft one can see large areas of the Altafjord, all the way to the large islands of Seiland and Stjernøya, located at the very beginning of the fjord. It is also a central location in relation to the Kåfjord, a side fjord to the Altafjord. The rock consists of a hard and pale sandstone, with stripes and patterns in black, purple, red, and green.

There are altogether around 3000 carvings in Hjemmeluft, spread over 85 panels. The panels are on the bedrocks and on some detached rocks on both sides of a bay. The size of the panels varies from a couple of carvings to several hundred, and they are 8 – 26 m.a.s.l., which dates them to 4200 B.C. – 200 A.D. (Helskog 2000). Remains of settlements have also been found in Hjemmeluft. The figures are varied with many large scenes where human figures and animals participate in different kinds of activities and interaction, such as hunting, gathering, fishing, rituals, and dance. The bear dens and the many bear tracks connect many of the figures and individual scenes to each other. The animals depicted are mostly reindeer, but also elk, bears, rabbits, wolves/dogs, foxes, birds, fish and whales. There are also boats, geometrical patterns, snow shoe prints and footprints. In the oldest phase we have also found fences which have been interpreted as enclosures for hunting wild reindeer; the oldest depictions in the world of such contraptions.

**Kåfjord**

The rock carvings in Kåfjord were discovered in 1978. The panels are about 3 kilometers

*Fig. 3 These new bear tracks (marked with white) were discovered during a control of the painted figures. The tracks in the bottom of the picture go between a crack in the surface to a natural oval formation. This is the clearest example of coordination between the rock surface and the carvings in Alta. K. Tansem, WAM*

from Hjemmeluft, on the other side of the entrance to Kåfjord. The rocks consist of a soft clay slate with red and green vertical stripes. There are about 1500 carvings in Kåfjord at 18-26 m.a.s.l., which dates them to the two oldest phases. The two panels are concentrated and very detailed. Reindeer are also here the most common animal, and otherwise the same figures are found as in Hjemmeluft. Kåfjord also has rare scenes and figures that are not found in the other World Heritage areas.

**Amtmannsnes**

The rock carvings on Amtmannsnes were discovered in 1977 by a group of boys who played soccer in the area. Amtmannsnes is a low-lying headland at the bottom of the Altafjord, from which one can see the entire eastern part of the fjord. The highest point on the headland is only 25 meters above sea level, which means that Amtmannsnes was still below sea level when the first rock carvings in Hjemmeluft and Kåfjord were made. The rock is a very pale meta-arkose with veins of white quartz. There are remains of settlements close to the rock carvings here as well. The four panels are 14-17 m.a.s.l., which dates them to phase 3 (1800-900 B.C.). The figures are unlike any other known rock carvings, and many of the figures are larger than on the other panels in Alta. The most important figures are humans and reindeer, both of which have different patterns on their bodies. Many of the human figures have facial features, hair or horns, fingers, and other body parts. The largest human figure measures 210 cm. There are also zig-zag lines and patterns that stretch across the panel and separate it into zones.

**Storsteinen**

The rock carvings on Storsteinen were found in 1973. The enormous erratic boulder is in two private gardens and was about to be removed when an observant worker noticed the figures on the stone. The stone has steep edges and a top surface of a little less than

*Fig. 4 Human figures surround two mating dogs and a third dog. There is an opening in the circle of humans, and to the right of this two humans are performing the same activity. There are many fascinating details to this scene in Kåfjord, and there are no similar scenes in Alta. The figures have been digitally enhanced. K. Tansem, WAM.*

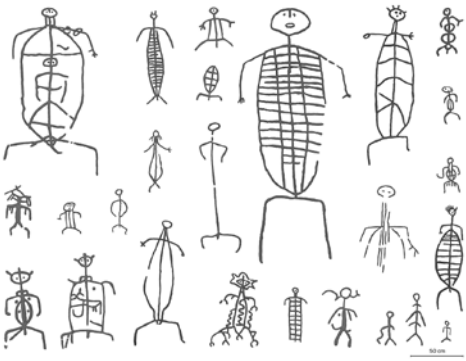

*Fig. 5 Human figures on Amtmannsnes 2B. The documentation of the figures on Amtmannsnes will always contain elements of subjective interpretation because the rock surfaces are so disintegrated. Digitally created tracings based on photography. K. Tansem, WAM.*

*Fig. 7 Human figure from Transfarelv 1. K. Tansem, WAM.*

*Fig. 6 Storsteinen. A human figure from phase 3 has been carved over three reindeer from phase 1. Digitally enhanced photography. K. Tansem, WAM*


*Fig. 8 A large and a small fence have been found in Kåfjord, both of them with details that we have not found in similar scenes in Hjemmeluft. Digitally created tracings based on photography and scanning. K. Tansem, WAM.*

50 m2. The tilted surface is 21-22 m.a.s.l. Several hundred figures have been carved on top of each other during a period of up to 3000 years. The figures are from the three oldest phases, and consist mostly of reindeer, elk, and human figures. Many of the figures are hard to interpret, partly because they are carved over each other, and partly because the surface is quite disintegrated and overgrown with lichen.

**Transfarelv**

Transfarelv is the only one of the World Heritage areas in Alta that consists of rock paintings. The paintings were reported to the Tromsø museum in 1966, but they had been known among the local population long before this (Simonsen 1969). The panels are located in a part of the Rafsnes Mountain on the east side of the Altafjord, in a landscape characterized by rough mountains with narrow gorges and lots of scree. 6 panels have been registered, with altogether 50 figures. The panels are located on almost vertical surfaces with or without overhang. There are humanlike figures, deer (reindeer?), and various geometric figures, lines and color stains. The pigment was made from iron oxide, mixed with blood, grease, or some other binding agent. The red color varies from warm to bluish. The paintings were made with fingertips and with brushes of animal hairs or plant fibers and both techniques have been used in the same area (Norsted 2004, 2006).

**Continuity and changes in the rock art**

People gathered around the rock art areas in Alta for several thousand years (e.g. Hood 1988). The great concentration of rock art in Alta is unique in the region, where rock art otherwise only appears in small amounts.

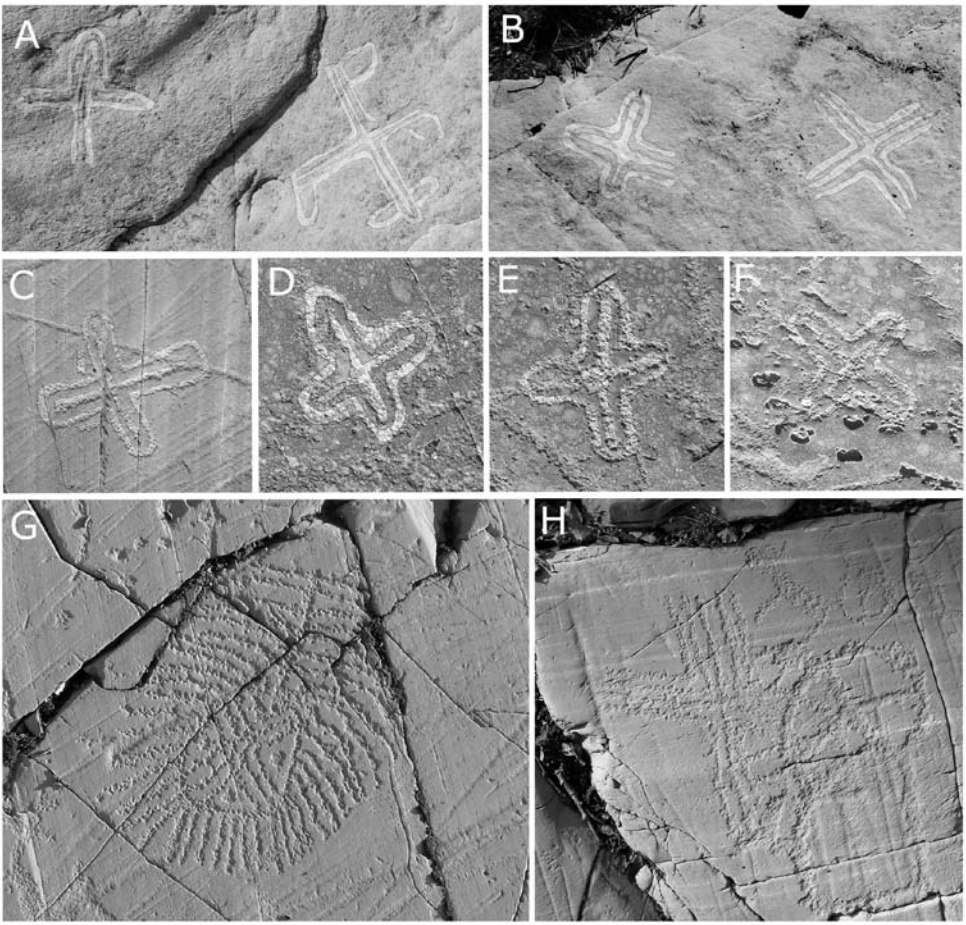


*Fig. 9 Cross-shaped figures. A and B: Amtmannsnes, C: Kåfjord, D, E, F: Storsteinen. The figures G and H from Kåfjord show similarities to the cross-shaped figures. K. Tansem, WAM.*

The distance between Kåfjord and Transfarelv, the easternmost and westernmost sites, is only 15 km. As one might expect within such a small geographic area, there are many similarities, but as we will see, there are also many differences, both in time and in space.

Kåfjord and Hjemmeluft share the most commonalities, both in terms of the type of rock and in terms of the art. In both places one can observe a conscious use of the "landscape" in the rock in the creation of some of the figures and scenes (Helskog 1999, 2004). One example of this is the most famous scene in Hjemmeluft (a large enclosure for capturing wild reindeer; bears, bear tracks, bear hunting and dens), of which there is also a version in Kåfjord (fig. 8). However, the areas in Kåfjord are more detailed, and there are more unique figures there. Kåfjord also stands out because of the density of the figures within a limited area, while in Hjemmeluft the figures are spread out over a larger area.

There is no doubt that the rock carvings in Kåfjord and Hjemmeluft are parts of the

same beliefs and world view, and that this area was the most important ritual and religious place in Alta for a long time. This period shows a high degree of continuity in terms of localization and motifs, even though the style changes from the first to the second phase.

The colors of the rock surfaces are also similar, even though they are different types of rock. Both places have stripes and shades of reddish purple and green. The colors and stripes in the surface were probably significant for the placement of the figures. Was it the reddish rock surfaces that attracted the people to the place? Or was it the occurrence of stone raw material? Several deposits of chert and jasper have been found in the area, even some quarries (Hood 1988:71-72). Chert was one of the most commonly used stone raw materials in Finnmark. The type of clay slate that the rock carvings in Kåfjord were made on was an important raw material in this period, and slate from the rock carving areas can also have been used as tools, such as spears, arrow heads and knives.

The continuity is disrupted around 2000 B.C., when the centre of the rock carving activity moved from Hjemmeluft and Kåfjord in the west to Amtmannsnes in the east. The figures on Amtmannsnes break with the previous style and motifs. Where there was previously a great variation in the types of figures and scenes, there is now a narrower selection with the main focus on human figures and reindeer. The human figures here seem to represent specific persons or gods, with detailed, and always different, faces and patterns on the bodies.

Placed between these big areas of rock carvings from different time periods is Storsteinen, which in a way connect the other areas to each other. It also connects the three oldest phases, and shows that there must have been continuity both in meaning and in production, and in the use of ritual – or in other ways significant – places. This repeated use of the same rock carving panel is completely unique in Alta, where new rock surfaces otherwise were used as they appeared after the land rose. Perhaps there were no other rocks close by that were suitable for rock carvings, or maybe the enormous rock in itself was so impressive that it called for ritual use?

Another example of the connection between phases and areas are the cross shaped figures. A small number of these can be found on Amtmannsnes and Storsteinen, the only panels with figures from phase 3, and one can assume that the figure belongs to this phase. However, the figure also appears in Kåfjord in the panel which is dated to phase 1, where it has been carved on top of other figures in the bottom part of the panel. This could mean that the panels were known and perhaps in use throughout all the phases, even though we have not found panels from all phases in one place. There is also geometric figures in Kåfjord which may be earlier versions of the cross shaped figure. Detailed figures, both patterns and more specific motifs, can have attained a more simplified shape without any change occurring in the meaning.

Around 900 B.C. the focus changes from Amtmannsnes and Storsteinen back to Hjemmeluft, the bay where the tradition started several thousand years earlier. Within a limited area on the Apana Gård panels, rock carvings are again made until the tradition ended around 2000 years ago. As in the previous phase on Amtmannsnes, reindeer and people are the most important figures, but the design is quite different. Now humans are depicted as small stick figures, and the reindeer are small with oversized antlers. Boats, whales, and halibuts are again important in the carvings, after a period without them. The boats in the two youngest phases are different from the older boats in Alta, and they are similar to the boats depicted in South-Scandinavian rock carvings.

The rock paintings in Transfarelv represent a separate type of rock art, and there is far too little knowledge about the correlation between rock paintings and rock carvings. There is still a great deal of uncertainty concerning the age of the rock paintings. The

*Fig. 10 South-Scandinavian types of boat, Apana Gård, phase 5. K. Tansem, WAM.*

production methods are obviously different, and the landscapes are also very different. The rock paintings were made in a landscape characterized by scree and steep hillsides, which is often difficult to get around in. The rock carvings, on the other hand, were made on gently sloping rocks on the shore, easily accessible to everyone. The rock paintings are less varied than the carvings, but reindeer and human figures are the most important motifs for both types of rock art.

**Management and dissemination**

The management of the rock art in Alta is in principle the same as the management of other automatically protected cultural monuments, and is administered accord-

*Fig. 11 The rock paintings in Transfarelv were made on vertical rock surfaces in a rough landscape; very different from the other World Heritage areas. K. Tansem, WAM.*

*Fig. 12: The system of foot paths has been used since 1987. K. Bang, WAM.*

ing to the Law of cultural monuments. In practice, however, there have been unclear divisions of labor in terms of who is responsible for initiating and executing measures to preserve the rock art. Alta museum has done some preservation work, but there were no formal agreements, and there was no plan for the management of the World Heritage areas, which made the local work difficult.

When ICOMOS evaluated the rock art in Alta in 1996, one of the suggestions made was to create a cooperation group. This group was formed two years later. It is lead by The Directorate for Cultural Heritage in Norway; the other participants are the Finnmark County Authority, the Sami Parliament, Tromsø Museum – the University Museum, Alta Municipality, and the World Heritage Rock Art Centre – Alta Museum. The cooperation group meets 1-2 times a year, and works as an advisory forum for discussion, information, and reports on all aspects of the work with the World Heritage.

A regional cooperation group has also been formed, which meets once a year to discuss and plan actions that concern the World Heritage. The establishment of these two groups has been exclusively positive for the management of the rock art in Alta.

In the evaluation from ICOMOS it was also recommended that a plan was made for the management of the rock art in Alta. Such a plan was created by the Finnmark County Authority in 2002. To follow up on this plan the authority created a position for an archeologist at Alta museum in 2002. The archeologist was, among other things, to develop plans for the preservation of the rock art areas on the World Heritage list, and be responsible for the practical preservation work. This was a big step in the right direction in terms of achieving a more complete and systematic management of the World Heritage, based on the results of The Directorate for Cultural Heritage in Norway's national Rock Art Project: Preservation of rock art (1996-2005). This was an interdisciplinary project, which included for example competence of different kinds from the natural sciences. The Rock Art Project added a great deal of knowledge about how to take care of the rock art to the management.

The status as World Heritage gives an advantage compared to other rock art in Norway, in that it makes it possible to apply for yearly financial contributions from the Ministry of the Environment's World Heritage resources. During the last few years we have experienced an increase in the contributions, which makes it possible to carry out large projects.

The last big step in the development of the management was the creation of the World Heritage Rock Art Centre – Alta Museum in 2007. This is a fusion of tasks which

Alta Museum previously was responsible for, and preservation tasks according to the Law of cultural monuments as delegated and authorized by the Finnmark County Authority. The new institution will be a centre of competence for the rock art in Alta, and it will work with preservation, documentation, and dissemination of rock art, as well as be a resource centre for rock art nationally and internationally. The development of knowledge and methods is emphasized. The centre is also the responsible museum in the Norwegian Rock Art Network.

Central management tasks are preservation and maintenance, adaptation for visitors and documentation. Work has commenced on creating a rock art archive. When it comes to research on the rock art, each position has a small amount of time set aside for this, but with limited resources and a lot of tasks, it becomes clear that the big research projects have to be done elsewhere.

The dissemination work has previously to a large degree focused on tourists from many different countries. The areas in Hjemmeluft that have been adapted for visitors have been presented with guided tours and written guidebooks in several languages. The museum has also since 2003 carried out dissemination efforts directed at teaching school children about rock art and history. The project "With rock art as a neighbor" is directed at the local community, and aims to increase the interest for and knowledge about the rock art. A new exhibition about the rock art in Alta is currently being planned, which will show the entire range of the rock art, not only the areas in Hjemmeluft that have been adapted for visitors. This project still lacks financing.

Gathering management, dissemination and research in one institution has already proven to be advantageous for all aspects of the work with the rock art. The dissemination work is strengthened, and there is a greater understanding within the institution and in all levels of the dissemination work for questions regarding the preservation of the rock art. The dissemination work will also benefit from new and accessible information about the rock art produced by the museum itself. The documentation is also influenced by the knowledge that it will be used for many different purposes, especially keeping the dissemination and presentation of the rock art in mind.

**Preservation**

The rock art has gone through great changes in the environment since it was made. When the land rose, the environment and vegetation changed drastically. What once was shore can now be woods or fields. Alta has a nice and dry climate, which gives good opportunities for growth. The summers can be warm, while the winter can be very cold. During fall and spring the temperature can swing between below and above freezing many times. The global climate change seems to have consequences for the rock art also, as fall lasts longer and spring comes sooner than previously.

The deterioration of the rock surface is a process that involves several factors. Physical deterioration fragments the surface without changing its mineralogical or chemical composition. An example of this would be cracks caused by frost. Chemical deterioration is characterized by the dissolution of minerals. The composition of the rock changes and it is usually weakened. Biological deterioration often encompasses elements of both chemical and physical deterioration, for example the acid produced by the lichen, which can dissolve the minerals in the rocks, or the mechanical disintegration of cracks and cavities in the rocks caused by plant roots (Bjelland and Helberg 2006:17). Frost and vegetation cause the most damage to the rock carvings in Alta. A number of preservation efforts have been made in the last few years to improve the future prospects for the rock carvings. The efforts are adapted to suit the different World Heritage areas.

**Frost**

All of the rock carving areas in Alta are exposed to multiple processes of freezing and

*Fig. 13 Storsteinen was covered in 2006. The cover will be removed in 2009, and the rock can be documented again. K Tansem, WAM*

thawing every year. The most recommended measure so far is covering the areas with isolating materials. This does not prevent frost, but it reduces the amount of times that the rock surface goes through freezing/thawing. The areas in Kåfjord, Amtmannsnes and Storsteinen are covered more or less permanent with isolating materials, but this is completely reversible. Our goal is to cover all of the 85 panels in Hjemmeluft every winter in order to reduce the harmful effect of the freezing/thawing processes. Many years still remain before such a big and demanding effort can be made for all areas, but the work of finding practical solutions has begun.

Covering the rock art raises new questions. The research done has been of a more general kind, but specific knowledge is needed about how the individual panels respond to being covered. Which areas are the most exposed to freezing/thawing processes, and how can we prevent them in those specific places? Is it right to more or less permanently cover up a cultural monument that was obviously made to be visible?

**Vegetation**

The panels in Hjemmeluft were previously in an open landscape, and one had a clear view from one panel to another, and to the Altafjord. During the last 20-30 years the vegetation in Alta has changed because the landscape is overgrown with deciduous trees. It became necessary to slow the development down, especially on and close to the rock carving areas. The forest was thinned in 2004 and 2005, and the areas around the rock carvings were opened so that the visual contact between the rock carving panels, the landscape, and the ocean could be re-established.

When the rock carvings in Hjemmeluft and Amtmannsnes were discovered in the 1970s, they were partly covered with thick layers of turf. The turf was removed, and lichen-free rock surfaces with clearly visible rock carvings were revealed. The surfaces that were covered in lichen were scrubbed and cleaned. After a few years the lichen began to return, and around the turn of the century the rock carvings were almost covered again. The painted carvings in Hjemmeluft were hardly visible anymore, and questions were raised about whether they could still be presented to visitors.

At this point in time ethanol was the method of choice for removing lichen. In 1999 some of the surfaces were cleaned with ethanol in connection with documentation work, seemingly without much effect. After a few years, however, the surfaces were completely free of lichen. The ethanol did not work immediately, but it is a process that takes several years, depending on the amount used, and if the surfaces are covered to let the ethanol work for a while. In

2003 the systematic use of ethanol on the panels in Hjemmeluft started, and the carvings and the details of the rock surfaces are now significantly clearer. The use of ethanol and the removal of lichen from rock carvings are controversial practices, both because of possible harmful effects, and for visual and ethical reasons.

**Lichen – a natural part of a rock carving area?**

There has long been a debate among Norwegian archeologists and other involved scientists regarding the possible damaging effect of lichen to rock surfaces with carvings. Some claim that the lichen does not represent a significant factor in the chemical and mechanical deterioration, and that it can even possibly have protecting and positive effects in terms of the freezing/thawing processes and in keeping loose mineral grains in their place (Walderhaug and Walderhaug 1998, Bakkevig 2004). Sverre Bakkevig has criticized Norwegian practices for preserving rock art:

"Not only should the art itself be curated to reflect the original intention of the engraved signs and figures, but also the environment should be treated as an important part of the magic or imaginative value of the site…Vegetation has often been considered as noise and disturbance around the site and cut down without reflection. Lichen has been removed by chemical agents, leaving large spots on the rock. (…) This is to degrade the value of the site as a prehistoric place of importance" (Bakkevig 2004:67).

Several studies have shown that the lichen causes chemical and mechanical deterioration on rock surfaces, but that the degree of damage depends on the kind of lichen and the type of rock (f. ex. Bjelland 2005). National authorities have no official opinion about whether or not lichen should be removed. Some decisions were made locally based on needs that arose. When the lichen removal began in Alta many objections were made based on the idea that lichen is a natural part of a rock carving area. Some have made the point that when the lichen is removed, it is difficult to consider the rock art as a part of the landscape (Bakkevig 2004:74). A praxis that has been considered a compromise, and which is in use in some places, is to keep only the rock carvings themselves free from lichen. It has proven difficult from a practical standpoint to limit the ethanol to only the carvings, and the result is an unsightly pale and lichen-free border around the carvings. As the removal of lichen is considered unfortunate with a view to ethics and preservation, it paradoxical that the lichen is remove precisely where the preservation of the rock surface is the most necessary.

Another objection to the removal of lichen is that it keeps loose parts of the rock surface in place, and that if the lichen is removed, the loose mineral grains will also be lost (Walderhaug and Walderhaug 1998:132). However, the loose grains are still there; the damage has already been done. As long as the lichen covers the surface, one can never have an accurate documentation of the damages, and it also becomes difficult to observe the development or implement possible efforts. Regarding the protecting effect that the lichen has when it comes to the freezing/thawing process, there is an alternative solution, which is covering the areas during the winter with isolating mats.

One can let the rock carving areas get overgrown based on the presumed preserving effect, and leave them covered in lichen and invisible until future generations possibly decide to clean them. But as Gustafsson and Karlsson (2004:32) point out: "The irony of this policy is that the rock carvings shall obviously be protected for future generations against the interest shown by generations living in the present!" In the case of Hjemmeluft such a choice would not only affect the visitors, but also research and management, as the documentation of the panels is partly lacking. New carvings and areas are discovered all the time, and they would have remained unknown if the lichen had not been removed and the areas documented again. One of the most important demands from UNESCO in relation to the purpose of

*Fig. 14 Shown here are some of the figures on Bergbukten 4B in Hjemmeluft before ...*

the World Heritage Status is to preserve the objects for future generations. At the same time, UNESCO demands that the World Heritage is documented, quantified, and disseminated to the living audience.

We are used to looking at the rock art in a landscape characterized by vegetation, which has created expectations that rock art should be placed in such a setting. The original environment in the upper shore zone was not characterized by trees, turf, grass, heath, and lichen. It is not possible to recreate the environment that the rock carvings were made in, but we can open the landscape so that the rock carving areas can be experienced in the context of each other and of the surrounding landscape. We can also present the rock surfaces in their most original condition, that is, without lichen, with all details visible and the correlation between the rock surface and the carvings can be interpreted by the viewers. Letting the surface get overgrown while keeping the carvings clean and perhaps painted red, separates the carvings from the rock surface; and letting the surrounding vegetation grow separates the rock carving panels from the landscape.

The measures that have been implemented in Hjemmeluft have done a lot for the experience of the rock carvings and their surrounding landscape. However, most of the panels are still dominated by lichen or remains thereof, which disrupt and destroy the impression of the rock carvings. The use of ethanol on the surfaces will continue until

*and after treatment with ethanol to remove the lichen that almost completely covered them. K. Tansem, WAM.*

they are completely clean and free of lichen, and after that to prevent re-growth.

Removing the lichen has had an unexpected and positive effect. As the lichen disappeared completely from some of the panels, the real shape of the rock surfaces began to appear. Striking colors and patterns in the rock surface emerged, and removed any doubt that the choice of Hjemmeluft as the location for the rock art had been coincidental.

The sandstone in Hjemmeluft is unique in the Altafjord. It has been formed in water, with the result that deposits of various kinds have created gradually transitioning layers of red, purple and green, with dark stripes of hematite. These observations are so recent that there is no systematic overview of the correlation between carvings and patterns in the surface, but some are so clear that they are obvious.

**Documentation**

Removing the lichen has made it possible to document the rock carvings and the rock surfaces again, and to a greater degree than previously. The documentation of the rock carvings can be carried out in several different ways, and can be defined as attempts to reproduce or copy the figures, rock surfaces, and environments using different tools. The three-dimensional nature of the rock carvings, as well as their immovability and the close interaction with the surrounding environment, make the documentation challenging. Two-dimensional depictions of

*Fig. 15 The rock carvings were probably made in the lichen-free zone of the beach. K. Tansem, WAM.*

three-dimensional objects of this kind can never be "accurate".

In all documentation there is a certain degree of uncertainty and subjectivity. If the rock surface is flawless and every carving completely visible, it will be difficult to document it wrong. If, however, the surface is deteriorated and the difference between carving and deterioration is difficult to separate, the matter is completely different. This uncertainty should be considered a natural part of the documentation.

Scanning the rock surfaces could be claimed to be the most objective method of documentation. It provides a three-dimensional point cloud which can be arranged to produce a digital copy of the rock surface. Scanning can give very precise results, but so far the technology is expensive and unavailable. It is a useful tool for documenting the condition of the area, and the shape and extent of the rock. However, it is not a tool for determining whether depressions on the rock surface are manmade, or the results of natural processes. The carvings do

*Fig. 16 On the panel Bergbukten 1 in Hjemmeluft it looks as though these small whales are diving into a maelstrom. These patterns exist on many of the rock surfaces in Hjemmeluft, but one has previously not paid attention to them. K. Tansem, WAM.*

*Fig. 17 The green and reddish purple stripes on the rock surface look like northern lights, and it is as if the animal figures are floating in it. The example is from Ole Pedersen 11A, Hjemmeluft. K. Tansem, WAM*

not become any clearer than they are in real life. The scanned material is just new raw material for determining if what we see is a rock carving or not.

Most of the rock carving areas in Alta have been documented previously (Helskog 1984, 1988, Helskog and Høgtun 2004, Søborg 2006). Important methods used then have been photography and tracing on transparent plastic. Large parts of the Kåfjord panels were also scanned. Frottage has not been used much. Tracing is incomplete in the sense that it only documents the carvings, not the rock surface. Some now add cracks and other characteristics of the surface, but this is still only a few details. There is no reason to criticize the documentation methods that have been used previously, except for the ones that directly harmed the rock art, such as casting with various materials. It is in fact good that the surfaces are documented using several methods, because they complement each other in terms of which aspects are emphasized.

**The uses of documentation**

Making the World Heritage accessible for the audience, management, and researchers is a central task, and the documentation therefore has to be adapted to different uses that demand individual solutions and various degrees of details. The management should protect the rock art against intervention and preserve it. Satisfactory management demands some basic information, such as an overview of the historical progress, especially the development in vegetation and geology, and this information must be updated regularly.

Good documentation is also significant for dissemination and research, although other aspects are emphasized. For classification and comparison, for example, it can be necessary to study the figures in detail. It has also become more common to consider the rock surface and the environment as a significant part of the rock art. When it comes to dissemination, the esthetic aspects are particularly emphasized, for example the way in which light, moisture and other elements change the rock surfaces and make them come alive.

Documentation can also be seen as preservation for the future. As Kalle Sognnes (2005:54) has pointed out: "Should we not accept the fact that rock art is doomed by natural geological processes and rather spend time and money on documenting them? It is, after all, too late to do this when they are gone". The rock art is in its right environment in nature, and will be lost sooner or later, regardless of our efforts. Documenting the rock art with modern methods will preserve the knowledge of it for future generations.

**Photography as documentation method**

The documentation methods must be of a certain standard, but not be too time consuming. The World Heritage Rock Art Centre – Alta Museum has therefore chosen photography as the basis for all documentation, also because of the possibility of digital enhancement. Different details of the carvings can be documented by photographing the same panels and carvings under different light and moisture conditions. These photographs are supplemented with photographs of the carvings traced with a mixture of water and quartz powder. Individual carvings, rock surfaces and the environments are subject to a photographic documentation that is as complete as possible.

The photographs also form a basis for digital work for other ways of documenting, for example composite tracings of entire areas. The digital work is a simple process for small areas, but it is quite demanding when it comes to the larger areas. The tracings give an overview of the position of the carvings to each other, but the details are lost.

As the rock surfaces become completely free of lichen, the old photographs will only be useful as historical documentation of the lichen growth. Photography will become more and more effective as a documentation method. The documented areas will be made accessible as the digital treatment

*Fig. 18 Ole Pedersen 9, Hjemmeluft. To the left tracings of the entire panel based on photography. To the right the figures have been separated from each other, giving the viewer a different impression of the panel. K. Tansem, WAM.*

has been completed and the photographs arranged and registered in the new digital rock art archive.

The goal of the World Heritage Rock Art Centre – Alta Museum is to document all of the panels and carvings again, both because the access to previous documentation is limited, and because documenting the areas several times is valuable in itself. One method, or one depiction of the areas, is not enough. It is usually not only the individual carvings, the position of the carvings to each other, the rock surface or the landscape that is of interest, but a combination of these. It is not easy to give an impression of all of these aspects at once, which is why it is a goal to document and present the panels and carvings in several ways. The combination of the methods can give those interested in the rock art in Alta an overall picture, while at the same time providing the opportunity to study specific aspects of the areas.

**Red carvings on pale rock – or the other way around?**

The effect of the several hundred liters of ethanol that have been used in Hjemmeluft has given us new ideas about what the rock carvings and the rock surfaces looked like when the carvings were made. We have already mentioned the colors and patterns that appeared; but the lack of lichen also revealed old vandalism. In 1948 local boys carved their initials onto the rock carving panels, and they also left their marks on rocks by the beach. Even though more than 60 years have passed, the contrast between the carvings and the rock surfaces is still great. Surprisingly, the contrast is greater closer to the beach, due to a reddish brown color of varying intensity on the rock. This is a geological phenomenon, and not the result of algae or lichen.

The phenomenon occurs in the sea spray zone, exactly where it is assumed that the rock carvings were made. Above this zone, where the lichen grows, the red color seems to disappear. There are many questions that we are only beginning to find answers to, but it would be somewhat surprising if this phenomenon were unique to modern times. The pale letters against the reddish rock gives an idea of what the rock carvings looked like when they were made and used, that is, pale carvings against red rock, and not red carvings against pale rock, the way many of them are presented today.

Painting the rock carvings is a way to render them more visible which has been common in Norway and Sweden since the middle of the last century. This is a controversial practice today and justly so, as the rock carvings are transformed into something other than what they are. Some of the panels in Hjemmeluft were painted already in the 1970s, and so far the museum has


*Fig. 19 HTP carved his initials into the rock in the 1940s, and they are still clearly visible against the red-brown color that covers the rocks on the beach. This is what the rock carvings may have looked like. K. Tansem, WAM.*

chosen to keep touching up the areas that are open to visitors. Partly worn off painting does not do justice to the rock carvings, nor does it make them any clearer. It rather distorts the carvings, and the visitors can be left with the impression that the rock carvings are not being properly cared for. The alternative to touching up the paint would be to close the areas for visitors until the paint has worn completely off, which could take a long time.

**Some closing comments**

The rock art in Alta is a great and rich material with many possibilities for interesting research projects and exciting dissemination. As we have shown in this article, research and dissemination both depend on good management. Good management depends on research and method development, and that the dissemination creates an understanding for and interest in preserving the rock art among visitors.
The rock art project, the cooperation group, the management plan, and gathering rock art related tasks in one institution, have all brought the work with the World Heritage a big step further.

The work that has been done has begun to bring results in several areas, but it also leads to new questions. The damaging effect of the lichen must be researched further. There is reason to believe that it would vary from area to area, depending on the condition and type of rock. The same would be true for freezing/thawing processes.

New and fascinating aspects of the rock carvings are also emerging; the rock surfaces the way that they originally were, with colors, patterns, and structures. What was the significance in terms of which surfaces were used, and how the carvings were placed in relation to each other? Can we use this knowledge to discover new rock carving areas? One natural consequence of this would be to conduct thorough research on the geology in the World Heritage areas. These new perspectives can add to the knowledge of what the rock carvings meant to the people who made them, and perhaps give some new ideas about how they can be presented today.

Central authorities encourage new methods for presenting the rock carvings and making them visible that can replace painting them. So far there are no effective ways to remove the old paint. Such a method would provide real opportunities for a completely new way to present the rock art in Scandinavia.

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