United Nations
Educational, Scientific and
Cultural Organization

Laponia
Upptogs på
världsarvslistan 1996

LAPONIA

WORLD HERITAGE IN SWEDISH LAPLAND

Tjuottjudusplána
Management plan

Regulations and Maintenance Plan for the National Parks

Sarek
Stora Sjöfallet/Stuor Muorkke
Muddus/Muttos
Padjelanta/Badjelánnda

Regulations and Maintenance Plan for the Nature Reserves

Sjávnja/Sjaunja
Stubbá

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Administrative Data

National parks

Sarek (1909), Stora Sjöfallet/Stuor Muorkke (1909), Muddus/Muttos (1942) and Padjelanta/Badjelánnda (1962)

Nature reserves

Sjávnja (1986), Stubbá (1988) and the Tjuoldavuobme (part of Huhttán-Gables/Kvikkjokk-Kabla 2000)

Other areas

Ráhpaäno suorgudahka (Lájtávrre delta), Tjuoldavuobme and Sulidälbmá

Name	Referece-number	Established	Municipality	Surface areal	Position (SWEREF99)
Padjelanta/Badjelánnda	1220	1962-05-09	Jokkmokk	200 233 ha	7478537 572941
Sarek	1221	1909-05-24	Gällivare Jokkmokk	198 658 ha	7469126 613007
Stora Sjöfallet/Stuor Muorkke	1219	1909-05-24	Jokkmokk	128 056 ha	7500067 622277
Muddus/Muttos	1223	1942-03-24	Gällivare Jokkmokk	51 166 ha	7433015 725402
Sjávnja	1071	1986-03-07	Gällivare	281 459 ha	7487983 684481
Stubbá	850	1988-05-10 1996-05-24 (rev)	Gällivare	33 409 ha	7451837 717633
Huhttán-Gables/ Kvikkjokk-Kabla Nature Reserve (part of)	1050	2000-04-28	Jokkmokk	49 114 ha	7434093 628535

Laponia is included in the physical geographical regions 36 (a and b) Nordland, Troms and Lapland alpine region, 52 (a) Northern coniferous Lapland and 32 (c and d) Northern Norrland and northern Finland coniferous areas.

Laponia joined the list of the World's Cultural and Natural Heritages at the 20th session of the World Heritage Committee on December 2-7 1996 in Mérida, Mexico. Laponia was inscribed on the basis of natural criteria (vii), (viii) and (ix) and the cultural criteria (iii) and (v). The World Heritage includes, aside from the above mentioned national parks and nature reserves, the Lájtávrre delta (1 919 ha), the western Tjoulda valley (19 830 ha) and the Sulidälbmá area (21 868 ha). In total, Laponia covers an area of 936 597 hectares. Laponia - The Laponian Area – has the serial ID number 774 in the World Heritage List with the following sub-divisions and serial ID numbers. Padjelanta/Badjelánnda National Park 774-1, Sarek National Park 774-2, Stora Sjöfallet/Stuor Muorkke National Park 774-3, Sjávnja Nature Reserve 774-4, Stubbá Nature Reserve 774-5, Muddus/Muttos National Park 774-6, Sulidälbmá glacier area 774-7, Ráhpa valley delta land 774-8 and Tjuolda valley area 774-9.

Laponia affects the mountain Sámi village organizations Jåhkågaska tjiellde, Luokta-Mávas, Tuorpon, Sirges, Unna tjerusj and Baste čearru and the forest Sámi village organizations Gällivare skogssameby, Slakka and Udtja.

Rijddeljávrre. Photo Jan Erik Nilsson

1. A New Management and a Comprehensive Management Plan

From a height
on a high mountain
A sight
hard to tell about
(*Paulus Utsi)*

The Laponian World Heritage is more than just a landscape with high natural value, in which the indigenous Sámi people have lived and worked for generations. Laponia is more than the historical traces in the landscape, reminding us about those who lived here before us. Laponia is more than just a landscape, which would have a partly different appearance without the impact on biodiversity due to the grazing of reindeer. Laponia contains all of these landscapes.

Laponia is also the image of landscapes that we carry within us, independent of our background. The Sámi people – who traditionally, with respect and caution, have taken care of land and water in a way that preserves resources for future users – carry within themselves their mental landscapes. The visitors, looking for a place to rest at the end of their long journey, carry within themselves images of their landscape. The conservationist sees a landscape

where the natural conditions and the historically low intensive land use have provided conditions for high natural values. Laponia is all of these landscapes – and many more.

Conservation work has a long history in Sweden. The origin of cultural heritage conservation can be traced back to the mid-17th century, and Swedish nature conservation turned 100 years old in 2009. However, there were different driving forces behind the birth of nature and culture conservation. While cultural heritage conservation started as a way to raise the kingdom's reputation and reach the same level as other great powers of Europe, the foundation for nature conservation was to protect nature against man, who through industrialization was seen as a threat to that which was considered original and native. There was a strong nationalistic spirit in both nature and culture conservation. For a long time the ideas behind nature conservation thought of humankind as a problem, with the focus set on preservation – not sustainable management. For a long time politics were shaped only by the aspect of nature protection, while management was not prioritized.

When the first national parks were established at the beginning of the 20th century, it took place during a time when the viewpoints of individual people were not very important. The homesteader on Ängsö or the reindeer herder in Laponia did not have the possibility to influence what kind of protection was given. At the same time it was the people who had used the land for long periods of time who had contributed to shape the areas that were to be protected, and to a great extent they lived in tune with nature. Today, ways of thinking, ideas and politics behind conservation work have changed, both nationally and internationally. There are many reasons for these changes, but the growing research on local management, etc. has contributed. There is still a need for protection, but how the protected areas should be managed in cooperation with local people and local businesses is being discussed more and more.

A new way of thinking has started the so-called Laponia Process, which has led to a new management plan for the Laponian World Heritage. This is a cooperative effort of the Sámi village organizations (sameby) in Laponia through the association Mijá Ednam, the municipalities of Jokkmokk and Gällivare, the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency. This new way of thinking originates in the acceptance of the different backgrounds and realities of the parties involved, recognizing the importance of the historical heritage, respecting each other's competence and experience, and above all, is a strong expression for the will to create together a new management for the Laponian World Heritage.

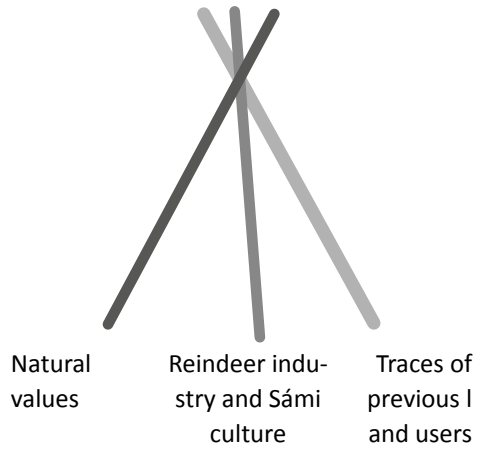
The parties have met in a joint management organization with a local base in the municipalities of Jokkmokk and Gällivare and the Sámi village organizations that operate within the World Heritage. The work of conservation and development of the values that are the basis of the World Heritage appointment will be done collectively.

The Laponian World Heritage is a so-called "mixed site", a World Heritage that meets both the natural and cultural criteria.

The parties of the Laponia Process have agreed to describe the values of the World Heritage within three areas linked together, which cannot be seen separately: the work with Laponia is to be based on a comprehensive view of the area and its content.

The three areas are:

- The natural environment and its high values.
- The living Sámi culture and reindeer industry.
- The historical heritage arising from previous usage of the land.



A new management organization is required if these values are to remain. The Management Plan lays the foundation for such an organization. The management will be based on a number of pillars: sustainability, comprehensiveness, local participation and joint effort. The work will take a humble approach, where new work methods and models will continuously be tested and reevaluated. A joint management organization, like the one now being designed, is as yet untested.

1.1 Objectives of the Management Plan

The objectives of this Management Plan are:

to describe the conditions for the Laponian World Heritage, the background of the World Heritage appointment, the values existing in the national parks and nature reserves included in Laponia as well as the living Sámi culture and reindeer industry;

to declare the direction of the management work required to preserve and develop the Laponian World Heritage, and maintenance plans and regulations for the national parks and nature reserves which are part of Laponia.

The Management Plan is based on the following set of values which have been worked out and determined by the Sámi village organizations involved through the association Mijá Ednam, the municipalities of Jokkmokk and Gällivare, the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency on June 30th 2006:

Laponia is a totality in which the important relationship between people and their surroundings is emphasized. This wholeness is an invaluable legacy that should be handed down to future generations. The Sámi culture lives on and reindeer husbandry makes use of the area at the same time as new Sámi businesses are managed in tune with the natural and cultural values that were the basis of the World Heritage appointment.

The cultural landscape, national parks and nature reserves are protected and taken care of in such a way that their values are preserved, making them good examples within the field of nature and culture conservation and a resource for development in the municipalities concerned. The visitor's experience is enhanced by suitable information efforts and other measures.

By the regulations protecting the values of the area and by a management plan with thorough maintenance plans and a management organization, long term safeguarding will be able to take place, at the same time as the World Heritage will be able to be used and developed by the Sámi people and the local community. Visitors will be able to experience the Laponian World Heritage with its natural and cultural values as well as the international concept of World Heritages.

1.2 Established Demands on the Management Plan and Maintenance Plan

UNESCO's "Operational Guidelines" (WHC 08/01) require each World Heritage to have a management plan.

Each nominated property should have an appropriate management plan or other documented management system which should specify how the outstanding universal value of a property should be preserved, preferably through participatory means. (WHC 08/01, January 2008, moment 108)

These guidelines include a description of what a management system should fulfill:

In recognizing the diversity mentioned above, common elements of an effective management system could include:

- a thorough shared understanding of the property by all stakeholders;
- a cycle of planning, implementation, monitoring, evaluation and feedback;
- the involvement of partners and stakeholders;
- the allocation of necessary resources;
- capacity-building; and
- an accountable, transparent description of how the management system functions. (WHC 08/01, January 2008, moment 111)

This Management Plan and the process leading to its development fulfill in all essentials the proposals brought forth in the UNESCO guidelines.

In the Swedish Environmental Code (1998:808), the Area Protection Ordinance (SFS 1998:1252) states that the County Administrative Board shall establish a maintenance plan for the long term management of a nature reserve. The Ordinance on National Parks (SFS 1987:938, modified 2009:729) states that the Swedish Environmental Protection Agency is to establish a maintenance plan specifying how a national park shall be tended and managed. The Environmental Protection Agency has specified what is to be implemented in a maintenance plan in ordinances and regulations concerning nature and culture reserves (NFS 2003:8) according to chapter 7 of the Environmental Code and the Area Protection Ordinance (SFS 1998:1252).

The maintenance plan should include a descriptive section that deals with the conservation values and historical land and water use of the area. It should also include a section concerning the different management areas and their boundaries, the defining of objectives for prioritized conservation values and a description of management measures. Instructions for documentation and follow-up and a summary of prioritized management measures should also be included. Objectives should be defined for each management area. The lowest level of ambition should be to define objectives for all types of terrain, prioritized nature types and habitats, and for conservation and making visible the traces of cultural history, as well as for recreation.

This Management Plan with thorough maintenance plans for the national parks and nature reserves within the Laponian World Heritage, as well as regulations, fulfill both the international and the national requirements put on these documents. It is the responsibility of the management organization to gradually deepen the Management Plan into more detailed work plans where it is found necessary.

1.3 Outline of the Management Plan

The Management Plan consists of four parts:

- ***Chapter 1*** *describes the starting-point for the new Laponia Management.*
- ***Chapter 2*** *gives a thorough description of the values of the Laponian World Heritage.*
- ***Chapter 3*** *explains in which way Laponia is protected today.*
- ***Chapter 4*** *consists of maintenance plans for national parks and nature reserves within Laponia, and specifies the task of the management organization.*

The appendix contains, among other things, regulations, horizontal criteria and an account of international commitments that concern the management of the Laponian World Heritage.

1.4 The Task of the County Administrative Board and the Range of the Management Plan

LIn 2006, the Swedish Government assigned the County Administrative Board of Norrbotten

the task of developing the outlines for the management of the Laponian World Heritage, in accordance with the agreement made between the Sámi village organizations involved through the association Mijá Ednam, the municipalities of Jokkmokk and Gällivare, the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency.

The County Administrative Board of Norrbotten is to develop the outlines for the management of the Laponian World Heritage according to its request 2006-06-30 (ref. M2006/2962/Na). The possibilities for and the benefits of a local management organization is to be evaluated during that work. Suggestions for a set of rules for the management are also to be made, as well as a management plan for the World Heritage. Privately owned property within the World Heritage is not to be included in the management.

The task is to be carried out in cooperation with the Sámi village organizations within the World Heritage, the municipalities of Jokkmokk and Gällivare and the Swedish Environmental Protection Agency. The assignment is to be presented to the Government (Ministry of Environment) before December 20th 2009.

The Management Plan covers all land and water areas within the Laponian World Heritage. Maintenance plans and regulations only refer to Sarek, Padjelanta/Badjelánnda, Muddus/Muttos, Stora Sjöfallet/Stuor Muorkke, Stubbá and Sjávnja. Maintenance plans and regulations do not apply to the Sulidälbmá area, Ráhpaäno suorgudahka (the Lájtávrre delta), Tjuoldavuobme (western Tjuolta valley) or the part of Huhttán-Gábles (Kvikkjokk-Kabla) located within Laponia. The maintenance plans and regulations do not apply to privately owned property excluded from the nature reserves. Within the borders of Laponia there are small areas of privately owned property in Sjávnja, Stubbá and Ráhpaäno suorgudahka (the Lájtávrre delta).

1.5 Criteria for World Heritage Appointment – Objectives and Obligations

The Convention Concerning Protection of the World Cultural and Natural Heritage was created in 1972 to protect the world's most valuable cultural and natural environments against destruction and degradation. In their own unique way, the World Heritages tell us about the history of earth and mankind.

Sweden ratified the convention in 1984 and has since then been committed to protect its own World Heritages forever, and to support the efforts of other countries who are protecting theirs as well. This commitment includes that Sweden is to:

- establish an organization to attend issues for caring and preserving the cultural and natural heritages,
- protect the World Heritages with national legislation,
- adopt a management plan for the protection and care of the areas,
- inform about the World Heritages,
- teach about the World Heritages through schools,
- report about the conditions of the World Heritage areas every six years.

The World Heritage Committee's Justification for Inscription

UNESCO's World Heritage Committee inscribed Laponia as a World Heritage in December 1996 with the following justification:

The Committee considered that the site is of outstanding universal value as it contains examples of ongoing geological, biological and ecological processes, a great variety of natural phenomena of exceptional beauty and significant biological diversity including a population of brown bear and alpine flora. It was noted that the site meets all conditions of integrity. The site has been occupied

continuously by the Sámi people since prehistoric times, is one of the last and unquestionably largest and best preserved examples of an area of transhumance, involving summer grazing by large reindeer herds, a practice that was widespread at one time and which dates back to an early stage in human economic and social development.

Criteria met by the World Heritage:

The World Heritage Convention states different criteria for cultural heritages and for natural heritages. Laponia meets the following criteria according to the World Heritage Convention.

- to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features.
- to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals.
- to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance.
- to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.
- to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change.

1.6 The Extent of Reindeer Husbandry Rights and Sámi Self-determination

1.6.1 Immemorial Usage and Reindeer Husbandry Rights

The rights of the reindeer industry are protected through the Instrument of Government (1974:152), which is a part of the Swedish constitution. Section 20 in the second chapter states that "the rights of the Sámi people to practice reindeer husbandry are regulated through law (1994:1468)". The law referred to, the Reindeer Husbandry Act (1971:437), accounts for what is included in the reindeer husbandry rights. According to chapter 2 § 18 of the same constitutional law, reindeer husbandry rights can only be limited if it is demanded in order to meet important public interests. Limitations through ordinances for protection of national parks and nature reserves are examples of what is considered to be such important public interests. If reindeer husbandry rights are restricted due to expropriation, ordinances or other similar procedures it would entitle for compensation if the restrictions mean that land use is significantly complicated. In such cases the Sámi village organizations concerned and reindeer herders are entitled to compensation.

Thus reindeer husbandry rights are in many ways comparable to proprietary rights since it is protected by the constitution, unconfined by time and independent of agreements.

When the national parks and nature reserves were established in Laponia, the intention was that the Sámi were to continue with reindeer husbandry. The historical process that preceded the establishment of national parks in Laponia does not meet the current demands on participation and consultation with the Sámi people and the Sámi village organizations, but still the originally set ordinances have been applied. Gradually these ordinances have been changed, which has resulted in restrictions of reindeer husbandry rights.

The renewed regulations for Laponia (appendix 1) have been developed to ensure that the objectives of the national park and nature reserve establishments and the World Heritage appointment are met. Thus the regulations forbid some measures and operations or

Ráhpavuobme. Photo: Carl-Johan Utsi

prescribe the requirement of permits or exemptions. According to the regulations, reindeer husbandry rights can be practiced within Laponia, but some included measures come with an obligation to give notice. Requirement of permits, exemptions and notifications are tools that are intended to give the management organization a comprehensive insight in ongoing and planned operations necessary for the long term and appropriate maintenance and management of Laponia. This setup will primarily be used during a trial period.

In some respects the Sámi have a special status in law, both as indigenous people and through their special use of land and water. The Sámi people's right to land and water are based on immemorial usage. Immemorial usage refers to someone who has used certain land and water for such a long period of time and to such an extent that it has given rise to their right to use it. The rights of the Sámi have emerged through their use of land and water for reindeer husbandry, hunting, fishing and other things over a very long period of time. Consequently the reindeer husbandry rights are based on the traditional use of land. What separates reindeer husbandry rights from other rights of usage is that reindeer husbandry rights are held by individuals (a Sámi who is member of a Sámi village organization), but must be managed collectively (through a Sámi village organization) and cannot be transferred to someone else.

A characteristic when it comes to Sámi rights is that customs can affect the interpretation of what these rights mean. The living conditions and livelihood of the Sámi are so special that they can have an immediate effect on the legal position.

The Sámi peoples' current right to land and water is regulated, as previously stated, by the Reindeer Husbandry Act. In this law Sámi rights are called reindeer husbandry rights. It states that the Sámi can use land and water to provide for themselves and their reindeer. Since these rights are based on immemorial usage, they would remain even if the law would expire.

Many land rights emerge from agreements. When it comes to reindeer husbandry rights

there are no such agreements. The Sámi peoples' right to land and water is not based on agreements and not limited by time.

To be able to exercise reindeer husbandry rights you have to be a member of a Sámi village organization. A Sámi village is an organization responsible for the reindeer husbandry within a specified area. The Sámi village is a legal entity, which means it can have both rights and responsibilities. The members of the Sámi village have influence over the organization through their right to vote at the village meetings.

Many elements in the reindeer husbandry rights are of collective character. According to 1 § of the Reindeer Husbandry Act, the Sámi rights are given to the Sámi people. However, in order to be able to exercise these rights you must be a member of a Sámi village. The Sámi village also forms a community that represents its members in different situations. Many of these rights are exercised by individual Sámi. The content of reindeer husbandry rights therefore has both collective and individual features. The reindeer husbandry right is a civil right bestowed on certain determined individuals and applied to a specified area.

The rights of the Sámi are, in a way, unparalleled in other civil rights and are shaped with concern for the Sámi culture. This consideration has motivated certain rights and also plays a big role when the rules are carried out. In the preparatory work of the legislation and in other contexts, the protection of the Sámi culture and way of life are emphasized.

Reindeer husbandry rights include, among other things, the right to:

- let reindeer graze from the ground as well as from trees,
- move reindeer between different parts of the grazing area, gather reindeer and watch over reindeer, as well as travel through the area on foot and by auxiliary means,
- build facilities, cabins and similar constructions needed for reindeer husbandry,
- cut trees for the construction of facilities, cabins or such as mentioned above,
- take firewood and wood for handicraft for personal use,
- use dry trees, windfalls, forest residues and such,
- cut trees with tree lichens if it is inevitably necessary for providing fodder for the reindeer,
- dig gravel pits and other quarries for household needs,
- haying and other pasturage than reindeer pasture,
- hunt and fish for household needs and for selling.

Reindeer husbandry rights also cover the possibility to use modern technique within the framework set by the Swedish Environmental Code, the Off-Road Vehicle Use Act and other legislation for reindeer husbandry purposes.

Reindeer husbandry rights can be modified if the usage of land and water for reindeer husbandry purposes change. The Sámi right to reindeer husbandry, based on immemorial usage, also implies rights that do not appear in the Reindeer Husbandry Act, assuming that use of the natural resource can be historically documented.

A person who owns or uses land within the year-round grazing area cannot use this land in a way that substantially interferes with the reindeer industry. A person located within an area where reindeer husbandry is permitted must have their dog on a leash or fenced in. A reindeer owner may kill a dog hunting or in other ways disturbing reindeer if the dog will not allow itself to be caught. Obstructing a Sámi village organization from exercising their reindeer husbandry rights could prove itself a punishable offense. That would mean, for example, if somebody tried to cut off a reindeer migration route or scare reindeer off an area they are permitted to occupy. The Swedish Forestry Act contains regulations concerning consideration for the reindeer industry.

Naturally, other legislation also applies, for example the Swedish Environmental Code, the Swedish Planning and Building Act and the Off-Road Vehicle Use Act. A person conducting reindeer husbandry is to show consideration for other interests. As far as possible, reindeer

are to be prevented from going outside the grazing areas or inflicting damage or inconvenience in other ways. Reindeer migration is to be conducted in a way that inflicts as little damage as possible. The Sámi village organization can in some situations, as described in the Reindeer Husbandry Act, become liable to pay damages.

The Reindeer Husbandry Act includes a provision on the environmental consideration to be taken when conducting reindeer husbandry. According to this provision, reindeer husbandry is to be managed so that natural grazing land maintains its long-term capacity for production in order to provide a good and sustainable output, at the same time as biodiversity is preserved. The Sámi Parliament's provision (2007:3) states the required consideration for natural and cultural environments to be taken by the reindeer industry, for example when cutting trees, using off-road vehicles, constructing pens and buildings or giving additional feeding.

1.6.2 Special Protection of Sámi Rights and Sámi Self-determination

The constitution provides special protection for the Sámi people and the Sámi rights. Beyond what is already specified above in chapter 1.6.1, the Instrument of Government states (chapter 1, § 2, subsection 4) that the possibilities for ethnic, linguistic and religious minorities to preserve and develop their own cultural and communal life are to be promoted. Culture includes reindeer husbandry and other kinds of Sámi land use. Chapter 2, § 15 of the Instrument of Government includes a prohibition against discrimination.

Sámi rights are also covered by international law. The Swedish Parliament has unanimously determined that the Sámi are the indigenous people of Sweden (Parliament letter 1976/77 rskr. 289). The fact that the Sámi are an indigenous people gives them a special legal status in Swedish law.

Today the right to self-determination is a generally accepted right within international law. Self-determination is the most central part of human rights. It is a prerequisite for the realization of other human rights and fundamental freedoms.

In a report to the United Nations from July 2006, the Swedish Government has acknowledged that the Sámi have the right to self-determination: "It is the position of the Swedish Government that indigenous people have the right to self-determination as they constitute a people according to the meaning referred to in the common first article of the 1966 International Covenant on Civil and Political rights and the 1966 International Covenant on Economic, Social and Cultural rights" (Sweden's report on the compliance with the UN Covenant on Economic, Social and Cultural rights in July 2006, S2006/1919/SK).

Sámi self-determination means that the Sámi viewpoints are to be decisive in issues concerning them as Sámi. It is not about establishing a separate state. That right is not covered by international law since the principle of territorial integrity of nation-states limits the capacity to exercise the right of self-determination.

Self-determination includes the right for all peoples to decide over their economic, social and cultural development. They have the right to shape and preserve their identity as a people. It also includes the right to be consulted as a people in all issues concerning them as a people. A part of the right to self-determination is to give indigenous people the right to decide and/or exercise influence over their land and water areas, natural resources and traditional livelihoods. Several UN agencies have underlined that indigenous people have this right.

1.7 The Right of Public Access and its Extent

The Swedish Right of Public Access gives us a unique opportunity to freely move around in the countryside. This right is accompanied by demands of consideration and caution – toward nature and animal life, toward land owners and businesses and other people in nature. The Right of Public Access can be summarized with the words: "Don't disturb, don't destroy."

The Right of Public Access is written into one of Sweden's four constitutional laws (chapter 2, § 18, Instrument of Government), but it is neither a law nor is there such a law that precisely defines the Right of Public Access. However, the Right of Public Access is enclosed by laws that set limits for what is permitted, for example the Swedish Penal Code (1962:700). The Swedish Environmental Code expresses it in the following way: "Everyone who dwells in nature is to show consideration and caution in their relationship with it (chapter 7, § 1). This means that it is not always possible to give exact answers on what a person is allowed to do in nature. The Right of Public Access can be interpreted in court, but there have been few legal cases concerning the Right of Public Access.

All that which is included in the Right of Public Access goes far back in Swedish history, although the expression itself comes from more modern times. Some see the Right of Public Access as a cultural legacy and sometimes even as a national symbol.

The Right of Public Access applies to everybody and it is of great importance when it comes to our opportunities to be in nature. Organizations and tourist companies can benefit from the Right of Public Access in their activities even if it essentially only applies to individuals and not groups.

In some cases, the Right of Public Access in national parks and nature reserves can be restricted through provisions.

1.8 Other Rights within Laponia

In addition to the rights mentioned in chapter 1.6 and 1.7, there are a number of other rights that apply within the Laponian World Heritage as well. For example, these rights may be based on the rights of individual land owners within the area and may concern mining claims according to the mineral legislation, hydropower rights etc. The situation for these kinds of rights are often both complex and complicated, so different measures must always be observed with great consideration to the different rights that may be concerned.

1.9 International Instruments and Swedish Commitments

The Laponian World Heritage contains several different dimensions that are to interact and together form a functional whole. The starting-point for the World Heritage concerns, among other things, the relationship between the Sámi and the Swedish, between conservation and sustainable use. Sweden has obligations regarding these relationships through international commitments. In other words, Laponia is affected by a number of binding commitments made by Sweden.

Sweden has ratified several international conventions, and in many cases Sweden has played a prominent role and been a driving force during their establishments. These include commitments concerning Laponia and the World Heritage management. These commitments made by Sweden span over a wide area.

For many years the protection of natural and cultural values was a national affair. Gradually the protection has been given more of an international character, in order to secure the world's common natural and cultural heritage and at the same time allowing sustainable development. In many cases this has led to adopting conventions and other international instruments as important tools for this work.

A rich nature is considered to have its own justification and be of great importance for the improvement of social and economic development. The connection and balance between all three dimensions of sustainable development (social, economic and environmental) has been expressed more and more. Furthermore, well preserved nature and a clean environment contribute to secure the health, comfort and life quality of people. There has been an increased focus on the importance of conserving the world's cultural heritage, among other things for providing a historical consciousness and as a basis for our feeling of identity – re-

gardless of where in the world we come from. In addition to archaeological sites and historical remains, areas that are being emphasized are still living cultural environments with a well-preserved link between past and present. Laponia is such an example.

The list below shows the international commitments of most importance for the management of the World Heritage. Appendix 4 gives a short summary of the content of the respective conventions/commitments.

Conventions and other international instruments concerning human rights and indigenous issues

- UN Covenant on Civil and Political Rights (1966)
- UN Covenant on Economic, Social and Cultural Rights (1966)
- UN Convention on the Elimination of All Forms of Racial Discrimination (1965)
- UN Convention on the Rights of the Child (1989)
- Council of Europe's Framework Convention for the Protection of National Minorities (1995)
- European Charter for Regional or Minority Languages (1992)
- UN Declaration on the Rights of Indigenous Peoples (2007)
- EU Council Directive 2000/43 implementing the principle of equal treatment between persons irrespective of racial or ethnic origin
- Nordic Sámi Convention (still being drafted)
- ILO Convention No. 169 concerning Indigenous and Tribal Peoples (not ratified by Sweden)

Conventions and other international instruments concerning natural and cultural environments and sustainable development

- Convention concerning the Protection of the World Cultural and Natural Heritage (1972)
- Sustainable development; The Rio Declaration on Environment and Development (1992) and the Agenda 21 Programme of Action for Sustainable Development (1992)
- The Convention on Biological Diversity (1992)
- UN Framework Convention on Climate Change (1992)
- Aarhus Convention (1998) a new kind of environmental convention
- Ramsar Convention (1971) on Wetlands of International Importance, especially as Waterfowl Habitat
- Bern Convention (1979); Convention on the Conservation of European Wildlife and Natural Habitats
- Washington Convention (1973) on International Trade in Endangered Species of Wild Fauna and Flora
- Bonn Convention (1979) on the Conservation of Migratory Species of Wild Animals
- EU Habitats Directive (1992); Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora
- European Landscape Convention (2000)
- Malta Convention, the Council of Europe's Convention on the Protection of the Archaeological Heritage (1992)
- Programs etc. within the Arctic Council and Barents Regional Council that in certain contexts involve Laponia.

1.10 The Laponia Process 2006-2011

From the time of the establishment of Laponia and until 2005, different attempts were made to create a new management for the area. However the time was not ripe until the autumn

of 2005 when the Sámi village organizations in Laponia, the municipalities of Jokkmokk and Gällivare, the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency initiated discussions and negotiations about the framework for the development of the World Heritage management.

On June 20th 2006 the parties made an agreement that laid the foundation for the so-called Laponia Process. They also wrote to the Government, which in December assigned the County Administrative Board to develop the management framework.

The work procedure and the process that were the foundation for the new management and this Management Plan are in several ways unique in Sweden. The Laponia Process was based on local, regional and national involvement represented by five parties, Mijá Ednam, which represent Sámi village organizations with land in Laponia, the Swedish Environmental Protection Agency, the municipalities of Jokkmokk and Gällivare and the County Administrative Board of Norrbotten. The process has been based on common basic values, consensus decision-making and participation on equal terms as far as possible. The work has been done with methods based on utilizing traditional knowledge and with fundamental respect for the competence and experiences of all parties, especially for those who make use of land and water in the area.

The most important lessons to learn from the Laponia Process are:

- consensus as the form for decision-making is to be used as far as possible and the council, rádedibme, is an important part of this,
- the view of nature and culture should be based on the landscape as a whole,
- the people who live and operate within an area have important competence and experiences that the management cannot be without,
- the prevailing view on culture and history is changing because of our work so that knowledge and solutions are sought out more from the perspectives of the local cultures,
- we work within a system and develop and renew it so that the creation of norms, etc. are based on local competence and traditional knowledge,
- language is an important part in culture creation.

The Laponia Process was presented to the Government on July 2nd 2010.

1.11 Starting-points for the New Management

To be able to understand the viewpoints that the different stakeholders have on Laponia, it is also important to describe their ideas of what management is and what importance they give local participation. Together these parts make up important starting-points for the new management. The comprehensive view brought forth in the World Heritage appointment is fundamental. In this view, the values that were the basis for the appointment are equal.

During the work to develop the Laponia Management, the stakeholders agreed that the work is to be based on a holistic view:

- The natural environment and its high values,
- The living Sámi culture and reindeer industry,
- The historical heritage that previous land use has given rise to.

The natural value is based on the same foundations as those of the national parks and nature reserves. The purpose of the protected areas and the provisions made to safeguard these are important parts of the judicial and practical management of the area. The value of the view that the Sámi have on nature is also emphasized in the management of the World Heritage. *The cultural value* is based on the Sámi culture and reindeer industry. Apart from that there are also strong values linked to the traces of new land users who arrived in Laponia in more recent times, like settlers, scientists and tourists. The holistic perspective also includes, in

addition to safeguarding the World Heritage values for the future, that development is possible in the area.

A new and modernized management of Laponia is based on local participation and joint responsibility-taking, where the area is looked at from a holistic perspective, a sustainable perspective and a developmental perspective. In all three perspectives, learning is a constant part of the process.

1.11.1 Management – A Broadened Concept

Management can be described as taking care of, running and maintaining or administering something like real estate or a facility, on behalf of yourself or someone else. Sometimes this definition is used to signify the public establishment that is appointed to prepare, execute and implement political decisions.

The Sámi, who for a long time have been using the land and water of Laponia, have operated in the area long before the use of concepts like management. The Sámi way of using the land, with reindeer husbandry as the main industry, is one of the prerequisites for how the area looks and one of the bases for its values.

Management can also be seen as different partial processes – negotiations, discussions and establishment work – that lead to the shaping and assessment of regulations and guidelines, and the preparation of cases, decisions and measures. It can be done formally, through hearings and documents circulated for comments, but also informally through continuous dialogue and communication. In this will be a natural element with the purpose to promote local participation and involvement, and to make use of local knowledge and ideas.

With management of the Laponian World Heritage this Management Plan refers to a combination of the above mentioned viewpoints. One main point is management as a process. The process thinking is to be based on sustainable, developmental and holistic perspectives. In the management process, the will and needs of the Sámi who traditionally have used and still use the area, are to carry weight since the living Sámi culture and reindeer industry was one of the reasons for the World Heritage appointment.

Management of more than the material

In most cases of nature and culture conservation the management objective is to preserve physical values, such as a valuable natural environment, a rare animal species or a specific building. However there are more ways to look at natural and cultural values. The material dimension covers what the eye can catch in nature, as forests, mountains and mires, or the landscape where the reindeer walk and graze, fishing waters, settlements, migration routes and hiking trails. The social dimension includes more or less fixed relations between people who live and move around in Laponia, but also to other people in the surrounding world. The mental dimension covers conceptions, knowledge, attitudes and values.

Against the background of criteria and the justification behind the appointment of Laponia as a World Heritage, the parties of the Laponia Process agree that even the social and mental parts of the World Heritage are to be managed. Relations between people, relations to and involvement in the area belong together with the local participation that the management of Laponia is based upon and which is important to make use of and take care of. In the same way, local know-how, traditional knowledge and the local community's view on the landscape are also parts of the World Heritage that must be passed on into the future.

Social Management – local participation and dialogue

On the basis of the conservation values of Laponia, the Management Plan is to show consideration for the needs of people, human use of natural resources and allow an adapted and combined nature conservation and cultural heritage protection. Such a continued development means that the management has to be based on local participation and be rooted in as many contexts as possible. A good and on-going dialogue between different stakeholders

Photo: Carl-Johan Utsi

connects these parts.

Local participation and dialogue can be rated or described as a scale, with different levels depending on how the participants look at collaboration. The scale goes from neglecting the opinions of individual stakeholders, to carrying out negotiations on equal terms prior to decision-making. The aim of the highest level on the scale is to reach common solutions. The traditional way of collaboration between the state and local stakeholders has often meant that the local level has only been allowed to make comments on positions already held.

Speaking of local participation and actually carrying through with it so that all stakeholders are equal in the process can be two totally different things depending on your starting-point. In the Laponia Process cooperation has been emphasized, a way of working where everyone has a voice and is able to influence future decisions.

In the Government's letter "A Comprehensive Nature Conservation Policy" (2001/02:173) which has been processed by the Parliament, the importance of local participation in nature conservation work and the need for new forms of management are emphasized. The process leading to the Management Plan and a new management organization is an example of a practical implementation of this new orientation for nature conservation.

The new nature conservation policy emphasizes among other things:

- strengthened dialogue with the citizens,
- planning and implementation of conservation measures should be done in dialogue with those affected by it,
- during management and maintenance, the work procedures should be aimed to be characterized by openness, good dialogue and with participation of different stakeholders as well by providing good information early on in the process,
- innovative local management forms,
- points of contact between nature conservation and regional development, nature and culture tourism and cultural heritage protection,

- build-up of knowledge, sharing knowledge, education, popular education, information and the utilizing of traditional and local knowledge.

Increased local participation is about more than meeting general democratic aims. For the local population and land users, increased participation can be of importance for securing jobs and gaining control over some important issues of survival for the local community. It is reported more and more that increased local participation also can help to ensure the purposes of nature and culture conservation.

Local participation strengthens the stakeholders' commitment for long-term protection and sustainability. New perspectives on problems and better solutions can be developed when scientific, traditional and practical knowledge and experiences of authorities and local communities meet in respectful dialogue. For the Laponia Management, this is particularly noticeable because the World Heritage appointment clearly points out the importance of the perspective of the land users – the reindeer industry – alongside the perspective of conservation.

For Laponia, participation and joint responsibility means that the stakeholders are of equal importance.

1.11.2 Holistic Perspective

Seeing Laponia in a holistic way might seem impossible, since many different systems are becoming more and more specialized. According to the demands made and the natural criteria of a World Heritage, Laponia is basically an untouched area in which the geological phenomena testify to the development stages of the history of the world and where the on-going ecological processes form the ecosystem. In this respect and given the natural beauty of the area and its extensiveness, Laponia is paramount in Europe. With its location in the boreal region and its unique character combined, Laponia is given an outstanding worldwide value, which was also part of the basis in judging the criteria for the natural environment required for a World Heritage area.

Nominating Laponia to a World Heritage area is based, according to the cultural criteria, on the corresponding unique values of the Sámi culture and way of life, with reindeer herding which still affects and has affected the environment in a careful and deliberate way. In a holistic perspective of the area as a combined nature and cultural world heritage, it is necessary to consider and deal with both the aspects of the environment.

The Management Plan for Laponia is based on a holistic perspective. In this perspective the connection between people, the landscape, culture, nature, reindeer husbandry, hunting and fishing as well as the fact that Laponia is part of a greater economic and geographic totality is central.

The relation of people to the landscape

The landscape is a geographically limited area as perceived by people and which has characteristics which are the result of the impact from the interaction of natural and/or human factors.

To survive people have always had to adjust to their surroundings, and still do. For the Sámi the traditional choice of food, clothing, settlement areas and patterns of migration are examples of the adjustment necessary for survival. At the same time as people adjust to their surroundings, the surroundings are also impacted by human use. An obvious example of this is the use of the environment because of reindeer grazing and the long migrations of reindeer which shape the landscape that we consider to be an untouched mountain region, but which have actually affected the ecology and species there in a concrete way.

Photo: Carl-Johan Utsi

Throughout time, humans have left their traces on the land, given their use of it and their way of life. It is through this impact and interaction that the character of the landscape is shaped. The environment of Laponia still carries the traces from the use given to the land generations ago, for example milking areas and settlement areas, and is still being affected by its present use today. As well as the specific physical traces, the landscape also leaves mental traces which an area has on people. People identify an area or a place with their own thoughts, memories and associations.

In our traditional way of thinking, landscapes are often thought of as a surrounding where human activity is noticeable and is measurable and can be described. The opposite is also true, where one experiences the absence of human influence and the distinctiveness of phenomena in nature is noticeable as well. Landscapes are often associated with cultivation, like agricultural landscapes and cattle-raising landscapes. In the northernmost areas of Sweden, mostly in the areas not along the coast, the land was considered an unpopulated wilderness area before industrialization with the building of the railroads, hydroelectric projects, mining, etc. left its trace. The presence of the Sámi in the area did not significantly affect the view of the mountain area being an unpopulated wilderness area. The way of seeing Laponia as a relatively untouched landscape was also an important basis in designating national parks and nature reserves. It is also probably the dominating way the majority in Sweden would characterize this area. At the same time there is a growing insight that people and the environment are intimately related to each other by means of a common adaptation. This view should be encouraged in the on-going management of Laponia as a combined natural and cultural World Heritage and the insight that reindeer husbandry is an important starting place of the value this landscape has.

Laponia is a part of a larger reality

Laponia is an area 9 400 km² large. It is mainly protected as national parks and nature reserves. The borders of Laponia, from a Sámi perspective, are artificial. For members of the

Sámi village organizations who use Laponia, the World Heritage area is only part of the area they live in and of which they are dependent.

Without the areas of land the Sámi village organizations use and which are outside Laponia, there would not be a functioning reindeer husbandry enterprise within Laponia, and thus, there would not be a World Heritage area. Thus for the Sámi, Laponia is only part of a large economic and geographic environmental whole, which makes survival and development possible. Even for other natural values, like the large moose Ráhpavuobme, they need extensive areas to live in.

In other ways as well, Laponia is part of a larger totality. Laponia is only part of the municipalities of Gällivare and Jokkmokk, and the development in other areas of the municipalities are connected to the future of the World Heritage area. Thus, it is impossible to separate Laponia from the surrounding society—neither on a local, regional, national nor on a global level.

1.11.3 From a Perspective of Sustainability

Laponia is to remain sustainable. The management of Laponia has always been based on using our resources in a way which is sustainable in the long-run and it will continue on that basis. This ensures that the needs of this generation are met without endangering the needs of the next generation.

For Laponia to remain sustainable in the long-run there are especially three conditions which have to be evaluated collectively and in a balanced way, namely:

- Environmental sustainability which has to do with long term conservation of water and land as well as the capacity for production of the ecosystems while at the same time diminishing the impact on nature, the cultural environment and people's health,
- Social sustainability which has to do with the creation of a long term society which is stable and dynamic and where people's basic needs are met,
- Economic sustainability which has to do with the long term wise use of the human and material resources.

Thinking sustainably, all endeavors of improvement are central, transcending the different interests. This means that a collective assessment and evaluation of a measure or activity will always be carried out to determine what the most sustainable solution is. For Laponia this can mean concretely that the management organization has to evaluate choices of material and transportation in a new way. For example, if a bridge has to be improved, this might involve moving the bridge and having the trail re-done so that it would meet the needs of both hiking tourists and reindeer husbandry.

A sustainable perspective presupposes a conscious choice.

1.11.4 From a Perspective of Development

Laponia is a combined nature and cultural World Heritage based on both conserving it while at the same time developing it. Contrary to most World Heritage areas, Laponia has a specific industry – reindeer husbandry. This form of livelihood was basic for the nomination process. It is therefore important that this industry be given the chance of developing sustainably in this region. This development will not occur in a vacuum, but rather options have to be seen in a context where reindeer husbandry, like other forms of livelihood, successively develop and transform.

As well as reindeer herding, other forms of livelihood which relate to the World Heritage are carried out. For example, catering to the needs of visitors. Others see the possibility of processing local produce such as wild berries, meat and fish as having a potential in the future.

It is important that the Sámi population have the possibility to continue reindeer herding

and develop it. The same is true for the rest of the inhabitants who live and work in the World Heritage area and its surroundings, that they can keep and develop sustainable livelihoods—both traditional ones as well as new possibilities—to be able to live here and sustain themselves. Such options contribute to increase the willingness to protect and conserve the area for future generations, even for people who do not have a direct or cultural tie to Laponia.

1.11.5 The New Laponia Management – Laponiatjuottjudus

To administer the Laponian World Heritage area according to this Management Plan, a new Laponia Management – Laponiatjuottjudus – was created. It is a coalition of the parties who have most at stake in the area: the affected Sámi village organizations, the municipalities of Jokkmokk and Gällivare as well as the Swedish state, represented by the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency. A majority of the steering committee of Laponiatjuottjudus is to be Sámi and it is to have an operative organization for practical work. The new entity is to be located in Jokkmokk, but will use new technology and new ways of working throughout all of Laponia. To ensure that many different interests meet and influence the work of management, while at the same time creating the right conditions for an administration which can continually adjust to changing realities (an adaptable management), two basic ways of working are needed. It is to be searvelatjna – a place for joint learning as well as a learning process – and rádedibme – consultative. Consensus – joint decision-making – is a central understanding. The overall management goal is that:

The Laponian World Heritage is managed in such a way that its values are preserved for the future. The World Heritage is an asset for development. Management of the World Heritage is a joint effort, and is carried out respecting the partners' differing conditions and in accordance with the Management Plan. The work of management is a learning process (searvelatjna) which continually develops and is renewed, with core values at its base. Laponiatjuottjudus is a model for managing valuable natural and cultural sites.

1.12 Evaluation of the Management Plan and Management Organization

Laponiatjuottjudus is to grow successively, beginning in 2011. The management organization is shaped in a way which ensures that the management is a cooperative management with a high degree of local influence. It is organized so that there are different kinds of council functions which contribute to this.

Since the Management Plan along with the maintenance plans and regulations are organized in a new way as well as the new Management Plan being a novel model for managing protected areas, it is important that an evaluation be carried out for both the Management Plan, the regulations and the management organization.

This evaluation is to be undertaken during the first five-year period. The evaluation is to be carried out by external reviewers. The various organizations which run the management organization are to jointly decide how this evaluation is to be carried out and be presented to the Government. The evaluation can then be used, for example, to develop the management of protected areas in other regions.

1.13 Validity Period of the Management Plan

This Management Plan is to be valid for ten years from when it is determined by the stakeholders. The Management Plan and the above mentioned provisions are to be evaluated and revised within a five year period. The organization is responsible to break down the Management Plan into concrete, target oriented work plans for a period of 1-3 years depending on what area is referred to. The work plans are worked out by the operative parts of Laponiatjuottjudus following decisions made by the committee.

Allávárre. Photo: Carl-Johan Utsi

2. People and Landscape – Nature and Usage

Laponia can be described in many ways. The Management Plan uses a comprehensive approach on the World Heritage and the description of Laponia. That is also why this chapter has its starting-points with people, landscape, nature and usage.

The most important overall impression of Laponia is the diversity – the diversity of biotopes, climatic environments and physical geographical and geological formations, the diversity of plant communities, plant species, animal species and human attitudes to this environment. For long periods of time, people have adapted to this varied landscape through a diverse use of its resources, a usage that also has affected and helped shape the landscape.

Since the melting of the Fennoscandian ice sheet, people have used the area now called Laponia. Hunters of wild reindeer, reindeer herders, fishing Sámi, settlers, forest laborers, hydroelectric power plant workers, tourist entrepreneurs – they have all used the land based on their specific knowledge and needs. Usage is often connected to the great geological and ecological variation of the landscape, even if the people who lived and worked in the area used other words than the scientific ones.

For the wild reindeer hunter and the reindeer herder, life was and is governed by the migration of the reindeer from the summer lands of rich alpine bedrock to the poorer lichen lands of primary rock during winter. In this nomadic way of life it has been essential to be able to find food along migration routes throughout the whole year, through hunting, trapping, fishing, gathering or by storing. Through all of this, a great awareness of the environment has emerged, knowledge that to a great extent has been passed down to present day reindeer herders. In a landscape which is covered by snow for more than half of the year, familiarity with snow and ice has been traditional knowledge for survival.

For the fishing Sámi and for settlers, knowledge of fish species and their life has been essential, as well as the dependence of their domestic cattle on land for grazing and locations good for haying. For all people who have used the area, knowledge about how to travel and transport things on bare ground, on water and on snow has been crucial.

The Laponian World Heritage and the surrounding area is a landscape that reflects many

types of usage of nature and its resources throughout history. It is a landscape where people have lived in close relationship to nature, as in the Sámi culture, or where people have wanted to exploit as much as possible of what nature has to offer, as during the exploitation of rivers during the hydroelectric era.

Laponia is at the same time a landscape with high mountains, forests, mires, mountain moors, waters, animal and plant life that has been preserved in a pristine condition. The naturalness and great geological and biological values of the area have been the basis for the establishments of national parks and nature reserves as well as for the World Heritage appointment.

A vast area like Laponia can be viewed from many different perspectives, some of which will be described below. The image of the World Heritage area is different depending on if it is viewed through the eyes of the reindeer herder, the geologist, the botanist, the mountain hiker or the fisherman. The following chapter gives different perspectives of the Laponian World Heritage, in order to give a holistic view.

2.1 Characteristics of National Parks, Nature Reserves and other Areas

2.1.1 Sarek National Park

The national park was founded in 1909 in order to preserve a distinctly high alpine landscape in its natural condition.

Landscape

Sarek is a distinctly high alpine landscape with high, pointed peaks and deep valleys. The national park contains around 200 massifs, of which around half rise 1 800 meters above sea level, as well as six of Sweden's thirteen mountains higher than 2 000 meters. The difference in altitude between peaks and valleys is extreme, in some valleys 1 300 meters. Dark and hard amphibolite dominate the bedrock, which explains the mountains' height and sharp ridges giving contrast to the softer shapes of Padjelanta's/Badjelánnda's limestone bedrock.

The largest valley of the national park is Ráhpavuobme (the Rapa Valley). Through the valley the river Ráhpaädno drains around 30 of the national park's nearly 100 glaciers, and transports enormous amounts of slurry to the lake Lájtávrre in the outlet of the valley. The process has created the Ráhpaäno suorgudahka (the Lájtávrre delta), a growing myriad of mire strings and solid ground, channels and lagoons. The delta and the surrounding high mountain walls are a very essential part of the nature of the alpine areas, but which at the present time are not a part of the national park.

Nature type	Surface area
Boulder terrain and bare rock	75 598 ha
Mountain moor	69 209 ha
Mountain grassland	15 566 ha
Mire	4 237 ha
Mountain birch forest	10 893 ha
Coniferous forest	2 734 ha
Glaciers and permanent snow fields	15 995 ha
Water	4 426 ha
Total	**198 658 ha**

Vegetation

Bare mountain and block terrain with scarce vegetation cover a large part of Sarek. On the high altitudes there are lichens and mosses, dwarf willow and occasional grasses and herbs, like glacier crowfoot *(Ranunculus glacialis)*. Further down the slopes the vegetation cover thickens into moors of grass and brushwood, the latter with dwarf birch, willow, juniper and bilberry. Mountain birch forests spread out in the deepest valleys, especially in Ráhpavuobme, where a favorable local climate creates a greenhouse during the long daylight hours of summer. There is a great contrast between the snow spotted, windswept mountain moors and the lush vegetation of the valleys. In clearings of mountain birch forests in moist areas there are tall flowery meadows with globe flowers *(Trollius europaeus)*, northern wolfsbane (*Aconitum lycoctonum ssp. Septentrionale)*, woodland geranium *(Geranium sylvaticum)* and red campion *(Silene dioica)*.

Sarek is located almost entirely above the coniferous forest line. Only the most southern part has pine forests, which here forms a thin primeval forest.

Wildlife

A large part of the animal life is concentrated in the valleys, which is a lush life-blood in an otherwise barren landscape. The Ráhpa Valley is known for its large moose which do not wander out of the park until after hunting season is over in late fall. The moose in Sarek are the only ones in Sweden, and probably in the whole of Europe that, in effect, are safeguarded from hunting. Other larger mammals in Sarek include bear, wolverine and lynx.

Also the bird life is richest in the birch forests of the valleys and close to watercourses. Willow Warbler, Brambling, Yellow Wagtail, Bluethroat and European Pied Flycatcher are common. In small lakes and lagoons there are plenty of Eurasian Teal, Common Scoter, Wigeon, Tufted Duck and other seafowl, and on the mountain moors Meadow Pipit, Lapland Bunting, Golden Plover, Eurasian Dotterel and Rock Ptarmigan are common. Birds of prey like Golden Eagle, Rough-legged Buzzard, Merlin and Gyr Falcon are part of the bird fauna of Sarek.

Usage

Sarek is the summer grazing lands of the Sámi village organizations Jåhkågaska tjiellde, Tuorpon and Sirges.

Sarek is probably the most demanding mountain area for hikers. There are no marked trails or tourist cabins, except on a stretch of the trail Kungsleden in the most south-eastern part – and only a few bridges ease the crossing of waters. The majority of visitors here hike along a relatively limited area in the traversing valleys.

For a very long time, research in different scientific disciplines has gone on in Sarek.

2.1.2 Padjelanta/Badjelánnda National Park

The national park was established in 1962 with the purpose of preserving an alpine landscape rich in lakes and widespread moors in its pristine condition.

Landscape

The Sámi name Badjelánnda, "highland", is a good description of this plateau at an altitude of 700 meters. The plain is made up of vast moors and flat valley floors between softly rolling mountains. Two big lakes, Virihávre and Vásstenjávrre, are located in the central part of the park and have a special appearance through the open expanses on the treeless mountain plain. In the southern part of the park there are several high massifs. The highest one is Jiegŋáffo, rising more than 1 800 meters above sea level, and on a clear day giving you a view all the way to Lofoten on the Atlantic coast of Norway.

The bedrock of Padjelanta/Badjelánnda is to a great extent made up of rocks which crumble easily and are rich in limestone, which can be seen by its rich alpine flora. A special com-

ponent is the ultrabasic serpentinite rock, known for its content of heavy metals. Elements of interest also include the flat terraces of Gisuris in the north-east, once deltas of a meltwater lake created by the melting inland ice sheet 7 000 years ago.

Nature type	Surface area
Boulder terrain and bare rock	19 799 ha
Mountain moor	121 913 ha
Mountain grassland	19 872 ha
Mire	3 876 ha
Mountain birch forest	745 ha
Glaciers and permanent snow fields	2 662 ha
Water	31 683 ha
Other	3 ha
Total	**200 233 ha**

Vegetation

Padjelanta/Badjelánnda is located almost completely above the forest line. Owing to the content of limestone in the ground, meadows and moors of grass cover a large part of the plateau and contribute to the open character of the area. Only smaller areas in the north-east are covered with mountain birch forests. The park is known as one of the most blooming mountain areas in Sweden, with more than 400 species of vascular plants. The meadows and mountain slopes south of Virihávree harbor species like mountain aven *(Dryas octopetala)*, alpine arnica *(Arnica angustifolia)*, Arctic wood-rush *(Luzula arctica)*, Lapland rosebay *(Rhodendron lapponicum)*, redrattle *(Pedicularis flammea)*, Arctic bellflower *(Campanula uniflora)* and northern catchfly *(Silene wahlbergella)*. At the precipice of Aralåbddå, by the north shore of Vásstenjávrres and its limestone cliffs, tall-herb meadows, willow shrubbery and moors, you will find plant rarities like strict primrose *(Primula stricta)*, dark-red helleborine *(Epipactis atrorubens)* and whorled Solomon's-seal *(Polygonatum verticillatum)*. Other rarities are Robbins' cinquefoil *(Potentilla robbinsiana)*, creeping sandwort *(Arenaria humifusa)* and golden dwarfgentian *(Gentianella aurea)*, which in Sweden are only found here.

Wildlife

The bird fauna of Padjelanta/Badjelánnda display most of the species of the alpine moors and mountain lakes. Characteristic species of the mountain moors are Golden Plover, Meadow Pipit, Northern Wheatear but you can also see Rock Ptarmigan, Eurasian Dotterel and Whimbrel. In areas with willow and small lakes there are often plenty of dabbling ducks, for example Long-tailed Duck, Eurasian Teal and Common Scoter, as well as waders like Red-necked Phalarope, Ruff, Temminck's Stint and Common Redshank. Common small birds in willow and birch regions are Common Redpoll, Willow Warbler, Lapland Bunting, Bluethroat and Redwing. Rough-legged Buzzard and Long-tailed Jaeger are quite common during lemming-years, when even the rare Snowy Owl might nest. Other interesting birds are Lesser White-fronted Goose, Gyr Falcon, Golden Eagle, White-tailed Eagle and Great Snipe. Mammals are few both in number of species and individuals. Moose wander in during summer, and wolverine and Arctic fox exist here.

Usage

Padjelanta/Badjelánndas moorlands and meadows are important grazing lands for the reindeer of the three Sámi village organizations Tuorpon, Jåhkågaska tjiellde and Sirges who all have their summer settlements in the national park.

Due to the relatively soft hilly terrain, the national park is fairly easy to hike in. A hiking trail crosses the park with starting-points in Rijtjem in the north and Huhttán/Kvikkjokk in the south. Along the trail there are cabins and in Stáloluokta there is a larger mountain lodge.

2.1.3 Stora Sjöfallet/Stuor Muorkke nationalpark

The national park was established in 1909. The original intention was to protect the waterfall and the lakes feeding it. In 1919 the Swedish Parliament decided to exclude the whole lake system above the waterfall from the national park. Since then there has been extensive hydropower exploitation. The purpose of the current park is to preserve a high Nordic alpine landscape in its natural condition.

Landscape

Stora Sjöfallet/Stuor Muorkke National Park is mainly made up of two parts, one on the north side of the reservoir Áhkájávrre, and one on south side. The northern part forms a long ridge with several crests between Áhkájávrre and Dievssavággi. The highest point of Gállaktjåhkkå reaches an altitude of more than 1 800 meters. Dievssavággi, constituting the northern border of the national park, is a deep and narrow valley – one of the most characteristic valleys of the Swedish mountains.

In the southern part the mountain terrain is more varied. The steep peaks and glaciers of the mountain Áhkká reach altitudes of more than 2 000 meters. The ascent of the massif becomes particularly apparent since it is separated from other mountains. To the east of Áhkká, the plateau of Gássaláhko with its many lakes spreads out at an altitude of 900 meters, a barren arctic landscape almost impassable due to the extreme cumulation of boulders and block terrain. South-east of Gássaláhko the terrain dips into the straight, more than ten kilometer long valley of Guhkesvágge, which constitutes the border to Sarek.

One of the mountain region's most interesting Ice Age deltas is located west of Áhkká. The delta is made up of huge sediments of sand and gravel in a series of even terraces, ending with a 50 meter high front. The higher terraces are perforated by deep glacial kettle holes created by the melting of embedded ice blocks.

Nature type	Surface area
Boulder terrain and bare rock	28 225 ha
Mountain moor	57 152 ha
Mountain grassland	6 465 ha
Mire	1 280 ha
Mountain birch forest	14 550 ha
Coniferous forest	3 295 ha
Glaciers and permanent snow fields	5 564 ha
Water	11 430 ha
Other	95 ha
Total	**128 056 ha**

Vegetation

The bedrock of the national park has little limestone and the vegetation is relatively poor of species. Block terrain, rocky ground and open mountain moorland cover large areas. An interesting feature in the vegetation is the beautiful primeval pine forest along the road leading into Stora Sjöfallet/Stuor Muorkke and in the valley north of waterfall itself. It is a distinct coniferous forest outpost to the west, with large, old trees and silver colored dead pines

View from Rijddelbákte. Photo: Carl-Johan Utsi

that give the mountains a striking framework. The pine forest covers about 3 000 hectares, and the oldest pines are more than 500 years old.

In the lower parts of the park there are considerable areas of mountain birch forests, mostly of moorland type, but on the southern slopes toward Áhkájávrre and in Dievssavággi the birch forests are lush with herbs.

Wildlife

Among the larger mammals you will find moose, wolverine, bear and lynx. The seafowl fauna is relatively poor while smaller birds have a normal composition of species for mountain areas of alpine character. Belonging to the characteristic species are Snow Bunting, Lapland Bunting, Wheatear, Golden Plover and Rock Ptarmigan.

Usage

The area is part of the summer grazing lands of the Sámi village organizations Sirges and Unna tjerusj.

The heavily regulated river Julevädno with power plants, dams and reservoirs runs through the national park. Despite this, and the fact that the once famous waterfall nowadays is gone, the vast national park – the third largest in Sweden – contains an interesting and relatively easy accessible alpine nature. There is a car road along the shore of the Lule River/Julevädno all the way to the national park and along the north shore of Áhkájávrre. The trail Kungsleden runs northward through the northern part of the park.

2.1.4 Muddus/Muttos National Park

The national park was established in 1942 to protect a landscape of forests and mires in its natural condition.

Landscape

Muddus/Muttos consists of vast expanses of forests and mires with solitary, flat conically shaped mountains. Compared with the mires and forests of Sjávnja to the west, the mountains are lower and more sparse and only a few mountain tops in the north-west rise above the tree line. Instead, Muddus/Muttos is dominated by a connective central mire area, which in size is almost as large as the central mire complex of Sjávnja.

The terrain of the national park slopes downhill towards Stuor Julevädno (Stora luleälv), and ultimately drops 200 meter down into the river valley. This slope holds the only really dramatic terrain of the park through a series of deep canyons. Through one of these, Muttosjåhkå, almost the whole national park is drained. The watercourse drops 42 meters at Muddusagahtjaldak (Muttosfallet) before continuing on through a deep canyon down to the Stuor Julevädno. The terrain around the canyon is wild and rugged, with vertical valley walls rising up to 100 meters. Similar valleys without significant water flow exist on the slope to the east.

Nature type	Surface area
Boulder terrain and bare rock	391 ha
Mountain moor	104 ha
Mire	19 926 ha
Mountain birch forest	436 ha
Coniferous forest	28 411 ha
Water	1 895 ha
Other	3 ha
Total	**51 166 ha**

Vegetation

The mire complexes of Muddus/Muttos are relatively shallow and contain lots of solid ground islets. More than half of the mire area consists of string flark fens and string mixed mires. They make up a grid of alternately solid and loose ground which is hard to pass through. The big central mire area is rich in lakes and streams. Common species grow here, like bottle sedge *(Carex rostrata)*, slender sedge *(Carex lasiocarpa)*, cloudberry *(Rubus chamaemorus)* and bog bilberry *(Vaccinium uliginosum)*. Less common species include whortle-leaved willow *(Salix myrsinites)*, velvetbells *(Bartsia alpina)*, alpine meadow-rue *(Thalictrum alpinum)* and marsh saxifrage *(Saxifraga hirculus)*. On the rock walls of the Gähppogårssåcanyon there is an interesting flora with alpine catchfly *(Lychnis alpina)*, alpine catsfoot *(Antennaria alpina)* and Arctic white campion *(Silene furcata angustiflora)*.

The pristine Swedish boreal landscape has been fundamentally altered through forestry and roads, but can still be experienced in Muddus/Muttos National Park. One of the reasons that logging did not reach the area was that the central watercourse Muttosädno was not suitable for timber-floating. The magnificent primeval forests with large trees, dry trees and charred stumps after numerous forest fires strongly contribute to the wilderness character of the national park. Spruce covers the central and western parts of the area, while pine dominates the southern and eastern parts. Mixed forests of spruce, pine and birch also appear in many places within the park. The oldest living pine has been dated to 720 years.

Wildlife

Of the large predators, Muddus/Muttos carries a stable population of bear as well as occasional specimens of lynx and wolverine. Moose and marten are quite common and even otter can be found along the many watercourses. The bird fauna is species-rich, especially when it comes to swimming-birds and waders. The Whooper Swan has long since been somewhat of a trademark for the park, and nests in the central mire area. Common Goldeneye is typical for the lakes, Wood Sandpiper and Crane for the mires. Less common species are Smew, Bean Goose, Broad-Billed Sandpiper and Jack Snipe. Among the birds of prey there are Osprey and Hen Harrier, but also Golden Eagle and Peregrine Falcon appear regularly. Boreal Owl and Ural Owl live in the coniferous forests. Western Capercaillie and Hazel Grouse are among the common woodland birds.

Usage

Muddus/Muttos is winter grazing land for the Sámi village organizations Unna tjerusj and Sirges as well as summer grazing land for the forest Sámi village organization Gällivare skogssameby.

The national park is well prepared for hikers. In the southern part there is a system of trails and cabins accessible from the south-west and south-east. Along the European route E45 there is also the trail Rallarstigen ("old Navvy Trail") between Bårjås/Porjus and Jiellevárre/Gällivare, which is restored and well-marked. The bird observation tower at Muttosluoppal gives you a good view of the vast mires.

2.1.5 Sjávnja Nature Reserve

The nature reserve was established in 1986. The purpose was to protect an area of essential importance for understanding nature in the upper woodlands, mires and mountains. In this way, the particularly rich animal life, the unique mire complexes and the physical geographical elements are preserved.

Landscape

Sjávnja is the second largest nature reserve in Sweden, and contains the largest complex of mires in Europe. In the eastern parts, mires cover the terrain and extend, along with lakes and solid ground isles, over more than 25 000 hectares. The central part of Sjávnja has extensive mires in the lower parts of the terrain as well, although the plains are broken off by several forest covered mountains and low alpine mountains.

In the western part of the nature reserve, the landscape rises into an alpine terrain where the highest peaks rise 1 700 meters above sea level. The transition from mire to alpine terrain is abrupt in some places, where 400 meters high mountain slopes drop down into the mires. The difference between the primary bedrock of the sub-alpine terrain and the alpine bedrock is very well visualized through this transition where the landscape is particularly dramatic and grandiose.

Despite the vast mires, Sjávnja is not a uniform wetland area. It changes along its 120 kilometer long east-western stretch and through the transition from a landscape of solitary hills of primary rock to an alpine terrain. Within this intact natural landscape there are natural qualities of a unique kind bound to wetlands, forests, animal and plant life. There are also interesting geological terrain shapes like glaciofluvial deposits and tundra polygons.

Nature type	Surface area
Boulder terrain and bare rock	17 916 ha
Mountain moor	80 545 ha
Mountain grassland	5 869 ha
Mire	46 739 ha
Mountain birch forest	52 425 ha
Coniferous forest	55 173 ha
Glaciers and permanent snow fields	2 078 ha
Water	20 646 ha
Other	67 ha
Total	**281 459 ha**

Vegetation

Sjávnjaáhpe, the largest mire of Sjávnja, is characterized by the enormous areas of treeless string mixed mires. Dwarf birch and marsh Labrador tea *(Rhododendron tomentosum)* grow in thick, knee-high layers on strings of solid ground. Cloudberry, crowberry and bilberry grow abundantly. Closer to the mountains there are palsa bogs, a typical phenomenon in areas with a harsh Arctic climate. Palsas are humps of peat which have been pressed up, with a permanent core of ice. They are created on mires on sites with little snow, where only the surface of the ground frost melts during summer.

Sjávnja is also the home of vast areas of primeval forests. The total area of coniferous forests extends to more than 50 000 hectares. Mixed forests with spruce, pine and scattered birch dominate, but pure stands of pine and spruce are common. The main part of the forests consists of older generations, which in the case of pine forests means that individual trees range from an age of 300 - 400 years, sometimes as old as 500 years. Through the high occurrence of large, old trees, dry trees and dead wood, the forest stands often have a strong primeval character. Another important forest type is the mountain birch forest, which cover an area about the same size as the coniferous forests, mainly in the western parts.

Wildlife

Few, if any, areas in the mountain and sub-alpine region harbor as many different species of vertebrates as Sjávnja. There are more than 150 bird species, of which 100 nest in the area. Around fifty of these are directly tied to the wetlands. Among the nesting birds you can find White-tailed Eagle, Golden Eagle, Gyr Falcon, Hen Harrier, Whooper Swan, Crane, Bean Goose as well as dabbling ducks, cormorants and loons. Many waders nest here, and it is typical that species like Bar-tailed Godwit, Red-necked Phalarope and Dunlin are common on high-altitude mires, while mires further down in the coniferous forests are home for species like Common Greenshank, Spotted Redshank and Green Sandpiper. Moose is common in Sjávnja and you will also find bear, lynx, wolverine, beaver and otter.

Usage

Sjávnja is an important part of the reindeer grazing lands of the Sámi village organizations Unna tjerusj and Baste čearru. There are several older pioneer settlements in the eastern part, which are now used as holiday homes.

The size of the intact landscape, five times that of Muddus/Muttos, grants a special character of a pristine and virgin land. The area offers good conditions for enjoying nature, but the demanding terrain and great distances make the area relatively infrequently visited. The trail Kungsleden passes through the western part, and in the east there is a bicycle trail. There are also some snowmobile trails.

2.1.6 Stubbá Nature Reserve

The nature reserve was established in 1988 and later expanded to its present size in 1996. The purpose of the reserve is to preserve the untouched character of the landscape in order to let the primeval forest and the ecosystems of the different alpine and sub-alpine biotopes develop naturally. The aim is also to – within the frames of this objective – provide opportunities for experiencing nature, outdoor life and scientific research in untouched nature.

Landscape

The Stubbá Nature Reserve is located as a connecting link between Muddus/Muttos National Park and Sjávnja Nature Reserve. The landscape is similar to that of Muddus/Muttos and consists mainly of flat areas of mires and lakes. A few mountains rise above the plain, a couple of them rising above the treeline with peaks of mountain moor. In the most southern part there is a section of hills, becoming more of a mountainous area as it crosses into Muddus/Muttos

Nature type	Surface area
Boulder terrain and bare rock	87 ha
Mountain moor	171 ha
Mire	14 186 ha
Mountain birch forest	518 ha
Coniferous forest	17 349 ha
Water	1 069 ha
Other	28 ha
Total	**33 409 ha**

Vegetation

The mires of Stubbá are made up of the same kind of string mixed mires as Muddus/Muttos and Sjávnja. Especially the western parts have large, connective mire complexes in mosaics of lakes, ponds and smaller isles of solid ground. Flark fens with large flarks are common, as is wetland forests along watercourses. On the mountain slopes there are belts of mountain birch forests..

Wildlife

Bird life in Stubbá is typical for wetlands and intact forests in Lapland. The Whooper Swan, dabbling ducks and waders nest in the mire complexes and in the coniferous forests there are typical species like Western Capercaillie, Boreal Owl, Grey-headed Chickadee and Eurasian Three-toed Woodpecker. Moose, bear, marten and otter are some of the mammal species of the area.

Usage

Stubbá is the reindeer grazing land for the Sámi village organization Unna tjerusj.

The Inland Railway Line, Inlandsbanan, and the European route E45 between Jåhkåmåhkke/Jokkmokk and Jiellevárre/Gällivare cross through the nature reserve, making it easy to visit. A stretch of Rallarstigen runs inside the north-eastern part of the nature reserve.

2.1.7 Other areas in Laponia

Ráhpaäno suorgudahka (the Lájtávrre delta)

Ráhpavuobme (the RapaValley) is the largest valley in Sarek. The valley begins in the middle of the park and collects streaming water from a large number of side valleys. The river Ráhpaädno flows in the middle of Ráhpavuobme, bringing along large amounts of slurry from around thirty glaciers. The slurry is mostly deposited in Ráhpaäno suorgudahka in the lake Lájtávrre. In the river delta, which is the fastest growing delta in Sweden, the water branches off in a complex of channels and lagoons. The delta forms the mouth of Ráhpavuobme and is surrounded by 600 meter high cliffs. The scenery is extraordinary and probably the most well-known – and most portrayed – alpine environment in Sweden. The area also has a rich bird life, above all when it comes to dabbling ducks and waders. The area is inscribed in the Ramsar Convention's List of Wetlands of International Importance. The valley is also known for its population of large moose which graze in the delta and as an important place for bear, lynx and wolverine.

Ráhpavuobme is located within Sarek-Mávas intact mountain area.

Nature type	Surface area
Boulder terrain and bare rock	104 ha
Mountain moor	56 ha
Mountain grassland	243 ha
Mire	368 ha
Mountain birch forest	555 ha
Coniferous forest	7 ha
Water	585 ha
Total	**1 919 ha**

Tjuoldavuobme

Tjuoldavuobme (Tjuoltadalen) stretches from the north-west to the south-east and connects to the south-west border of Sarek. In the west it connects to the border of Padjelanta/Badjelánnda National Park within a part of the area called Buodjes. Tjuoldavuobme is known for its untouched nature, mainly visible through the forests of strong primeval character. There are spectacular primeval forests of pine and spruce in the lower part of the valley, while the upper part is covered by forests of mountain birch. Especially the north-western slopes have lush meadow birch forests. Similar vegetation is found in Njoatsosvágge, in the north of and parallel to Tjuoldavuobme. Together, these lush valleys constitute one of the most important wildlife biotopes areas in Sarek. Among other wildlife you will find moose, bear, wolverine and lynx.

A part of Tjuoldavuobme is included in the Huhttán-Gábles/Kvikkjokk-Kablas Nature Reserve. The whole valley is located within Sarek-Mávas intact mountain area.

Nature type	Surface area
Boulder terrain and bare rock	3 239 ha
Mountain moor	7 955 ha
Mountain meadow	1 895 ha
Mire	624 ha
Moutain birch forest	3 848 ha
Coniferous forest	1 479 ha
Glaciers and permanent snow fields	468 ha
Water	323 ha
Total	**19 830 ha**

Sulidälbmá

Sulidälbmá is an area with high alpine mountains and two of the largest glaciers of Sweden. The farthest east of these covers about 1 000 hectares. The terrain is formed by glacial activity, which is shown by distinct end moraines and other formations. The Sállajiegŋa glacier has the largest glacial river mouth of the country, from which the meltwater stream Lájrrojåhkå flows. The stream flows into the lake Bieskehávrre creating a delta, a so-called sandur of great scientific interest. Within the area there are also high mountains with peaks reaching an altitude of 1 870 meters.

The vegetation is mostly made up by brushwood moors, changing into meadows and grasslands on higher altitudes. Around Bieskehávrre there are tall herb meadows rich in species, as is the botanically interesting delta. Wildlife is concentrated to the delta with its seafowl fauna.

Sulidälbmá is located within Sarek-Mávas intact mountain area.

Nature type	Surface area
Boulder terrain and bare rock	4 977 ha
Mountain moor	9 773 ha
Mountain meadow	2 186 ha
Mire	189 ha
Glaciers and permanent snow fields	3 924 ha
Water	819 ha
Total	**21 868 ha**

2.2 The Living Sámi Culture and Reindeer Industry

2.2.1 The Sámi Cultural Landscape

Sometime during the first millennium A.D. people started to keep domestic reindeer. Reindeer husbandry gradually became the main livelihood of the Sámi. The reindeer were used both as pack and draft animals, as well as for milk, meat and other things from the reindeer that were made use of. The habits of people became closely interlinked with the grazing needs of the reindeer. The Sámi lived in Lavvu-tents that could easily be taken down and erected, and they moved according to the reindeer's natural migration routes. The herds were small and managed by families. The herds were guarded every day, and people moved often to avoid overgrazing and infections among the animals. When autumn came, the rajd (reindeer caravan) went east. During winter they would stay in the coniferous forest near the coast, were there were plenty of lichens growing in the trees and on the ground. The traces left on the land were often hard to discover.

At the beginning of the 20th century, reindeer-herding Sámi started to keep larger herds, managed jointly by several families. Transportation with reindeer rajds between summer and winter settlements ceased at the end of the 1950s, and reindeer herders started to travel to their summer settlements by other means. This is also the time when people stopped milking reindeer. It was common to build peat huts, and eventually reindeer herder cabins began to be built in the settlements.

Today the Sámi community is going through an extensive structural transformation, and patterns of life are rapidly changing. This means for example that many places that can be seen as especially important parts of the cultural heritage are being forgotten. The cultural landscape of the Sámi often includes values and memories that do not solely consist of man-made remains.

2.2.2 Life in the World Heritage

Today reindeer husbandry is the dominating industry of Laponia, using land of great cultural, social and economic importance for the members of the Sámi village organizations. The land represents the home, history book, workplace, pantry and bank account all at once. The traditional way of living was in a "mixed economy" with reindeer husbandry, hunting and fishing as the primary industry in addition to some side-line enterprises. Today this has been complemented so that there is often someone in the family who makes their livelihood outside of the primary industry. Many reindeer herders also look for other options, get further education and combine a competence in e.g. economy or computer knowledge with reindeer husbandry. The reindeer industry is and will continue to be the backbone of activities within the villages.

2.2.3 Land-use by the Sámi Village Organizations

Nine Sámi village organizations are active within Laponia to different extents. They are the mountain Sámi village organizations Luokta-Mávas, Tuorpon, Jåhkågaska tjiellde, Sirges, Unna tjerusj and Baste čearru and the forest Sámi village organizations Udtja, Slakka and Gällivare skogssameby. The mountain Sámi village organizations, with the exception of Luokta Mávas, have a significant part of their land and operations within Laponia. The south-west corner of the World Heritage, parts of Sulidälbmá, are included in the grazing lands of Luokta-Mávas but not used to a great extent due to terrain conditions. Gällivare skogssameby have parts of their reindeer grazing lands in Muddus/Muttos in the eastern part of Laponia, while the forest Sámi village organizations Udjta and Slakka only have certain rights in Laponia. These rights concern snowmobiling and permission to land in connection to fishing and reindeer husbandry work, which normally takes place outside of Laponia.

The Sámi village is organizationally to be seen as a form of economic co-operation with individual reindeer business owners managing reindeer husbandry within the grazing lands of the Sámi village organization. It is regulated in detail through the Reindeer Husbandry Act from 1971. However, the Sámi village also offers a social affinity and constitutes a geographic area. The mountain Sámi village's east-to-west area can range from fifty to two-hundred kilometers from summer area to winter area, while the forest Sámi villages are somewhat more centered.

The Sámi village organizations vary in size and Sirges is the largest. In 2008 the villages had more than 360 reindeer enterprises that used land and water in Laponia to a greater or lesser extent. In 2009 the maximum number of reindeer allowed for these mountain Sámi villages was 54 000 reindeer, and for the forest villages 10 800. The number of reindeer varies cyclically over decades, mostly depending on factors linked to climate, grazing and predators.

Sámi village organization	No. of members (approx.)	Max. reindeer allowed	No. of companies
Sirges (Si)	385	15 500	96
Tuorpon (Tu)	105	9 000	59
Unna tjerusj (UT)	130	8 000	50
Jåhkågasska tjiellde (Jå)	100	4 500	45
Gällivare skogssameby (Gä)	135	7 000	39
Baste čearru (BČ)	100	7 000	30
Luokta-Mávas (LM)	135	10 000	27
Udtja (Ud)	50	2 800	14
Slakka (Sl)	10	1 000	2

Per-Anders Vannar and Elisabeth Nejne Vannar. Photo: Carl-Johan Utsi

Elisabeth and Per Anders Vannar, Sirges

The expensive freedom

”Really, one should probably be doing something else.” Elisabeth Vannar responds thoughtfully to my question if reindeer husbandry breaks even. ”But I guess I enjoy it, and value the freedom it brings. An expensive freedom.”

Text: John Erling Utsi

Skuollá is located on the border between the national parks Bajdlánnda and Sarek. The Sámi village organization Sirges has a larger facility here where they mark reindeer calves every year. The work lasts around a week. This year they will be using a new method of catching calves for the first time. Instead of using the traditional lasso, everybody is holding rods with a loop on the end. Now it is a matter of ensnaring the small calves. Nobody in the corral is allowed to use the lasso. The language used during the first hours might not be something for little children to hear. After a few clumsy and tentative hours of making mistakes, people are getting a hang of the technique. The work is done calmly while the reindeer peacefully wander around in the corral.

Despite the difficult winter, Per Anders and Elisabeth have calves to mark. Their children, Sanna and Antaris, also have rods they’re trying to figure out. In most reindeer herder families the man or the woman has a job, full-time or part-time. But neither Elisabeth nor Per Anders work with anything else other than with reindeer. Elisabeth says that she earlier tried to combine reindeer husbandry with steady jobs. But it didn’t work out. ”Eventually it wasn’t even possible taking temporary jobs. It didn’t suit this.”

They don’t seem particularly worried. And they don’t complain. ”If you enjoy something, you go for it. And we cut down on some things. Live simply,” she says. She tells me that when their children were small and they had to go out to take care of the reindeer, their aunts and grandmothers helped out by looking after the children. Without them it wouldn’t have been possible. For Elisabeth the change was great. Since she hadn’t been raised with reindeer husbandry, it was an unfamiliar way of life at first. But she decided to go for it during the first years, to see if it worked. And they’re still on that journey.

Like in other present-day reindeer herds, the

herds of Sirges do not contain a large number of big reindeer bulls. Researchers and economists have calculated that it is most profitable to sell the male calves. As in other Sámi village organizations they have increasingly gone over to selling calves. “We don’t invest that much in bull slaughter today,” says Per Anders. “Everything we sell now is entirely bonus.” Per Anders says that it isn’t necessary to have very many bulls in a reindeer herd. He reckons that one out of thirty is enough. They believe that bull slaughter is more of a cultural tradition in the village. “And that will continue going on for a long time,” he laughs. Of course they would like to have a herd with many large, magnificent bulls. But that’s not the way it’s going to be. The male calves that they’re now marking will be sold for slaughter the coming winter. “Economically you can’t wait until the male animals are full-grown,” says Elisabeth. “The only alternative is to work with something else.” So they keep struggling, with a standard of living that the average Swede would not even consider living on. Their machines are not exactly new. The snowmobiles are old, causing Per Anders to spend a lot of time in the garage repairing them.

We sponsor the predator population

An expense that they also have to live with is the loss of reindeer due to predators. The past twenty years their numbers have increased, and according to scientists in that field they take at least twenty percent of the reindeer that could have been sent to slaughter. This is something that angers them. “I can live with some of my reindeer being killed. But now it is too much”, says Per Anders. “We are the ones who are sponsoring the predator population of Sweden. I don’t like the fact that I’m the only one who’s paying. It’s me and my economy that suffer.”

Per Anders argues that the only solution is to reduce the number of predators to a level that he can accept. If he had been able to sell the twenty percent that are lost, he would have been able to make a better living from this. ”In combination with hunting and fishing,” he adds.

”Sure, you can get really angry when you find reindeer that have been killed or maimed. But I don’t hate predators. It would be pretty dull if you never saw traces of their existence,” he says.

The reimbursement from the state for these losses are not based on the number of animals they kill. Today the compensation is based on the number of predatory animals within the respective Sámi village organization. The compensation is not given directly to the reindeer owner, but to the Sámi village organization. Per Anders thinks that the system has many flaws. “You won’t find all predator offspring. And when it comes to eagles and bears, the compensation is based on the total area of the Sámi village. And the red fox is totally forgotten. It kills calves as well,” he says. Even though he doesn’t like the system, his opinion is that it is better than the previous one. Back then compensation was based on the number of carcasses you found.

Limit tourism

Skuollá is located as far west in Sarek as you can go. To the east you will find the many narrow valleys that wind their way between the peaks. During the summer there are always tourists wandering along the unmarked valley floors. Even though there are never hordes of them, it still becomes a problem according to Per Anders. It is right then in July, when the reindeer are supposed to eat and get fat before winter, that their grazing is constantly being disturbed.

The risk they see with the area now being a World Heritage is that the area will become more well-known and a popular destination, especially for summer tourism. If things evolve in this fashion, they would like to start limiting the number of hikers. This would give them the possibility of directing and to some extent regulate hiking tourism in the most sensitive areas. “In winter, from November to April it really doesn’t matter,” says Per Anders. “But during the summertime I have seen that tourists actually move reindeer, exactly like we do, when they come walking along the valley floors.” He thinks there is starting to be almost too many tourists, especially within Sarek.

For several years, the couple has not only marked calves by cutting notches in their ears. They have also clipped tags onto their ears.

With the help of these they can, among other things, see the age of an individual animal. They can also monitor which animals are left in the herd and which have been lost for different reasons. When the morning sun has started to heat up it is time to let the herd out. Despite the setbacks of the first hours, most people are satisfied with the new rod system. And one sign that the marking has proceeded calmly is that few calves are left when the herd is let out. Most of them are running up the mountain slope together with their mothers. For the Vannar family, the Lavvu-tent is awaiting with dinner and a few hours of sleep. Before the evening when the next herd is brought in.

Sámi village organization	**Number of reindeer 2005/2006**	**Number of reindeer 2006/2007**	**Number of reindeer 2007/2008**	**Number of reindeer 2008/2009**
Baste	6 559	6 506	6 241	5 914
Unna tjerusj	5 049	5 250	5 909	5 802
Sirges	16 298	13 427	15 623	13 831
Jåhkågasska	4 843	3 886	4 776	4 539
Tuorpon	6 264	5 917	5 862	5 494
Luokta-Mávas	4 795	4 549	4 838	5 253
	43 808	***39 535***	***43 249***	***40 833***
Gällivare skogssameby	6 513	6 143	5 440	5 002
Slakka	810	818	824	833
Udtja	2 800	2 920	3 166	
	10 123	***9 881***	***9 430***	***5 835***

The mountain Sámi village organizations have their year-round grazing lands between the Norwegian border and the border above which cultivation was not allowed (limit of cultivation, *"odlingsgränsen"*). Thus they include the major part of the Laponian area. All Sámi village organizations have winter grazing lands below the limit of cultivation, but only smaller parts of the winter grazing lands are within the World Heritage area.

The reindeer industry uses the land in a cyclical seasonal manner, which means that all areas are not used simultaneously but during different parts of the year.

2.2.4 Present-Day Reindeer Industry

Reindeer husbandry is an industry, equal to other land-based industries, intended to give the individual reindeer entrepreneur a secure income for the subsistence of their family. Like other industries, the reindeer industry of today faces challenges that must be addressed in order to survive and give an economic surplus. Active reindeer entrepreneurs are the ones who can develop reindeer husbandry.

Well-functioning and long-term sustainable reindeer husbandry requires suitable calving areas, functional migration routes with adjacent grazing lands as well as central and connected seasonal grazing lands for each season of the year. It also requires calm grazing areas, especially during the time of calving and during the reindeer's growth period. Guaranteed access to winter grazing lands is essential for the industry's survival. It also demands a simple and clear set of regulations, as well as effective contacts with authorities and the need for rapid

Skuollávallda. Photo: Carl-Johan Utsi

decision-making, for example when there is a need for protective hunting when predatory animals are inflicting damage or causing disturbance.

The reindeer industry is an industry that does not have any control over environmental factors like weather, grazing availability and natural disturbances. In essence, the only thing that can be controlled is one's own work effort.

Some of the central challenges for the reindeer industry to be able to develop and have the chance of creating a stronger economy are to develop the way the reindeer industry is seen and to develop the infrastructure of the reindeer industry.

A stronger economy and an improved profit for the reindeer industry requires, among other things, that the damage generated by predators is regulated both with sufficient economic compensation as well as with the possibility to manage areas with especially high predatory pressure or harmful individuals. Laponia is not only a core area for the predatory animal population of Sweden, but also a core area for the reindeer industry. Another requirement is that access to winter grazing lands is secured and that damage inflicted by e.g. forestry is avoided on current winter grazing lands. The reindeer industry in the municipalities of Laponia generates more job opportunities than the forestry industry.

The way of looking at the reindeer industry needs to evolve, both externally and internally. Externally, the fact stated above that the reindeer industry is a substantial and sustainable industry that generates jobs, needs to be given more importance when planning e.g. forestry measures, mineral exploration and mining activities. Internally within the Sámi community there must be more focus upon the fact that the reindeer industry is an actual industry, not primarily a cultural activity (even though the connection between the Sámi culture and the reindeer industry always will be central). Both production methods and levels of added-value processing must be developed.

Finally, the reindeer industry needs to continuously renew and develop the infrastructure necessary for making more effective work methods. It could mean anything from coordinat-

ing the making of new routes and constructing bridges with contributions from the tourism industry to the construction of processing facilities and slaughterhouses.

2.2.5 Sámi Settlements

Reindeer stray and are moved between different grazing lands within the areas of each Sámi village organization. Often there are long distances between different areas. To be able to look after the reindeer and do the work necessary for reindeer husbandry, the reindeer-herding Sámi often have different houses depending on where the reindeer are. The Sámi village organization has constructed small reindeer-herder cabins for common use at suitable locations. It is a kind of simple workman's dwelling used by the reindeer herders while gathering reindeer or in other ways caring for their reindeer.

This is most apparent during the summer period when the members of mountain Sámi village organizations say they are "moving up to the mountains". Some families move to the mountains for a few weeks during the most intensive calf marking period, while others stay in their summer settlement throughout the whole summer. Summer housing for families can be cabins, *gámás* (peat huts) or *låvdagoade* (Lavvu-tents). In each Sámi village organization there is one or several settlements, and families return there every summer. For the forest Sámi village organizations the movement between settlements is less apparent, but often the families have several dwellings that they use depending on where the reindeer are.

The settlements are often socially important for the reindeer-herding Sámi, since the time after the calf marking is a period of hard work as well as a time for social interaction while the Sámi village is gathered. Apart from the work with marking calves there is often time for subsistence fishing and other side-line enterprises like fishing or handicrafts, where the products are both sold locally and to middlemen. There are also many outside visitors coming to the settlements, partly because several of them are located along tourist trails, and partly because they are gathering points both for family and for friends.

Some families only have one other dwelling besides their more permanent house, while others have specific dwellings for spring, autumn and winter. During autumn and spring however, it is less common that whole families stay in the settlements since the children are in school in one of the regional towns. Instead it is the people actively conducting reindeer husbandry who move between the reindeer and the Sámi village organization's reindeer-herding cabins, the settlements and the family's more permanent house.

In many of the modern-day Sámi settlements it is possible to find traces of earlier settlements. Many settlements show a long tradition of usage and have great cultural-historical values with their mixture of small cabins, peat huts, boat-houses and different buildings and storage constructions. Each settlement is unique with their own characteristics depending on its history and natural conditions. Traditionally the settlement consisted of a so-called *"bovall"* (meadow) with buildings or remains of such, and sometimes one or more reindeer pastures.

When the reindeer-herding Sámi became more stationary at the beginning of the 20th century, Stáloluokta was chosen as the main settlement during the summer, since it is near to the reindeer's calving area. The favorable location means that the area around Stáloluokta has been the place for settlements for a long time, and there are plenty of remains from the Stone Age and on. For example there are four remains of huts in the middle of the camping site.

Árasluoktsijdda is one of many examples of settlements in Laponia. In Àrasluokta both ancient hunters and fishers and more modern-day reindeer herders have found suitable places to settle. Today Árasluoktsijdda is mainly the summer settlement for Jåhkågaska tjiellde, but is also used during spring and autumn. At Boarek, hunters, fishers and reindeer herders have lived during spring, summer and autumn in connection with activities within Bårdde. Today Boarek is used by members of Jåhkågaska tjiellde in the same way as earlier, mostly for hunting, fishing and reindeer husbandry work. Tjáhppisoajvve is an autumn and

spring settlement in Gábllá. The settlement has earlier been used to a great extent, and is still being used by the members of the Sámi village organization during most of the year.

Gáidumgeahči is an old Sámi settlement for the Sámi village organizations Baste čearru and Girjas. The Sámi from Girjas had their reindeer-herding dwellings in Gáidumgeahči on the north shore, while Sámi from Baste čearru had their settlements south of the lake. Reindeer were moved to the area by means of reindeer *rajd* in the springtime, or by *rajd* during the snow-free period. With the introduction of boat engines and snowmobiles life changed, and oars and reindeer *rajds* were exchanged for technological aids. During the 1980s, Baste čearru's settlement at Gáidumgeahči was moved to Siidasjávri due to changes in reindeer husbandry.

Čuonájohka on the north side of Gáidumgeahči is an old Sámi settlement. For parts of the year it is still used by members of Baste čearru. In the area there is a system of trapping pits, which shows that people have lived here for a long time. Baste čearru's reindeer-herding families earlier moved by means of reindeer *rajd* to their spring settlements and on to the summer settlements further west. This was done with *ackja* (reindeer sledge) and by using reindeer as pack animals during the snow-free period. The Sámi of Baste čearru have also managed transportation by boat, either by rowing or *bårjåstit* (sailing), for example from Liedik to Gáidumgeahči, where they had a summer settlement. Food was brought to Liedik with reindeer *rajds* during the spring. In recent times the snowmobile has been the most common means of freight and transportation.

Today three of Sirges' spring and summer settlements are located by the lakes Vásstenjávrre and Sáluhávrre. One of them is the old settlement Huorsonjárgga at Vásstenjávrre, established in 1955 just around the time when people went from moving with reindeer *rajds* to starting to fly to the mountains. Today the settlement is divided, and some members have settled on Gievgessuoloj, a small island by the outflow of the river Vuojatädno. Other summer settlements of the Sirges Sámi are found around the lake Guvtjávrre. The two summer settlements Vájsáluokta and Änonjálmme around Áhkájávrre are located around lakes in places that are now drowned by the hydroelectric reservoir Suorvvá. The dam has been expanded four times, leaving older settlements and unknown remains from earlier generations submerged under water. Settlements were also made around Sáltoluokta, both by ancient hunters and fishers and more modern-day reindeer herders. Today Sáltoluokta is spring, summer and autumn settlement for the Sirges Sámi village organization. The settlement by the lake Bietsávrre is also inhabited during summer.

The Sáluhávre *sijdda* (settlement) from the 1950s is located on a tongue of land with a long history of use. The area is one of Laponia's richest in ancient remains. There is a large area west of Gisuris with hundreds of remains from Sámi settlements.

2.3 The Historical Heritage Arising from Previous Usage of the Land

2.3.1 Traces in the Landscape

Many of the physical expressions of the cultural heritage are disappearing. By its structure and construction, the cultural heritage is extremely frail and vulnerable. Often it is made up of exposed and sensitive, sometimes temporary, constructions of forked poles. Even today there are traces after dwellings and reindeer pastures along the migration routes.

Within Laponia there are peat huts and reindeer herder cabins that tell about reindeer husbandry of yesterday and today. Along old migration routes there are both huts and traces of huts, but also old reindeer pastures with diverging vegetation, telling us about the time when the reindeer were gathered and milked here. In other places there are traces of reindeer corrals. Very often there are ancient remains in connection to present-day Sámi settlements and reindeer-herding cabins.

Between 1998–2001 the Swedish National Heritage Board carried out a specific campaign

for the conservation of the Sámi cultural heritage. It meant that a large number of buildings were restored and documented, important documentation and information projects were carried out as well as establishing a counseling and guidance agency at Ájtte, the Swedish Mountain and Sámi Museum. Results from these efforts show that there is a great diversity in terms of cultural environments, building techniques and land-usage. Around 50 buildings were restored within and in the proximity of the World Heritage. Included are efforts in Bietsávrre, Čuonájohka and Sáltoluokta, all on the border of Laponia.

In 1998 and 1999, parts of the Swedish National Heritage Board's inventory of ancient monuments took place in Laponia. Some additional inventory and documentation efforts in Laponia have been financed by specific EU funds. These efforts were aimed at gathering basic knowledge of the area and its history.

Abandoned Sámi settlements are characterized by lush vegetation, remains from Lavvus or peat huts, overgrown hearths and cellar pits. During the 20th century, reindeer husbandry has changed, and many of the old settlements are no longer used. The summer settlements of the mountain Sámi, that previously were located along the birch forest line, are now located around mountain lakes. Adjacent to settlements there are often old reindeer pastures. Here, the treading of the reindeer and their fertilizing the ground has given way to a richer vegetation, distinctly different from surrounding vegetation. Sometimes remains of old fences are visible. Along the trails between different settlements there are cairns, stone mounds or piled up stones that mark the trail. It is also common that trees have been blazed.

The hearth, the fire-place, is the most frequent ancient remain found in the mountains. Traces of fire are one of the safest signs that people have been at that place. The hearth is often seen as a rectangular elevation around one meter in length. The elevation can be surrounded by a ring of stones. Inside the stone ring there can also be a lot of stones packed together. A *Lávvu*-tent stood around the hearth. Hearths are often found along watercourses, and in the mountains they indicate temporary summer settlements. They are dated from the 800s A.D. and onward.

Lávvu sites are remains of old *Lávvus*, and can have three different appearances. It could be a hearth with two parallel stone rows leading to a stone that used to serve as the *Lávvu's* threshold. Or it could be a hearth surrounded by a usually round or oval ring of stones. The stones were placed there to hold down the walls of the *Lavvu*. If there used to be a peat hut there, it can be seen as a hearth surrounded by a round mound. Lavvu sites are dated to the 17th century and onward. More than 1500 hearths and *Lavvu* sites have been registered during inventories of ancient remains in Laponia in the past years.

A *Stalotomt* is a large hut foundation (up to five meters in diameter) with an oval or round lowered floor level, often with a hearth in its center. A mound runs along the indentation. The *Stalotomts* are usually found in groups of two to five. They are often alongside the natural migration routes of reindeer, and only in high-altitude valleys. Sometimes there are trapping pits nearby. They are dated from the time between 800 and 1500 A.D. Around fifty *Stalotomts* have been registered within the World Heritage area.

Storage facilities were used to store e.g. meat and reindeer milk. Today they are seen as pits surrounded by large stones. They are found along old migration trails, often on the top of dry ridges and moraine slopes. Near the storage facilities there are often old settlements.

Sacrificial sites and other sacred grounds are found in many places in the Sámi landscape. They are often located near unusual natural formations, like a mountain, a strangely shaped rock, a cave or a cliff. Several Sámi names tell of sacred places, for example Sájvva. Sacrificial sites began to be used in the 900s and may have been used into the 19th century. They are still revered within the Sámi community, and as a visitor you should show respect for these sites. Leaffásáiva in northern Laponia is an example of an area with Sámi sacrificial sites located by a lake and on a mountain.

Svea Länta. Photo: Carl-Johan Utsi

Svea Länta, Árasluokta, Jåhkågaska tjiellde

Árasluokta – balm for the soul

Áraslоukta is a bay on the eastern shore of Virihávrre. The customary willow shrubbery and dwarf birch plains struggle to ensnare the wanderer's boots. Virihávrre extends to the west, toward the Norwegian border. A few cabins, sheds and peat huts lie scattered around the bay. For an outside visitor there is nothing very special about this place.

Text: John Erling Utsi

Smoke is rising from one of the peat huts. The hut is not big and local grass and flowers cover the walls and roof. Svea Länta sits by the fire-place, baking today's bread with the aid of one of her grandchildren. With experienced hands she turns and twists the round piece of bread against the hearth until it has been given a light brown color.

Svea was raised in the surroundings of Kittelfjäll in the county of Västerbotten. Per Anti Länta, who later became her husband, was a reindeer herder in Jåhkågaska tjiellde. When Svea came here with her husband for the very first time, she immediately and completely fell in love with the place. "Immediately! I felt right then that this is where I wanted to be," she says. That was 36 years ago. "Every spring both the children and I knew that we had to come here and stay here." She had just started a family when she came to Árasluokta for the first time. With one infant and two older children. That summer they stayed in a Lavvu-tent while her husband, Per Anti, built the peat hut they would later live in.

Árasluokta is a place for intensive weeks of marking calves and tourist season. For Svea the place is a balm for the soul. As soon as she gets time off from her work as a childcare provider in Jokkmokk, shortly after midsummer, she moves up to the mountains. And she doesn't return until she really has to at the end of August.

Modern Times

Before the 1960s there were neither peat huts nor cabins around the bay. The groups of

reindeer herders who lived in the area lived in Lavvu-tents here and there. Gradually corrals for marking calves began to be built around Miellädno. When people in the 1960s decided to have more permanent residences, peat huts were built along the shore of Árasluokta. Today most of the peat huts have been replaced by cabins and huts. Living along the lake made it possible to fish more than what was needed for daily needs. Air traffic, which at this time had started making daily tours to pick up fresh Arctic char, came and collected the day's catch. This made the little bay by Virihávrre become a permanent residence for Jåhkågaska tjiellde during summer, from midsummer until far into August.

Life along the bay of the mountain lake has changed today. As soon as marking the calves is over at the end of July, most people leave Árasluokta. Only Svea and a couple of neighbors remain there. Her son Rickard works as a host in the tourist cabin along the Badjelánnda Trail. He makes sure that the mountain hikers who stay overnight in the cabins get comfortably settled in. When he doesn't have time, Svea helps out. "For Rickard tourism is a really good job on the side. Without it he would have to go down from the mountains and work with something else before they start working with the reindeer again," she says.

The Sámi village organization Jåhkågaska tjiellde is one of the smaller Sámi villages in the country if you look at the number of members. As long as Svea's husband Per Anti was alive, he worked with reindeer husbandry. This profession is now carried on by their son and daughter. The area around Áraslоukta is the summer land of Jåhkågaska tjiellde. The spring and autumn lands are to the east in Badjelánnda and Sarek. Beyond them you will find the coniferous forests where their reindeer graze during winter. As most Sámi village organizations, the area for Jåhkågaska tjiellde is long and narrow. Only some tens of kilometers wide along the Lesser Lule River, but around 350 kilometers long. It stretches from west of Árasluokta and down to the forests east of Jokkmokk.

Today, her son has left the children in their grandmother's care. When the bread has been baked it is time to feed them. The menu can appear one-sided, but it's what the children love. Fried, freshly caught fish and freshly-baked bread, seven days a week. After this it's time for the daily work as a cabin host. Together with her grandchildren she walks over to the tourist cabin, counts in the overnight guests and collects their payment. Along with this, her role as a cabin host is to act as a mentor, meteorologist and shopkeeper. And to those who wish, Svea shares of what she knows about the Sámi, reindeer husbandry, nature and of course about Árasluokta, the place she loves.

Sjávnjajávrre. Photo: Jan-Erik Nilsson

2.3.2 New Users

Nybyggare

During the 19th and 20th century, many Sámi became resident at the same time as Swedish and Finnish settlers moved into the mountain area. Small pioneer settlements were made in the forest and mountain valleys. The resident Sámi lived by raising livestock in combination with hunting and fishing. From the middle of the 20th century the new settlements started to depopulate. In Laponia there have been pioneer settlements in Muttos among other places. In the mid-19th century a settlement was established north of Muttosjávrre, called Ramsomuttos. A family lived here for about 50 years.

Several older pioneer settlements are found in Sjávnja, such as Allávárre and Áhkávárre. None of them are being used for farming today. As a spin-off from the pioneer village Áhkávárre, the farm Måsskejávrre was built. It was a good site for a settlement. The lake and the river Sjávnjaädno provided fish. The land around the house was without stones and easily used as hay fields or potato fields. The mires provided forage for the animals, and the forest supplied wood for the buildings. The little stream flowing into the lake by the farm was big enough to provide water power for the small sawmill. The farm was in use for one generation and is now a holiday home. However, the traces still remain in the landscape.

Just outside the borders of Laponia, among low mountains or just at the edge of the mountains there are several pioneer settlements. As early as the 1820s the foundations were laid for the small farm near Aktse. In the 1940s, the people stopped raising cattle, but Aktse is still inhabited large periods of the year.

The Sámi homestead Oalloluokta was established around 1830 next to a migration route and has developed into a smaller village with around ten farms. The pioneer settlement in Soahkenjárgga (Björkudden) is an example of a settlement on the edge of the mountains. The mountain settlement was founded here in 1905 and is still inhabited. Today, the tourist facility and fishing are important.

The pioneer settlements are still a living part of Laponia, but now as holiday homes for the local people and descendants of the settlers. Hunting, fishing, being in the magnificent nature, is valued and Áhkávárre, for example, periodically bursts with social life during early spring with snowmobiling and ice fishing, as well as during hunting in autumn.

Eastern Sjávnja, Stubbá and Tjuolda-vuobme are areas that today are used frequently by the local people and descendants of the settlers for hunting, fishing and daily life in nature. The snowmobile is a relatively new element in that kind of life. It is mainly used as a means of transportation, and has increased the accessibility of the area.

Research

Many scientists and researchers have found their way to Laponia. The most internationally well-known person who came to Laponia is probably Carl Linnaeus, who during his journey through Lapland followed in the footsteps of Olov Rudbeck up to Huhttán/Kvikkjokk and on to Norway. Records of the Sámi culture in Laponia can be found in the travel reports of Olof Rudbeck in 1695 and Carl Linnaeus in 1732. Their travels were mainly intended to describe nature, but a lot of information of cultural-historical value was documented as well. Olof Rudbeck traveled with a large company performing, among other things, astronomical observations of the midnight sun and botanical descriptions. Linnaeus' journal from the expedition to Lapland is reckoned to be one of his best publications. Aside from the flora, he also depicts the Sámi population, *jojk* (traditional song), clothing, food, milking of reindeer, dwellings, medicinal plants, the art of healing and other things.

Axel Hamberg, who was a mineralogist, cartographer, glaciologist and climatologist, managed to spend 35 summers and eight winters in Sarek, exploring and mapping the area. On strategic places around Sarek he had small cabins or cottages built to be used as housing during scientific research. In 1911 he erected a red tin cottage on the summit of Bårddetjåhkkå, serving as research station and housing for his assistants. The four cottages yet standing are still used as research housing.

The first archaeological records and studies in Laponia were made at the beginning of the 20th century. These were mainly studies connected to water regulation of the Lule River. These studies were carried out by the Swedish History Museum and the Swedish National Heritage Board up to the 1970s. Around one hundred ancient and cultural remains were registered during these inventories, but only a few settlements were examined before being submerged. A large part of the material gathered during these studies is still unprocessed. In the 1940s, Ernst Manker from the Nordic Museum started doing archaeological and ethnological documentation and studies that throughout the year became very extensive. Among other things, these studies related to *Stalotomts*, trapping pit systems, graves and sacrificial sites. Today a lot of research, inventory and documentation is being done in Laponia. It is mainly research included in different programs of environmental monitoring. For example, glacier monitoring research is being done in Sarek, Padjelanta/Badjelánnda and Stora Sjöfallet/Stuor Muorkke National Parks in order to follow up ongoing climate change. Ájtte, the Swedish Mountain and Sámi Museum in Jokkmokk, has a special responsibility to document the Sámi cultural heritage.

The Visitors' Landscape

Tourism in Laponia has a long history. The first tourists traveled by steamboat combined with rides provided by the guest-houses along the Lule River up to the mountains. The new railway to Jiellevárre/Gällivare in 1887 made the northern regions more easily accessible. The Swedish Tourist Association (STF) decided to construct their first tourist cabins by the great attraction Stuor Muorkkegårttje/Stora Sjöfallet, and on the trail between Huhttán/Kvikkjokk and Sulidälbmá, which at the time was the highest known mountain in Sweden. The mountain cabin in Varvek on the trail to Sulidälbmá was the first mountain cabin in Laponia, built by STF in 1888. Around Tsihávárásj/Bälldovárre and in Darrevuobme there are still rest

shelters from that time period. Other places with early tourist cabins or huts are the Teusajaure/Dievssajávri hut and Luleluspe/Stuor Julevulusspe hut. It was also common to spend the night in a pioneer settlement or Sámi settlement. STF continued to facilitate tourism by putting boats by watercourses and later on by building larger tourist stations. The tourist station in Sáltoluokta was opened in 1918 and the tourist station in Huhttán/Kvikkjokk in 1928. During the second half of the 19th century Huhttán/Kvikkjokk was one of Lapland's most well-described places and even an internationally known tourist attraction. Huhttán/Kvikkjokk is a place that has attracted scientists for centuries.

Stuor Muorkke gårttje/Stora sjöfallet was once the largest waterfall in Europe, an enormous fall in five levels. After a few decades as a national tourist attraction, the Parliament established Stora Sjöfallet/Stuor Muorkke National Park in order to protect the famous waterfall and the surrounding nature. The roar from the rumbling water masses could be heard from Sáltoluokta, and the different falls and their clouds of vapor were visible to the naked eye from a distance of ten kilometers. The first accounts of the waterfall show that it was hard to find suitable words for the impressions; "a rare and gripping natural phenomenon", and "the wilderness marvel Stora sjöfallet is a masterpiece of nature's infinite creative powers". Ten years after the establishment of the national park, the Parliament decided to exclude the whole lake system above the waterfall from the national park in order to construct a dam in Uhtsa Muorkke/Suorvvá to collect water for the new power plant in Bårjås/Porjus. The largest natural waterfall of Sweden thus lost its greatness.

Since the more organized form of tourism took off at the end of the 19th century, accelerated by the arrival of the Iron Ore Railway Line, large crowds of visitors have come to the Laponian area. They have mainly been attracted by the mountains. In the beginning, focus was set on great achievements and ascending summits. The interest for botany has also brought many visitors, especially to Huhttán/Kvikkjokk and the Badjelánnda area. During the mid-1900s, the interest in ornithology led more and more people both to Muddus/Muttos and the Sjávnja area. Generally though, it can be said that the touristic interest has always been directed to the high-alpine areas and to a lesser extent to the forest areas. The areas in between, for example the low-alpine areas in Sjávnja, are probably rarely visited by tourists.

The tourist perspectives on the landscape have partly been set on achievements, and partly on the interest in nature and culture. Today there is a tendency towards adventure tourism, eco-tourism and authentic, living encounters with the foremost users of Laponia – the Sámi. From the tourist perspective, Laponia and the national parks included in the World Heritage are important trademarks that give local tourism entrepreneurs an internationally attractive profile.

Laponia has a wide target group among visitors. It consists of the general public from Sweden and abroad, people from nearby as well as far away guests, from pre-school children to seniors, experienced and unexperienced mountain visitors. Scientific and educational communities and schools of all levels are also important target groups. The local population that uses Laponia as their local recreational area hardly see themselves as tourists. Accustomed mountain hikers do not see themselves as tourists either, but as people pursuing their passion for outdoor life.

2.3.3 Industrialism

People have lived and shaped the landscape within the World Heritage area and its surroundings for thousands of years. The cultural landscape in and around Laponia therefore reflects different types of nature usage where people have either lived in unison with nature, as hunters and fishers or reindeer herders, or where people on a large scale have wanted to exploit as much as possible of what nature has to offer, for example through mining or hydroelectric exploitation. Today, when there is a need to increase the share of renewable energy, there are interests that want to use the area around the Suorvvá dam, partly outside of Laponia, for building wind turbines.

There have been great changes in the areas surrounding Laponia; during the 17th century in connection with mining operations and during more recent times through railways, roads, forestry and hydropower expansions on the Lule River. Even parts of Laponia's national parks have been affected by the industrial society, mainly by means of hydropower exploitation.

Mining

Mining of silver in the mountain regions of Lapland started as early as the 17th century. Silver ore was extracted on Silbbatjåhkkå and on Álggavárre within Laponia between 1659-1702. New attempts to resume mining were done again later in the 18th century as well as in the 20th century, but failed. At these sites, visitors can still clearly see mineshafts and house foundations from the mining era.

Between 1660–1664 a furnace and smelting-work was established in Huhttán/Kvikkjokk, denoting the dawn of an industrial community. Supplies and ore were hauled by the Sámi, while the mining workers came from the coastal area with promises of exemption from military duty. Cattle-raising, hunting and fishing became necessary complements to working at the furnace. When the industrial era was over, people remained in Huhttán/Kvikkjokk. There are still visible remains from that time, such as house foundations and the cemetery for the silver works. Abandoned and overgrown hayfield isles in the delta are a reminder of the haying landscape.

A chapel was built in Álggavárre in 1788, where church service could be held for the Sámi in the summer. The chapel was dry walled using excavated rock from the old mining area. Today the chapel is restored

Hydroelectric Power

During the entire 20th century, the World Heritage's nearest surroundings have suffered greatly due to the water regulations of Unna Julevädno and Stuor Julevädno. Construction of power plants, roads, five great water reservoirs and the regulation of lakes have affected the surrounding environment to a great degree, and thereby also the reindeer industry and the conditions for the Sámi culture within the World Heritage.

2.3.4 Cultural Environments in Laponia

The most important cultural environments are described in the regional Cultural Environment Program worked out by the County Administrative Board after consultation with the county's museums and municipalities et al. in 2009. An overhaul of the program with some adjustments of the selections was done in 2009. Of the cultural environments included in the program, both within and adjacent to the World Heritage, several show a continuous usage over time. They often contain ancient remains and settlements from different ages and with different functions.

The following environments are included in the current program (2009):

Within the World Heritage

- Padjelanta/Badjelánnda (ancient remains area, Sámi settlements)
- Gårtjejávrre and Stuor Muorkke (dwelling places, Sámi settlements, tourism)
- Leaffásáiva (sacrificial site)
- Stáloluokta (ancient remains, Sámi settlement, tourist station)
- Sáltoluokta and Bietsávrre (ancient remains, Sámi settlements, tourist station)
- Sijddojávrre and Lájtávrre (ancient remains, Sámi settlements, pioneer settlement)
- Guhkesvágge
- Luleå silver works in Huhttán/Kvikkjokk, Gierggevárre and Álggavárre (industrial remains, pioneer settlement, tourism)
- Hamberg's cabins

Photo: Ludvig Wästfelt

Stuor Muorkke – Roaring silence

The roar from the huge waterfall was heard deep down into the valleys. A whole lake leapt down the great rapids. Cascades and foam kept the place covered in humid fog. Even for the first wanderer who laid eyes on it, the place was something that you just could not pass by. During the millennia that people have walked here, it has been a wonder to watch, a resting place and a meeting point. The narrow valley with its steep mountain slopes also meant that prey, mainly reindeer, were nearer at hand. The big lakes in three directions also meant that fish could be found nearby.

Text: John Erling Utsi

For at least 7 000 years the area around Stuor Muorkke has been a central gathering point. There are traces of human life on practically every hill. Before the reindeer were tamed, herds of wild reindeer passed through the valley during migration between summer and winter grazing lands. Systems of trapping pits, as well as findings of storage pits for food, point to the fact that people have lived around the waterfall during long periods of the year. In one of the stone fields there are cavities that have been used for burying the dead. Altogether, the findings and conclusions made by archaeologists mark the area as a regional center for ancient hunters. A hub between the forest land and the mountains.

Throughout time, from the first hunter up to a hundred years ago, the area was the obvious meeting place. It had everything that people needed. But in the beginning of the 20th century, the place was also discovered by others. Strangers appeared at an increasing rate. The great fall was called the Niagara of Sweden. People from the south came in hordes to view the wonder. It became a national point of interest as well as the beginning of the mountain tourism we see today. Old sacrificial sites and graves were defiled and called archaeological finds belonging to the Swedish state. The Sámi who lived there were suddenly interesting objects, examined and evaluated by archaeologists, geographers and anthropologists. In

1909 the area was given the status of national park, which in hindsight would prove to be somewhat of a misleading title. Ten years later the water system was excluded from the park.

For the Best of the Kingdom

After the First World War, the state-owned power company Vattenfall started to build a dam up-river by Suorvvá. This pioneering work was the beginning of the end not only for Stora Sjöfallet, but for the whole of the vital river valley from Ruotjajávrre, twenty kilometers from the Norwegian border, and down to the coast of the Gulf of Bothnia. The dam in Suorvvá was expanded stage by stage. At the beginning of the 1970s they built a road past the waterfall. Now the dam in Suorvvá was going to be expanded for the fourth time and a few kilometers north, Sádijávrre was to be dammed up. Water regulation of the lakes became a curse for the people, devastating enormous areas of land and depleting fish populations and animal life. The lakes became a reservoir that supplied a large part of the energy needs of the country.

For the Sámi who had seen Stuor Muorkke before the waterfall disappeared, the site is a painful reminder of racism, abuse and greed. The old waterfall is gone. The road leading past the fall is both a curse and a blessing. The protests by the Sámi of Unna tjerusj against further exploitation was probably something that the state smirked at with indulgence. The "negotiations" on compensation for submerged settlements, reindeer grazing lands and fishing places carried out by representatives of Vattenfall were more like parodies performed by people without respect for the opposite party. Their basic view was that the Sámi, despite everything, did not own the land. People who lived along the lakes had to accept what they were offered and for all future live with the consequences of the water regulations.

The great rapids have been silenced. Instead the water that used to foam here is producing power, light and heat for the welfare state.

In close proximity

In the areas surrounding Laponia there are many cultural environments significant for Laponia, but which are not covered by the management's ambitions and care-taking. However, it is important that they are mentioned as a part of the context of Laponia's cultural environment.

- Jávrregasska (pioneer settlement, transshipment place)
- Suollagavallda (ancient remains area)
- Tjoammbe/Tjåmotis (storehouse buildings)
- Vájsáluokta (Sámi settlement, church hut)
- Oalloluokta/Ållоluokta (Sámi homestead)
- Sájvvo (hearths, sacrificial sites, kåtatomts and more)
- Tsihávárásj/Bälldovárre (Sámi hearths, pioneer settlement, tourist cabin)
- Gáidum (ancient remains area, main Sámi settlement and more)
- Guorbak Bårjås/Porjus
- Njoammelsasskam/Harsprånget
- Tjáhppisoajvve
- Adámvallda
- Čoavrrik

In the county's Antiquities Conservation Program, a selection of ancient remains environments have been made accessible through conservation efforts and information. The area around Sáltoluokta is partly within the World Heritage, while the remaining conservation areas are not included in Laponia's management assignment. Nonetheless they should be mentioned as a part of the cultural context:

- Vuolep Áhppojávrre (hearths, trapping pit system)
- Nábrreluokta (chapel location)
- Sáltoluokta (trapping pit system, hearths, cooking pit and more)
- Huhttán/Kvikkjokk (remains from the silver works with house foundations, cemetery and more)
- Oarrenjárgga (hearths, cooking pits, dwelling places)

2.4 The Natural Landscape in Laponia

Many people might imagine an area like Laponia to be a monotonous, undiversified wasteland. Nothing could be further from the truth. The landscape in Laponia is very diverse and there are few similarities between the glaciers of Sulidälbmá and the willow shrubbery of Ráhpavuobme (the Rapa Valley), or between a pine-heath forest in Muttos and a vast mire in Sjávnja. The landscape is also characterized by the reindeer industry and reindeer grazing. In many places the natural landscape would have a different appearance without the reindeer grazing.

2.4.1 An Overview of the Natural Conditions of Laponia

Laponia is made up of two landscape types with completely different characteristics. The eastern section is a part of the taiga, a plain on primary bedrock with vast wetlands, forests and lakes. Here there are extensive coniferous forests, covering a total of around 1 000 square kilometers. It also contains the Nordic countries' largest open mires and continuous mire complexes. Mosaics of forests and mires cover large areas.

The mountain terrain in the west is the other landscape type of Laponia. The central high-alpine area forms a natural landscape with peaked mountains, deep valleys and rushing watercourses. In Sarek National Park there are 200 massifs that reach an altitude of more than 1 800 meters above sea level and around 100 glaciers. The deeply cut Ráhpavuobme runs right across Sarek and is one of the core areas of Laponia. In Padjelanta/Badjelánnda National Park, to the west of Sarek, the landscape transforms into wide, open mountain plains with large lakes and lower mountains.

With a surface area of around 9 400 square kilometers, Laponia is one of Europe's largest protected areas. The distance from Muddus/Muttos in the east to Padjelanta/Bardjelánnda in the west is about 200 kilometers, and the north-to-south extent is at its most about 80 kilometers. Vertically the area varies from 165 meters above sea level in the southernmost part of Muttos to the highest peak of Sarek at an altitude of 2 090 meters above sea level. The great variation means that Laponia displays most of the landscape types, geological formations, nature types as well as animal and plant societies that characterize the nature of northern Sweden's inland.

The Scandinavian mountains and sub-alpine coniferous environments can be classified as geologically and biologically open landscapes, where landforms and geological phenomena are numerous and relatively easy to interpret and where the natural development of the vegetation is easy to follow. The absence of forestry and other exploitive activities also grant parts of the Swedish mountain and sub-alpine landscape an exceptional position in Europe as unexploited natural landscapes. Nowhere are there qualities greater than in Laponia.

In what follows, an overview of the natural conditions that shape Laponia is given as a background to the World Heritage appointment.

Nature type	Surface area
Boulder terrain and bare rock	150 315 ha
Mountain moor	346 879 ha
Mountain grassland	52 095 ha
Mire	91 425 ha
Mountain birch forest	83 972 ha
Coniferous forest	108 449 ha
Glaciers and permanent snow fields	30 390 ha
Water	72 874 ha
Other	197 ha
Total	**936 597 ha**

2.4.2 The Landscape of Millions of Years – the Geological Perspective

Primary rock in the east

In the eastern half of Laponia, the bedrock is made up of primary rock, chiefly granites and gneisses that are between 1 900 million and 1 600 million years old. A lot of this primary rock is associated to the formation of the Svecokarelian mountain chain, of which only its roots are visible today. Most has been ground down during millions of years by wind, water, glaciation, change of temperature and chemical weathering. This explains the rounded surface shapes and the absence of bold peaks and valleys in the primary rock area. Despite this there are variations in the primary rock area. The higher parts reach a height of 500-600 meters above sea level, for example Oarjemus Stubbá (Sörstubba) in Muddus/Muttos National Park with an altitude of 657 meters. The lowest part of Laponia is found at Stuor Julevädno (Greater Lule River) by the south edge of Muddus/Muttos at 165 meters above sea level. The mountains often have precipices facing east, sometime also facing south and north, while the western sides have softer slopes. Deep-cut ravines are also found in the primary rock, especially in Muddus/Muttos.

Creation of the Mountain Chain

The actual mountain chain was formed between 510 and 400 million years ago through plate tectonics. The earth's crust consists of big plates that slide around and may collide with each other (as is now happening in the Himalayas) or move apart (as we see on Iceland). The mountain chain was created by a collision between two plates, current Greenland-North America and current north Europe. In between these there was an ocean, where the ocean bottom consisted of volcanic material and sediments of sand and mud that could be several kilometers thick. The ocean bottom was compressed with the most intensity 430 million years ago, creating a mighty mountain chain. The material was pressed up above the European plate in large sheets of bedrock, called *skollas*.

The skollas at Stora Sjöfallet/Stuor Muorkke have been transported in over each other and 500-600 kilometers in above the primary rock. They were created west of Lofoten in Norway and are now lying like books fallen from a bookshelf. Most rock types in the *skollas* of the mountain bedrock are metamorphic, i.e. transformed to a more or less degree during the violent processes. 430 million years ago our mountain chain was probably as mighty and dramatic as the Himalayas. After that the supercontinent cracked and was split right through the mountain chain, creating a new ocean – the Atlantic. The rifting happened in the same way as you pull up a zipper, from the south to the north. This continental division reached Laponia 54 million years ago. The major part of the mountain chain ended up as the Caledonides (our mountain chain) in Scandinavia and Scotland/Wales. Another part ended up in America as the Appalachian Mountains. America and Europe are still drifting away from each other a few centimeters every year.

The border between primary rock and the mountain bedrock, the so-called *glinten*, winds its way along the edge of the mountains as is clearly visible in the terrain. The valleys often have primary rock in the bottom while the valley sides are made of mountain bedrock. A few places where this border is particularly distinct are Lulep Girekav by Sáltoluokta, Skierffe by Aktse and Čihkkumbákti by Gáidumjávri.

One example of an environment of geological importance within Laponia is Sarektjåkkå, where the rock types clearly display the rifting of an old continent.

Biervvet – a young fault

There is a fault that runs from north to south along the mountain chain. It is visible as a 5–10 meter-high terrace. The Sámi have long had a name for this visual formation in the landscape – Biervvet. South of Vuolip Gáidumjávri the fault creates the lakes Bearvejávrrit. North of Láŋas at Soahkenjárgga (Björkudden) it seems to have cut off both an esker and shorelines of glacial lakes, which could indicate that it has been active during the past 9 000 years.

Erosion

When our mountain chain was young, it was high and dramatic. Since then three to five kilometers of rock has been worn down. The mountains we see today are only the roots of the old mountain chain. Running water, sliding glaciers, frost shattering and chemical weathering have helped to transform the rock to loose material. Most of the old mountain chain is today bottom sediments in the North Sea and the Atlantic Ocean. Our current topography largely follows bedrock structures. Hard rock types like amphibolite construct the higher peaks, while softer rocks have been worn down deeper. Inland ice sheets have only modified the mountains' bedrock formations.

2.4.3 Creation in Progress – the Quaternary Geological Perspective

The most recent glaciation

During the Quaternary Period – the past million years – the landscape has been transformed on the surface by several glaciations. The most recent Ice Age and glaciation started 115 000 years ago. 20 000 years ago, the inland ice sheet had reached it greatest extent. The entirety of Scandinavia and a large part of Europe was covered by glacier ice several kilometers thick. At that time the center of the ice was out in the Baltic Sea. Thawing began 14 000 years ago and ice shrank both in thickness and extent. Gradually the ice center was moved to the high-alpine area, where the last remains of the inland ice sheet disappeared 8 500 years ago. A warm period followed where the tree line in the Swedish mountains was a couple hundred meters higher than today. There were no glaciers in the Swedish mountains at that time.

The abrasion and deposits of the inland ice sheet

It is easy to find traces of the great glaciations in Laponia. Roche moutonnées polished in the direction of the ice movement and glacial troughs (U-shaped valleys) hollowed by ice abrasion are common. The ice has also spread out a layer of moraine, ground rock, over the bedrock. In some valleys and flat areas moraine hill landscapes can be found. Sometimes large pieces of melting ice would be isolated as dead ice. Deep holes, now filled with water or peat, show where the melting ice blocks were parked. Such glacial kettles can also be found in eskers and delta lands, for example around the Gisuris cabin. Large amounts of moraine are cumulated around glacial fronts. If the front stands still for a longer time period an end moraine is formed.

Glaciofluvial erosion

Short-lived but huge glacial rivers from ice-locked lakes have been able to erode deep canyons, or *kursu* valleys. Some examples are the canyons in Muddus/Muttos and Áhusjgårsså

Gisuris

If you walk along the Badjelánnda Trail from Ánonjálmme to the Gisuris cabins, there are few traces of human life to be seen for the uninitiated. No monuments, ruins or other traces of anybody ever living here. Just before you arrive at the Gisuris cabins, the trail passes by a few depressions in the ground scattered on an open plain. The mountain hiker walks by it, unaware that it was a central spot for ancient hunters, and that this place made it possible for groups of hunters to stay here for long periods of time.

Text: John Erling Utsi

It probably started by someone hearing of how you could dig pits on reindeer routes. And as they passed by, you would stand watch close by and scare them toward the pits. They already had the knowledge of where herds of wild reindeer migrated throughout the different seasons of the year. So, on a plateau not far from Sjpietjavjåhkå, a few deep holes were dug and covered with brushwood so they couldn't be seen. Sharp poles were set up on the bottom, so that if a reindeer was to fall into the pit it would be pierced to death. A pack of stampeding reindeer would probably not be paying too much attention to where they were running. Now it was all about scaring the reindeer up the steep slope below the trapping pits.

Today it is hard to imagine the joy that people of that time experienced after a successful hunt. Fresh meat in abundance. Skin, bone and antler for making clothing and tools. The booty meant that you could keep hunger away for several weeks. Present-day hunters probably only feel a small ripple of that same feeling after a successful hunt.

It is likely that people lived close by during longer times. Aside from the possibility of getting meat, there was a river, a few streams and lakes in the area. Fish were caught with snares from willow roots, or hooks made from bone or antler. Below the plain, large mires expand toward Vuojatädno. These wetlands had sedge that could be processed and dried to be used as "socks" inside your shoes. In late summer there could grow a never-ending amount of cloudberries.

For thousands of years, reindeer herds have lived in the area around Guvtjávrre in spring, summer and autumn. On the plains around the lake, reindeer cows calve at the end of May, and when the mushrooms emerge in August the moors are frequently visited by the herds. During heat in September, the bulls gather harems of female reindeer on the open plains.

Photo: Carl-Johan Utsi

Upstream, on the eastern side of the river, there are a countless number of remains from settlements. Practically every hill has one or several hearths. The older Sámi from Jokkmokk who lived during the time of nomadism, tell about how they would stay by the lake and river, raise their Lavvus and live there for a few weeks. During that time, reindeer cows were milked and reindeer herds were kept rounded up on the nearby mountain slopes. On both sides of the big river there were mountain peaks with patches of snow, on which the reindeer could escape insects during hot summer days.

Today the Lavvus are gone, replaced by huts and cabins built by reindeer herders along the shores of Guvtjávrre, Sáluhávrre and Vásstenjávrre. During the major part of July and parts of August, the people of Sirges Sámi village organization live there. July is the month for gathering the reindeer herds to mark this year's calves. In August, those who remain are occupied by fishing, for household needs or for sale.

Photo: Carl-Johan Utsi

near Sáltoluokta. On some mountain slopes you can see ice-margin channels, eroded by meltwater streaming down from the impact between the melting inland ice sheet and the bedrock. Series of ice-margin channels show how the ice gradually melted away, making the stream change its course further down the slope. The slope above Aktse is a good example, well visible from the pasture.

Glaciofluvial deposits

When a glacial river slows down in a lake, the slurry sinks to the bottom. Thus a delta is formed. Deltas formed while the inland ice sheet melted are often on dry land today. This happened for example around the Gisuris cabin and on the slopes of Áhkká, where old delta areas now are plateaus. New streams or rivers can cut deep ravines into the old delta areas. The shore becomes a so-called *nipa*, a steep sandy river-bank.

A delta changes from day to day. Every year the Ráhpaäno suorgudahka (the Lájtávrre delta) in Ráhpaädno grows five meters further out into the lake. Another active delta is the Darreluoppal delta in Darrevuobme. The delta areas were formerly important haying lands, for example for the people in Aktse. Today the delta areas are important grazing lands for moose and moose hunting grounds for people living in the mountains.

Many of the formations created during the Ice Age can be studied as active processes in the mountains of Jokkmokk. Glacial streams branch out below the present-day glaciers, depositing sediment in the shape of a descending folding fan, a sandur. Sandur is an Icelandic word, and we recognize the structure from pictures of Vatnajökull and the great glaciers of Iceland. In Sarek there are many active sandur formations near glaciers. A good example of an inactive sandur, formed at the end of the Ice Age, can be found by the eastern edge of Bietsávrre above Sáltoluokta.

Where fast rushing streams have transported material down mountain slopes, alluvial fans have been built up by coarser material. Alluvial fans are fan shaped like sandur formations, but more sloping. Aside from many places in Sarek, beautiful examples are found on the slopes of Ráhpavuobme and Áhkká.

There are also many eskers in Laponia. Eskers are high, ridge-shaped and usually run along valley floors. There are many beautiful ridges, for example along Vuojatädno in Padjelanta/Badjelánnda and on the mires of Muttos, used as ancient migration trails for both humans and animals.

Glacial lake shorelines

Temporary glacial lakes were formed during the retreat of the inland ice sheet. These were dammed up between the ice and rock. Shorelines and remains of small deltas where the streams flowed out are often seen on mountain slopes. Good examples are a series of delta plateaus on the slope above Sáltoluokta and on the slopes of Áhkká. They display different stages of ice-locked lakes. Often you will see series of shorelines on slopes, marking how a glacial lake gradually has been drained.

Frozen lands

Ground frost re-creates soils in cold regions. Some areas in Laponia have permafrost, constant ground frost. On mires with permafrost we find palsas, for example at Nuvjávri in Sjávnja and at Stáloluokta. Palsas are humps of peat with permanent frost. On high altitudes in the mountains, for example in the areas east of Stáloluokta, there are tundra polygons. The ground has cracked into four or five-cornered shapes with a size of 10–40 meters. Beneath these squares there are ice wedges, permafrost that penetrates deep into the ground.

Traces of the workings of ground frost are displayed as soil frost formations. Fine-grained soils become water-saturated and plastic when the ground frost thaws. This results in the ground starting to move down slopes in the shape of sliding soils (solifluction) or stone streams. Through solifluction grassy terraces are formed on the slopes. On level ground stone blocks can be lifted up by thawing, creating stone pits, stone rings or boulder depressions. If the surface is flat and stoneless, soil-tufts are created. Which ground frost phenomenon is formed depends on climate, soil type, amount of stone blocks, degree of slope and water content in the ground.

Glaciärer och sluttningsprocesser

Dagens glaciärer är inte kvarlevor av inlandsisen. Under stenålderns värmeperiod försvann alla svenska glaciärer. Under järnålderns klimatförsämring flyttades trädgränsen nedåt och glaciärer började återskapas. Idag finns det 300 glaciärer i Sverige, varav cirka 100 ligger i Laponiaområdet. Av Sveriges tio största finns nio i Laponia. De tre största glaciärerna i Sverige är 11-13 kvadratkilometer stora och ligger i Sulidälbmá, störst är Sálajiegŋa om vi räknar med även den del som ligger i Norge. Glaciärerna växer eller krymper som en följd av klimatet. Allt sedan Axel Hambergs forskning vid början av 1900-talet har forskare bl.a. i Sarek följt den processen för att lära sig mer om klimatförändringar. Under senare år har Sareks och Sulidälbmás glaciärer krympt cirka 10 meter/år vid fronten.

Glaciers and slope processes

Present-day glaciers are not remnants of the inland ice sheet. During the warm period of the Stone Age all Swedish glaciers disappeared. During the colder climate of the Iron Age, the tree line moved down and glaciers started to be re-created. Today there are 300 glaciers in Sweden, of which around 100 are within the Laponian area. Out of Sweden's ten largest, nine are found in Laponia. The three largest glaciers in Sweden are located in Sulidälbmá and cover 11-13 square kilometers. The largest is Sállajiegŋa if we also count the part that is on the Norwegian side. Glaciers grow or shrink depending on the climate. Ever since Axel Hamberg's research at the beginning of the 20th century, scientists in Sarek and other places have studied these processes to learn more about climate change. During recent years the glacier fronts of Sarek and Sulidälbmá have receded around 10 meters every year.

Slope processes

Frost has the power to blast away rock from cliffs (frost shattering). There is a steady rockfall from the mountains. Rocks often follow specific rockfall chutes and cumulate below the precipices as talus deposits, a blocky scree. The largest boulders end up on the bottom, while finer material stays at the top. Such screes can be found everywhere in the mountains, some good examples are Skierffe near Aktse and Gierkav west of Sáltoluokta. In the summer of the year 2000 a rockfall brought down a gigantic boulder, the size of a house, that settled finally on a parking place along the road to Ritsem, obstructing all traffic. It is still there, and the road had to be rerouted.

There are many other slope processes. Snow avalanches can drag along large volumes of rock material from the mountain slopes, creating avalanche deposits. Heavy rain can bring large quantities of rock and soil down the slopes as debris flows. The masses claw out a deep ravine on its way down, later to be deposited on the valley floor. Traces of slope processes are very common in Sarek and on the slopes of Áhkká. For the mountain area it is quite typical that many changes do not happen gradually and quietly, but fast and dramatically. One example is the debris flow that in the year 2000 came down from the slope and completely covered a long stretch of the southern Badjelánnda Trail north of Stáddájåhkå.

Another example of sudden processes is when the glacial lake at Ruopsokjiegŋa was emptied in 1985 after a heavy downpour. The same heavy rainfall caused several debris flows on the slopes of Skanátjåhkkå. The traces from these can still be seen, for example on Guhkesvágge.

2.4.4 The Path of Water – the Hydrologic Perspective

Large parts of the Lule River's drainage area have their river sources within the borders of Laponia. 89 percent of the World Heritage's surface is drained into the Lule River. The remaining surface area belongs to the drainage areas of the Kalix River, Råne River and Pite River.

At higher altitudes the level of precipitation is greater, temperatures are low and large lakes are few in number. The Laponian area however differs from other high alpine areas in the country by the presence of a few larger mountain lakes above the forest line: Virihávrre, Vásstenjávrre, Sáluhávrre and Guvtjávrre. Snow melting happens late, and spring floods come as powerful mountain floods during summer. Large volumes of glacial slurry are transported by the water, allowing deltas to be formed. Otherwise water is clear with low levels of dissolved substances and organic material. The further you go along the water systems, the earlier spring flood arrives and the more dissolved substances and organic materials are found in the water. On lower altitudes water also flows through primary rock areas with more acid bedrock than in the mountains. Along with acidic humic matter from mire areas, this results in lower pH values.

The most eyecatching water surface, Áhkájavrre, and the dominating watercourse, Lule River/Julevädno, only partially belong to the World Heritage. Hydroelectric exploitation of the Lule River has resulted in the loss of natural aquatic environments, causing these parts to be left outside as a corridor. The World Heritage is also affected by other dams: Dievssavággi with Sádijávrre in the northern part of Laponia and Tjaktjajávrre in the south.

2.4.5 A Landscape of Extremes – the Climatic Perspective

An area like Laponia shows great climatic contrasts with many extreme situations when it comes to snow depth, cold, water bearing, wind force etc. This is due to the great spread both vertically and in west-to-east extent. The western parts of Laponia are to a higher degree subjected to Atlantic influence and have a more maritime climate. Western ocean winds bring in high levels of precipitation over Padjelanta/Badjelánnda and Sarek, resulting in ample amounts of snow and rain, substantial snow depths and in summer strong flows in watercourses. The moist Atlantic winds are pushed up against the mountain massifs in

Sarek National Park, where we get the highest levels of precipitation in the country, 2 000 millimeters per year. The eastern parts of the mountain chain and the forest area have a considerably more continental climate with warm summers, cold winters and low levels of precipitation, around 500 millimeters per year. Around half of the annual levels of precipitation fall as snow. In the forest area snow covers the ground for more than half the year. The period of snow coverage increases when altitude rises. In the high alpine massifs of Sarek and Sulidälbmá there are grounds that never thaw.

Temperature

Altitude above sea level has more climatic importance than the degree of latitude. In summer the temperature drops almost 1° Celsius for every 100 meter rise of altitude. This means that it can be 15 degrees colder on Bårddetjåhkkå than in Huhttán/Kvikkjokk, 30 kilometers away. The vegetation changes very rapidly if you move westward up toward the high mountains, while it does not change as drastically if you move north at the same altitude. The mean annual temperature in the Vuollerim area, for example, is about 0° C, while it is -8° C in Sarek. The length of the growing season is measured in the number of days per year with a mean annual temperature above +5° C. The growing season within the municipality of Jokkmokk varies from 100 days in the most western parts to 140 days in the most eastern parts. As a comparison it can be mentioned that Uppsala has 180 days and Malmö 210 days. The shorter growing season in the mountain area is compensated in many ways through the strong insolation in early summer. The growth of all plants is very rapid in the month of June because of sunlight at all hours. The midnight sun is visible in Laponia from June 6th to July 6th with big variations depending on where you are located.

A totally different situation often occurs in the winter. During clear days and nights the cold air sinks down into the valleys, while the peaks have higher temperatures. This inversion, reversed air stratification, can mean a temperature difference of ten degrees between peaks and valleys. The winter cold of the valleys affects the vegetation. Often a reversed tree line is formed, and due to inversion the bottoms of the valleys are barren. Mountain birch forests grow higher up the slopes and later transitions into bare mountain at even higher altitudes. Down in the coniferous forests you can instead find a border of mountain birch forests on the bottoms of valleys due to cold.

2.4.6 From Calypso Orchid to Glacier Crowfoot – the Botanical Perspective

Hardiness zones

Due to its great spread in altitude as well as to its east-to-west extension, Laponia falls into several hardiness zones. Even within a few kilometers on the map, there can be great contrasts between austere high-alpine environments and lush birch forest covered valley floors. The eastern part of Laponia is within the zone called boreal forest, more exactly in the middle boreal zone. This zone makes up the majority of the coniferous forests of northern Sweden (the taiga) and the mire areas. Nearer to the mountains we enter the north boreal zone with even sparser coniferous forests, where birch is also common. This zone also includes the mountain birch forest, which in some contexts is called the sub-alpine zone. Above the north boreal zone, the bare mountain begins. This alpine zone has the subdivisions low-alpine zone, mid-alpine zone and high-alpine zone.

The coniferous forest area – the taiga

The coniferous forest, the taiga, with vast forests and mires constitutes a large part of eastern Laponia (Muddus/Muttos, Sjávnja and the eastern edge of Stora Sjöfallet/Stuor Muorkke and Sarek). The coniferous forests cover around 1 000 square kilometers, which means that Laponia contains the largest protected forest area in Europe. Pine and spruce are the dominant tree species. Spruce dominates on the mountains' northern and eastern slopes, where the

ground is colder and moister and the snow cover is deeper. This is due to the fact that pines are not well-adapted for the large amounts of snow that occur in such places. Treetops and branches break from the weight of snow. On the other hand, the pine is very well-adapted to forest fires. More often than not it survives and is only injured by the flames. Where the fire has burnt the trunk, parts of the growth layer are destroyed. The injury can be visible for centuries as a fire scar, before it is overgrown by the surrounding living, undamaged sections. There are pines that have been afflicted by several forest fires during their life, but still kept on growing. Usually spruce do not survive such fire damage, but are affected by rotting and die. Especially dry, south-facing slopes have been ravaged by forest fires about once every 100 years, making it hard for spruce to take hold.

The major part of Laponia's coniferous forests rest on primary rock and moraine ground which is poor and dry. The abundance of reindeer-lichen make the pine forests important grazing lands during winter. The higher ground vegetation is dominated by berry shrubs and wavy hair-grass *(Deschampsia flexuosa)*. Near the edge of the mountains and on fine sedimentary soils along rivers and streams, you will find richer vegetation in coniferous forests. Mezereon *(Daphne mezereum)*, red baneberry *(Actaea erythrocarpa)*, alpine blue-sow-thistle *(Lactuca alpina)* and ostrich fern *(Matteuccia struthiopteris)* are among the more exclusive plants.

Many lowland species disappear closer to the mountains. Alpine species like blue heath *(Phyllodoce caerulea)* and alpine bearberry *(Arctostaphylos alpina)* start to appear in the coniferous forests. The coniferous trees become shorter and grow more sparsely and mountain birch become more and more common. Large areas of coniferous forests along the mountains are primeval forests – never logged. The trees are very old. Many pines are older than 500 years. This means that there is a lot of dead or dying wood, which is why many threatened wood-living species (fungi, lichens, insects) find large, suitable and connective environments with an unbroken continuity as old-growth forests.

Wetlands

A large part of Laponia is made up of wetlands. In the coniferous area of Lapland, 25 percent of the land is mire. Within the forest parts of Laponia – Muddus/Muttos, Stubbá and Sjávnja – the portion is even greater. Closer to the mountains the proportion gradually declines to 5–10 percent. Mires are common in the forest areas of Lapland even though the level of precipitation is low. This is due to the short summers where only a small portion of the water has time to evaporate. Mires can form when there is a lot of water in the ground. On higher mountains it rains more, and mires can form even on steep slopes called slope fens. The vegetation is made up of a thick carpet of sedge, grass and herbs.

However the most typical mires of Lapland are the vast string bogs (*áhpe* in Sámi), that are striped with alternately dry ridges and wet areas, called flarks. The mires of Muddus/Muttos, Stubbá and Sjávnja are good examples of this mire type. The ridges run at right angles to the direction of the slope of the mire. A large number of plant species live on the mires. Bottle sedge *(Carex rostrata)*, slender sedge *(Carex lasiocarpa)*, mud sedge *(Carex limosa)*, purple moor grass *(Molinia caerulea)*, several species of sundews and some species of orchids live on carpets made up by a large number of different sphagnum mosses and other moss species. What gives the mire a special flowerage in June is the simultaneous blooming of the pink bog rosemary *(Andromeda polifolia)* and the white flowers of the cloudberry *(Rubus chamaemorus)*.

Until the 1940s many of the mires of Lapland were used for haying. That is why many of the pioneer settlements were established in the wetlands of eastern Sjávnja, where there was plenty of winter fodder for the livestock. August was the month of haying. September often arrived before all the hay was harvested and dried on racks. When the snow came there were many weeks of work in bringing home the hay by horse and sled. Many species of sedge, horsetail, cottongrass, grass and flowers were among the mire hay. The richest fodder was

water horsetail *(Equisetum fluviatile)*. Poor mires were not hayed every year. Today no mires are hayed, but mires are still economically important as moose hunting grounds and reindeer grazing lands. Especially in the spring, reindeer find their way out in the wetlands to graze on bogbean *(Menyanthes trifoliata)* and marsh cinquefoil *(Potentilla palustris)*.

The mountain birch forest

Along the Swedish mountain chain, it is most common that mountain birch forms the tree line below the bare mountain. It is a special characteristic of the Scandinavian mountains, and has few equivalents in other mountain areas. The mountain birch forest consists of a roughly 200 meter wide belt between the coniferous forest and the bare mountain. Many of the valleys of Laponia are at such altitudes above sea level that mountain birch forest stretch out along large areas on the valley bottoms. The mountain birch forest contains several other species of deciduous trees. Aspen, mountain-ash, birch cherry, grey alder, sallow and other species of willow are common. The mountain birch forest is very varied, from poor mountain birch moors with berry shrubs to rich meadow birch forests with tall herb vegetation.

The easternmost birch forests on primary rock are often of moorland character. Berry shrubs, lichens and coniferous forest mosses dominate. Where there is more nutrition and water you will find more dwarf cornel *(Cornus suecica)* and western oakfern *(Gymnocarpium dryopteri)*. Lichens and mushrooms are important reindeer grazing plants in these forests during the transition to winter.

Lush meadow birch forests extend over mountain slopes with moving water and rich alpine bedrock. Ráhpavuobme (the Rapa Valley) is known for its rich vegetation that feeds the big moose and the many bears. Meadow birch forests are dominated by tall herbs like woodland geranium *(Geranium sylvaticum)*, northern wolfsbane *(Aconitum lycoctonum ssp. Septentrionale)*, alpine blue-sow-thistle *(Lactuca alpina)*, angelica *(Angelica archangelica ssp. Archangelica)*, sorrel *(Rumex acetosa ssp. Lapponicus)*, globe flower *(Trollius europaeus)*, meadowsweet *(Filipendula ulmaria)*, melancholy thistle *(Cirsium helenioides)* and common valerian (*Valeriana sambucifolia)*. At the time of leafing in early summer you will see the flowering of low herbs like twoflower violet *(Viola biflora)*, May lily *(Maianthemum bifolium)* and Arctic starflower *(Trientalis europaea)*.

The tree line

The tree line is the border where the continuous mountain birch forest changes into bare mountain. In Laponia this line is drawn along an elevation of around 800 meters above sea level, but it varies considerably. Toward the west the tree line drops due to the more maritime climate. The birch forests climb higher on slopes facing south (the north sides of valleys) while they are lower on the more shaded northern slopes. During the warm period that followed after the ice age, it is calculated that the tree line was 200 meters higher than today. The warm period lasted for 4 000 years and was interrupted by colder climate 5 000 years ago.

Delta areas

A delta is a dynamic environment where water flow, sedimentation of silt and vegetation interact. Stiff sedge *(Carex bigelowii)*, narrow small-reed *(Calamagrostis stricta)* and water sedge *(Carex aquatilis)* colonize the river-banks and water horsetail *(Equisetum fluviatile)*, bottle sedge (Carex rostrata) and blister sedge *(Carex vesicaria)* the lagoons. Gradually willows and grey alder start growing on the highest parts of the deltas.

Bare mountain – the alpine zone

Above the tree line you will only find occasional birch and other deciduous trees. Here the bare mountain begins, with many different types of plant communities, formed by different environmental conditions. Access to water and nutrients are important factors. Other

Muddus/Muttos national park. Photo: Carl-Johan Utsi

factors that strongly influence plant life are access to lime and the amount of snow during winter.

On dry and poor soils mountain moors are formed, while mountain meadows spread out on land with an abundance of water and nutrients. There you find a lushness and flowerage that is probably unmatched in our country.

Lime-poor mountain moor – wind exposed grounds and snowbeds

The variations of the mountain moors is due to the amounts of snow that falls. On places exposed to wind, where there is no protecting snow cover during the entire winter, the most hardy plants of the mountains grow: diapensia (Diapensia lapponica), alpine azalea (Loiseleuria procumbens) and alpine bearberry (Arctostaphylos alpina). Below a border of bilberry and blue heath come the plants that have adapted to life with a short growing season due to snow remaining far into the summer. Dwarf willow (Salix herbacea), moss bell heather (Harrimanella hypnoides) and creeping sibbaldia (Sibbaldia procumbens) are well adapted to grow on these snowbed patches. Grasses and sedges thrive here. These snowbed communities give rich summer grazing for the reindeer. It is no coincidence that the large reindeer herds stay far to the west, up in the mountain area during the summer. Closer to the Atlantic the snow depths are great, which has resulted in vast grassy moors on snowbed grounds.

Mountain aven moor – on lime-rich grounds

When the bedrock is rich in lime the character of the mountain moor changes. Botanists often speak of Dryas heaths, since the mountain aven *(Dryas octopetala)* becomes common as soon as the levels of lime rise. It forms very species-rich plant communities together with Lapland rosebay *(Rhododendron lapponicum)*, moss campion *(Silene acaulis)*, purple saxifrage *(Saxifraga oppositifolia)*, Arctic bell-heather *(Cassiope tetragona)*, Arctic bellflower (Campanula uniflora) and several louseworts and orchids.

Titti Bergman. Photo: Carl-Johan Utsi

The frog, the moose and I

She must have tremendous endurance and be in great shape, I thought when I struggled through yet another willow shrub, of which large parts of Sjávnja are covered. In front of me, Titti Bergman leapt and wiggled herself between willow shrubs and over tuffets with a small backpack on her back and a larger moose rifle in her hand. It was the middle of September and Titti's hunting party was out on their second week of moose hunting. Why she wasn't carrying the rifle over her shoulder like most of us do, probably has to do with her growing up. She was so young and skinny when her father brought her on the hunt for the first time, that she simply didn't have shoulders broad enough to hold the rifle strap. Titti has carried the rifle in her hand since then.

Text: John Erling Utsi

We had reached the road's end at Allávárre, around 25 kilometers north-west of Gällivare. A few hundred meters further was the boundary line to the Sjávnja Nature Reserve. On the map it doesn't look tempting at all. Green is dry land, blue is either lakes or mires. Where we were going, the map showed almost only blue. But that was something that Titti didn't care about. Titti and her two hunting friends are discussing where they would hunt. She has brought a young dog that she is going to train to hunt moose. After making plans for the day, we move off along a small forest lane.

"I love to slosh around on the mires", she says. Already as a child her father brought her on these treks. They fished in the lakes and hunted moose. Since she from childhood is accustomed to the landscape and the terrain, the mires don't bother her. On the contrary she likes them. "I love the smell of the mire, there are a lot of frogs, some moose and then me", she says. After she got married, her newly fledged husband asked her where she wanted to go on their honeymoon trip. The answer was that she wanted to go to one of the lakes in Sjávnja. There they were to fish pike. From Titti's way of telling it, I get the impression that

the trip was a totally romantic experience. The husband's version might be a little different however.

Solo in Sjávnja

When I ask Titti how it came to be that she started hunting, the answer is simple. "My father always brought me out to the forest. So I don't think it mattered that I was a girl. If I was a boy I think it would have been the same. Since dad didn't have any sons he brought me and my sister. If you take your children along, they'll become interested. And we're both interested in hunting. Both my sister and I."

Hunting moose in Sjávnja, jumping between tuffets and sloshing around on the mire is the highlight of the year. The shooting itself she sees as a secondary matter only. Out on the mires she's not pondering anything else. These are days and weeks that give her energy for the entire winter. And for her it's also a kind of therapy. "You look at the tuffets, watch the weather, the sun and what animals that have passed through the area."

You very rarely encounter anyone else in these areas. But a few years ago, Titti met a couple of canoeists carrying their canoe. They had definitely gone astray. In summer time there are not many who disturb the life of the birds in the nature reserve. And Titti is proud that these lands are now part of a World Heritage. The fear people had about there being more restrictions if the area became a World Heritage, turned out to be unwarranted. "The interest among tourists has increased with the status. But I don't think that there are that many more who actually get out here to slosh around on the mires. I can probably count them on the fingers of one of my hands."

The flora around Virihávrre is among the richest and botanically most interesting of the Swedish mountain chain. On the easily crumbled, lime-rich bedrock not only mountain aven and other common companions of lime-rich areas grow. The diversity of species is even bigger, with the occurrence of a number of real rarities: alpine arnica *(Arnica angustifolia)*, Arctic sandwort *(Arenaria norvegica)*, redrattle *(Pedicularis flammea)* and snowbed draba *(Draba crassifolia)*. The two most well-known and truly exclusive plants are however Robbins' cinquefoil *(Potentilla robbinsiana)* and creeping sandwort *(Arenaria humifusa)*. There are only three known locations with Robbins' cinquefoil on the European mainland, namely Padjelanta/Badjelánnda. It grows on the volcanic rock type Jeknaffotuffit on exposed peaks, for example on Jiegŋáffo. Outside Padjelanta/Badjelánnda, the nearest known locations are on Greenland and Svalbard. The inconspicuous little creeping sandwort was first discovered on the mountain Unna Duvgge, but has since been found in other places in Badjelánnda, but always on serpentinite rock.

High mountains

On the high peaks in the high-alpine zone there are only a few plant species. Glacier crowfoot *(Ranunculus glacialis)* is one of them. It is the seed plant that can manage to survive at the very highest altitudes. Solifluction, permafrost, short summers and large amounts of snow are hardships that alpine plants at high altitudes must endure.

2.4.7 Animal Life – the Zoological Perspective

Since the area stretches across such diverse hardiness zones, the area has an overall rich animal life with mammals and birds. The density of individuals is however seldom high. The lower, invertebrate fauna is not particularly well studied. The fauna of mammals, birds and

fish has been examined better. Many species, like reindeer, moose, Willow Ptarmigan, brown trout and grayling set about on long journeys between regions within Laponia. Others, mainly migratory birds, only use the area during the snow-free period.

Some especially spectacular species are associated with the Laponian area. The big moose belonging to the mountain valleys (especially Ráhpavuobme) are maybe the only moose population in Sweden that lives in a situation where predators and climatic conditions, not hunting, is what limit the population. The highly threatened Arctic fox has one of the country's core areas in Sarek and Padjelanta/Badjelánnda. Golden Eagle, White-tailed Eagle, Gyr Falcon and Peregrine Falcon all have important nesting places in Laponia. Even the four large predators live or exist in the World Heritage area. Bound to the deep and fertile mountain valleys (for example Ráhpavuobme and Njoatsosvágge) and the edge of the mountains there is a stable population of bear that even extends down into the coniferous forest. Lynx has a similar expansion, but with more dependence on the steep mountain sides, which are suitable for kittening. The wolverine has its main presence in more alpine environments, but especially in winter it finds its way down to the forest lands, all the way to the Muttos/Muddus area. Nowadays, wolves are only found in the area sporadically, but historically the area was home for many wolves.

The coniferous forest (Muttos/Muddus, Sjávnja and the edge of Sarek and Stuor Muorkke/Stora Sjöfallet)

The boreal forest, the taiga, is rich in species. Western Capercaillie, Hazel Grouse and Black Grouse are real coniferous forest species that live side to side with the Willow Ptarmigan. Five species of woodpeckers, with the Eurasian Three-toed Woodpecker as the true northern Swedish species, seek their way to the old forest. Abandoned woodpecker holes are preconditions for a whole number of hole-nesting birds: Grey-headed Chickadee, Common Swift, Northern Hawk-Owl and Red-breasted Merganser. Redwing, Song Thrush, Brambling, Common Redstart and Common Cuckoo are some of the migratory birds that nest in the taiga. Among the resident birds the Siberian Jay, Parrot Crossbill and Red Crossbill, who nest as early as in the end of winter, especially stand out. Among birds of prey, the threatened species Peregrine Falcon, White-tailed Eagle and Golden Eagle are a few of the birds that nest in the forests of Laponia. The Eagles are dependent on old-growth forests. It is estimated that the trees must be older than 300 years to be able to hold their nests, which can weigh up to one ton.

The squirrel and the marten are the only mammals which are almost entirely linked to the coniferous forest. They are hard to catch sight of, but in the winter their tracks reveal that they are common.

Coniferous forest mires (Muddus/Muttos and Sjávnja)

The mires in the coniferous forests have a rich and noisy bird life in May-June with Whimbrel, Wood Sandpiper, Spotted Redshank, Common Greenshank and Ruff. Yellow Wagtail, Common Snipe and the more unusual Jack Snipe belong to the large mires, as does the Broad-Billed Sandpiper. The mires are also the nesting places for Bean Geese, Cranes and Whooper Swans. At the beginning of the 1900s the Whooper Swan was only to be found in a few locations, among others inside Muddus/Muttos. However, since the 1950s the species has increased in numbers and has now spread across the country.

The birch forest (Sjávnja, Stuor Muorkke/Stora Sjöfallet, Sarek and Badjelánnda/Padjelanta)

In winter the Willow Ptarmigan is the typical bird. In summer the birch forests are filled with migratory birds like Willow Warbler and Bluethroat. Merlin is the typical bird of prey, and is dependent on crows whose abandoned nests it takes over. Merlins and Fieldfares willingly nest together, and have the advantage of each other's aggressiveness towards nest plunderers.

Most mammals move through both coniferous and birch forests. Bear, lynx and wolverine

often seek their way to the birch and mountain forests along the edges of mountains, as do moose. Common viper and viviparous lizard are the only reptiles. They are mainly found in the coniferous forests, but can also be seen on rare occasions on southern slopes in the birch forest. Common frogs are surprisingly common high up in the birch forests.

Bare mountain (Stuor Muorkke/Stora Sjöfallet, Sarek and Padjelanta/Badjelánnda)

The lower mountain moors are used by many species. Typical birds are Golden Plover, Lapland Bunting and Long-tailed Jaeger, which all give a loud voice to the early summer mountain. Even the quieter Eurasian Dotterel live in the same areas. The Arctic Redpoll of the willow shrubberies are replaced further down in the birch forest by the Common Redpoll. Willow Ptarmigans in the willow regions are succeeded by Rock Ptarmigans at higher altitudes. In years with plenty of rodents there is food for Rough-legged Buzzards, Snowy Owls and Long-tailed Jaegers. The Gyr Falcon on the other hand is a Ptarmigan hunter. It nests on mountain precipices, where it takes over old Raven nests.

The bare mountain is the summer land of the reindeer. Here they graze on alpine meadows, grassy moors and willow marshes. Otherwise the only mammals that are completely linked to the bare mountain are the Arctic fox and Norway lemming. The Arctic fox is completely dependent on the fluctuations of the lemming population. Unfortunately the lemmings seem to have prime years more and more seldom, meaning that both the Arctic fox and birds of prey usually have very weak populations. The wolverine is also found most frequently on the bare mountain.

On the truly alpine parts of our mountains, on the high peaks, there are not many species of birds. The birds that are most at home in these sterile, blocky grounds are the Rock Ptarmigan and Snow Bunting. The Purple Sandpiper, a small wader, also nests on these rocky high plateaus.

The lakes and mires of the mountains

Long-tailed Ducks, Greater Scaups, Velvet Scoters and Common Scoters swim in lakes on the bare mountain. There are large mires on the mountains, for example in Sjávnja and Padjelanta/Badjelánnda. Red-necked Phalarope nest here, along with other Arctic wader species like Dunlin, Temminck's Stint and the rare Great Snipe and Bar-tailed Godwit. The Lesser White-fronted Goose which nowadays is very rare is still seen in its nesting environments in Padjelanta/Badjelánnda.

2.5 Infrastructure for Locals, Land-users and Visitors.

Laponia is a combined World Heritage, which means that the visitors are of a considerably wider target group than that of a regular nature heritage or culture heritage. What Laponia has to offer attracts the young as well as the old, the novice as well as the adventurer and both national and international visitors. The area in and around Laponia is also an important recreational area for the local population.

It is of special importance to provide opportunities for experiences that shed light on the interaction between a living Sámi culture, the reindeer industry and the experience of nature, stillness, solitude and of fending for oneself, at the same time as learning and getting insights in a human activity that has been going on in the area for ages.

The majority of areas sensitive to disturbances, both when it comes to nature and ongoing reindeer husbandry, require special consideration and contain restrictions to some extent for the visitor. Certain areas make no provisions for lodging, have no marked trails or guides, and the hiker should have experience of lengthier tours and knowledge of mountain safety, as well as knowing how to act in case of emergency. Less experience is required along trails where there is a system of cabins, and parts of Laponia are so easily accessible that they are even suitable for children and people with minor functional disabilities.

It is particularly important to show respect for the reindeer and the land-use of reindeer husbandry. The reindeer grow mainly in the summer, building up fat and storing protein. During the summer is also the time when the cows produce milk for the calves. In winter there is only marginal growth. The reindeer's need of calm when grazing is of great importance for its survival, and thereby also for the reindeer industry.

Since Laponia is made up of already well-known national parks and nature reserves, the tourist culture and popularity have developed over the years. In the area there is a developed infrastructure that supports the visitor and those who want to develop the industry.

There are lots of activities which are possible to do in Laponia. Some are more or less appropriate, while others are not permitted in some parts or in the whole area. The starting-point is to promote natural or cultural experiences and outdoor life, with the basis in Sámi cultural experiences, hiking, ski touring, spending nights in a tent and cabin, picking berries and mushrooms or studying nature.

Since the prohibition against pursuing commercial activities within national parks has been removed, there are now greater opportunities to make a living through sustainable tourism for people who live and work in and around Laponia. Consequently, it is probable that the commitment to jointly take care of and preserve Laponia for coming generations will increase.

This is favorable both for the reindeer industry and the local economy. For the municipalities concerned and for their inhabitants it is especially important that the World Heritage can contribute to a feeling of a heightened quality of life. A committed and knowledgeable local population is one of the most important tools in the work to preserve the qualities of Laponia for the future.

2.5.1 Entrances and Rest Areas

There are a number of entrances and rest areas around Laponia. Some of them are presented below.

Stuor Muorkke/ Stora Sjöfallet with Mountain Center and Visitor Center

Naturum Laponia, the central visitor center for Laponia, is in Stuor Muorkke in the center of the world heritage. It is a central place, an entrance and a destination for those who visit Laponia.

The facility Stora Sjöfallet Mountain Center is owned by Vattenfall who leases it to a private tourist entrepreneur. The facility has recently been renovated. The mountain center offers hotel, restaurant, shop, conference facilities, caravan site, camping grounds and a gas station.

Hiking trails, fishing waters and snowmobile trails are found adjacent to Stuor Muorkke, as well as a helicopter station. During the summer season there is a daily bus service to Jiellevárre/Gällivare and Jåhkåmåhkke/Jokkmokk.

The Muttos entrance

Parking place and rest area at Skájdde. Imporant take-off point for day visits and longer tours in Muddus/Muttos. Rebuilding and renovation is planned for the entrance.

The Huhttán/Kvikkjokk entrance

Huhttán/Kvikkjokk has a long tradition of being a popular destination for mountain tourism. It is an entrance to Laponia with Kungsleden, the King's Trail, and the Badjelánnda Trail connecting to the Arctic Trail (Nordkalottleden) to Sulidälbma. There are lodging facilities, caravan sites and parking places. In summer there is regular air traffic to Stáloluokta, and the village has a bus service running to Jåhkåmåhkke/Jokkmokk all year around.

Road 825 information site

The information site has signs and a small rest area where cars and buses can stop and get information about the Laponian World Heritage and the road between the World Heritages.

Per Erik Kemi. Photo: Carl-Johan Utsi

Per Erik Kemi, Gällivare skogssameby

The hidden forest people

"I don't have a clue how, but it works", says Per Erik with a laugh as he describes how they gather their reindeer in eastern Muddus/Muttos. He says that they sometimes walk around with cattle bells. Often times the reindeer gather in the vicinity. For some reason that he doesn't know, they are drawn to the sound. In dense forests and vast mires they have even more help, in addition to the cattle bell. Without the mosquitoes the reindeer would never gather during summer time. When the mosquitoes become too much of a disturbance for the reindeer, they gather in open areas. Out on the large mires they are easy to find and gather together for calf marking, which starts the week after midsummer.

Text: John Erling Utsi

Foxes and rainThe difference between reindeer husbandry in the mountains and in the forest is that while the mountain reindeer find their way to the mountains near the Norwegian border in spring, the forest reindeer stay in the forests of the inland. Herds move in circles between different areas, depending on the season. The herds are often smaller than those of the mountain Sámi village organizations. After calf marking, which they try to finish as quickly and in as few nights as possible, the herd is set free and is left undisturbed until bull slaughter.

According to Per Erik, cool summers are the best for forest reindeer. "This summer it's been rainy and cold, and we've had very big calves this year," he says. "Such summers have fewer insects, and we've hardly seen horse-flies or warble flies." Another thing that also affects the number of calves is predators. When the bears leave their dens at the end of April, they become a danger for the calves which are born a few weeks later. "Another rascal is the red fox," he says. "Some of them are hopeless.

They seem to specialize on taking calves. And if the reindeer cow gets scared easily or is very young, it is more common that she loses her offspring to the fox."

Now, before heat, the bulls are gathered around the cattle bells. "They flock into larger groups," he says. "But after the 15th of September I don't dare to shoot them. A reindeer bull in heat has a flavor that makes the meat inedible." When he has shot and slaughtered enough reindeer for his family and closest friends, he lets the herd graze in peace. They won't start gathering the scattered reindeer again until October. At the end of November or beginning of December, the mountain Sámi village organizations come with their herds down to the forest land. "That's when there are collisions, since both Unna tjerusj and Sirges use these areas as their winter grazing lands," says Per Erik. "We try to keep the herds separated as long as possible. When it's no longer possible we take the reindeer into corrals and feed them."

Hard times

Per Erik belongs to Gällivare skogssameby. The lands of the Sámi village organization are within the municipalities of Jokkmokk and Gällivare. As all forest Sámi village organizations, they don't have many members. Contrary to the long and narrow areas of mountain Sámi village organizations, their area is more circular. "Forest reindeer husbandry has always been the little brother of the mountain reindeer husbandry," he says. "It's seldom or never that you hear about forest reindeer husbandry. It's not until recently that we have been paid attention to, when there has been talk of opening mines here in the forest areas, not otherwise." During recent years the County Administrative Board has decided where the borders are between the winter grazing lands of different Sámi village organizations. Per Erik considers that they've lost out in this demarcation process. "The lands that we earlier used for grazing during the winter are no more," says Per Erik. "So we either have to choose giving up reindeer husbandry, or accepting the conditions we live under." According to Per Erik the main options, especially in late winter, are to move further west with the reindeer, above the limit of cultivation, or to keep them fenced in. So during the last few winters they have fed their herds.

The fact that Muddus/Muttos is protected and a part of Laponia, is something that Per Erik thinks is entirely positive. That his land is inside a World Heritage doesn't affect his work. "I can work with reindeer, hunt and fish there just like before. I hope that it's a protection for nature, especially where there are still larger areas of old-growth forests. Outside there is hardly anything left, except as tiny, tiny areas. The tree lichens that grow in the old-growth forest are excellent back-up forage for the reindeer. I'm sure it's the salvation for many reindeer sometimes."

Gäbnásj – the Sáltoluokta entrance

Gäbnásj is an important parking place for visitors to the Sáltoluokta mountain station and the Sámi settlement. For mountain hikes the place is an importing take-off point for hikes south along Kungsleden, the King's Trail.

Rijtjem

Entrance with hiking trails leading to northern Padjelanta/Badjelánnda. There are lodging facilities, caravan sites and parking places. In summer there is regular air traffic to Stáloluokta. In winter it is an important starting-point for snowmobile-borne outdoor life outside of Laponia. There are good opportunities for sport fishing in the areas outside of Laponia.

Forsviken

Lullegiehtje/Forsviken outside of Jokkmokk is an important information site for Laponia and the road between the World Heritages, E45.

Oarrenjárgga

Oarrenjárgga is a privately owned facility for visitors and an important entrance to the World Heritage.

Other entrances and rest areas

Along Road 825,"The road to the west", there are rest areas at Sjávnjaädno, Nábrreluokta, Vuolep Áhppojávrre and Jávrregasska. In winter there is a parking place at Girjáluokta for the snowmobile trail to Čuonájohka. The Swedish Road Adminstration is responsible for the rest area at Vuolep Áhppojávrre. Who is responsible for the other rest areas is unclear.

Siejdevárre, along the road to Huhttán/Kvikkjokk, is another entrance to Kungsleden. Allávárre, Harrå and Gáidum are entrances to Sjávnja.

Urddajávrre and Sárggavárre are entrances to Muddus/Muttos from the east (on the road between Nahtavárre-Miessávrre).

The Inland Railway Line, Inlandsbanan, passes through Laponia between Bårjås/Porjus and Jiellevárre/Gällivare. There are stops that are mostly used by locals for picking cloudberries and transportation to holiday cabins. For travelers Laponia is a destination point.

2.5.2 Information Sites

The Informational structure around the World Heritage is composed of different types of information, information sites and informational media. The structure is based on levels, where the amount and depth of information varies between different places. The structure includes a number of different categories of stationary information sites:

- visitor center *(Naturum)* in Stuor Muorkke with surrounding facilities
- information points in Huhttán/Kvikkjokk, Bårjås/Porjus, Jiellevárre/Gällivare and Jåhkåmåhkke/Jokkmokk
- cabins along trails with signs, informational material
- rest areas along public roads with adapted information, mainly in the form of signs
- entrances
- portal placard/entrance that shows that the visitor has arrived to the Laponian World Heritage
- portal placard/entrance that shows that the visitor has arrived to a national park, designed according to the guidelines for national parks and signposting set by the Swedish Environmental Protection Agency
- information along trails in the form of signs
- object signs with directions for particular destinations
- boundary demarcations and smaller entrances. The boundary of the World Heritage is marked along roads and trails to emphasize that the visitor is entering Laponia, a Sámi village organization, national park or nature reserve.
- reindeer, boat ride, fish or bread signs which indicate places where these services are provided.

In addition to stationary information, the informational structure includes printed material like books and brochures, digital information, web pages, etc.

2.5.3 Trails and Bridges

The relative inaccessibility is a part of the character of Laponia. Large parts of the World Heritage can only be reached after several days of walking. The structure of the trail system and the types of facilities are, together with cabin sites and bridges over rough watercourses, crucial for what parts of and to what degree Laponia is made accessible for the general public. A well-planned trail structure is also important for the needs of the reindeer industry.

The current trail system is to a great extent built upon the basic structure established in connection to the overhaul of trails in the Swedish mountains done in the 1970s. The state

Stora Sjöfallet/Stuor Muorkke national park. Photo: Jan-Erik Nilsson

has appointed the Swedish Environmental Protection Agency to have the principal responsibility over most of these trails. The national trail system in the mountains is compiled in a report with the same name. In addition to the national trail system there are other state-run trails as well as municipal and private trails. Some trails and bridges are primarily used by the reindeer industry.

Many of the trails in the Swedish mountains, including Laponia, follow natural migration routes. Therefore some stone cairns might be classified as ancient remains. In such cases, that stretch of the trail itself constitutes a cultural heritage, which could mean that permission from authorities may be necessary before making changes and doing maintenance work.

Marked summer trails

Kungsleden
Kungsleden, the King's Trail, is a well beaten and well-marked summer and winter trail that partly runs through Laponia from Aktse to Gáidumjávri. Kungsleden has a well built-up system of trails and cabins, suitable both for beginners and more advanced mountain hikers. There are no difficult passages, bridges have been built over all of the rivers and streams that are hard to wade through, and boat routes have been established across the large lakes. There are three cabins on this trail which are in Laponia (Dievssajávri, Vákkudavárre and Bårdde) and just outside the border to Laponia there is Sijddojávrre, Aktse, Sáltoluokta mountain station and the mountain cabin in Gáidumjávri.

Badjelánndaleden
Badjelánndaleden, the Badjelánnda Trail, (also known as Padjelantaleden) is a marked summer trail that stretches for 150 kilometers between Huhttán/Kvikkjokk and Rijtjem. Badjelánndaleden is suitable for the first-time hiker, the trail is easy to walk and there are no difficult watercourses to cross. It is equipped with bridges and boarded paths. Along the trail there are sleeping accommodations with a day's march distance from each other, about

every 10–20 kilometers. There are six such cabins on the trail which are in Laponia (Gisuris, Låddejåhkå, Árasluokta, Stáloluokta, Duottar, Darreluoppal) and right outside of Laponia there are five cabins (Áhkká, Guvtjávrre, Såmmárlahpa, Darregájsse, Njunjes). Fishing is allowed in lakes and watercourses along the trail, if you have a valid fishing permit. For those who do not want to walk the whole trail there is regular helicopter traffic in summer between Huhttán/Kvikkjokk – Stáloluokta – Rijtjem.

Nordkalottleden and Rádjebálges/Gränsleden
Nordkalottleden, the Arctic Trail is an approximately 800 kilometer-long marked summer trail that runs through the northernmost parts of Sweden, Norway and Finland. Small parts of the trail join together with Kungsleden, the Badjelánnda Trail and Rádjebálges. It stretches from Treriksröset in the north to Huhttán/Kvikkjokk in the south. The trail runs through Laponia, from Bieskehávvre to Sulidälbmá. There are two cabins on this trail which are in Laponia, Ståddájåhkå and Sårjåsjávrre. Nordkalottleden is made up of already existing trails which have been linked together through new routes and supplemented with cabins on the Norwegian side of the border. As a rule, the cabins are 10-20 kilometers apart, but a few stages are 30 kilometers long.

Rádjebálges/Gränsleden is a newly established trail that connects to Nordkalottleden. It stretches from mountain to fjord, between Rijtjem north of Áhkájávrre to Tysfjord in Norway. The trail is 43 kilometers long and based on an old Sámi trail. There are bridges and shelters with toilets on the Swedish side, and overnight lodging on the Norwegian side.

Muttosbálges
In Muddus /Muttos National Park there is an approximately 50 kilometer long marked system of summer trails, accessible from three different directions: from the south through Skájdde, from the south-east through Sárggavárre and from the east through Suolávrre. In Muddus/Muttos there are four cabins: Manson, Nammavárre, Muddusagahtjaldak and Muttosluoppal. Outside the trail system is also the Arvidsson cabin.

Rallarstigen
Rallarstigen, the Old Navvy Trail, which runs through Stubbá and Muddus/Muttos, is a 44 kilometer long cultural trail. It has a special and interesting cultural history stretching back to the 18th century as a route for Sámi, settlers, tourists and railroad workers. The trail starts at Vassaraträsk in Jiellevárre/Gällivare and ends in Bårjås/Porjus. At Stubbá there are connections from the E45 to Rallarstigen. The trail was re-opened in 1994. It is restored with rest areas and boarded paths across mires. Supervision and maintenance is managed by the Porjus Archives Committee and the Gellivare Local History Society. There are requests for building a rest area at Stubbávallen, where there used to be a Sámi homestead.

There are also trails that in some cases are marked, for example at Soldalen above Stuor Muorkke, Bietsávrre and Oarjemus Stubbá (Sörstubba).

Soldalen
This trail offers a view over Stuor Muorkke/Stora Sjöfallet and Láŋas. It is a nature trail through virgin pine forest, bordering to lush high-alpine terrain. It is around 5 kilometers long.

Bietsávrre
Bietsávrre and Gierkav are two popular tourist destinations from Sáltoluokta. For many mountain hikers, Bietsávrre is one of the entrances to Sarek. The trail to the Sámi settlement Bietsávrre is also used by the Sámi people. Gierkav is a frequently visited mountain peak with a grand view toward Áhkká and into Sarek.

Oarjemus Stubbá
Oarjemus Stubbá (Sörstubba) is a mountain just next to the E45 between Jiellevárre/Gällivare and Bårjås/Porjus. After walking about 20 minutes the wanderer is rewarded with an

expansive view over large parts of Laponia, from the mires of Muddus/Muttos to the snow-capped peaks of Sarek.

In Sjávnja there is a well-used hiking trail between Allávárre and Áhkávárre. Wanderers in Sarek often use the trail from Kungsleden to the Bårdde cabin.

Marked winter trails for ski tours

Kungsleden, Gáidumjávri-Dievssajávri
Between Gáidumjávri and Dievssajávri there is a nine kilometer long winter trail for skiing.

2.5.4 Cabins and Shelters

There is an extended system of cabins for resting and staying overnight in Laponia. There are state-owned cabins and cabins owned by The Swedish Tourist Association (STF), but also private cabins and tourist facilities inside Laponia. The reindeer industry also has cabins for their needs.

In a number of cabins there are emergency telephones, which the national Police are responsible for.

Stuor Muorkke/ Stora Sjöfallet

STF's mountain cabin at Vákkudavárre is within the borders of the national park. Just outside the edge of the park you will find the STF mountain station Sáltoluokta and the mountain cabins in Rijtjem and Gáidumjávri. In the national park there is also the mountain facility at Stuor Muorkke/Stora Sjöfallet, owned by Vattenfall who leases it out.

There is a wind shelter at Dievssajávri in Stuor Muorke/Stora Sjöfallet.

Padjelanta/Badjelánnda

There are twelve cabins along the Badjelánnda Trail. Those which are within the borders of the national park are owned by the state and contracted out (in 2009 to the Badjelánnda Laponia Tourism economic association, BLT). The remaining cabins are owned and run by STF.

Cabin	Number of beds	Owner
Vájsáluokta	20	STF
Áhkkástugorna	40	STF
Guvtjávrre	20	STF
Gisuris	34	Staten
Låddejåhkå	34	Staten
Árasluokta	32	Staten
Ståloluokta	36	Staten
Duottar	32	Staten
Darreluoppal	36	Staten
Ståddájåhkå	18	Staten
Såmmárlahpa	18	STF
Darregájsse	30	STF
Njunjes	20	STF

STF owns the unmanned cabin at Sårjåsjávrre in Padjelanta/Badjelánnda, located along the trail to Sulidälbmá.

Muttos/Muddus

In Muddus/Muttos National Park there are unmanned, state-owned cabins for spending the night in proximity to the trails. There are cabins at Muddusagahtjaldak, Muttosluoppal, Manson, Nammavárre and Arvidsson. Laponiatjuottjudus are responsible for these.

Sarek och Stubbá

In Sarek and Stubbá there are no buildings or facilities for visitors. There is a shelter at Jågge in Sarek which Laponiatjuottjudus is responsible for.

Sjávnja

STF has a mountain cabin at Dievssajávri in Sjávnja. Of importance to the visitors of Laponia are also the private facilities Soahkenjárgga/Björkudden at Láŋas, the fishing camp in Čuonájohka, the facilities in Rijtjem, Oarrenjárgga and Huhttán/Kvikkjokk.

Övriga byggnader

There are also facilities for the reindeer industry and management cabins. These are not available to the public.

2.5.5 Road Signs

Road signs along public roads (see 2.5.3) are the responsibility of the Swedish Road Administration. Currently there are tourist signs according to the EU-standard (brown-white signs) along the E45 around Bårjås/Porjus and at the crossing at Stuor Muorkke/Stora Sjöfallet. Through different projects, the Swedish Road Administration has also developed the informational signposting around Laponia. This refers to the informational signposting at Lullegiehtje/Forsviken, Jåhkåmåhkke/Jokkmokk and the exit to Stuor Muorkke/Stora Sjöfallet. It also refers to the informational signposting on account of the project "The Road between the World Heritages" (Road 97 and E45). There are signs in Bårjås/Porjus, Lullegiehtje/Forsviken as well as along the road to Huhttan/Kvikkjokk.

Between Stora Sjöfallet/Stuor Muorkke and Rijtjem there is a private road, under the responsibility of a community association of local stakeholders. There is a municipal road leading to Allávárre, Lijnäädno and Harrå. It is mainly used by the local population and the Sámi people concerned, but it also composes an entrance to Laponia, foremost to Sjávnja.

2.5.6 Public Transportation, Roads and Communication

The public roads in and around Laponia are E45, Road 805 (Huhttán/Kvikkjokk) and Road 827 (Stuor Muorkke/Stora Sjöfallet). In addition, Road 833 (Gáidum) may indirectly be used as an entrance to parts of the Laponian area. These roads are managed by the Swedish Road Administration.

The nearest airport with regular traffic is in Jiellevárre/Gällivare. There are helicopter bases in Bårjås/Porjus, Huhttán/Kvikkjokk (in summer), Stora Sjöfallet/Stuor Muorkke (in summer), Rijtjem (in summer). It is possible to fly Huhttán/Kvikkjokk-Stáloluokta-Guvtjávrre-Rijtjem.

The area is also accessible by train, either by getting off in Muorjek/Murjek combined with bus, or by getting off in Jiellevárre/Gällivare, also combined with bus. In addition to the main towns there are bus services going to Huhttán/Kvikkjokk and Stuor Muorkke/Stora Sjöfallet.

Mobile-phone coverage is relatively good along the main roads. Permanent settlements along roads have regular phones, while settlements in roadless areas lack landline telephony. Primarily in the western part of the area, it is possible to reach Norwegian cellular networks. Satellite telephony works in the major part of the area, but might have some problems in deeply cut mountain ravines.

Muddus/Muttos National park. Photo: Carl-Johan Utsi

3. Laponia is Protected

IThe following passages present the forms of protection and conservation, instruments of control, national environmental objectives and international conventions and commitments with the most relevance for the management of the World Heritage.

3.1 Forms of Protection and Conservation

The World Heritage Convention and other international conventions signed by Sweden set the framework for the conservation and sustainable use of Laponia. The World Heritage Convention does not by itself implicate any kind of protection for the areas assigned as World Heritages. The basis for protection lies foremost in the national decisions made by the Parliament and authorities through legislation and other regulations. These conventions are incorporated into the Swedish system of rules.

An area like Laponia is affected by a large number of regulations which have controlling functions. By exercising the national system of rules in a responsible way, respecting immemorial usage and exercising reindeer husbandry rights, the management of Laponia is to fulfill the commitments made on an international level.

The Swedish legislation grants the possibility to protect natural and cultural values. Area protection is the distinctly dominating instrument for nature protection and means that authorities can establish national parks, nature reserves, cultural reserves and other forms of protection with legislative support. The value of the areas as habitats for plants and animals is often the main reason for protection. Cultural values and recreational and outdoor life values can also be the basis for different types of area protection.

The national parks and nature reserves are the most prominent forms of protection within Laponia. They are both forms of judicial area protection according to the Swedish Environmental Code, and their general aim is the same – to preserve valuable nature. In order to achieve the objectives of the national parks and nature reserves it is possible to make restrictions on the rights to use land and water as well as the right to travel and dwell in the area.

3.1.1 National Parks

A national park is the strongest form of protection in Sweden. According to the Swedish Environmental Code, a national park is always to be on state-owned land and its establishment is to be determined by the Swedish Parliament and Government. Regulations for national parks are stated in chapter 7, §§ 2-3 of the Swedish Environmental Code and in the Ordinance on National Parks (1987:938). Regulations and maintenance plans are defined by the Swedish Environmental Protection Agency..

3.1.2 Nature Reserves

Nature reserves are a more flexible form of protection compared to national parks. Other parties besides the state can own land included in a nature reserve. The regulations for nature reserves are stated in chapter 7, §§ 4-8 of the Swedish Environmental Code and in the Area Protection Ordinance (1998:1252) etc. In Sjávnja and Stubbá there are some privately owned properties that are not included in Laponia.

3.1.3 Intact Mountain Areas

In Laponia there are three areas, Ráhpaäno suorgudahka (the Lájtávrre delta), Tjuoldavuobme (the Tjuolta Valley) and Sulidälbmá, that are not formally protected as national parks or nature reserves. When the World Heritage was established, these areas were considered to have sufficient protection through the ordinance on intact mountain areas (chapter 4, § 5 of the Swedish Environmental Code).

The ordinance on intact mountain areas says that settlements and facilities may only come to be if they are necessary for the reindeer industry, the resident population, scientific research or outdoor life. Other measures within intact mountain areas may only be taken if they do not affect the character of the area.

At the end of 2008, the Swedish Environmental Protection Agency presented a proposal for a revised National Parks Plan for Sweden, with the suggestion of incorporating Ráhpaäno suorgudahka (the Lájtávrre delta) and Tjuoldavuobme into the Sarek National Park and Sulidälbmá into Padjelanta/Badjelánnda National Park. The National Parks Plan was finalized in October 2008. Tjuoldavuobme was partially given formal protection when Huhttán-Gábles/Kvikkjokk-Kabla Nature Reserve was established.

3.1.4 National Interests and Municipal Planning

That an area is considered of national interest means that it is protected against measures that may tangibly damage the natural environment, cultural environment or outdoor life (chapter 3, § 6 of the Swedish Environmental Code). Both during municipal planning and during authorization procedures, the different stakeholders are to try to satisfy national interests. The entire Laponian area, with the exception of minor parts of Stubbá Nature Reserve, are within areas designated as national interest for nature conservation. The major part of the mountain region and Muddus/Muttos National Park are of national interest for outdoor life. These national interests for cultural heritage protection are located around Stora Sjöfallet/Stuor Muorkke, Suorvvá, Leaffásáiva, Sáltoluokta, Bietsávrre, Badjelánndaområdet, Luleå silver works, Stáloluokta and Sijddojávrre and Lájtávrre.

Chapter 3, § 5 states that areas of national interest for the reindeer industry are, as far as possible, to be protected against measures that can substantially obstruct the industry. In Laponia, significant areas are designated as national interest for the reindeer industry. In

Per Suorra. Photo: Carl-Johan Utsi

Per Suorra, Viedás, Unna tjerusj

Nya tider – mindre marker

Under hela barmarksperioden färdas han i de här trakterna. Ibland på en kalvmärkning på fjället. Men för det mesta är han ute på någon av sjöarna omkring. På Sádijávrre eller Láŋas. Båda sjöarna är påverkade av vattenkraftens utbyggnad. Sádijávrre är reglerad, medan Láŋas inte är uppdämd utan påverkas av hur kraftstationen i Viedás reglerar vattenflödet. Per Suorra är en av traktens mest flitiga fiskare. I mån av tid för renskötseln och beroende på väder och årstid fiskar han i sjöarna i omgivningen. Hans nattsömn är nog inte så god om han inte har näten i sjön.

Text: John Erling Utsi

Hans hem under sommaren ligger på stranden av Láŋas. En liten koja vid stranden är hans bostad just nu. Närmaste granne är en flygbas med helikoptrar. En bit ifrån honom planerar man att börja bygga upp ett besökscenter för världsarvet Laponia. Ovanför hans koja går vägen till Rijtjem. Just nu, under sommaren, är trafiken livlig. Det passerar flera bilar i timmen.

Uppe med tuppen

Redan klockan fyra på morgonen är han ute på sjön och drar upp näten. När vanliga människor stiger upp har han gjort upp dagens fångst och hans arbetsdag nästan över. Idag har han lagt ut näten i Sádijávrre. – I sjön finns en massa olika sorter, säger han, i väständan mest sik och röding, och i öst både gädda, harr och abborre. Speciellt i Láŋas, berättar Per, har beståndet av gädda ökat kraftigt. Han tror att det har att göra med att vattnet blivit varmare. Láŋas är inte heller längre så fiskrik. Och den fisk som finns är mindre än förr. Något fel är det, kanske beror det på att klimatet har förändrats. – Och inte vet jag om det här fisket lönar sig, avbränningarna är så stora. I de här reglerade sjöarnas bottnar finns en massa träd, buskar, rötter och annan bråte som gör att näten rivs.

Innan maskinerna

När Per tänker tillbaka på hur de levde här innan vägen nådde hit och innan sjöarna här reglera-

des säger han att livet då var helt annorlunda. Det går inte att jämföra med dagens. Strax innan midsommar startade man resan västerut i Stuor Julevulusspe/Luspebryggan, en mil väster om Bårjås/Porjus. Flytten väster kunde förr ta några veckor, beroende på väder och om isarna gått upp i de sjöar de kom till. Man hade fasta ställen man slog upp sina tältkåtor på längs sjöarna. När man nått upp till den västligaste av dessa var det dags att ge sig av och samla ihop renhjordarna för att märka årets kalvar. Några veckor senare, när detta var avklarat, var det dags att börja med fisket. Fångsten saltades ner i tunnor som efter hand transporterades österut, till uppköparna. De bodde längs sjöarna till långt in på hösten. Flytten österut började inte förrän isarna tvingade dem.

Då hade vi ju nästan ingenting, säger Per. Inte hade vi bilar eller något annat. Och vi var vana att klara oss på mycket lite. Nu, när vägen finns, och alla har bil är det som en helt annan värld.. Idag kan Per åka till Jiellevárre/Gällivare över dagen för att proviantera. Att sättet att leva förändrats ser han inte som något enbart negativt.

the area there are also national interests for infrastructure, commercial fishing and valuable minerals.

The municipalities have a great responsibility for the physical planning of land and water use. The term physical planning includes both the economizing regulations of the Swedish Environmental Code and the planning instruments of the Swedish Planning and Building Act. Planning instruments, for example overview plans, are tools with which the municipalities, taking into consideration national and regional interests, can carefully balance different interests and how to satisfy them. Other planning instruments used by the municipalities are area regulations and detailed plans. National interests are to be translated into the municipal planning.

3.1.5 Cultural Environments and Ancient Remains

The most important instrument for the protection of cultural environments in Laponia is the Act concerning Ancient Monuments and Finds (1988:950). The first chapter of the act states that *"protecting and preserving our cultural heritage is a national affair. This responsibility is shared by everybody. Individuals as well as authorities are to show consideration and care for the cultural environment. Those who plan or perform a job are to make sure that damages to the cultural environment are, as far as possible, avoided or limited."*

The second chapter of the act regulates the protection of fixed ancient remains and finds. It is "*prohibited without permission, to displace, remove, excavate, cover or through development, planting or in other ways change or damage a fixed ancient remains."* To every fixed ancient remains there is a so-called ancient remains area. This area is as big as is needed to preserve the ancient remains and give enough space with consideration taken to its kind and importance. All ancient remains are protected by law, regardless of whether they have previously been discovered or not. Within the World Heritage there are a many ancient remains, many inside larger coherent ancient remains areas such as in Padjelanta/Badjelánnda and at Stáloluokta.

Buildings can be protected as a listed building according to the Act concerning Ancient Monuments and Finds if their cultural-historical values are *"especially notable"*. If the buildings are owned by the state, it is the Government that decides if it is to be protected as a

listed building. In other cases it is determined by the County Administrative Board. The so-called Hamberg's cabins in Bårddetjåhkkå, Boarek, Lidnok and Jilájåhkå are expected to become state-listed buildings.

All church buildings constructed before 1940 and a selection of church buildings constructed later are protected according to the act. They are not to be altered without permission from the County Administrative Board. Within the borders of the World Heritage, the Álggavárre chapel and the church hut in Stáloluokta are subject to this judicial protection.

Buildings can also be protected through detailed plans or area regulations by the municipalities.

3.1.6 Natura 2000 Areas and Conservation Plans

The European Union has created the Natura 2000 network in order to protect nature, wildlife and plants. The network consists of valuable natural environments that member states are responsible to protect for the future. Natura 2000 is supported by the Birds Directive (1979) and the Habitats Directive (1992). Within the field of nature conservation, Natura 2000 is the most important contribution to biodiversity conservation in Europe. Almost the whole of Laponia is included in Natura 2000 and for these areas there are conservation plans.

New regulations entered into force in 2001, concerning permissions for activities and measures within Natura 2000-areas. It deals with activities or measures that in a significant way may affect the environment of an area. Decisions to give permission are in most cases made by the County Administrative Board, but in some cases by other authorities, like the Land and Environment Court. In special cases the Government can make such decisions.

The Birds Directive and Special Protection Areas

The Birds Directive includes long-term protection and management for all wild bird species and their living environments. The directive lists 185 species of birds which are threatened due to too small of a population and/or the decline of natural habitat and are therefore covered by special conservation measures.

The member states of the EU must assign the most suitable habitats for these species, and create Special Protection Areas (SPAs). There are four government approved SPAs in Laponia.

Habitats Directive and SCI-areas

The Habitats Directive supplements the Birds Directive. It deals with the conservation of selected plant and animal species and different nature types. Among the species are those which are threatened by extinction or on the way to becoming extinct, as well as species which are unique to a certain location. The concept of "nature type" is used in a wider sense and includes geological formations as well as biotopes and plant communities.

The directive lists almost 2 000 animal species and more than 500 plant species whose habitats must be protected. To protect these, the member states are to suggest Sites of Community Importance (SCIs) where the mentioned nature types or species exist.

Habitats that are at risk of disappearing, for example wooded mires, and endangered species like the wolverine and Arctic fox, have been classified as prioritized and are given an especially high status. Nine land areas in Laponia have been approved by the Government as SCI-areas, four of which are also appointed as SPAs.

Conservation Plans

For each Natura 2000-area there is to be a conservation plan. The conservation plan is to be a living document, able to be revised when necessary. The nature types and species that were the basis for the inclusion in the network are to be sustained at a favorable conservation status. The conservation plan is to function as:

- a supporting document on how the area is to be managed in order to preserve its natural values, as well as an estimation of the need for additional protection (nature reserves, habitat protection, etc.) in order to meet the area objectives
- a guiding document for authorities, municipalities, etc. which might become affected by possible evaluations or assessments during exploitation or other measures that can harm the Natura 2000 area.
- a source of information for landowners, land users, developers and the general public on the special values of the Natura 2000 area, and what could harm these values.

3.1.7 Diploma Areas

The European Diploma is an award which has been handed out by the Council of Europe since 1964. It is awarded to protected natural areas of exceptional interest for the European continent that meet the demands of high natural value. The areas are to have distinguished scientific, cultural or aesthetic values, be covered by suitable nature protection and preferably have a plan for the work of sustainable development.

The award is given for a five-year period and is only renewed if the demands and qualifications are still met. A total of 69 areas carry the status of European Diploma, four of which are in Sweden. Two of these are the national parks Muddus/Muttos, and Sarek and Padjelanta/Badjelánnad (merged).

3.1.8 Buffer Zones and Risk Areas

Regulations for buffer zones around the World Heritage area are presented in §§ 103-107 of the Operational Guidelines of UNESCO. According to the regulations, buffer zones are required when necessary for effective conservation of a World Heritage. The buffer zone is to have complementary legal restrictions and/or other restrictions for land use and development, in addition to the protection that exists within the area. This refers to the immediate surroundings of the area, significant scenery/look-outs and other areas or occurrences that are functionally important for the conservation of the World Heritage.

Buffer zones are to be included and their function described when areas are nominated as World Heritages, but are usually not included in the World Heritage itself. After an area has been inscribed in the World Heritage List, all changes of buffer zones have to be approved by the World Heritage Committee.

Demands for new or expanded buffer zones can be made after an area has been included in the World Heritage List. This has been applied during the evaluation of the protection status of areas. Evaluations are made every six years. Demands for taking measures, for example buffer zones, may also be made by the World Heritage Committee when areas become threatened.

Laponia lacks a formally defined buffer zone

When Laponia was nominated as a World Heritage, it was estimated that there was no significant need for a buffer zone. The size of the area was considered to be enough to preserve its values. After the first periodic report (2006), UNESCO called for the need of a buffer zone.

Natural values in the surroundings of Laponia

Today Laponia is to a great extent surrounded by areas protected as intact mountain areas. These intact mountain areas have a concrete protection against exploitation in the form of roads, power lines, wind power plants and other facilities. Long-term planning for outdoor life, etc. can thus essentially be done on the basis of the current access to roads.

In addition to the intact mountain areas there are a number of nature reserves in connection to Laponia. These are Silbbaädno/Pärlälvens fjällurskog, Huhttán-Gábles/Kvik-

West of Badjelánnda. Photo: Dan Ojanlatva

kjokk-Kabla fjällurskog, Ulldevis fjällurskog, Gáidum fjällurskog and Lijná fjällurskog. There are, however, adjacent areas that are not intact mountains or nature reserves. These parts can be labeled risk areas. In the areas surrounding Laponia there are parts which are composed of productive forest land but are without formal area protection. It is primarily the Swedish Forestry Act that regulates how these forests can be managed. The Swedish Forestry Act includes regulations for environmental consideration as well as regulations dealing with the consideration needed to be given to the reindeer industry.

The nature reserves are to a great extent composed of moors and forests at high altitudes, close to the bare mountain. They are often bordering with other high-conservation value forests of primeval character at lower altitudes in valleys and on mountain sides. The forests are also often of importance for the reindeer industry. The Swedish Government assigned the Swedish Environmental Protection Agency and the County Administrative Boards to perform mapping of such forests in 2003-2004 (State-owned Forests Worthy of Protection, SNUS). The mapping efforts resulted in the Environmental Protection Agency proposing to the Government that affected areas under the management of the Swedish Property Board should be permanently exempt from forestry as voluntary set-aside areas. This matter was raised in the Government's Proposition "Hållbart skydd av naturområden" (prop 2008/09:214), which stated that the areas were to be preserved through their transference to the Swedish Environmental Protection Agency and the establishment of nature reserves. This transfer was carried out in 2010.

There are no ideal borders for the buffer zones of Laponia. The World Heritage constitutes a large landscape section from forests and wetlands to high-alpine mountains and alpine plateaus. The highest natural values are within the borders, but there are high values outside of Laponia as well.

Reindeer industry in the vicinity of Laponia

The Sámi village organizations and the reindeer industry affected by Laponia have their lands to a greater or lesser extent within its borders. Winter grazing lands are mainly outside of Laponia. Access to winter grazing lands is crucial for the survival of the reindeer industry. If the winter grazing lands of the Sámi village organization are diminished or damaged, the situation will also become more difficult for the reindeer industry in Laponia. In that perspective, the totality of the land of the Sámi village organizations can be seen as a sort of buffer zone.

There is also another perspective of importance. Since the reindeer industry is one of the reasons for the World Heritage appointment, the economy and future of reindeer husbandry is important to ensure the status of the area as a World Heritage. This means that access to grazing lands both within and outside of Laponia is essential for the survival of reindeer husbandry and thereby also for sustaining the World Heritage.

3.2 National and Regional Environmental Objectives

National environmental objectives with interim targets have been adopted by the Swedish Parliament. They constitute the environmental dimension of sustainable development. Regional environmental objectives that follow the national objectives have subsequently been established by the County Administrative Board of Norrbotten, with a broad consensus in the county.

The environmental objectives describe the quality that the environment is to have, and what society strives after. The aim is that these so-called environmental quality objectives are, as a rule, to be met within one generation. The goal is to:

- promote people's health
- preserve biodiversity and the natural environment
- preserve cultural environments and cultural-historical values
- protect the long-term production capability of ecosystems
- ensure that natural resources are managed sustainably

The environmental objectives are not prescribed by law, but constitute a benchmark for the management of Laponia. The possibility of achieving most of them is, however, strongly dependent on what happens in the outside world.

Six of the sixteen environmental quality objectives have a more direct impact on the Laponian area.

- *Reduced Climate Impact*

In accordance with the UN Framework Convention on Climate Change, concentrations of greenhouse gases in the atmosphere must be stabilized at a level that will prevent dangerous anthropogenic interference with the climate system. This goal must be achieved in such a way and at such a pace that biological diversity is preserved, food production is assured and other goals of sustainable development are not jeopardized. Sweden, together with other countries, must assume responsibility for achieving this global objective.

- *Flourishing Lakes and Streams*

Lakes and watercourses must be ecologically sustainable and their variety of habitats must be preserved. Natural productive capacity, biological diversity, cultural heritage assets and the ecological and water-conserving function of the landscape must be preserved, at the same time as recreational assets are safeguarded.

Álggavárre kapell. Photo: Carl-Johan Utsi

- *Thriving Wetlands*

The ecological and water-conserving function of wetlands in the landscape must be maintained and valuable wetlands preserved for the future. Cultural-historical values connected to wetlands are to be preserved and strengthened.

- *Sustainable Forests*

The forest landscape in Norrbotten is to be managed in such a way that the conditions for all its species are improved. Forests are managed sustainably so that natural, cultural, social and recreational values are safeguarded as well as to improve conditions for the reindeer industry.

- *A Magnificent Mountain Landscape*

The pristine character of the mountain environment must be largely preserved in terms of biological diversity, recreational value, and natural and cultural assets. Natural and cultural assets in the mountains are to be preserved and developed so that they are a resource for sustainable development in a county where people have the possibility to live and work.

- *A Rich Diversity of Plant and Animal Life*

Biological diversity must be preserved and used sustainably for the benefit of present and future generations. Species habitats and ecosystems and their functions and processes must be safeguarded. Species must be able to survive in long-term viable populations with sufficient genetic variation. Finally, people must have access to a good natural and cultural environment rich in biological diversity, as a basis for health, quality of life and well-being. (Identical to the national objective).

3.3 Environmental Objectives of the Sámi Parliament

The Sámi Parliament has through the environmental program Eallinbiras established environmental targets for their field of responsibility (Report from the Sámi Parliament, January 2009). These are:

- *Ealli eallinbiras juohkeaktii – nature, a sustainable living environment*

A sustainable living environment is the foundation for life and development of people, animals and plants. The use of land and water must be balanced between what nature can provide and what we gather from nature, without impoverishing it. Use is not to be based solely on economic conditions. We strive after balance and sustainable use. Products and forms of production that drain the resources of Sápmi are to be minimized. Protection of nature and the environment must be given high priority in all community planning, as well as becoming an indisputable part in all types of use of land and natural resources. All activities that pollute air, land and water must cease.

- *Árbevirolas máhtu – traditional knowledge*

We are experts in sustainability. Sustainability has always been the condition for our survival and the advancement of our society. It is important to search for knowledge in places where it is to be found, for example collective Sámi knowledge on how to optimize withdrawal and manage resources. When creating a long-term sustainable society, consideration should be taken to such knowledge. Research on our traditional knowledge gives us the opportunity to make new evaluations of history, critically examine contemporary society and build the future. This is why we are to enhance our ability to research, look for solutions in our culture and carry on what we as a people have today. First, we will remember and revive our knowledge. We will research with the comprehensive view innate to our culture and philosophy of life. The aspects of sustainability include social conditions, history, culture and rights. Sustainability is to be the uniting theme for Sámi research on Sámi culture. In our research we will also respect the material, social and mental dimensions of knowledge. This type of research must be done on a local level, since traditional knowledge is place-bound.

- *Dássálas ovdánahttin – balanced development*

Our goal is to research on our own culture on how we can attain a sustainable lifestyle and a high quality of life by simplifying life, instead of raising costs. We take both modern and traditional knowledge seriously and use the best experiences to advance. A sustainable development is based on a meaningful balance between traditional and modern knowledge. If successful technology is used within the scope of our values, it will not destroy our living environment or our health – which in many cases is done today.

3.4 Control Instruments for the Management

In order to protect Laponia and its values while at the same time letting people make use of the area, it is important that the management has access to the necessary control instruments. These instruments can be divided into three categories: regulations, economy and information/education

- Regulations are important for letting the users and visitors of Laponia understand what is permitted and what is prohibited within the World Heritage, as well as what rules there are for different activities.
- Economy determines what ambitions are possible for the work of the Management. The economy of the Management is based on the responsibility of the Swedish state for taking care of, preserving and making the protected areas accessible.
- Information contributes to facilitate for the users and visitors to make conscious choices

so that the values that were the basis for the World Heritage appointment remain intact.

The control exerted through various instruments can be divided into three categories: direct, indirect and specific.

Direct control does not provide a choice for visitors and users in the area, for example through ordinances or other compulsory regulations that must be followed.

Indirect control is about getting users and visitors to make the ”right” choice, thus guiding the use of the area and its natural resources in a way that does not risk threatening the values of the area. A number of horizontal criteria have been developed during the process to serve as guidance for the Management. The most concrete form of indirect control is, however, information and education aimed at different types of visitors and users of the area.

The third and last category, specific control, includes instruments of control that are more detailed and chiefly aimed at different types of enterprises in the area.

3.4.1 Regulations

Each national park and nature reserve is to have its own regulations. To emphasize the World Heritage as a whole and to simplify and clarify things for users and visitors, new regulations for the nature reserves and national parks of Laponia have been worked out as a part of the Laponia Process. The regulations apply to the national parks and nature reserves included in Laponia (with the exception of Huhttán-Gábles/Kvikkjokk-Kabla Nature Reserve which is a part of Laponia, but has its own regulations). The introduction of the Swedish Environmental Code, the appointment of the Laponian World Heritage, a changed view on the relationship between nature and usage as well as revising the language used, have resulted in renewing the regulations which have been in use until now and collecting them in a joint document.

The regulations are designed so that the purpose of the national parks and nature reserves, as well as the obligations accompanying the World Heritage appointment and other essential international commitments, are fulfilled in the long-term. Good practice of place names is used in the regulations, which in practice means correct Sámi, Swedish and Finnish designations for settlements and places.

Muddus/Muttos National park. Photo: Carl-Johan Utsi

The new regulations are aimed at the general public, managers of the World Heritage and to all others who make use of land, water and buildings.

An evaluation of the application and appropriateness of the regulations is to be performed within a five-year period from its finalization, after which changes may be made. The evaluation is to cover the application and appropriateness of the regulations which would give the possibility to counteract or prevent negative effects on nature and the environment from the activities and measures taken. The evaluation is to be based on the reasons for which the national parks and nature reserves were protected, as well as for those leading to the appointment of Laponia as a World Heritage.

Reindeer husbandry rights are to be exercised according to the regulations of the Sámi Parliament (STFS 2007:3) with consideration given to the interests of nature conservation and cultural heritage protection.

For more details see chapter 4 on supervision, enforcement and follow-up.

3.4.2 Maintenance Plan

To guarantee that the natural and cultural values of protected areas are preserved and developed, a maintenance plan is included in the Management Plan. The purpose of the Maintenance Plan is to specify the direction of the operational work in such a way so that the values of the World Heritage are safeguarded and that the objectives of area protection through national parks and nature reserves are met. In the Maintenance Plan for Laponia, examples of maintenance areas can be trails, facilities, cultural environments, information, etc., but also collaboration with authorities and others around zonation, buffer zones or the development of reindeer husbandry.

One element of maintenance is to support local participation by, as much as possible, using the competence found in the local community.

The Maintenance Plan is an overall practical program for the management. It is to be used during planning, procurement, maintenance measures, documentation and target follow-ups. The Maintenance Plan for Laponia specifies the objectives of the new management organization for different maintenance areas, as well as how the parties behind the Management Plan want other public administration entities to practice their operations within the World Heritage.

The Maintenance Plan consists of five different parts:

- tools and methods
- the natural landscape in Laponia
- the historical heritage arising from previous land-usage
- the living Sámi culture and reindeer industry
- infrastructure for locals, land-users and visitors.

3.4.3 Horizontal Criteria

When decisions and implementation of measures are to be made, contributions and procurements to be carried out, or as support for statements of opinion in exemption application or similar documents, Laponiatjuottjudus is to apply six horizontal criteria. Laponiatjuottjudus is also to have a system for following-up the criteria. The horizontal criteria are based on the World Heritage appointment and other national objectives, and have been worked out within the Laponia Process. It is recommended that other parties also use these criteria in their work.

The values of nature

The values of nature are a fundamental condition for the establishment of the Laponian World Heritage. Maintaining and strengthening the natural values is to be pursued in all efforts carried out within the Laponia Process. The natural values include species diversity and

expanse, as well as the natural formations and contents of the landscape. The natural value of Laponia has its starting-point in landscapes which are relatively undisturbed compared to others. The animal and plant life is unique for northern Europe, from the big moose of Ráhpavuobmes to the predator-rich areas of the national parks.

The management of the Laponian World Heritage is to be practiced so that consideration to natural values increases.

Cultural heritage

Based on the conditions of nature, people have influenced the landscapes in Laponia for a long time, giving it its current appearance. Laponia is full of traces from the people who came before us, and who in a more or less apparent way have contributed to what it looks like today. The traces of our ancestors, Sámi and Swedish, reindeer herders, fishermen, miners, settlers or hydroelectric power plant workers are all over Laponia. These traces are important for our understanding and respect for the people who came before us, but also for us to learn to show consideration to those who will come after us.

The management of the Laponian World Heritage is to be practiced so that the historical dimension of the landscape is preserved and becomes comprehensible for the people who use the landscape today, and for those who visit the area.

The Sámi culture

The different expressions and dimensions of the Sámi culture are noticeable throughout the World Heritage. In both visible and invisible ways, the material, social and cultural dimensions unite the present with the past. The present is also characterized by a strong influence from the majority culture.

The management of the Laponian World Heritage is to be practiced so that the Sámi culture is preserved and developed.

Sustainable development

The concept of sustainable development means: *Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.* This implies a society that promotes economic development, social well-being and cohesiveness without threatening living environments and people's health. This is why the work needs to be done with a comprehensive view.

The management of the Laponian World Heritage is to be based on the perspectives of sustainability and be a model of sustainable thinking.

Quality of process and conduct

The measures performed by Laponiatjuottjudus are to have quality in process and quality in conduct as their guiding principles.

Equality

The measures performed by Laponiatjuottjudus are not to be an obstacle for anyone using or visiting Laponia, regardless of gender, age, ethnicity, function, etc. as long as laws and regulations are respected. An evaluation as to whether or not special efforts are necessary for raising equality is to be made in the different areas.

The appendix has a check-list as support for evaluations according to the horizontal criteria.

3.4.4 Information and Education

In the process preceding this Management Plan, the Laponia Process, two concepts have been especially important: rádedibme and searvelatnja. They stand for two different forms of joint learning. For searvelatnja, the learning arena and the joint learning can be said to be based on people with different competence and experience jointly giving shape to learning in the encounters between individuals. Rádedibme has more of a counseling function, where all the participants have the possibility to voice their opinion before joint decisions are made.

Searvelatnja and rádedibme are to influence the continued work in building the management of Laponia. They are also to influence the design of different informational efforts and the education of everyone who is active in the management and those who in different ways have contact with it.

Information and education are management instruments, both contributing to convince visitors and users to act in a way that the values of Laponia are not threatened, as well as to make sure that they get more out of their visit or their work in Laponia.

People have different needs of information and education, mainly depending on what previous knowledge they have. The need also varies depending on if the visitor is a tourist or a researcher, whether they are working or whether the activity is to hike, camp, make campfires, drive snowmobile or maybe only visit one of the Laponian information points or search information online.

According to the 27th article of the World Heritage Convention, Sweden also has a responsibility, through informational or educational measures, to strengthen its citizens' appreciation and respect for the World Heritage and the awareness of the dangers threatening it.

Based on different needs it is suitable to use different channels and means of communication. Examples of such are lectures, signs, printed material, websites, visitor centers and information points where information is transmitted in different ways, but all the methods should help to increase the level of knowledge and awaken interest and commitment for the World Heritage.

The best information officers of Laponia are probably the people who live and work in the World Heritage!

Other means to satisfy the need for information and education are different types of educational efforts, for example directed toward tourist entrepreneurs who use Laponia in their work, to reindeer herders or more general educational information to schools and preschools in the municipalities of Jåhkåmåhkke/Jokkmokk and Jiellevárre/Gällivare. Such education increases the chance of creating understanding for the many interests that co-exist in Laponia.

The Laponia Process has defined that information and education on reindeer industry, Sámi culture and cultural heritage, nature and nature conservation and Laponia in general is to be seen as a special popular education assignment.

When different types of informational and educational measures are planned, it is important that planning is based on the specific conditions of the different target groups.

3.4.5 Guidelines

Guidelines are a support for Laponiatjuottjudus and other public entities whose work relates to Laponia in different ways. The guidelines specify how different activities are to be managed in Laponia. They give guidance to the management organization when it comes to giving their opinion on different issues of permits and exemptions. Guidelines are also a source of information for applicants in matters concerning requests for permits and exemptions to the authorities responsible. The guidelines are also a supporting document for the authorities concerned to take into consideration as they work on applications.

The guidelines are to be developed gradually for different areas, such as tourism, research, air traffic and off-road vehicle use. The guidelines are worked out in cooperation with the authorities concerned and established by the committee of Laponiatjuottjudus.

Each authority or business operator doing work that affects the World Heritage is responsible for their operations and for following the rules that apply. Since the management of Laponia is a joint responsibility between the state and the local stakeholders, the management organization is given an important role in providing liaison for this work. Laponiatjuottjudus is to act as a support for local stakeholders during this work but not take over the legal status or responsibilities of individuals or organizations.

So far, general guidelines for visitors have been established. The Maintenance Plan states that Laponiatjuottjudus is to develop further guidelines, for example for the tourism industry.

Photo: Daniel Olausson/Media Tales

4. Maintenance Plan

This maintenance plan applies to the national parks and nature reserves included in the Laponian World Heritage with the exception of parts of Huhttán-Gábles/Kvikkjokk-Kabla Nature Reserve. The Maintenance Plan presents the long-term direction for the management and care of these areas as well as indicating what the level of ambition is. The purpose of the Maintenance Plan is to give guidelines for the operative work so that the values of the World Heritage are safeguarded and so that the objectives of the area protection are fulfilled. It is the responsibility of Laponiatjuottjudus, based on the Management Plan, to establish measurable and monitorable targets for its operations in an ongoing work plan. The shaping of the Maintenance Plan has been established on the basis of the World Heritage appointment and a shared set of values. Experiences from the Laponia Process have been taken into account and included in the Maintenance Plan.

This Maintenance Plan is the standard ruling for the areas protected by the Swedish Environmental Code, i.e. the national parks and nature reserves included in Laponia. For the part of the Huhttán-Gábles/Kvikkjokk-Kabla Nature Reserve that is included in Laponia, there are specific regulations and a maintenance plan that apply.

For areas not covered by formal protection as a national park or a nature reserve, the Maintenance Plan is only a non-binding guideline for the work done by the management.

Laponia covers a large area and includes several national parks and nature reserves. This means that the Maintenance Plan is to be seen as a general directive, having somewhat fewer details than that which is customary in maintenance plans for parks and reserves.

The shape of the Maintenance Plan

The Maintenance Plan is a practical program for the management, mainly to be used for planning, procurement, maintenance measures, documentation and monitoring. The introductory text of each maintenance area provides a short description of the current status

of the maintenance area. The main descriptions are in the second chapter. These follow the basis for the World Heritage appointment and the three values constituting the foundation of Laponia.

The plan uses different concepts deriving from traditional maintenance plans. This applies, for example, to the concept of "untouched nature", which in this plan refers to a low-intensive use of nature where large areas have been left untouched by forestry and other exploitations. However, reindeer husbandry has been going on for a long time and has influenced the landscape.

The title "**Ambition**" describes the long-term objectives and ambitions for the maintenance area. Overall objectives have been determined for some maintenance areas since there are specifically expressed demands on what is to be achieved.

The title "**The Task of Laponiatjuottjudus**" determines the overall maintenance measures for which the management is responsible. Thus it makes up, together with the economic resources made available for the management, the basis for the work planning.

Some other authorities or organizations have assignments that affect Laponia. This mainly applies to different state authorities (the County Administrative Board, the Swedish Environmental Protection Agency, the Sámi Parliament, the Swedish Property Board, etc.) and municipalities which in their exercising of public authority deal with issues that concern Laponia. Cooperation and consultation should take place between Laponiatjuottjudus and the authority/organization in issues concerning Laponia.

Below the title "**Duties for the Public Entities Involved**", suggestions are given for measures that should be taken by authorities, municipalities, etc., in such issues as stated above.

Ambition

In the long run the entire Laponian World Heritage should be protected with the support of the Swedish Environmental Code or other legislation and consequently be covered by regulations and maintenance plans. The structures for coordination between Laponiatjuottjudus and other parties work well and the distributions of roles are known and respected.

4.1 Tools and Methods

4.1.1 Searvelatnja, Learning Arena and the Process of Learning

Managing a World Heritage of the dignity of Laponia requires work methods where the involved parties' differences in culture and views of nature are an asset. The management of Laponia is to be built on dialogue and be broadly based, having the shape of a learning arena where competence and learning are practiced daily – searvelatnja. Searvelatnja is a concept with roots in the Sámi culture, and is the model for a way of working and an arena where everybody can participate and which is accessible to everyone. It is a meeting place for several generations, cultures, languages and peoples. Teaching and competence are practiced through searvelatnja at the same time as the division of work is done according to knowledge and experience.

Ambition

Create a healthy, ongoing dialogue and continuously work to find broad support between the parties that constitute Laponiatjuottjudus as well as with individuals and groups that live in, visit or in other ways use the area.

The Task of Laponiatjuottjudus

- Use the learning arena searvelatnja as an accepted and normative way of working.

4.1.2 Information

Information about the World Heritage is an important means of management and planning. The information is aimed at enriching the visitor's stay and experiences of the different values of the World Heritage, but also to protect natural and cultural values and the active reindeer industry.

Many of those who visit a region can be expected to have limited knowledge of the local nature, culture and history. Even the inhabitants and schools of the region often have a big need for information. Information in and about the Laponian World Heritage and its national parks and nature reserves has several functions. Good information is a way to direct visitors so that damage and disturbances are avoided. Information also fills the important function of informing about the rules which apply in that area and the reasons for them.

Information provides the visitors and users with the possibility to:

- create an interest in visiting the area and learning about the values of the World Heritage
- know the area, what you can expect to see and experience as well as what rules apply in the area
- find your way there, for example through maps and road descriptions, as well as signposts along roads
- find your way around, for example through maps with information about trails, paths, cabins and suitable tours
- acquire understanding and respect for the natural and cultural values of the area, as well as the conditions the reindeer industry faces.

In addition to general information about the natural and cultural values of Laponia, the information is also to cover:

- consideration for the reindeer industry and the Sámi culture – zones for the reindeer industry, particularly areas sensitive to disturbances during certain times of the year
- safety aspects
- accessibility
- the nature and landscape in Laponia
- cultural environments and ancient remains
- buildings and built environments
- ethical code of conduct
- guidelines for visitors
- fishing
- hunting

Ambition

Good information is easily accessible so that everyone who stays in or visits the Laponian World Heritage gains a good understanding of the natural and cultural values of the World Heritage. Visits to the World Heritage are undertaken with care toward the natural and cultural values of the area. Particular consideration is shown toward the Sámi culture and the reindeer industry. Regulations, guidelines, ethical code of conduct, suitable tours and other information that is important for a safe visit as well as to increase the understanding between different visitors and users are to be another important part of the information.

The Task of Laponiatjuottjudus

- The information is to be well adapted for the target group, objective and place. It is to be of high quality in terms of content, material, design and upkeep. Environmentally friendly material is used.

Photo: Carl-Johan Utsi

4.1.3 Education

With the exceptions of the World Heritage Schools in Jiellevárre/Gällivare and Jåhkåmåhkke/Jokkmokk, education about Laponia occurs today only to a small extent in Swedish schools. This is why a work group within the Laponia Process has been assigned to formulate a proposal for how education on Laponia and its values could be done in the shape of an educational package. The Communication and Education work group has in brief proposed the following:

The target of education is to safeguard the values of Laponia for the future. Areas where education is required to reach the target are:

- people and landscape interacting in unity
- current regulations
- reindeer industry
- natural values
- cultural heritage
- sustainable behavior in effect

Each area of education involves:

- increasing the knowledge and understanding of the values of Laponia
- putting desirable values and horizontal criteria into practice as concrete educational efforts or material
- continuing the work of finding wide support for Laponia and its values.

Ambition

The target of education is to safeguard the values of Laponia for the future. The education

is to give the local population, visitors, users and others interested increased understanding and knowledge about the values of Laponia. Those who are working within Laponia are to have particularly good knowledge and be able to pass it on.

The Task of Laponiatjuottjudus

- Continue the work of developing and using the parts of the educational package established within the framework of the Laponia Process
- Educate those who work, especially those who work in the management or on assignment of the management, about the values of Laponia and the horizontal criteria
- Likewise offer comparable education to others, especially authorities, companies and Sámi village organizations.

Duties for the Public Entities Involved

- Make sure that personnel working with issues concerning Laponia and people doing practical work in Laponia, are educated on the values of the World Heritage, in order to increase knowledge of and respect for the area.

4.1.4 Ethical Code of Conduct

All visits and all work done in Laponia, regardless of whether it is based on professional activity, exercising public authority or recreation, must be carried out in such a manner that the foundation of the World Heritage is respected. Achieving good management sometimes requires balancing different interests against each other. As a support for this there are, among other things, the horizontal criteria, presented previously and in the appendix. Irrespective of activity or target, there is to be an ethical code of conduct to follow for visitors and others during their visit.

The Task of Laponiatjuottjudus

- An ethical code of conduct for professionals and visitors in Laponia is to be worked out and applied.

4.1.5 Laponia-GIS

In connection with the development of the Management Plan, a large amount of geographical information has been put together to support the work of the new management. The target of Laponia-GIS is to make geographical information easily accessible both for the management and for others who are looking for information about the area. Laponia-GIS is a channel to ensure that information about regulations that specify prohibitions for certain activities and operations in different parts of the area, as well as information on reindeer husbandry areas sensitive to disturbances, are easily accessible and clearly understandable.

Ambition

Laponia-GIS is an important tool used in the continuous work of management. The information is to be accessible by other authorities as a support for making decisions concerning Laponia. Up-to-date and relevant information is available to visitors in order for them to plan their visit to Laponia.

The Task of Laponiatjuottjudus

- Investigate forms of management and up-dating of information on Laponia-GIS, as well as how the information is to be made available, for example through a web tool.

Duties for the Public Entities Involved

- Coordinate up-dates of informational layers with Laponiatjuottjudus.

4.1.6 Guidelines

Guidelines are to give direction to the management organization and others who work within Laponia, but also to visitors. The guidelines state how different operations are to be conducted in Laponia and constitutes a supporting document for the authorities concerned to evaluate in their authorization procedures.

Ambition

The guidelines contribute to uphold the values of Laponia and guide applicants during exemption procedures, granting rights and other decisions and measures that affect Laponia.

The Task of Laponiatjuottjudus.

- develop tools and methods for following-up the horizontal criteria
- continuously follow-up, evaluate and if needed revise established guidelines
- work out new guidelines when needed, and early in the task establish guidelines for the tourism industry.

4.1.7 Buffer Zones and Risk Areas

After the first periodic report (2006), UNESCO called attention to the need of a buffer zone. Surrounding protected areas, intact mountain areas and a far-reaching consideration for cultural environments and Sámi land use within the lands of the Sámi village organizations concerned, function as a sort of buffer zone for the preservation of the values of Laponia. The areas along the boundaries of Laponia which lack protection can however be called risk areas. The main threats to the values of Laponia are large-scale forestry, mineral extraction and energy production. The forests of high-conservation value that have been pointed out on lands owned by the Swedish Property Board are addressed in the Government's Proposition "Hållbart skydd av naturområden" (Prop. 2008/09:214). It states that those areas are to be protected by transferring them to the Swedish Environmental Protection Agency and establishing nature reserves.

Ambition

Measures in the surroundings of Laponia are not to jeopardize the values and status of the World Heritage. Municipal planning and development efforts consider Laponia as well as its relation to the surrounding area. Planning and decision-making authorities have a common ambition to view Laponia in a landscape perspective where its surroundings are inserted into a buffer zone. The needs of the reindeer industry are observed.

The Task of Laponiatjuottjudus

- strive to make the municipalities of Gällivare and Jokkmokk handle both conservation and development issues in the surroundings of Laponia in rough planning in a manner that does not threaten the area
- strive to bring about a dialogue with Norway about the areas near the border
- strive to include all other forest lands that surround Laponia into ecological landscape planning, reindeer husbandry plans and other land use planning that takes the needs of the reindeer industry into consideration
- strive to make the information in the reindeer husbandry plans available for the work of the management
- monitor the development in risk areas in order to initiate collaboration with authorities, land owners and other parties.

Duties for the Public Entities Involvedr

- the municipalities of Gällivare and Jokkmokk handle both conservation and development issues in the surroundings of Laponia in their physical planning in a manner that does not

threaten the area
- apply a landscape perspective on Laponia in their work and insert the areas surrounding Laponia into a buffer zone.

4.1.8 Exemptions and Permits

It is possible to apply for exemption for activities and facilities within Laponia which are prohibited according to the regulations. The regulations also require permits for some activities and facilities. The handling of exemptions and permits is an official task and is carried out by the County Administration Board of Norrbotten.

For the reindeer industry this means that the construction of reindeer herding cabins and other buildings or facilities, and the harvesting of timber for construction, requires giving notice in advance to the management organization and the administrative body managing the property, as well as to the municipality where the cabin is to be built.

An exemption signifies an exception from a prohibition. According to chapter 7 § 7 of the Swedish Environmental Code and § 5 of the Ordinance on National Parks, the County Administrative Board can give exemptions from provisions for nature reserves and national parks. For exemptions to be given there must be specific reasons and the ordinance on the review of interests in chapter 7 § 26 of the Swedish Environmental Code is to be applied. The review of interests means that exemptions are only to be given if they comply with the objectives of the protected area. Specific reasons can be considered to exist if the measure has an essentially positive influence on the prioritized conservation values of the area.

When a prohibition is issued in the regulations, the basic assumption is that such measures or activities are not permitted. Exemptions are only to be given in exceptional cases and may not involve disregarding the objectives of area protection.

The requirement of permits for some measures and operations is not regulated in the Swedish Environmental Code when it comes to nature reserves and national parks, but is the result of the regulations for a specific area being formulated as permit requirements. Thus, these decisions are not issued with the support of any ordinance in the Swedish Environmental Code, but by the support of the current regulations. Specific reasons are not required for permits.

As a main principle, permits for operations or measures can be given if the extent, location or shape of the operation or measure does not go against the objectives of the national park or nature reserve. Furthermore, those who are to perform the measure must show that they will follow the requirements of the general rules of consideration in the Environmental Code. Limitations and precautions which can be required in order to meet the goal of the regulations are also observed. What this means in practice in each specific case should always be specified in the terms issued by the County Administration Board in connection with permit decisions. The regulations for Laponia state which activities require permits.

Ambition

Exemptions and permits are handled in such a way that the values of Laponia are safeguarded.

The Task of Laponiatjuottjudus

- be an important consultation body for authorities.

Duties for the Public Entities Involved

- implement authorization procedures with the support of existing guiding documents, horizontal criteria and in cooperation with Laponiatjuottjudus
- consult with Laponiatjuottjudus around terms, locations, etc. during review processes

4.1.9 Concessions

Within the framework of the Reindeer Husbandry Act, the County Administrative Board of Norrbotten has an extensive task of granting rights for the use of lands above the limit of cultivation. This task is controlled by paragraphs 32-34 of the Reindeer Husbandry Act, and supplemented by the regulations set by paragraphs 2-8 of the Reindeer Husbandry Ordinance. Essential and new concessions are considered and decided upon by the Reindeer Industry Delegation which is a mandatory organ in reindeer husbandry regions according to the regulations of the County Administrative Board Instruction. The County Administrative Board has an established policy for concessions concerning rights to fishing, hunting of small game, moose and bear, as well as the right to use land. On property above the limit of cultivation managed by the Swedish Environmental Protection Agency, concessions are given based on the Property Management Ordinance and a special agreement between the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency. The Swedish Property Board has duties as state managers of land within Sjávnja, Stubbá, Tjuoldavuobme and Sulidälbmá.

Ambition

Concessions are handled in such a way that the values of Laponia are safeguarded.

The Task of Laponiatjuottjudus

- be an important consultation body for authorities.

Duties for the Public Entities Involved

- implement concession procedures with the support of the horizontal criteria and in cooperation with Laponiatjuottjudus
- coordinate the revision of concession policies with Laponiatjuottjudus.

4.1.10 Supervision and Enforcement

The formal responsibilities for the operative supervision, with the authority given by the Swedish Environmental Code and the Ordinance on Enforcement, rest with the County Administrative Board of Norrbotten. The operative supervision of protected areas consists of monitoring whether or not the current regulations are being followed. Supervision also consists of controlling if permits and exemptions, issued through the regulations for the area, and their terms are followed. The municipalities also have supervision tasks in the area.

Overall Objectives

Supervision in Laponia is effective and counteracts non-compliance with laws and regulations.

The Task of Laponiatjuottjudus

- work with preemptive measures as information to and education for visitors and users
- work towards an expanded supervision within the World Heritage
- is responsible that the non-compliance of regulations, permits and exemptions are reported to the supervisory authority (the County Administrative Board).

Duties for the Public Entities Involved

- in consultations between the County Administrative Board of Norrbotten and Laponiatjuottjudus reach agreement on appropriate arrangements in reporting instances of non-compliance of the regulations in order to facilitate effective legal measures such as injunctions and prosecution notifications.

4.1.11 Zoning

The subdivision of the World Heritage into zones, along with the regulations, is aimed at clarifying how the World Heritage (within the scope of its values leading to the appointment by the World Heritage Committee) is to meet the demands of visitors and local population. Zoning is thus a tool both for preserving the values which maintain the World Heritage status as well as for creating conditions for sustainable use by different groups.

The goal of zoning is to:

- funnel visitors and tourist operations with consideration to areas and times that min mize disturbance for the reindeer industry and with greatest possible consideration to areas which are especially sensitive for the reindeer industry
- funnel visitors and tourist operations with consideration to areas where natural or cultural values are sensitive to wear and other negative impacts
- make specific requirements for enterprises which apply for permits and exemptions
- specify desired tour routes for visitors and others. The aim of the tour routes is to minimize disturbance and wear in particularly sensitive and important areas.

Zoning is to be based on three different themes:

1. areas which during some parts of the year are of the greatest importance in securing access to land and routes for the reindeer industry.
2. areas which are of strategic interest for the tourism industry, i.e. areas that are of the greatest importance for the majority of people who visit the area, either for outdoor life or as a part of the developed tourism industry.
3. areas which have especially high natural and cultural values within the framework of the overall values that exist in the World Heritage.

The three themes of zones included in the Management Plan are general. They are to be seen as a base for the management in facilitating the planning of activities in Laponia, as well as contributing to a better control that takes different interests into consideration. Forthcoming zoning is aimed at facilitating communication on where there is good accessibility, what activities are suitable and in which areas it might be necessary for visitors to show extra consideration during parts of the year. Zonation can also be used for support by authorities during exemption and authorization procedures and in laying down terms.

The three themes presented in this plan are the foundation for zoning and the overall direction for the respective zone. In order to apply zoning it must be developed further and adapted to a varied landscape use, not only in space but also in time.

Ambition

Zoning is to be used as an overall directive for the management in order to facilitate communication and planning of activities in Laponia in such a way that the values of Laponia remain. Zoning is also to be used as support during exemption and authorization procedures and in laying down terms in such decisions.

The Task of Laponiatjuottjudus

- work out a detailed system of zoning, based on the three themes specified in this Maintenance Plan as well as the material developed through the Laponia Process.
- propose and apply methods for the implementation of zoning, for example funneling, education and consultation.
- evaluate forthcoming zoning and continuously implement possible adjustments.

Duties for the Public Entities Involved

- planning of activities and operations are to be carried out taking the zonation of Laponia into consideration.

Areas particularly sensitive to disturbances for the reindeer industry

This theme includes locations where it is essential to protect areas important for the reindeer industry during different times of the year, in order to avoid disturbances. Examples could be narrow valleys, calving areas, migration routes and especially sensitive grazing lands, etc. These areas may overlap other zones and have set times for when the area is the most sensitive to disturbances.

Focus for zones within the theme
To have easily accessible information on where these areas are located and at what times visitors are to show extra consideration is a priority.

Strategic areas for tourism, trails and entrances

This theme covers areas which are important for those visiting Laponia. It is composed of trails, cabin sites and targets of interest for visitors within the area and lie along or close by trails. The theme also covers areas which are important and available for the local population and outdoor life, for example subarea III in Sjávnja, Stubbá and Huhttán-Gábles/Kvikkjokk-Kabla. The area includes the entrances to the World Heritage and its surrounding area, as well as shorter trails with connected rest areas and vantage points. The entrances are arranged in order to receive large numbers of visitors and have prepared trails, to a large extent boarded paths or in other ways adapted for visitors who are in need of trails with easy accessibility. The area is characterized by a high level of facilities and service, and is easily accessible and well-used by visitors. There are good opportunities here to understand the natural and cultural values of Laponia and the reindeer industry. There can be traffic noise during periods with large amounts of visitors. Subareas specify desirable routes for visitors and others. The objective of the routes is to decrease disturbance and wear in especially sensitive nature and in areas which at different times are especially sensitive for the reindeer industry.

Focus for zones within the theme
The areas and facilities have the highest frequency of visitors within the World Heritage, since practically all visitors pass through these areas. It is highly prioritized to have these areas well taken care of, as well as to provide facilities and information of good quality. Marking and upkeep of trails, bridges and difficult passages is prioritized. Measures are carried out to decrease wear, and wear that has already occurred is restored. Other activities that visitors may experience as disturbing should be avoided as far as possible.

Core areas for natural and cultural values

The main body of the World Heritage consists of continuous areas with a low level of accessibility and very high natural and/or cultural values, as well as a low level of impact, even though reindeer husbandry has been carried on here for a long time. The area has very limited or no arrangements for visitors, for example there are a limited amount of trails and only a few bridges ease the crossing of watercourses. Some of the zones of this theme are the most demanding areas to visit in Laponia. There are very good opportunities to experience spectacular nature, solitude, silence, challenge and fending for oneself on the terms of nature, as well as experiencing the core areas of reindeer husbandry. The theme also provides the possibility to see and understand the traces from previous land use, as well as the variations of nature in a geological perspective. Core areas of all national parks and nature reserves concerned are included in this zone.

Focus for zones within the theme
The area is to maintain its character of inaccessibility. No new establishment of trails or other arrangements for visitors, and restrictiveness in establishing other facilities. Information is to be given to visitors about the sensitive nature, the high demands of consideration toward nature and reindeer husbandry and the demanding character for hiking, etc.

4.1.12 Follow-up

Follow-up and evaluation are included as parts of the management. The objective is to safeguard the values of Laponia as well as to evaluate the caretaking of the area in relation to set targets.

Follow-up work is directed by the needs of the management when it comes to knowledge required for safeguarding the values of the areas and the demands placed on reporting.

Self-monitoring and feedback

It is the duty of the management organization to continuously and systematically examine and evaluate the implementation and expediency of current regulations from an environmental perspective. Follow-up is to be done in order to be able to discourage or prevent negative impact on the natural or cultural environment by enterprises and measures taken, above all based on the objectives for which the national parks and nature reserves were protected and for which Laponia was appointed as a World Heritage.

The results of the examinations and evaluations are to be documented and appropriate follow-up parameters, routines and proposals for measures are to be worked out.

Annual report

The management organization is to annually submit a written report to the authorities responsible.

The annual report of the management organization is to follow a coherent form and contain the data necessary for reflecting the development within the World Heritage, as well as the implementation and functionality of the different regulations that apply for the area. Especially the implementation and expediency of the regulations are to be described. Where it is possible, different annual debriefings are to be assembled in the annual report in order for it to serve as a supporting document for measures both by Laponiatjuottjudus and the authorities responsible.

The report is to be submitted before the 31st of March of the following year.

The committee of the management organization can assign the management organization to watch over, investigate and document specifically indicated issues/situations. The annual report is also to contain an account on what has emerged from such specific assignments.

Five year report

Five years from the date of the establishment of the regulations, an evaluation of the implementation and expediency of the regulations is to be done regarding its ability to discourage or prevent negative impact on the natural or cultural environment by enterprises and measures taken. It is above all to be based on the objectives for which the national parks and nature reserves were protected and for which Laponia was appointed as a World Heritage.

The report is to include an analysis of identified developmental trends, based on what has emerged from the annual reports and other information available.

Follow-up of the status of the World Heritage

There are many requirements for reporting and follow-up that directly or indirectly affect Laponia. This can become a large task for the management and specific developmental ef-

forts will be required. Those who require follow-up and reporting with closer connection to the World Heritage are:

- UNESCO's World Heritage Committee, which every six years wants a periodic report on the areas included in the World Heritage
- the European Commission, that wants to follow-up on the status of the areas and species included in the EU Habitats Directive and Birds Directive (i.e. the areas in the Natura 2000 network)
- the Council of Europe, that wants an annual report on the status of the areas awarded the European Diploma for "good nature conservation and good management". This pertains to Muddus/Muttos National Park and the merged national parks of Padjelanta/Badjelánnda and Sarek.
- State authorities that follow-up the national environmental objectives and the general environmental situation.

A large part of the international reporting and follow-up is to be coordinated by the Swedish Environmental Protection Agency. However, the Swedish National Heritage Board has the main responsibility for reporting for the World Heritage.

Performing follow-ups

To ensure the preservation and development of the values of the area according to established targets, the management of Laponia requires knowledge of: the state of different nature types and species, the number of visitors and their experiences as well as performed maintenance measures and their effects.

The knowledge needed in order to carry out reporting is a part of the knowledge requirements put on the management.

Nature types and species

The follow-up on nature types and species in Laponia is carried out in accordance with the Swedish Environmental Protection Agency's guidelines for follow-up on protected areas (report 6379).

As much as is possible of this monitoring is to be coordinated with ongoing environmental monitoring (Swedish National Forest Inventory and NILS – National Inventory of Landscapes in Sweden).

Reindeer grazing

Since continued reindeer grazing is a prerequisite in preserving the natural and cultural values of Laponia, it is important to follow reindeer grazing and its effects. Effects of reindeer grazing can be monitored through implementation of methods stated in the manual for monitoring alpine and substrate environments (Swedish Environmental Protection Agency, 2008) and through coordination with environmental monitoring and environmental objectives monitoring.

Visitors

The number of visitors should regularly be monitored through the use of visitor counters and by the compilation of guest books. Visitor studies in the shape of surveys should also be carried out with suitable intervals in order to gather the impressions and viewpoints of visitors over the conditions in the World Heritage area (experiences, service, information, etc.) As supporting documentation for monitoring there is the survey carried out by ETOUR, the Swedish Environmental Agency's Guidance for Visitor Studies and the Manual for Monitoring Outdoor Life. Visitor surveys can contribute in creating a good and open dialogue with the entrepreneurs who operate in the area.

Photo: Carl-Johan Utsi

Performed maintenance measures and their effects

In order to connect follow-up results on the status for nature types and species as well as the number of visitors and their experience on maintenance measures performed, all maintenance measures must be registered. This should be done in SkötselDOS.

The horizontal criteria for managing Laponia are to be followed by the management. However, there are as of yet no tools or methods for following these. Therefore, these tools and methods should be developed.

There is also a need to evaluate the effects of more extensive maintenance measures, for example burning an area for nature conservation, in order to reach objectives and to develop the quality of performed measures through a process of learning.

Ambition

Well-recognized methods are to be used when making follow-ups in order to compare results over time and with other areas, as well as constituting part of the basic data for reporting according to the Habitats Directive.

Overall Objectives

Follow-up is done continuously and within set time frames. Follow-up is a tool for ensuring that the values of the area are preserved and developed, as well as being a support for the development of the management.

The Task of Laponiatjuottjudus

- be in charge of performing follow-ups according to the guidelines of the Swedish Environmental Protection Agency and the above stated assignments
- when needed, further suitable indicators should be developed regarding monitoring of reindeer grazing vegetation

- annual reporting to the Council of Europe regarding the status for the areas awarded the European Diploma
- a plan for visitor surveys is established and implemented
- develop tools and methods for following up the horizontal guidelines.

Duties for the Public Entities Involved

- Provide initial support to Laponiatjuottjudus for follow-up measures.

4.2 The Natural Landscape of Laponia

While the landscape and nature of Laponia have been the home and living environment for people during thousands of years, Laponia also features a natural environment which is exclusive in Europe. The forests, mountains, lakes, watercourses and wetlands which make up the Laponian World Heritage area shelter unique nature values and a rich biological diversity. The impression the landscape gives is that it is an area which has not been subject to large-scale forestry or extensive habitation, even though in many places one can find traces of small-scale use of nature from reindeer herding. In certain areas, e.g. on the bare mountain above the tree line, or on pine heaths, the vegetation is clearly marked by hundreds of years of reindeer herding and which has contributed to the plant species which grow there.

As a whole, Laponia is an important sanctuary for a diversity of species which are dependent upon the type of nature and conditions that Laponia offers. The majority of the approximately 200 red-listed species which are found in the World Heritage area benefit from the absence of negative human impact and exploitation.

Nature in Laponia does not need to be cared for in the traditional way for its natural value to be maintained. The main rule is instead, to allow nature to evolve freely, so that the natural processes and successions can continue happening undisturbed. In certain situations careful use of the land is needed to ensure natural value marked by traditional reindeer grazing. On-going reindeer husbandry is this kind of a pre-requisite.

An important function for management is to ensure that nature and the landscape in Laponia are protected from negative impact, disruptions and exploitation which are not in keeping with the values of Laponia. In order to follow the development and discover possible problems, it is important that there be on-going follow-up and environmental monitoring of the area. (See 4.1.12 Follow-up).

Today, within Laponia, all habitat types reported to the EU according to the Habitats Directive meet the demands for favourable conservation status (for more details see the section "The Conservation of Habitats and Species Regulations" in the Habitats Directive of the European Union).

4.2.1 Habitat Types

Laponia, with an area of approximately 9 400 square kilometers, comprises many different habitat types which are very different from each other. The short descriptions of these habitat types in this section give the most important features and characteristics for that specific habitat which have significance for its management. For more detailed descriptions see section 2.4 "The Natural Landscape in Laponia".

Forest

The forests of Laponia stretch from the coniferous forests of Muddus/Muttos in the east to the mountain **birch forests** of Sarek in the west. The mountain *birch forests* in Laponia are extremely varied from the scrawny sub-alpine birch forests to lush meadow birch forests. Besides mountain birch the forests also contain other deciduous trees such as aspen, mountain ash, sallow and bird cherry. The forests also shelter numerous species of birds. The moun-

tain birch forests in Laponia have the same characteristics as old growth forests and have a very high conservation value.

The coniferous forests in the World Heritage area, the taiga, are the biggest forest areas in Europe which are protected. These coniferous forests have the same characteristics as primeval forests. The coniferous forests of Laponia have a unique conservation value and exhibit a great richness of species, successions and processes which depend upon the natural forest ecosystem.

The species and processes which occur in the forests of Laponia are all favored by the absence of exploitation and other negative human impact. The forests in the World Heritage demand no active management. The objective of the management is to ensure that the forest ecosystem is left undisturbed, except for reindeer husbandry taking place here.

One of the most important disruptive factors in boreal forests is forest fires. It is these naturally reoccurring forest fires which have created much of the mosaic of differing age in the forest stand and the shifting forest structure which one sees today in the coniferous forests of Laponia. Spontaneously occurring fires which are allowed to spread in as natural a process as possible are considered to give the best conditions for the forest ecosystem to preserve its natural value in the long run.

The sheer size of Laponia will result in spontaneous forest fires occurring which can be expected to happen as often in modern times as they did in the past.

Overall Objectives

The forests of Laponia are to be left untouched regarding nature conservation and forestry measures and are to be allowed to continue developing freely by natural processes and successions. This means that natural disruptions such as forest fires, flooding and windfalls are to be seen as a natural part of the forest dynamics and are allowed to occur as naturally as possible, while at the same time active reindeer husbandry takes place in the surroundings.

The Task of Laponiatjuottjudus

- the forests are to be allowed to evolve freely. No active conservation care of habitat types.
- in consultation with the fire department, the County Administrative Board of Norrbotten and the Swedish Environmental Protection Agency, produce guidelines and an organization to handle spontaneous fires in the different parts of the World Heritage area.

Wetlands

Large portions of Laponia are made up of wetlands, especially different types of mires. The largest ones are called aapa mires and are to be found in the forest landscape of Muttos/Muddus, Stubbá and Sjávnja Even on the bare mountains there are different kinds of mires. These are often sloping and significantly smaller in size than the mires down in the forest lands.

The wetlands in the World Heritage area show a richness of species with a numerous amount of mosses, vascular plants and insects. It is also rich in birdlife, with many different species of waders, ducks and birds of prey. Many wetlands in Laponia, e.g. in Sjávnja are also almost inaccessible which make them a valuable haven for animal life. With a few exceptions, the wetlands of Laponia are practically untouched other than by small-scale use and reindeer grazing.

Overall Objectives

The wetlands of Laponia are to be protected from negative impact and be allowed to evolve freely by means of natural processes and successions. This means that natural happenings, as for example flooding, are to be allowed to occur as naturally as possible.

The Task of Laponiatjuottjudus

- No active conservation effort other than in exceptional cases.
- Installing boarded paths is to be undertaken in such a way that it not disturb the natural flow of water.
- Try to minimize the impact on the wetlands that off-road vehicles cause.

The Bare Mountain

The bare mountain begins above the tree line. It is the most common habitat type in Laponia and covers more than half of the surface of the World Heritage. On the bare mountain there are many different vegetation habitats, shaped by the variations in the environment such as climate, access to nutrients, water, the amount of snow as well as the composition of the bedrock. There is a great difference between the lush greenery and flowerage of the lowland meadows rich in limestone and the scrawny mountain moors farther up or the even higher barren summits with slabs of stones and rocky ground with solifluction, permafrost and glaciers.

Up on the mountains above the tree line, the reindeer have their summer grazing grounds, where they graze on the lush mountain meadows, grasslands and willow-shrubbed wetlands. Ever since the end of the Ice Age, herds of reindeer have wandered here, grazing in this area—a fact that has left its imprint upon the plant communities. Reindeer grazing in this environment is an important pre-requisite to preserve the nature value of the bare mountain.

Overall Objectives

The bare mountain environment above the tree line is protected from negative impact, and the species, their successions and processes are to be allowed to evolve naturally. On-going reindeer grazing is an important condition for a long-term preservation of the nature value of the bare mountain.

The Task of Laponiatjuottjudus

- No active conservation effort other than in exceptional cases. Landslides and floods are to be considered as part of the natural dynamics of the area and be allowed to occur as naturally as possible.
- Laponiatjuottjudus is to minimize the impact on the bare mountain that off-road vehicles cause.

Lakes and Watercourses

There are big differences in the aquatic environments within Laponia. In Badjelánnda/Padjelanta there are highly productive lakes such as Vásstenjávrre, Virihávrre, Sáluhávrre and Guvtjávrre. Within Sarek and Stora Sjöfallet/Stuor Muorkke National Parks the lakes are extremely poor. Within the extensive forestlands of Sjávnja and Muddus/Muttos there are humic lakes. The biggest watercourses are affected by human exploitation of hydroelectric power and all of its effects.

On high grounds, due to the deglaciation of the numerous glaciers during the summertime, large amounts of glacier silt are transported by the watercourses and builds a delta landscape in the large lakes. Farther down in the forest landscape the limnetic environment in the watercourses is affected by the draining of the mighty wetlands near which they run. In the World Heritage there are areas where the lakes are devoid of fish, but which have a high nature value.

The predominant part of the surface of the World Heritage drains into the Lule River by way of other watercourses such as Muttosädno, Ráhpaädno, Gamájåhkå, Darreädno and Sjávnjaädno. All these rivers have a high conservation value. The limnetic environment is directly and indirectly influenced by the harnessing of the Lule River anyway, since the natural

migration of fish upstream is prevented by dams and hydroelectric plants.

For hundreds of years small-scale fishing for daily needs has taken place in basically all the waters of Laponia.

Measures for fish preservation within Laponia should not involve any physical changes or impact other than for restoration, but rather mainly deal with "soft" measures in managing the fish stock in a sustainable way. In the area there are strains of fish of regional and national importance (fish used as stock in the hatched spawn release compensation agreement in both branches of the Lule rivers).

Overall Objectives

The limnetic environments in Laponia are to be protected from further negative impact and exploitation. The aquatic environments are to be allowed to evolve freely by means of natural processes and successions. This means that naturally occurring disruptions such as floods be allowed to proceed as naturally as possible. The natural fish fauna has a favorable conservation status.

The Task of Laponiatjuottjudus

- No active conservation efforts are to be carried out within the limnetic environments which at this time are not already influenced by water regulations or are covered by possible fish conservation plans
- Cooperate with the appropriate water council within the framework of the authority responsible
- Cooperate with the authorities responsible for fish conservation and Sámi village organizations on fish conservation and management.

Duties for the Public Entities Involved

- Cooperate with Laponiatjuottjudus when dealing with fish conservation efforts.

Haying Grounds (Meadowlands)

On certain locations within Laponia hay has been harvested on mires, alongside watercourses and other grasslands. At certain Sámi settlements with ancient grazing-grounds, claims to the right to graze are still on-going, or have been re-established with support from agricultural subsidies. These places are important cultural environments.

Overall Objectives

Areas where the rights to grazing lands are claimed based on traditional use should continue being used in this fashion. This is especially true for areas where restoration efforts are undertaken. Land on which hay-making has ceased a long time ago reverts to its natural condition.

The Task of Laponiatjuottjudus

- Work towards a continuation of grazing on lands which are claimed or have been claimed more recently
- In areas where the claims have been terminated recently, Laponiatjuottjudus should make efforts so that hay-making once again takes place if it can be motivated for the preservation of natural and cultural values.

Instructions for the Public Entities Involved

- The Sámi Parliament and the County Administrative Board of Norrbotten cooperate with Laponiatjuottjudus on issues relating to support of valuable cultural and historic elements in the landscape.

4.2.2 Flora and fauna

Protection for red-listed species

About 200 different red-listed species have been found in Laponia. The majority of these are birds and vascular plants. In the highest category for the threat of extinction, "Critically Endangered", are the Snowy Owl, the Lesser White-fronted Goose as well as the *Antrodia crassa* fungi. Scarcely 20 species are "Endangered", the remaining species are to be found in the categories "Vulnerable", "Near Threatened" and "Data Deficient". The Swedish Parliament has decided that an action program should be established for species which are especially threatened with the purpose of preserving species and their habitat. The action program compiles the existing state of knowledge for each particular species and presents suggestions for measures that can be taken to improve their conservation status.

While most of the red-listed species are spread throughout Laponia, there are specific areas which are especially rich in species. Virihávrre in Badjelánnda/Padjelanta boasts of a flora which is the richest and botanically the most interesting area in the mountain range.

Monitoring the status of the species is mostly carried out by the County Administrative Board of Norrbotten, while other management tasks are taken care of by other parties. The Swedish Transport Administration, for example, changes culverts which are a hindrance to aquatic fauna.

Many red-listed species benefit from the lack of disturbances and exploitation. Where active measures need to be taken, they are most often related to human activity which has changed natural processes. For example, burning an area for nature conservation might be needed.

Overall Objectives

The red-listed species live in viable populations with a favorable conservation status.

The Task of Laponiatjuottjudus

- Cooperate with the appropriate authorities in regards to the protection of red-listed species
- Include aspects of nature conservation at an early stage in all plans that have an environmental impact.

The following measures have been listed by the authorities (the County Administrative Boards affected, the Swedish Environmental Protection Agency and ArtDatabanken—the Swedish Species Information Center) regarding threatened species:

- Avoid disturbances for nesting Gyr Falcons by moving trails for snowmobile, hiking and skiing one kilometer away from traditional nesting patches. This measure is appropriate also for the Golden Eagle and the wolverine
- To the extent that freshwater pearl mussels are present in the area, an important measure to stop their decline is to prevent the sludging of the riverbed as well as establishing a viable trout population. Culverts which are placed wrongly, dams and water regulation, hinder the host fish from migrating and should be dealt with. These measures benefit other aquatic organisms, like the otter and trout
- The Great Snipe benefits from recreating and restoring suitable conditions such as meadow dam systems and haymaking on mires in the mating grounds. Fire benefits diversity in the forest and is referred to as a measure to preserve insects dependent upon forest fires, which are threatened with extinction.

Protection of Species and Habitat Types According to the EU Habitats Directive and the Birds Directive

Laponia has a number of habitat types listed in the directive. The Western Taiga and the aapa mires are considered prioritized habitat types.

Laponia also shelters otter, Arctic fox, bear, wolverine, lynx and wolf at times. All these species are listed in the Habitats Directive. The large predators move across large areas and managing these species cannot only be seen in the context of Laponia. Preservation of these animals involves a number of interested parties. Since 2001 there has been a coherent policy for predators (including the Golden Eagle). Guidelines were complemented in 2009 by means of a parliamentary decision regarding a new management for predators (Government bill 2008/09:210). The presence of these large predators implies a hardship for reindeer husbandry, so that an active predator management in close cooperation between the parties concerned is necessary.

The majority of bird species on the lists of the Birds Directive are connected with and greatly benefit from the untouched forest types, lakes, mires and mountain moorland. The same can be said about many of the species of insects already pointed out, vascular plants and mosses. For the species which benefit from fires, it is important that in the long run there be new areas of forest which are allowed to burn and fire successions in the forests of Laponia.

Overall Objectives

That the species and nature types mentioned in the Habitats Directive and the Birds Directive be preserved in such a way that they fulfill the favourable conservation status.

The Task of Laponiatjuottjudus

- Care of the habitats and species mentioned earlier is carried out according to the conservation plans to the extent that they coincide with the overall goals of the maintenance plans
- Making an inventory and increasing our knowledge of the species affected
- Cooperation with the authorities involved relating to a common management of the large predators, carrying out the parts of the inventory which do not involve the exercise of public authority (for quality control).

Duties for the Public Entities Involved

- Cooperate with Laponiatjuottjudus with regards to issues dealing with species protection.

4.3 The Historical Heritage Arising from Previous Usage of the Land

4.3.1 The Cultural Environment

Laponia has a rich cultural heritage and important cultural environments. The cultural heritage is the collective traces of past generations, their work, lives, faith and expectations. These traces might be an abandoned location where a Sámi hut once stood, or just some cracked rocks along a shore where hunters made fires thousands of years ago. The traces can also be new and reveal a location where a reindeer herder used the land in modern times.

Cultural heritage is both material and immaterial; what we can see and touch or that which we listen to in a story, or in a *jojk* (Sámi song) or just by knowing how the landscape was seen by earlier generations who lived here before our time. For a more detailed description of the cultural environments within Laponia, see the earlier chapter on this topic.

Ambition

The cultural heritage and the cultural environments which are found in the area are to be respected and made visible.
Disseminating the awareness of earlier use of the land is done in cooperation with the respective Sámi village organization or other parties who are affected. Knowledge of the cultural heritage and cultural environments in the World Heritage is to increase for those working here as well as for the visitor to the World Heritage area.

The Task of Laponiatjuottjudus

- To use traditional materials and methods in the practical care of the area
- To include aspects of heritage protection in all planning which affects the practical care-taking
- Participate in the work regarding the cultural environment program of the county.

Duties for the Public Entities Involved

- Use traditional materials and methods in carrying out the practical care of the area
- Cooperate with the management regarding the Cultural Environment Program of the county.

Ancient Archaeological Remains and Conservation Areas

During the years 1992 to 2001 about 30% of the surface of Laponia underwent an inventory to discover ancient remains. More than 3000 finds and cultural traces were registered in areas totally or partially within Laponia. Approximately two-thirds of the archaeological remains are hearths and Lavvu sites, while the other third are Stone Age places of lodging, trapping pits, stalotomts and storage facilities.

For any measures to be taken or intrusive action taken on the land which can affect the ancient remains (see chapter 2.3) the Act concerning Ancient Monuments and Finds applies.

Ambition

Awareness of the ancient remains in Laponia will increase by both those working there as well as by visitors to the World Heritage area. Disseminating this information is undertaken in dialogue with the respective Sámi village organization, the owner or other party that is affected.

The Task of Laponiatjuottjudus

- Ancient remains are always to be taken into consideration and protected when possible measures are to be taken
- Be able to carry out inventories and gain more knowledge in a way which is not exercising public authority.

Instructions for the Public Entities Involved

- Consult with Laponiatjuottjudus about up-coming inventories and documentation efforts.

Buildings and Constructed Environments

Within Laponia there are mainly Sámi settlements but there are also buildings which reveal the history of earlier mining, of settlers, of the church, of researchers and of tourism in the area. In the surroundings there are environments relating to the history of industry and have a high cultural-historical value.

Owners and users have the responsibility of maintaining buildings so that the cultural-historical values are maintained. Subsidies for restoration work, conservation as well as information can be applied for from the County Administrative Board of Norrbotten as well as from the Sámi Parliament.

Laponiatjuottjudus is responsible for the care of the four Hamberg research stations in Sarek which are owned by the Swedish Environmental Protection Agency. The Hamberg stations have a high scientific and technical historic value. These research stations are in the process of being designated as listed buildings.

Ambition

Constructed environments with a high cultural-historical value are to be preserved, main-

tained and developed in a careful fashion and with consideration being taken to their cultural-historical value. Knowledge of buildings and constructed environments has increased for those working and visiting the World Heritage area. Disseminating information takes place in cooperation with the respective Sámi village organization, owner or other affected parties.

The Task of Laponiatjuottjudus

- Care for the Hamberg research stations takes place in dialogue with people having antiquarian competence and the Swedish Environmental Protection Agency.

4.4 The Living Sámi Culture and Reindeer Husbandry

4.4.1 Reindeer Husbandry

Reindeer husbandry is a profitable part of the Sámi culture in Laponia. Throughout history reindeer herding has been that which has preserved great natural and cultural environmental values. Reindeer husbandry is also important for rural areas in the north, as it provides work opportunities and contributes important values to society in general. Reindeer herding faces the same demands of turning a profit as other forms of making a livelihood do. To be able to carry out and develop sustainable reindeer husbandry it is necessary to have good conditions for production, among them access to grazing lands. What is unique to reindeer herding is that the reindeer graze naturally all year round. That is why this livelihood demands large areas and there is a great need for access to different types of lands. Reindeer are moved between grazing grounds which have different characteristics different times of the year and even from one year to another, a fact that makes these areas so important. The reality for each Sámi village organization is unique since natural conditions of each area differ greatly. Other uses of the land, such as mining, exploitation of hydroelectric power and tourism mean that the situation differs between the Sámi villages. This is true even within the Laponian World Heritage.

Ambition

Reindeer husbandry is seen and treated as a significant user of the landscape and as such as a pre-condition for the existence of the World Heritage. The conditions necessary to survive and develop have been strengthened. There is to be a good dialogue between the management organization and reindeer husbandry and their organizations.

The Task of Laponiatjuottjudus

- To support reindeer husbandry in its aspiration to develop
- To carry out its work in such a way that the needs of reindeer husbandry to function and develop in an environmentally acceptable way is ensured and where it is possible to coordinate efforts, for example for the infrastructure for reindeer husbandry
- Strive to make Laponia a pilot project area for the development of reindeer husbandry which is even more adapted to nature and the environment.

4.4.2 Traditional Knowledge and Local Experience as a Resource for Conservation and Development

The traditional settlements of the Sámi, their patterns of migration, choice of food, clothing and other materials as well as their knowledge of reindeer herding, hunting and fishing develop in harmony with the surrounding environment. There is a close connection between the pragmatic and the spiritual which is reflected in their respect for nature. Traditional knowledge and local experience deal with a practical and popular experience-based knowledge. Colonization, exploitation and the changes of the surrounding society have influenced the view of traditional knowledge and local experience. Interest in traditional knowledge has

Photo: Carl-Johan Utsi

nevertheless grown on an international and national level. It has proven to be an effective way of using resources in a way which is long-term and sustainable. Knowledge is a vital part of cultural and local identity which has importance in managing the World Heritage and its values.

Ambition

Traditional knowledge and local experience, innovations and customs are respected and preserved, using them in the caretaking of the area in cooperation with the respective bearer of knowledge. Traditional knowledge is used alongside scientific knowledge and experience from public management. **Árbediehtu** – the Sámi traditional knowledge – has an obvious place in the management work. New knowledge is woven together with traditional knowledge to achieve a more sustainable use of renewable natural resources.

The Task of Laponiatjuottjudus

- Use traditional knowledge and local experience with the practical work of taking care of the area, e.g. by using local competency for different kinds of management measures
- If Laponiatjuottjudus participates in commercialization of traditional knowledge, a fair distribution of the profits should be encouraged.

4.4.3 Language

Different dialects of the Sámi language are spoken in Sápmi. Laponia is situated within the Lule Sámi area, but Northern Sámi and Southern Sámi are also spoken in this region.

In many parts of Sápmi, both within Laponia and outside of it, a change of language is taking place and has come a long way. The Swedish language is the dominating one. Sámi tends to be a language spoken in the home. Interest in the language is growing as self-es-

teem and a stronger feeling of identity increase among the Sámi. This is also true within the Laponian World Heritage area.

The Sámi language received an official recognition in the Nordic countries when they adopted Sámi language laws. On April 1st, 2000, all dialects of Sámi were recognized as an official minority language in Sweden. It gives the right to use the Sámi language in dealing with authorities and judicial courts within the so-called Sámi management area. This area includes both the municipalities of Gällivare and Jokkmokk, which is where Laponia is situated. Since 2009 a new law was put in effect (2009:724) dealing with national minorities and minority languages.

As well as this, as of the year 2000, in the first chapter of the Act concerning Ancient Monuments and Finds there is the paragraph of consideration for place-names. Implications of that paragraph are:

- traditional place-names should not be changed without strong reason
- place-names should be spelled according to the accepted rules for correct language usage, unless the common spelling which is used indicates something else
- influence of the traditional name should be taken into consideration when establishing a new place-name
- Swedish, Sámi and Finnish names are to be used side by side on maps and signs and for other uses of the name in multilingual areas
- names which are accepted for map production are to be used in other contexts in their recognized forms
- the Swedish Mapping, Cadastral and Land Registration Authority (Lantmäteriet) is responsible for place-names and spelling changes of these, if any.

Ambition

Conform to good use of the principles for place-names on maps, signs, educational material and other information. Sámi and Swedish languages are the main languages of the area. Laponia is part of the Sámi management area and the rules and directives due to this are to be applied for this area.

The Task of Laponiatjuottjudus

- Operate so that the principles for place-names are used in accordance to the Act concerning Ancient Monuments and Finds. This is to be done in consultation with the Swedish Mapping, Cadastral and Land Registration Authority and the Sámi Parliament
- Follow the rules and guidelines relating to the fact that Laponia is part of the Sámi Management area
- Strive to make the Sámi language more visible in maps and other materials.

Duties for the Public Entities Involved

- Follow the relevant rules and guidelines as a result of Laponia being part of the Sámi management area in the work of managing the area and World Heritage
- See to that the principles for place-names are used within and around Laponia, in accordance to the Act concerning Ancient Monuments and Finds.

4.5 Infrastructure for Locals, Land-users and Visitors

4.5.1 Visitors/Active Outdoor Life

Among the basic objectives of the World Heritage is to give the chance for the general public to enjoy a high quality nature and cultural experience. Laponia is a combined World Heritage area, which means that the target group "visitors" is therefore broader than a nature or culture heritage would be on its own. The range of what Laponia has to offer attracts both

young and old, novice as well as experienced, national and international visitors. The area in and around Laponia is also an important recreational area for the population nearby and is of national interest in regards to an active outdoor life.

What is especially important is to give the chance for experiences that require an interaction between a living Sámi culture and nature, quietness, solitude and being able to survive; while at the same time to learn about and become aware of a way of life which has been in the area for hundreds of years. A lot of activities are possible to practice in Laponia. Some are not as appropriate as others, while certain activities are not allowed at all in certain areas. The starting-point is to improve nature and cultural experiences along with an active outdoor life with a Sámi cultural experience, hiking, cross-country skiing, sleeping in a tent or cabin, picking berries and mushrooms, studying nature, etc.

Most of the areas which are especially sensitive to disturbances in terms of nature or reindeer herding, demand special consideration from visitors who are thus somewhat limited. Very sensitive areas require the experience of having participated in tours lasting several days as well as knowledge of mountain safety and how to act in an emergency situation. Hiking on the established trails with cabins along the way demands less experience. Parts of Laponia are so easily accessible that they are appropriate for children and even for people with lighter forms of disabilities. In such a multifaceted and large area that can be visited it is necessary to have a well thought out strategy which is applicable to visitors and to the tourism industry.

"Funneling" or directing people can be necessary to steer visitors away from areas sensitive to disturbances, towards areas which are visitor-friendly. This can be done by means of paths, trails, bridges and boarded paths. Also by means of information on location e.g. visitor centers, information points and information signs as well as via modern information technology such as Internet, GPS and similar devices as well as folders and other information material and even through personal contacts, etc.

Since Laponia consists of national parks and nature reserves which were already well-known, there is already an interest in visiting this area which has developed through the years. Laponia as a destination puts pressure on the receiving end, making necessary visitor centers, "funneling" visitors, different types of activity and lodging enterprises and other facilities specifically equipped for visitors. To be able to serve visitors, a system of marked trails, signs and cabins have been built, which greatly facilitates visitors having a safe sojourn in Laponia.

Ambition

Laponia has satisfied visitors who by having access to good information by way of different channels know what they can expect and what consideration they need to take in different parts of the World Heritage. They can access this information prior to their visit. The activities which are available are in keeping with the objectives of the World Heritage, the Sámi culture and reindeer herding. Visitors to Laponia are to be able to get information of the merits of Laponia as well as the established codes of behavior expected of them. Visitors are to show respect and understanding for the World Heritage and its value.

The Task of Laponiatjuottjudus

- Monitor the development of the use of the area to avoid and prevent conflicts of interest between the values of preservation, development needs, reindeer husbandry and different types of activities
- Monitor the development of outdoor activities and evaluate whether any measures need to be taken and possibly adopt new or revised regulations for them
- Establish an ethical code of conduct for both visitors and enterprises suited for the values of Laponia and its need of protection

- Strive to make Laponia a pilot area for developing visitor enterprises which are in keeping with reindeer herding needs
- Develop strategies for working with visitors.

Making Fires

To make a fire to get warm, cook a meal or for well-being is a primary contribution to survival in Laponia. To make a fire with dry branches and twigs in a natural hearth is allowed throughout Laponia, but should be avoided close to park entrances and other facilities. In these places there are most often established hearths and access to firewood. The reason to allow making fires is that this is a significant part of the traditional way of being outdoors. A responsible use of fire does not destroy the feeling of being in pristine nature.

Ambition

Making fires takes place responsibly and affects the surroundings as little as possible. Stones are not used for the hearth. Established hearths are either kept up or taken apart. Knowledge of where, when and how making fires can be done is good among those working in Laponia and those who visit the World Heritage.

The Task of Laponiatjuottjudus

- Monitor the extent of making fires in specifically vulnerable places and observe the frequency of spontaneously built hearths, littering and damage to the vegetation, dried-up trees or ancient finds.

4.5.2 Outdoor Life

In Laponia there are many options for outdoor life for all, both the local population and other visitors who either come from nearby or farther away. A number of surveys have been done in different places in Laponia. Visitor counters have been installed at a number of strategic places and interviews have been made with visitors. For those working with Laponiatjuottjudus it is important to be aware of the knowledge available about visitors as well as to continue monitoring the development of visitor expectations and activities to better fulfill the objectives of developing outdoor life in this area.

4.5.3 Tourism Industry

Visitor enterprises are one of the ways of making a living which take place within Laponia and are basically based upon the skills of the different entrepreneurs to create and develop products which are attractive to the visitors, within the framework and conditions created by the merits of Laponia. Entrepreneurs who want to run visitor-centered businesses within Laponia need to know the rules which apply to their operation. The authorities who make decisions on exemptions, permits and the like, need to be clear regarding how the review process is done and on what basis decisions are made, as well as which conditions can be demanded.

A big responsibility also rests upon the new management organization whose task it is to protect and preserve Laponia for future generations and which is to function both as a consultant for authorities making decisions on permits and exemptions for the tourism industry within Laponia as well as being a support to those who want to run a business.

Information plays a central role in this work. The organized tour with a well-trained guide and tour leader gives the visitor the opportunity of experiencing places and getting to know people beyond the facilities and trails — things that give a richer and deeper experience of the World Heritage. For reindeer husbandry, the persons responsible for arranging the outing can be important partners who help diminish disturbances for the reindeer. The tourism industry plays an important part in maintaining the good service by means of access to lodging, transportation, food as well as information for visitors and other users of the area.

By allowing people who live and work in Laponia and its surroundings the possibility of making their livelihood by carrying out ecologically, socially, culturally and economically sustainable tourism enterprises in and around the World Heritage, they attempt to protect and conserve the inheritance for future generations. This is advantageous not only for reindeer herding but for the local economy as well. For the municipalities and citizens involved it is important that the World Heritage contribute to a feeling of increased quality of life. A committed and knowledgeable population is one of the most important tools in the effort to preserve the values of Laponia for future generations.

Ambition

The tourism industry which is carried out in Laponia is based on the principles of eco-tourism. Good relationships exist in the area between the interests of the different users (reindeer husbandry and tourism enterprises). Codes of conduct and other information on the authorization procedures are clear and easily accessible for the tourism industry as well as to the agency giving authorization. Enterprises within the tourism industry feel they are welcome to operate in the Laponian World Heritage area with care.

The Task of Laponiatjuottjudus

- In cooperation with sector organizations and the authorities concerned, elaborate a clear framework for granting authorization, based on basic ethical values, on the horizontal criteria as well as on the norms of eco-tourism, to facilitate things for the authorities as well as for the industry
- Strive to make Laponia a pilot testing area for a sustainable tourism industry.

Duties for the Public Entities Involved

- Examine the exemptions and authorizations according to the regulations and the set of rules and directions which were jointly produced
- Consult with Laponiatjuottjudus in granting authorization for tourism enterprises and other businesses within Laponia
- Carry out their exercise of public authority with respect for the values of Laponia which are the basis for being a World Heritage area and actively consult with the relevant local stakeholders.

4.5.4 Hunting

The right to hunt is extremely limited in the World Heritage area and is regulated by the provisions. Areas which are opened up for hunting appear on the map. Hunting which is allowed is regulated by the hunting laws, reindeer husbandry laws and local provisions established by the authorities. Restrictions can apply out of consideration for reindeer herding or other reasons.

Ambition

Hunting is carried out based on the existing legal framework while at the same time taking into consideration the biological diversity, the value of nature, reindeer husbandry and visitors.

Awareness of where, when and how hunting is allowed, is good for both hunters and visitors in the World Heritage area.

The Task of Laponiatjuottjudus

- Cooperate with the authorities responsible for hunting, those with hunting permits and local organizations to ensure that hunting is carried out in a sustainable fashion.

Instructions for the Public Entities Involved

- Consult with Laponiatjuottjudus on issues relating to hunting which involve Laponia.

4.5.5 Non-commercial Fishing and Hand-held Equipment

The right to fish is extremely limited in the World Heritage area and is regulated by the provisions. The areas open for non-commercial fishing using hand-held equipment are shown on the map.

Ambition

Non-commercial fishing with hand-held equipment is practiced within the legal framework and that fishing – including moving from one fishing area to another – is carried out with consideration given to diversity, its natural value, reindeer husbandry and tourism in the World Heritage area. Authorities carry out a careful supervision.

The Task of Laponiatjuottjudus

- Cooperate with authorities in charge of fish-care.

Duties for the Public Entities Involved

- Consult Laponiatjuottjudus on issues of fishing that deal with Laponia, e.g. production of the supplement to the fishing licenses.

4.5.6 Facilities for the Visitor

A necessity for many visitors to Laponia is a well-developed infrastructure such as entrances, information signs, trails, bridges, cabins and wind shelters. The purpose of these facilities is, to begin with, to make it easier for visitors to find the area and then to find the most interesting locations and experiences in a given area, as well as to provide a safe sojourn.

Ambition

The infrastructure for visitors should consist of the following descriptions and be well kept up.

Places of Entrance and Rest Areas

For visitors to Laponia it is of basic importance that there be functioning places of entrance, i.e. places easily found which mark the entrance place for the visit. Feelings about a place are strongly influenced by the first impression one has upon arrival. A well designed entrance place gives positive expectations and increases the payoff of the visit. Existing entrances and rest areas are described in Chapter 2.5. The web is also an important place of entrance to the World Heritage area.

Work is going on to produce a development plan for entrances and rest areas (including the possibility of adding new locations) in a separate development project for the geographically bound information regarding Laponia and its surroundings.

Ambition

Visitors' feelings about rest areas and entrance places are to be appealing. They are appropriately located in terms of being shielded from harsh weather, the distance visitors hike and reindeer husbandry. By means of these, visitors are directed to the appropriate area. The places are marked on the mountain map and in information material. Rest areas and entrances have parking space and provide good information about the World Heritage area.

The Task of Laponiatjuottjudus

- Take care of the rest areas and entrances which are located within Laponia and for which Laponiatjuottjudus has responsibility

Photo: Carl-Johan Utsi

- High priority is given to maintenance of these rest areas and entrances
- In cooperation with local entrepreneurs, develop the conditions necessary for the visitor to be able to learn about the Sámi cultural heritage
- To initiate the development of existing rest areas.

Duties for the Public Entities Involved

- Maintenance of the rest areas and entrances is given a high priority
- Where it is necessary, complete the area with basic services such as garbage collection, toilets, etc.

Information Places

Different forms of information, information places and a structure for information is being produced by means of a different development project in Laponia. Included in the project is that the upkeep of the information operation is given to Laponiatjuottjudus.

Target locations are places or facilities which have such an identity and quality that they attract visitors. They increase the attractiveness of the area and complete the more general merits it already has where the visit in itself and hiking in the World Heritage is the main goal.

Target locations function as magnets. They can also be seen as peak attractions which entice many visitors—enhanced by the "funneling" produced by the establishment of paths and information signs. In the on-going development project for an information structure in Laponia, these target areas will be made more clearly.

Ambition

Visitors have a positive experience of their visit to the Laponian World Heritage and have, by means of visitor centers and geographically bound information, become more aware about Laponia and the value it has. The geographically bound information as well as the future

operation and infrastructure are designed and built in such a way that they fit in with their surroundings. This avoids a negative influence on the Sámi culture and forms of livelihood and on the sensitive landscape.

The Task of Laponiatjuottjudus

- Take care of the information facilities which are found within Laponia
- Follow the service instructions for the different information facilities in Laponia
- Develop geographically bound information, keeping in mind the content, shape and way of transmitting it.

Trails and Bridges

What standard the different stretches of a trail and the facilities along the way should have depends on the safety aspect and the visitors' comfort. All the marked trails in Laponia are to have safe facilities and clear signs. Facilities which have special safety demands – such as bridges – are to be regularly inspected. Other facilities are to be safe so that visitors do not risk getting hurt on them due to the shape they are in. Comfort in hiking largely depends upon how extensive facilities are built to eliminate naturally troublesome passages. A well-built trail can be a prerequisite so that disabled people are able to use the trail.

Many of the trails in the Swedish mountains (including Laponia) follow natural migration paths, so that the mounds of stones which mark the trail can occasionally be classed as an ancient find. In these cases the stretch of trail itself is an ancient remains, which can mean that permission from authorities might be needed for up-keep work or changing the route.

To what extent different stretches of trail in the state trail system along the Swedish mountain range are used varies greatly. Some stretches are used significantly while others are only used marginally. The Swedish Environmental Protection Agency along with the County Administrative Boards have begun a discussion on a review of the present system of trails. The review will most likely result in the trails being put into different categories of maintenance. Since some of those trails pass through Laponia or are located there, the outcome of the review can affect their maintenance.

Ambition

The system of trails in Laponia is to be well-planned and all marked trails are to have safe facilities and well-visible markings. Trails are to be divided into different categories and information of the standard of the trail shall be clear. Appropriate hiking distances in the area which lack marked trails are noted. When bridges need to be replaced, their placement and condition is determined in dialogue with the appropriate Sámi village organization and the option of jointly coordinating bridges is considered.

The Task of Laponiatjuottjudus

- Take care of the national system of trails within Laponia in addition to parts of the Badjelánnda Trail which is outside the World Heritage as well as the stretch Kungsleden Huhttán/Kvikkjokk - Sáltoluokta
- Make a plan for categorizing the standard for different stretches of the trails, as well as the development, maintenance, measures to be taken, and regular inspection of the system of trails in Laponia
- Local trails are made at Stora Sjöfallet/Stuor Muorkke and for the look-out point Oarjemus Stubbá (Sörstubba). These trails are to be easily accessible
- Maintenance of bridges on the marked summer and winter trails
- A successive renewal of the system of bridges together with the reindeer industry.

Cabins and Wind Shelters

Lodging for the night is available in Laponia, both for visitors, administrative personnel at work and reindeer herders. Laponiatjuottjudus is responsible for the up-keep and maintenance of the state-owned cabins and facilities. A certain amount of coordination when provisions are transported should be possible jointly with other parties.

Ambition

Facilities for visitors are of good quality and are deemed attractive. Cabins and wind shelters are appropriately located, taking in consideration the weather, hiking distance and reindeer herding. By means of cabins and wind shelters visitors are directed to appropriate places to visit or hike. Unlocked safety space is available in all visitor cabin areas.

The Task of Laponiatjuottjudus

- Is responsible for the state-owned buildings and facilities
- Maintenance of the buildings and facilities is carried out according to a work schedule
- Make a development plan for the location of the cabins and measures to be taken, priorities, etc.
- Negotiate the management and staff for the tourist cabins in Padjelanta/Badjelánnda.

Sanitary Installations and Waste Management

Recycling refuse is an important ingredient in a sustainable society and new forms and methods are developed all the time. For the Laponian World Heritage area, a sustainable and functional waste management is self-evident. At the same time it can be complicated as there are different areas of responsibility.

The owner or manager of a facility is responsible for waste management. In Laponia it is those who run the cabin enterprises alongside the trails who are responsible for waste management and waste sorting. The municipality is always responsible for collecting and processing household waste and likewise comparable waste elsewhere. Producers have a statutory producer responsibility which at the time-being applies to cars, batteries, waste from electric appliances, packaging and newspaper. Due to the extremely sparse population in this area, the Packaging and Newspaper Collection Service as of yet places no demand to organize recycling centers e.g. along the Road 825 (”The road to the west”), but new agreements in the waste disposal branch might mean that new recycling centers will be established.

Visitors to this area should as far as possible take their own trash with them when they leave the area.

The same rules apply for sanitary facilities (toilets) which are built at e.g. a rest area. Those responsible for the rest area are also responsible to keep the toilets in good shape and make sure that they are regularly emptied or taken care of in some other way.

Ambition

Laponia has a functioning waste management in which waste sorting takes place in accordance with present legislation. Awareness of the responsibility for one’s own waste is to be good for those working in Laponia and for visitors to the World Heritage area.

The Task of Laponiatjuottjudus

- Collaborate with the Swedish Transport Administration, municipalities and other actors to build up a functioning waste management system and managing the sanitary facilities
- Monitor littering.

Duties for the Public Entities Involved

- Collaborate with Laponiatjuottjudus for a functioning waste management.

4.5.7 Road Signs

Developing road signs in cooperation with the authorities responsible for this is already part of a special development project. The project involves leaving the direction of working with road signs to the Management of the World Heritage.

Ambition

Road signs directing people to Laponia as well as within the World Heritage are clear and conform to good use of the principles for place-names.

The Task of Laponiatjuottjudus

- Develop road signs together with the appropriate authorities.

Duties for the Public Entities Involved

- Design and mount road signs in cooperation with Laponiatjuottjudus.

4.5.8 Boundary Lines

The area within Laponia is protected according to the Swedish Environmental Code. This means that the boundary lines of national parks, nature reserves and bird protection areas are to be clearly marked according to the guidelines of the Swedish Environmental Protection Agency.

Current boundary lines throughout Laponia, as well as the national parks and nature reserves in Laponia are in varied condition and mostly inadequate. If it turns out that the boundary line markings are in such bad shape that a new survey is needed, employees from the Swedish Mapping, Cadastral and Land Registration Authority should be called into the field to map out and survey the boundary lines anew (according to the agreements made between the Swedish Environmental Protection Agency and the Swedish Mapping, Cadastral and Land Registration Authority in 2008).

Boundary lines between the Sámi village organizations and the municipalities can at times be worthwhile indicating, especially where trails and roads pass nearby.

Overall Objectives

The boundary lines of the World Heritage area are to be marked. Boundary line markings for national parks, nature reserves and bird protection areas comply with the guidelines established by the Swedish Environmental Protection Agency for protected areas.

The Task of Laponiatjuottjudus

- Mark, restore and maintain the boundary lines of the national parks and nature reserves.

Duties for the Public Entities Involved

- Consult with Laponiatjuottjudus when corrections to the boundary lines need to be made.

4.5.9 Traffic

Driving with a motor-vehicle on bare ground

Other than driving on a public road or on a snowmobile track, all travel by motor-vehicles is prohibited for the general public basically throughout Laponia. Exceptions to this are noted in the regulations. The traffic that is allowed has to do with reindeer husbandry, management and the exercise of public authority. Driving on bare ground with an off-road vehicle by the general public is allowed only for hunters to transport moose cadavers out of Sjávnja and Stubbá.

Ambition

Except on private and public roads, traffic by motor-driven vehicles is to be minimized. Road 825 (the road to the west), Huhttán/the road to Kvikkjokk and E45 are in good shape and are maintained continuously.

The Task of Laponiatjuottjudus

- Strive for a reduction of the negative impact off-road driving has on bare ground, and support reindeer husbandry in their work on plans dealing with the use of all-terrain vehicles
- Monitor the use of motor-driven vehicles off public roads and snowmobile trails in order to be able to take measures.

Duties for the Public Entities Involved

- Maintain and develop the public system of roads to retain good accessibility
- Carry out an active supervision.

Traffic with Aircraft

The aircrafts which traffic Laponia are helicopters and small sport planes. Transportation is for reindeer herding, tourism, research and management. For the most part permission is needed to fly over, take-off or land in Laponia.

Ambition

Noise pollution from aircraft is low and limited to certain locations. In the majority of the World Heritage area there is a high likelihood of being spared from hearing motor sounds from airplanes or helicopters. In areas which have a special conservation value as well as those which are significant for visitors and reindeer herding, the number of flights is limited to a minimum.

The Task of Laponiatjuottjudus

- Monitor and evaluate the extent of permits granted and flying activity so that measures can be taken when it is necessary
- Strive for a reduction of flights to the area.

Snowmobile Traffic

Within the majority of Laponia snowmobile traffic is not allowed other than for reindeer herding or in connection with carrying out management duties or exercising public authority.

In Stora Sjöfallet/Stuor Muorkke National Park and in parts of Sjávnja it is permitted to drive snowmobile on specifically marked snowmobile trails. In Sjávnja part of area III and in Stubbá, snowmobile driving is allowed.

Ambition

Snowmobile traffic only takes place on specific snowmobile trails in the World Heritage.

The Task of Laponiatjuottjudus

- Maintain the snowmobile trails which are established
- Cooperate with authorities, Sámi village organizations and interested parties to minimize and direct snowmobile traffic
- Switch to the use of more environment-friendly snowmobiles and/or fuels in maintenance and surveillance work.

Duties for the Public Entities Involved

- Carry out an active supervision.

4.5.10 Mountain Rescue and Border Surveillance

The activities of the Swedish Mountain Rescue in Laponia consist of combined training and scouting tours with snowmobiles during winter time. The aim of these training missions is to maintain a high level of knowledge about the local terrain. When needed, rescue operations are also undertaken during summer and winter. The Swedish Customs are responsible for border surveillance in Laponia. The Swedish Customs cooperate with the Swedish Mountain Rescue and the Norwegian Customs Administration during operations and training in the area. How training and transportation may be conducted is specified in the regulations.

Ambition

The training activities of the Swedish Mountain Rescue involves minimal disturbance to the reindeer industry, wildlife, nature and visitors. Scouting and training missions are only conducted in Sarek by way of exception.

The Task of Laponiatjuottjudus

- consult with police, Mountain Rescue and border surveillance when needed
- work toward keeping the emergency telephones that currently exist within the area.

Duties for the Public Entities Involved

- cooperate with Laponiatjuottjudus in connection with training activities.

4.5.11 Scientific Studies and Documentation

Research, inventories and documentation is going on in Laponia. It is partly the collection of data by the County Administrative Board of Norrbotten and others for e.g. environmental monitoring and making inventories of predators and partly research and documentation that other parties are conducting. As an example the Ájtte Swedish Mountain and Sámi Museum has a special responsibility to document the Sámi cultural heritage.

Environmental monitoring, combined with scientific and cultural-historical inventories and documentation, are important in order to describe the status and development of the World Heritage. The collected knowledge also makes an important basis when planning what kind of measures and efforts that are needed in Laponia and can be used for reporting the status and development of Laponia. Transportation connected to research can be a disturbance for the reindeer industry, wildlife, nature and visitors.

Authorization from the County Administrative Board of Norrbotten is required in order to conduct research and scientific studies within Laponia. A policy for what type of research that is to be promoted within the World Heritage and what terms apply will be developed in cooperation with the authorities responsible for this.

Ambition

The research conducted in the World Heritage has a value to the World Heritage or for the people who out of tradition use the World Heritage and for those who visit it. Scientific studies are conducted without disturbing cultural or natural values or the reindeer industry. Well-recognized ethical guidelines for science are to be presented and implemented. Knowledge gathered during research is to regularly be brought back to the people who use and visit the World Heritage. A policy for research is to be developed.

The Task of Laponiatjuottjudus

- initiate the development of a policy and guidelines for scientific studies and documentation and ensure the reinsertion of knowledge
- perform environmental monitoring efforts, sample-taking, etc. and report to the regional and national authorities who are responsible for this

- conduct dialogues with Ájtte Swedish Mountain and Sámi Museum and other institutions on research issues that concern Laponia
- arrange meeting-places between management, users and researchers in order to exchange experiences and create a network.

Duties for the Public Entities Involved

- consult with Laponiatjuottjudus in connection with planning and permit procedures for scientific research.

Photo: Ludvig Wästfelt/Ájtte

Anta Pirak — en flyttsames liv

År 1933 gavs boken En nomad och hans liv" ut. Anta Pirak hade samlat en stor mängd berättelser om hur livet för ett nomadiserande folk såg ut i början. En kort tid arbetade Pirak som lärare. Ganska snart insåg han dock att hans liv skulle vara hos renarna. Han slutade som lärare och blev en nomad. Boken nedtecknades och översattes till svenska av kommunister Harald Grundström.

Det kapell Pirak berättar om byggdes 1788.

Álggá kyrka och dess silvergropar referat ur "En nomad och hans liv", Anta Pirak 1933:

I Alggá finns ett kapell som konungen byggt upp för att samerna ska kunna deltaga i mässor och andra kyrkoärenden. Redan långt innan min tid har den dock slutat användas. Redan som barn såg jag kapellet. Dörren var borta och inne i det fanns inga lösa föremål kvar. Vad jag förstår så har den aldrig haft golv. Taket var intakt, men på dess ena sida fanns ett stort hål. På så sätt har lite i taget försvunnit. Man har sett att en del av brädorna nyligen tagits bort. Det är nog folk som färdats förbi som använt dom som ved. Vid storm och oväder har man gjort upp eld inne i kapellet. Andra bitar av taket har vinden blåst bort. Väggarna är av sten. Men de är inte då täta som i dagens kyrkor. Man har ställt upp flata stenblock på varandra. Vinden och ljus kommer igenom. Man ser att det funnits fönster. Kapellet är på en fjällsluttning. Platsen är vackert belägen, med utsikt. Där växer enbart dvärgbjörk. Det finns många stora videsnår vid den stora bäcken. Uppifrån fjällsidan kommer en djup ravin ner till kapellet. I den ravinen finns silvermalm.

När jag var en ung pojke så fanns där vid kapellet, eller vid ravinen, några fyrkantiga stenhögar. Men på den tiden kunde ingen akkja frakta dem neråt. På norrsidan av Lánjektjåhkkå ska en same ha funnit silver, som syntes på flera ställen. Han hämtade då näver och täckte över dessa och lade lera och sten på dessa. För att de inte skulle synas. På så sätt försvann silvret. Det som samen var rädd för var att de skulle hitta denna fyndighet, och att de återigen skulle bli tvungna att frakta malm. En svensk arbetade vid kapellet, eller vid ravinen. Han föll ner i branten och dog. Han ska ligga begravd där vid kapellet. Men jag vet inte riktigt var.

Om kyrkomässan vid Álggá

Fyra veckor efter midsommar skulle alla samlas vid Álggavárre kapell. Denna helg var en vecka efter svenskarnas högsommar. Det var bestämt att det skulle komma en från varje hushåll. De som inte kom var tvungna att betala böter. Alla som ville fick komma dit. Prästen bodde i Huhttán och samerna var tvungna att turas om att hämta honom. De var tvungna att ha med sig härkar som skulle bära prästens och klockarens bördor. Prästen färdades alltid upp längs Darrevuobme. Om det var alltför mycket mygg och hetta så klättrade de upp på Válle och färdades längs fjället västerut. Jag vill minnas att det var så. De hade en båt vid utloppet till Álggajávrre. Med den kom de över sjön. Det var en lång färd de hade. För samerna blev det ännu längre, eftersom de hade sin sijdda en lång väg från Álggavárre. Samerna var nog positiva till att komma till kyrkhelgen. Men att hämta prästen ville de inte. De bråkade om vem som skulle göra detta.

De äldre har berättat att det var många samer som samlades dit. En del av dem kom ända från Norge. På backarna kring kapellet finns många eldhärdar där folk har eldat. När det var regnväder samlades allt folket inne i kapellet. Detta oavsett vad det var för tid.

Så hölls där högmässa med predikningar och även nattvard. En gång kom till Álggavárre kapell en präst från Norge. Jag tror att han kom på eget bevåg. Min far brukade berätta såhär: Den prästen talade samiska och höll en högmässa. Då blev många av oss rädda. Han predikade om domedagen. Utantill kunde far citera vad prästen sagt. Det var långa meningar som han kunde utantill. Jag minns dock bara några ord.. De var såhär: Elementen ska smälta av eldens hetta, bergen ska spricka och klippor ska rasa ner den dag Herren kommer.

Det berättas att samerna från Norge kom med brännvin och drack det där. Det fanns en präst i Huhttán som drack. Ibland så mycket att han inte kunde predika. Då var klockaren tvungen att sjunga psalmer med samerna. Till slut så var dock prästen så pass nykter att han kunde läsa nattvardsbönen. Vid det laget var ju gudstjänsten över.

Två samiska brudpar har vigts i kapellet har jag hört.

The Swedish Environmental Protection Agency's Code of Statutes

ISSN 1403-8234 **NFS 2013:10**
Issued on November 21st 2013

The Swedish Environmental Protection Agency's Regulations for the National Parks Muddus/Muttos, Padjelanta/Badjelánnda, Sarek and Stora Sjöfallet/Stuor Muorkke;

Established October 31st 2013.

The Swedish Environmental Protection Agency prescribes the following in accordance with 4 § first paragraph of the National Park Ordinance (1987:938).

Scope

1 § These regulations apply within the national parks mentioned above.

A. Restrictions of the right to use land and water within the national parks

2 § Within the national parks it is forbidden to

1. construct buildings or other facilities, such as masts, surveying equipment, bridges or wind turbines,
2. construct paths or roads,
3. construct electrical power lines in the ground or through the air,
4. cut down or in any other way damage dead and living trees, shrubs, use windfalls or remove other vegetation,
5. in other ways than stated under item 4 damage or alter land, vegetation or glaciers, for example to dig, excavate, fill, bore, dam, blast, ditch or establish storage sites
6. conduct mineral exploration beyond the prohibitions according to chapter 3 § 6 of the Swedish Minerals Act (SFS 2001:444) or remove peat, minerals or other geological material,
7. emit or spread toxins, hazardous substances, plant nutrients, lime, biological or chemical pesticides,
8. introduce plant or animal species,
9. hunt,
10. fish and to
11. operate motorboats and motor vehicles in the terrain.

3 § Without the approval of the County Administrative Board it is prohibited to

1. rebuild, enlarge or tear down building or facility and to
2. conduct military or police training activities.

B. On the rights to travel and reside and on the general order within the national parks

4 § Within the national parks it is forbidden to
1. intentionally disturb grazing reindeer and the gathering and moving of reindeer,
2. capture, harm, or kill vertebrates. Gather eggs or disturb animal life by climbing nesting trees or cliffs where birds of prey nest or intentionally reside near lairs,
3. collect invertebrates,
4. cut down or in any other way damage dead and living trees, shrubs, damage vegetation in other ways, for example by digging up and removing plants and plant parts such as herbs, mosses or lichens or by removing wood-living fungi,
5. destroy or damage rock, soil or stone by drilling, chopping, blasting, carving, digging or painting, etc.
6. litter,
7. operate motorboats and motor vehicles in the terrain,
8. operate watercrafts in Sarek National Park,
9. hunt,
10. fish,
11. bring along dogs,
12. bicycle, ride or bring along horses,
13. set up notice boards, posters, signs, make inscriptions or other markings in nature and to
14. park car, bus, ice fishing shelter, caravan or trailer.

5 § Without the approval of the County Administrative Board it is prohibited to
1. fly below 2 000 feet above the ground in Padjelanta/Badjelánnda, Sarek and Stora Sjöfallet/Stuor Muorkke,
2. start and land with aircrafts,
3. ride dogsled,
4. perform scientific studies and to
5. perform competitions, camps, recurring organized tours or other major organized events.

C. On the requirement to tolerate certain intrusion

6 § The owner of specific rights to property has to tolerate that the following arrangements are performed and that the following measures are taken which are needed in order to satisfy the objectives of the national parks included in the World Heritage:
1. demarcation of the national parks,
2. posting and upkeep of information,
3. marking and maintenance of snowmobile trails according to the map in appendix 1,
4. making the area accessible to visitors, for example by the making and maintenance of trails, fireplaces and wind shelters and
5. studies of animal and plant species as well as of land and water conditions.

D. General exceptions

7 § Without hindrance of the restrictions according to 2 § and 4 § it is permitted
1. for the manager of the National park to perform measures for the care and upkeep necessary to meet the objectives of the national parks included in the World Heritage. While performing measures it is also permitted to use motorized vehicles, boats and aircrafts,
2. to perform maintenance on existing buildings, parking places, roads, railroads, facilities with utility easements and other facilities. Consultation with Laponiatjuottjudus/the Laponia Management is to be done prior to major maintenance measures.

11 § In connection with reindeer herding in Padjelanta/Badjelánnda National Park, members of the Sámi village organizations Udtja and Slakka may fish and hunt, use motorboats, motorized off-road vehicles and aircrafts, bring along dogs, take wood for handicrafts and fuel wood.

12 § The Sámi village organizations' and their members' abstaining from moose hunting in Sarek National Park is to be specifically regulated in a written agreement between the Sámi village organizations and the Swedish Environmental Protection Agency.

These regulations entered into force on December 15th 2013 and are valid until further notice.

Through these regulations the following proclamations are revoked
1. SNFS 1987:8 with regulations for Stora Sjöfallets National Park
2. SNFS 1987:9 with regulations for Sarek National Park,
3. SNFS 1987:10 with regulations for Padjelanta National Park and
4. SNFS 1987:11 with regulations for Muddus National Park.

The Swedish Environmental Protection Agency

Appendix 1 **NFS 2013:10**

Map in accordance with § 6 third paragraph

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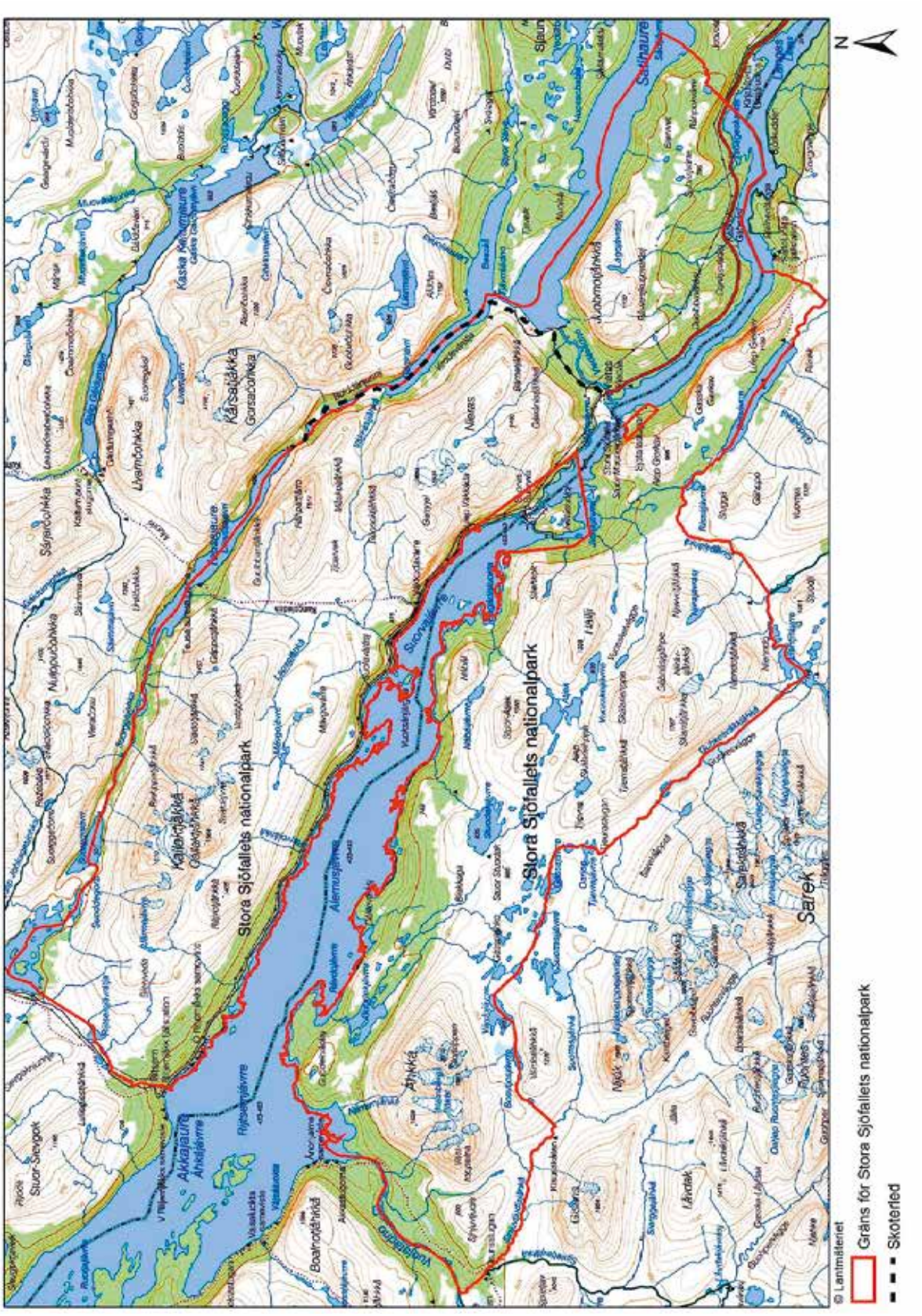
The Swedish Environmental Protection Agency

Appendix 1 **NFS 2013:10**

Map in accordance with § 6 third paragraph

Bilaga 1 **NFS 2013:10**



Check List for Assessment According to the Horizontal Criteria

The values of nature are fundamental conditions for the establishment of the Laponian World Heritage. All efforts should strive to maintain and strengthen the natural values. Management is to be carried out in a way that increases the consideration to the natural values.

Cultural heritage. Based on the conditions of nature, people have influenced the landscapes in Laponia for a long time, giving it its current appearance. The management is to be carried out so that the historic dimensions of the landscape are preserved and become comprehensible for the people who use the land today, and for those who visit the area.

The Sámi culture with its different expressions and dimensions is noticeable throughout the World Heritage. In both visible and invisible ways, the material, social and cultural dimensions unite the present with the past. The present is also characterized by a strong influence from the majority culture. The management is to be carried out so that the Sámi culture is preserved and developed.

Sustainable development. The concept of sustainable development means: a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Management is to be based on the perspectives of sustainability and be a model in sustainable thinking.

Quality of process and conduct. The management measures carried out in Laponia are to have quality in process and quality in conduct as guiding principles.

Equality. The management measures are to contribute in providing good opportunities for everybody, regardless of gender, age, ethnicity, disabilities, etc. An evaluation is to be made on whether or not special efforts are necessary for improving equality.

1. The Values of Nature

Criteria for decision-making and implementation	Assessment of impact	Definition	Rating (1, 2, 3)
1.1 Least possible environmental impact	Impact of decision/measure: 1) Is aimed at minimizing environmental impact. Environmental impact refers to e.g. emissions, noise pollution, intrusion on other land use, energy use, wear of land, use of materials, other disturbances. 2) Has a predominantly positive impact on the environment. 3) Has a predominantly negative impact on the environment.	1) One of the main goals of the decision/measure is to minimize environmental impact, which is clearly reflected in its content, targets and expected result. 2) The environmental impact of the decision/measure is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at avoiding environmental impact. 3) The environmental impact of the decision/measure is analyzed in the preparatory work. It is judged to have a predominantly negative impact.	
1.2 Improved comprehensive view of the landscape	Impact of decision/measure: 1) The goal is to improve the comprehensive view of the landscape. The aim of the comprehensive view is that all aspects (e.g. culture, industry, nature and their interaction) are to be considered during planning, protection, evaluation and landscape management. 2) Has a predominantly positive impact on the comprehensive view of the landscape. 3) Has a predominantly negative impact on the comprehensive view of the landscape.	1) An improved comprehensive view of the landscape is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on the comprehensive view of the landscape is analyzed in the preparatory work. It is judged to provide a predominantly improved comprehensive view on the landscape. Several parts of the decision/measure are aimed at improving the comprehensive view. 3) The impact of the decision/measure on the comprehensive view of the landscape is analyzed in the preparatory work. It is judged to provide a predominantly negative impact.	

1.3 Preservation of traditional knowledge, innovations and customs linked to sustainable use and conservation of biodiversity.	Impact of decision/measure: 1) Is aimed at preserving traditional knowledge, innovations and customs. 2) Has a predominantly positive impact on traditional knowledge, innovations and customs. 3) Either the decision/measure has a predominantly negative impact on traditional knowledge, innovations and customs, or it is not done in cooperation with the bearer of knowledge.	1) Preservation of traditional knowledge, innovations and customs is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. The decision/measure is taken in cooperation with the parties concerned who carry the knowledge, innovation, custom. 2) The impact of the decision/measure is analyzed in the preparatory work. It is judged to have a predominantly positive impact on preservation. Several parts of the decision/measure are aimed at improving preservation. 3) The impact of the decision/measure is analyzed in the preparatory work. The decision/measure is either judged to have a predominantly negative impact, or is not done in cooperation with the bearer of knowledge.
1.4. Viable plant and animal life.	Impact of decision/measure: 1) Is aimed directly at improving the vitality of plant and animal life. 2) Has a predominantly positive impact on plant and animal life. 3) Has a predominantly negative impact on plant and animal life.	1) Viable plant and animal life is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on plant and animal life is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at improving the vitality of plant and animal life. 3) The impact of the decision/measure on plant and animal life is analyzed in the preparatory work. It is judged to have a predominantly negative impact.

2. Cultural Heritage

Criteria for decision-making and implementation	Assessment of impact	Definition	Rating (1, 2, 3)
2.1. Preservation of the cultural heritage	Impact of decision/measure: 1) Is aimed at preserving the cultural heritage. Cultural heritages can be both material and non-material, e.g. physical remains, specific locations, knowledge, skills, customs and use. 2) Has a predominantly positive impact on the preservation of the cultural heritage. 3) Has a predominantly negative impact on the preservation of the cultural heritage, or is not anchored among the parties concerned.	1) Preservation of the cultural heritage is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. Decisions/measures are to be taken in cooperation with the Sámi village organization concerned, owner or other stakeholder. 2) The impact of the decision/measure on preservation is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed to improve preservation. Decisions/measures are to be taken in cooperation with the Sámi village organization concerned, owner or other stakeholder. 3) The impact of the decision/measure on preservation is analyzed in the preparatory work. The decision/measure is either judged to have a predominantly negative impact, or has not been developed in cooperation with the Sámi village organization concerned, owner or other stakeholder.	

2.2 Making the cultural heritage visible	Impact of decision/measure: 1) Is aimed at making the cultural heritage visible. Cultural heritages can be both material and non-material, e.g. physical remains, specific locations, knowledge, skills, customs and use. 2) Has a predominantly positive impact on making the cultural heritage visible. 3) Has a predominantly negative impact on making the cultural heritage visible, or is not anchored among the parties concerned.	1) Making the cultural heritage visible is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. Decisions/measures are to be taken in cooperation with the Sámi village organization concerned, owner or other stakeholder. 2) The impact of the decision/measure is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at making the cultural heritage more visible. Decisions/measures are to be taken in cooperation with the Sámi village organization concerned, owner or other stakeholder. 3) The impact of the decision/measure is analyzed in the preparatory work. The decision/measure is either judged to have a predominantly negative impact, or has not been developed in cooperation with the Sámi village organization concerned, owner or other stakeholder.
2.3 Correct use of names	Impact of decision/measure: 1) Is aimed at a correct use of names. Correct use of names means that e.g. the right terms and language are used as well as using correct spelling and proper locations. 2) Has a predominantly positive impact on the correct use of names. 3) Has a predominantly negative impact on the correct use of names.	1) The correct use of names is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on correct use of names is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at improving the correct use of names. 3) The impact of the decision/measure on correct use of names is analyzed in the preparatory work. It is judged to have a predominantly negative impact. It contains measures to minimize those negative effects.

3. The Sámi Culture

Criteria for decision-making and selection	Assessment of impact	Definition	Rating (1, 2, 3)
3.1. Making the Sámi culture visible	Impact of decision/measure: 1) Is aimed at making the Sámi culture visible. In a broader sense the Sámi culture includes e.g. language, industries, customs, Sámi symbols, jojk (traditional Sámi singing) and duodji (Sámi handicraft). 2) Has a predominantly positive impact on visibility. 3) Has a predominantly negative impact on visibility.	1) Making the Sámi culture visible is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on visibility is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at making the Sámi culture more visible. 3) The impact of the decision/measure on visibility is analyzed in the preparatory work. It is judged to have a predominantly negative impact.	
3.2 Developing the Sámi culture	Impact of decision/measure: 1) Is aimed directly at developing the Sámi culture. In this context the Sámi culture primarily refers to arts like duodji (Sámi handicraft), jojk (traditional Sámi singing), painting and language and can have its origin in traditional industries. 2) Has a predominantly positive impact on the Sámi culture. 3) Has a predominantly negative impact on the Sámi culture.	1) Developing the Sámi culture is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on development is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at improving the development of the Sámi culture. 3) The impact of the decision/measure on development is analyzed in the preparatory work. It is judged to have a predominantly negative impact.	
3.3 Sámi influence	Impact of decision/measure: 1) Is aimed directly at achieving Sámi influence. 2) Has a predominantly positive impact on Sámi influence. 3) Has a predominantly negative impact on Sámi influence.	1) Sámi influence is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on the Sámi influence is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at achieving Sámi influence. 3) The impact of the decision/measure on the Sámi influence is analyzed in the preparatory work. It is judged to have a predominantly negative impact.	

4. Sustainable Development

Criteria for decision-making and implementation	Assessment of impact	Definition	Rating (1, 2, 3)
4.1 Consideration to the people – and their enterprises – that currently live in the area and who have used it for a long time.	Impact of decision/measure: 1) Is aimed at showing consideration to the people who currently live in the area and who have used it for a long time. 2) Has a predominantly positive impact on consideration. 3) Has a predominantly negative impact on consideration.	1) Consideration to the people who currently live in the area and who have used it for a long time is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on consideration is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at showing consideration to the people who currently live in the area and who have used it for a long time. 3) The impact of the decision/measure on consideration is analyzed in the preparatory work. It is judged to have a predominantly negative impact. The parties concerned have not consented to the decision/measure.	
4.2 Contribute to reach relevant environmental objectives: reduced climate impact, clean air, flourishing lakes and streams, thriving wetlands, sustainable forests, a magnificent mountain landscape, a rich diversity of plant and animal life.	Impact of decision/measure: 1) Is aimed at improving the possibility to reach all relevant environmental objectives. 2) Is aimed at improving at least one environmental objective. 3) Is not aimed at improving any environmental objective.	1) Contributing to reach relevant environmental objectives is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on reaching environmental objectives is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at contributing to reach the environmental objectives. 3) The impact of the decision/measure on reaching environmental objectives is analyzed in the preparatory work. It is judged to have a predominantly negative impact.	
4.3 Sámi business development	Impact of decision/measure: 1) Is aimed directly at the development of Sámi businesses. 2) Has a predominantly positive impact on Sámi business development. 3) Has a predominantly negative impact on Sámi business development.	1) Development of Sámi businesses is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. The decision/measure is made in cooperation with the Sámi stakeholder concerned. 2) The impact of the decision/measure on Sámi business development is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at developing Sámi businesses. 3) The impact of the decision/measure on Sámi business development is analyzed in the preparatory work. It is judged to have a predominantly negative impact. The Sámi stakeholder concerned has not consented to the decision/measure.	

5. Quality of Process and Conduct

Criteria for decision-making and implementation	Assessment of impact	Definition	Rating (1, 2, 3)
5.1 Decisions made by consensus	The decision/measure is: 1) Taken by consensus 2) No formal decision is taken 3) Not taken by consensus	no definition	
5.2 Good legal certainty	The decision/measure is prepared and will be determined: 1) Based on the legislation and judicial interpretations of the regulations that apply. 2) Mainly with good legal certainty, but will need to be supplemented in some areas before decisions are made. 3) Without sufficient consideration to the judicial regulations that apply.	no definition	
5.3 Anchoring	The decision/measure: 1) Has included those who it concerns. That could be Sámi village organizations, other local inhabitants, authorities, politicians or other specific stakeholders. Local parties concerned have actively been offered the opportunity to share their points of view. 2) Has been subject to participation. The parties concerned have been given the opportunity to share their points of view on their own initiative. 3) Has not been subject to participation.	no definition	
5.4 Follow-up and evaluation of established targets	The decision/measure has: 1) Established targets for evaluation. The targets are to be relevant, possible to follow-up, limited in time (i.e. when the targets are to be reached) and realistic. Available and suitable indicators are to be used. 2) Established targets. It is uncertain if follow-up and evaluation of target achievements is possible. 3) No established targets that can be followed-up or evaluated.	no definition	

5.5 Nuanced information	Impact of decision/measure: 1) Is aimed directly at giving nuanced information on several aspects of the common basic values. 2) Has a predominantly positive impact on making the information about Laponia that is spread nuanced. 3) Has a predominantly negative impact on making the information about Laponia that is spread nuanced.	1) Providing nuanced information about several aspects of the common basic values is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on the supply of information is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at making information nuanced. 3) The impact of the decision/measure on the supply of information is analyzed in the preparatory work. It is judged to have a predominantly negative impact.
5.6 New ways of thinking	Impact of decision/measure: 1) Is aimed directly toward supporting new ways of thinking. A new way of thinking means going outside the usual boundaries, to contribute in changing norms, to use other viewpoints (old or new) or in some other way be innovative. 2) Has an ambition to use new ways of thinking. 3) Has predominantly no ambition to use new ways of thinking.	1) New ways of thinking are some of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on new ways of thinking is analyzed in the preparatory work. It is judged to have a predominantly positive ambition. Several parts of the decision/measure are aimed at supporting new ways of thinking. 3) The impact of the decision/measure on new ways of thinking is analyzed in the preparatory work. It is judged to predominantly lack ambitions to support new ways of thinking.
5.7 Effective utilization of competence	Impact of decision/measure: 1) Is aimed directly toward utilizing available competence. Available competence mainly refers to the knowledge which exists within the process, among the parties on the local level, “the right person in the right place”. 2) Has a predominantly positive impact on utilizing available competence. 3) Has a predominantly negative impact on utilizing available competence.	1) Effective utilization of competence is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on utilizing competence is analyzed in the preparatory work, which is clearly reflected in its content, objectives and expected results. 3) The impact of the decision/measure on utilizing competence is analyzed in the preparatory work. It is judged to have a predominantly negative impact.

6. Equality

Criteria for decision-making and implementation	Assessment of impact	Definition	Rating (1, 2, 3)
6.1 Gender equality	Impact of decision or measure on the equality between men and women: 1) Is aimed directly at improving gender equality. 2) Has a predominantly positive impact on gender equality. 3) Has a predominantly negative impact on gender equality.	1) Improved equality is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on equality is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at improving gender equality. 3) The impact of the decision/measure on equality is analyzed in the preparatory work. It is judged to have a predominantly negative impact on gender equality.	
6.2 Accessibility	Impact of decision/measure: 1) Is aimed directly at increasing accessibility. Increased accessibility means facilitating for people with specific needs, e.g. people with disabilities, children and seniors as well as people without knowledge of Swedish or Sámi. 2) Has a predominantly positive impact on accessibility. 3) Has a predominantly negative impact on accessibility.	1) Increased accessibility is one of the main targets of the decision/measure, which is clearly reflected in its content, objectives and expected results. 2) The impact of the decision/measure on accessibility is analyzed in the preparatory work. It is judged to have a predominantly positive impact. Several parts of the decision/measure are aimed at increasing accessibility. 3) The impact of the decision/measure on accessibility is analyzed in the preparatory work. It is judged to have a predominantly negative impact.	

Guidelines – Handling of Visits

In order to protect Laponia and its values and at the same time let people make use of the area it is necessary to regulate what is permitted and what is prohibited in the area. Special regulations have been developed for this purpose. There are also different kinds of guidance material that contribute to a suitable implementation of these regulations. The Guidelines for the Handling of Visits is such a guidance. These guidelines are the foundation for the work with visitors in Laponia and guide both Laponiatjuottjudus/the Laponia Management and the authorities concerned as well as visitors in general and those responsible for organized tours.

It is the task of Laponiatjuottjudus/the Laponia Management to develop these guidelines and in cooperation with responsible authorities clarify the regulations as well as to form functional and comprehensible systems for applications and their processing.
Guidelines for the tourism industry will be developed.

1. All visits to the World Heritage are to be characterized by care and caution toward the values of the area.

2. The reindeer industry that currently uses the area especially requires respect and consideration. This concerns visitor planning, criteria for permits, marketing as well as other visitor and tourist activity. There is to be cooperation with the Sámi community.

3. Laponiatjuottjudus is to develop an ethical code of conduct for visitors that applies within the World Heritage.

4. There is to be balance between the visitor's use of the area and the protection of the World Heritage.

5. Those who organize visits are to feel welcomed and be regarded as important communicators of the values of Laponia.

6. Organized visits are to be based on respect for the values of Laponia, a desire to communicate these values and a desire to have as little negative impact on these values as possible.

7. Those who organize visits are to take initiatives to dialogue with Sámi village organizations concerned when making arrangements. Laponiatjuottjudus/the Laponia Management can provide assistance on such occasions.

8. Knowledge-oriented small-scale tourism, preferably locally based, is striven after.

9. Organizers who want to develop commercial activities within the World Heritage should be certified.

10. Laponiatjuottjudus should lead with a good example. Visits carried out by the management organization are to show special consideration to the values of the area.

11. Everyone who is interested, visitor or not, is to be able to be informed about Laponia and its values.

12. Laponia is to be made accessible for people who want to experience the World Heritage with different degrees of difficulty, digital or in different language as well as for people with different kinds of disabilities.

13. The level of accessibility varies between different places in and around the World Heritage. Especially sensitive areas are to be respected during permit and exemption procedures as well as during visits in the World Heritage.

14. It is important to show consideration to the local population.

15. The regulations concerning visits are to be easily accessible for all visitors.

16. The regulations are to be explained and motivated in order to create understanding, acceptance and observance.

17. Through funneling, visitors are directed away from more sensitive areas to places that are able to withstand higher visitor pressure and/or are prepared for visitors.

18. Funneling is done through World Heritage entrances, visitor centers, junctions, marked trails, rest areas and signposting.

19. Funneling is executed and shaped in a way that fits in with the landscape and avoids negative impact on the Sámi culture and businesses as well as on cultural and natural environments.

20. Engaging and easily available information about the values of the area and its regulations are to be accessible online, at visitor centers and at information sites.

21. The information is to provide the visitor with an experience, understanding and a feeling of respect for the World Heritage area, its cultural and natural values as well as for the people and enterprises that have traditionally used the area.

Conventions and Other International Instruments which Imply Commitments for Sweden for the Management of Laponia

Conventions and Other International Instruments on Issues Regarding Indigenous People and Human Rights

UN Covenant on Civil and Political Rights (1966)

The covenant contains several central principles of international law that concern the Sámi as a people. This especially refers to articles 1, 2, 3, 26 and 27 and mainly concerns the right to self-determination and non-discrimination. Article 27[1] has through praxis (by the Human Rights Committee, a monitoring body) become the most important international regulation for indigenous peoples' demands for active support from the state, although the wording gives the impression that the article only grants negative rights (the right to protection). The rights in article 27 are phrased as individual rights. However, it is clear that some of these rights only have bearing when they are possible to make use of collectively.

UN Covenant on Economic, Social and Cultural Rights (1966

The convention deals with the right to work, the right to an adequate standard of living and the right to education. The convention has several articles of importance for Sámi legal matters in relationship to the Swedish state. Several articles are identical with the Covenant on Civil and Political Rights, for example the right to self-determination[2].

UN Convention on the Elimination of All Forms of Racial Discrimination (1965)

Even though many conventions on human rights include a ban against discrimination, this convention is the most central instrument against discrimination in international law. According to the first article, the concept of racial discrimination includes descent or national or ethnic origin. The prohibition against discrimination does not apply to affirmative action as long as it is required. The monitoring body of the convention, the Committee on the Elimination of Racial Discrimination, has adopted a general recommendation (no. 23) regarding the rights of indigenous peoples. The committee especially emphasizes loss of land and natural resources to "colonists, commercial companies and State enterprises" as discrimination. The committee gives the following recommendation to States:

- Recognize and respect indigenous distinct culture, history, language and way of life as an enrichment of the State's cultural identity and to promote its preservation;
- Ensure that members of indigenous peoples are free and equal in dignity and rights and free from any discrimination, in particular that based on indigenous origin or identity;
- Provide indigenous peoples with conditions allowing for a sustainable economic and social development compatible with their cultural characteristics;
- Ensure that members of indigenous peoples have equal rights in respect of effective participation in public life and that no decisions directly relating to their rights and interests are taken without their informed consent;
- Ensure that indigenous communities can exercise their rights to practice and revitalize their cultural traditions and customs and to preserve and to practice their languages.
- The Committee especially calls upon States parties to recognize and protect the rights of indigenous peoples to own, develop, control and use their communal lands, territories and resources.

1. Article 27: In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language.
2. Article 1: All peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.

UN Convention on the Rights of the Child (1989)

The children's convention includes regulations that specifically call attention to the rights of indigenous children. Article 17 obligates State Parties to encourage mass media to have particular regard to the linguistic needs of the children who belong to minority groups or who are indigenous. Article 30[3] specifies the international law obligations of States concerning the upbringing conditions of Sámi children and their religious, cultural and linguistic rights. Affirmative action can be allowed.

Council of Europe's Framework Convention for the Protection of National Minorities (1995)

The framework convention is the first legally binding agreement that concerns minority issues in general. A framework convention means that the protection and the rights mentioned in the convention are to be implemented in the national legislation and through appropriate policies. The formulation of the regulations are made flexible.

The framework convention emphasizes that the protection of national minorities is a part of the human rights and thus cannot be seen entirely as a national affair.

The rights referred to by the framework convention are individual rights. This means that the rights are attributed to each individual belonging to a national minority, not the minority as a group. It is up to each person to decide if he or she wants to belong to a specific national minority.

The framework convention includes a ban against discrimination which obligates states to give minorities the opportunity to preserve and develop their culture and protect important parts of their identity, such as religion, language, traditions and cultural heritage. Members of a minority group are to be secured access to education as well as be given opportunities to take part of the social, cultural and economic life of a state.

Language, education in one's own language and the possibility to use it, for example in contacts with authorities, is also regulated.

The balance between preserving your distinctive character and being integrated in society is a difficult and recurring issue of minority politics, which is reflected in the articles of the framework convention. As for other conventions there is a monitoring mechanism and an obligation to report.

European Charter for Regional or Minority Languages (1992)

The charter has more detailed regulations on minority languages than the previously mentioned framework convention. In connection with Sweden's ratification of the two instruments of the Council of Europe, two laws were established on the right to use Sámi, Finnish and Meänkieli with public authorities and at courts. In the law on the right to use Sámi the individual is given the right to use Sámi when dealing with public authorities and courts, among other places in the two Laponian municipalities of Jiellevárre/Gällivare and Jåhkåmåhkke/Jokkmokk. These have been appointed management areas for the Sámi language. Also, the individual has the right to receive preschooling and elderly care entirely or partly in Sámi.

UN Declaration on the Rights of Indigenous Peoples (2007)

On September 13th 2007 the UN General Assembly adopted a declaration on the rights of indigenous peoples. Representatives for indigenous peoples around the world participated in the work, among others the Sámi of the Nordic countries. The declaration is already described as a historical landmark in the recognition of indigenous peoples' human rights and

3. Article 30: In those States in which ethnic, religious or linguistic minorities or persons of indigenous origin exist, a child belonging to such a minority or who is indigenous shall not be denied the right, in community with other members of his or her group, to enjoy his or her own culture, to profess and practice his or her own religion, or to use his or her own language.

fundamental freedoms. The declaration is not legally binding but is a moral obligation. The declaration explicitly acknowledges the unreserved right to self-determination by indigenous peoples, which includes the Sámi people's right to freely determine their economic, social and cultural development as well as controlling and deciding over their own natural resources. Further, the declaration underlines the right to strengthen their own political, legal and economic institutions, etc., but also traditional local economic and cultural structures like Sámi village organizations and other Sámi social communities.

The annex of the right to self-determination emphasizes the indigenous peoples' right to own, use and control land, territories and natural resources. The declaration also establishes a so- called right to restitution or compensation for land, territories and resources that have been used without their consent.

Other

In addition to the previously mentioned international instruments, the EU Council Directive 2000/43 should be mentioned. It sets a minimum standard for the protection against discrimination because of race and ethnic origin. A Nordic Sámi Convention is being created by Norway, Finland and Sweden and a proposal from 2005 is now being processed by the countries. The ILO Convention No. 169 concerning Indigenous and Tribal Peoples in self-governing countries has not yet been ratified by Sweden.

Conventions and Other International Instruments on Natural and Cultural Environments and Sustainable Developmental

Convention concerning the Protection of the World Cultural and Natural Heritage (1972)

The goals and obligations of the World Heritage convention are described in chapter 1 as one of the starting-points of the new management of Laponia.

Sustainable Development; The Rio Declaration on Environment and Development (1992) and the Agenda 21 Program of Action (1992)

The UN conference on environment and development in Rio de Janeiro in 1992 adopted a declaration with principles for the environment and development as well as an action program for sustainable development, with the goal to establish a new and fair community. The principles and the action program came to establish the foundation for new forms of cooperation between states, the most important sectors of society and between people. There is a close connection between the declaration, the action program and the conventions on climate change and biodiversity which were also adopted at the Rio conference. Since then the overall direction of environmental politics in Sweden has been to find strategies for sustainable development. It can be defined as a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The Rio Declaration contains 27 basic principles for environmental and development work, among others the polluter pays principle, the precautionary principle and the substitution principle. To achieve a sustainable development the protection of the environment must form an integrated part of the process of development and cannot be considered as something isolated.

When it comes to Laponia the following principles can be emphasized:
From Principle 1: "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

From Principle 10: "Environmental issues are best handled with participation of all concerned citizens, at the relevant level… and the opportunity to participate in decision-making processes. Effective access to judicial and administrative proceedings, including redress and

remedy, shall be provided." This principle is developed in the Aarhus Convention (see below).

Principles 20 and 21 stress the importance of women and youth. "Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development." "The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all."

Principles 22 and 23 are directly associated with the cultural criteria of the World Heritage appointment: "Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development."

"The environment and natural resources of people under oppression, domination and occupation shall be protected."

The Agenda 21 Program of Action

The Agenda 21 Program of Action provides goals and guidelines for the achievement of sustainable development through eradicating poverty and removing the threats against the environment. The Program of Action is global, long-term and stretches into the 21st century. The guidelines are shaped as recommendations and are thus not legally binding, but have strong political and moral obligations for the states that support Agenda 21.

The content of Agenda 21 is in harmony with the principles of the Rio Declaration. The Program of Action emphasizes e.g. that environmental issues must be integrated socially and economically. The importance of democracy and participation in decision-making are underlined as is the responsibility and participation of different ethnic groups and individuals in the implementation. The Program of Action is to be viewed as a clear assignment for States as well as for groups and individuals of society to participate in the work of shaping our living environment. Agenda 21 emphasizes the importance of the local level and responsibility with a bottom-up approach, to answer questions like: What should be done? How is it to be done? Who should have the responsibility? When it was introduced in Sweden the work came to be mainly characterized by principles of economizing and closed loop systems.

The program contains 40 chapters divided into four different sections.

Chapter 26 is about strengthening the influence of indigenous peoples. It includes the recognition and strengthening of their position and their communities in order to ensure a stable/sustainable development. Governments are recommended to recognize that indigenous peoples and the areas of their communities are to be protected from activities that are not environmentally adapted or that these people regard as socially or culturally unsuitable. The values, traditional knowledge and methods of resource management of indigenous peoples are to be recognized when it comes to support an environmentally friendly and sustainable development.

The Convention on Biological Diversity (1992)

The convention, also known as the Biodiversity Convention, is the international community's most important tool for preserving the biological diversity. The negative development with the loss of ecosystems, species and genes is alarming. The main factors are stated to be the loss of natural habitats and the introduction of new species as well as over-exploitation, climate change and pollution.

The aim of the convention is mainly realized through

- protection of the biological diversity,
- safeguarding a sustainable use of biological resources, and
- a fair and reasonable distribution between countries of the benefits from use of genetic resources.

The convention is based on mankind being a part of nature and that we naturally must use the biological resources, but at the same time pay attention to how this affects ecosystems. "Humans are a part of the web of life."

The convention also includes an additional agreement on biosafety, the Cartagena Protocol. The protocol specifies how you are to protect the natural biological diversity from potential threats of genetically modified organisms entering the natural environment.

In Sweden this work is mainly done based on the Swedish Environmental Code and within the framework for the Environmental Objectives of the Swedish Parliament. Several of the objectives concern biodiversity, for example the environmental objective "A Rich Diversity of Plant and Animal Life".

One part of this work was elaborated in the Swedish Government's nature conservation letter to the Parliament in 2002. The message was to bring nature conservation closer to the citizens, through local participation in decision-making and improved opportunities for local nature conservation efforts. This letter has also had a lot of influence on the forming of the new management for Laponia.

Other cornerstones in this work are

- sectoral responsibility; each sector of society is responsible for its own activities and contributes to the preservation of biodiversity.

The emphasis of conservation work should be on ecosystems and different nature types. Sweden has a clear responsibility for "its own diversity", for instance on species that naturally occur in the country.

The convention is a so-called framework convention which is developed through working programs and additional guidelines, etc.

The Ecosystem Approach

The parties of the convention have agreed to manage conservation efforts from the perspective of ecosystems. The ecosystem approach is a kind of working method or management strategy for conservation and sustainable use of natural resources which also includes aspects of equity. Biodiversity is seen in a larger perspective that includes economic and social elements. This viewpoint is based e.g. on the insight that nature with high conservation values cannot be effectively preserved if it is seen as isolated from the surrounding landscape or from factors linked to the surrounding world, such as human needs. The surroundings can have a large positive or negative impact on natural values. For its organization the new Laponiatjuottjudus makes use of a couple of principles from the ecosystem approach on decentralized management forms.

Traditional Knowledge Regarding Conservation and Sustainable Use of Biodiversity
Article 8(j) of the convention deals with traditional knowledge, innovations and customs of indigenous peoples and local communities in relation to conservation and sustainable use of biodiversity. As far as possible, the states are to respect, preserve and maintain these values. With the consent and participation from indigenous peoples the states are to promote a greater use of such knowledge. One example of a Swedish commitment to article 8(j) is the National Program on Local and Traditional Knowledge concerning the Conservation and Sustainable Use of Biological Diversity which is run by the Swedish Biodiversity Center on assignment from the Government. Within the frame of article 8(j) an ethical code of con-

duct is being developed in order to safeguard indigenous peoples' and local communities' cultural and immaterial heritages which are relevant for the conservation and sustainable use of biodiversity.

Voluntary Guidelines

A number of voluntary guidelines are also being developed within the convention. There is for example a guideline/instruction for how states, authorities, land exploiters and others are to consult with indigenous peoples and local communities when they are planning to claim land and biological resources, the so-called Akwé: Kon Guidelines: "Voluntary guidelines for the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities."

The Climate Convention; UN Framework Convention on Climate Change (1992)

The threat from climate change is one of the most severe environmental issues mankind has ever faced. All countries are affected and all are contributing to the problem. The countries of the world will be afflicted in different ways. The temperature rise on earth during the 20th century can likely be explained with the increase of carbon dioxide emissions, mainly due to the increased use of coal, oil and natural gas.

The United Nations Framework Convention on Climate Change (UNFCCC) sets the frame for international climate politics. The regulations entered into force in 1994 and means among other things that "the parties of the convention should take precautionary measures to anticipate, prevent or minimize the causes of climate change. They should adopt national programmes containing measures to mitigate climate change within all relevant reforms of society covering all greenhouse gases as well as to cooperate in facilitating adequate adaption to climate change." The ultimate goal of the convention is to stabilize the concentrations of greenhouse gases in the atmosphere on a level that prevents a dangerous anthropogenic disturbance of the climate system. An important principle of the convention is that developed countries are to take lead in the struggle against climate change and its harmful effects. This is a basic approach since developed countries historically are accountable for the major part of emissions. Each year all the parties of the convention meet to negotiate at the so-called Conference of the Parties (COP).

The final report from the Swedish Commission on Climate and Vulnerability (SOU 2007:60) states that the conditions for reindeer herding will be significantly affected by climate change. The mountain environment is very delicate. The vegetation period will be prolonged and plant production during summer will increase. Insect harassment may be exacerbated. Areas of bare mountain are expected to decrease in extent, and pressure on coastal winter grazing may increase as snow conditions become more difficult inland and in the mountains, which may lead to more conflicts of interest with other sectors of industry. The most serious consequence will be a threat to Sámi culture if conditions for reindeer herding worsen.

Hazardous Impact?

The objective is reached in such a way and at such a pace so that biodiversity is preserved, food production is ensured and so that other goals for sustainable development are not jeopardized. What levels that would cause a dangerous disturbance of the climate system has been the subject of discussion between scientists and decision-makers worldwide. The EU has decided that the average temperature increase must not exceed 2°C in order to guarantee the goals of the Climate Convention. It is assumed that this requires global emissions to be cut in half by the year 2050.

The Kyoto Protocol

The Kyoto Protocol also belongs to the convention, which entered into force in February 2005. The protocol divides the way towards the ultimate goal of the Climate Convention into commitment periods. During the period 2008-2012 the parties are to reduce their emissions of greenhouse gases by at least 5 percent below the levels of 1990. This means that emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and Sulphur hexafluoride (SF6) must not exceed determined quotas.

Compliance – a Key Issue

Compliance with the regulations of the Kyoto Protocol is a key issue if we are to reach set targets, and in order to do so a reliable system for the reporting of emissions is required. The regulations state that a country that does not comply with its commitments will be imposed with additional emission reductions for the next commitment period after 2012 (the amount of emissions that have exceeded the assigned amount plus an additional 30 percent). Other consequences that a country may face are e.g. losing the right to emission trading.

New Tools

Several new tools for international climate collaboration came along with the Kyoto Protocol. Three so-called flexible mechanisms were according to the protocol allowed to be used in order for developed countries to meet their commitments by 2010. The aim was to provide countries with conditions to reduce emissions in a cost-effective way. The mechanisms were:

- Emissions trading
- Joint Implementation (JI)
- Clean Development Mechanism (CDM)

All mechanisms meant that a country may benefit from emission reductions accomplished in other countries. Since climate change is a global phenomenon it does not matter where on earth the emissions are reduced. However, the mechanisms may not be used to meet the total commitments of a country, domestic measures are also required.

The goals of the Kyoto Protocol were not met.

The Aarhus Convention (1998) – a New Kind of Environmental Convention

The Convention has three pillars – the right to have access to information, the right to participate in decision-making and the right to have access to justice in environmental matters. The overall aim of the Aarhus Convention is that the rights established in the convention will protect the right of everybody to live in an environment which is consistent with health and well-being.

The Aarhus Convention presupposes that we have responsibilities for coming generations and connects environmental and human rights issues in a way that was not done in earlier environmental conventions. The starting-point for the Convention is Principle 10 of the Rio Declaration from 1992 (see above) that states that environmental issues are best handled with the participation of all citizens concerned and specifically mentions the importance of access to information, participation and access to justice. The convention is based on the perception that environmental work must have public support and that it can be improved by public influence on authorities and decision makers. This in turn demands that the public has knowledge of the state of the environment and has ways to participate in decision-making of environmental importance. The rights of the Convention are not essentially new rights, but can be found in a number of already existing documents regarding human rights, the right to information from public authorities, the right to participate in decision-making processes and the right to justice.

What makes the convention unique is that it clearly states that the access to and the exercising of these rights have importance for the opportunities of the public to influence their environment and that the guaranteeing of these rights is an important factor in the protection of the environment.

The Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat (1971)

The natural wetlands and aquatic environments of the world are very important and have many functions that benefit humans. Since more and more of these valuable areas disappear, international and national measures to protect, preserve and manage wetlands and aquatic environments are needed.

The Ramsar Convention deals with the conservation and sustainable use of wetlands and aquatic environments. The Ramsar Convention is the first modern convention on biodiversity. The Convention is sometimes called the "Wetlands Convention". The convention is independent and does not belong to the UN-system. The work with the Convention is however done in collaboration with several other international agreements, among other the Convention on Biological Diversity and the Bonn Convention. At the beginning the work was mainly made up of appointing wetlands of international importance (Ramsar Sites) connected to birds, but during recent years the focus has been set on guidelines for the use of water resources, such as management of drainage basins and land use planning. There are two amending protocols – the Paris Protocol and the Regina Amendments – that entered into force in 1986 respectively 1994.

As a member of the Ramsar Convention, Sweden has committed itself to identify and preserve wetlands and aquatic environments of international importance. The criteria for this are based on ecological, botanical, zoological, limnological or hydrological importance. The Ramsar Sites can be of importance as resting or breeding areas for migratory birds, as spawning ground for fish or as an important resource for water supply.

Sjávnja/Sjaunja (188 600 ha) and Ráhpaäno suorgudahka/the Lájtávrre delta (4 319 ha) have been appointed as Ramsar Sites since 1974. Both are also included in the Natura 2000 network. As of February 2009 Sweden has appointed 66 so-called Ramsar Sites, whereof none is remotely as large as Sjávnja. The commitment to preserve Ramsar Sites implies that the ecological character of the area is not to be degraded and as far as possible is protected against damage on the natural or cultural environment. Within all Ramsar Sites it is prohibited to drain land.

The Bern Convention (1979); Convention on the Conservation of European Wildlife and Natural Habitats

The Convention, which is a regional nature conservation convention for Europe, has been worked out within the Council of Europe and mainly embraces its member states. A few African states have also joined. In addition to protecting wild animals and plants and their natural habitats, the Convention also promotes coordination between individual countries where cooperation is required in order to provide better protection. Special protection is to be given to migratory species which are endangered and vulnerable. National guidelines for protection are also to be worked out, in particular for the protection of species that only exist in one specific area (endemic) and for threatened environments.

The starting-point is that wild plant and animal life is a natural heritage with many different values. It has an intrinsic value, a visual value, a scientific and cultural value, an economic value and a recreational value. For all of these reasons the wild plant and animal life must be preserved and handed down to the next generation.

The Convention includes lists over plant and animal species that are subject to strict protection, as well as protected animal species and prohibited means and methods of capturing species, etc. Several Nordic species are on these lists of threatened and vulnerable species,

e.g. marsh saxifrage *(Saxifraga hirculus),* wolf, brown bear, birds of prey and owls. The Bern Convention has contributed in the protection of most of the amphibian and reptile species in the Nordic countries.

The Washington Convention (1973)

Many threatened species are subject to an extensive international commerce. The Convention was adopted against this background. The Convention is also called the CITES-convention and is a global convention that regulated international trade with endangered wild animals and plants. The Parties are to make sure that those who trade with endangered species are punished and/or that the animal or plant that someone has tried to trade is confiscated and sent back to the country of export.

Two major changes have been made to the Convention. The Bonn Amendment was signed in 1979 and came into force in 1987. The Gaborone Amendment was signed in 1983, and came into force in 2013. Sweden has ratified the amendments.

By means of the Convention there are regulations for different levels of protection for approximately 30 000 species of animals and plants. The regulations apply both to living specimens and for products from these species. The Convention mainly covers tropical species, but does also include several Nordic species, e.g. owls, birds of prey, otter, wolf and polar bear. The Convention includes three lists over species that presents different levels of trade controls. Within the EU there is also a more strict system for this kind of trade. There are databases on the website of the Convention.

The Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)

The goal of the Convention is to protect wildlife that regularly migrates between different countries. Member states are obligated to protect threatened animal species and to enter into agreements of cooperation that guarantee better protection of animals as they move or migrate. The goal is to achieve a favorable conservation status for the species.

There are two lists of species in the Convention. The first specifies migratory species which are endangered in their entire range or in part of their range and where countries are to protect or restore the habitats of these species. The second list specifies species that require or that can benefit from intergovernmental agreements.

The convention, sometimes called CMS, also contains appendices and several sub-agreements on specific species or groups of species, e.g. bats, small cetaceans and a number of bird species.

The European Landscape Convention (2000)

The "Landscape Convention" has been worked out within the Council of Europe. Sweden has ratified the convention.

The convention is to ensure that we have a surrounding landscape of high quality. It is to contribute to promote protection, management and planning of landscapes, as well as to improve devastated landscapes. Parties are to identify what is characteristic for a landscape, monitor changes, establish quality objectives for the development of different areas, increase people's awareness and knowledge of the landscape as well as enable insight and participation in decision-making.

Democracy and Landscape

The landscape affects the identity and well-being of people. It also reflects the diversity in a common cultural and natural heritage with environmental values and forms the foundation for economic development. All types of landscapes – cities and rural areas, beautiful and unsightly – are included and are important for our welfare. At the same the landscape is constantly changing due to the development of society.

The Landscape Convention contains a clear democratic aspect. Partly because it empha-

sizes the cultural and social importance of the landscape, and partly because in underlines the importance of an active participation by the public in evaluating and managing the landscape. The democratic aspect appears in the definition of landscapes set by the Convention: ”an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.”

The Malta Convention; the Council of Europe’s Convention on the Protection of the Archaeological Heritage (1992)

The background of the Convention was the need of a more target-oriented effort to ensure the archaeological cultural heritage. The cultural heritage includes structures, constructions, buildings, landscapes and movable objects that are remains of earlier epochs and which express the history and identity of humankind. The treaty aims to protect the archaeological cultural heritage as a source of common European history and identity and as an instrument for scientific and historical study.

In order to reach the objectives of the Convention member states are to record archaeological sites and ancient remains, guarantee the possibility of preserving or buying areas of special archaeological importance, etc.

The countries are to take archaeological values into account in connection with physical planning and road and construction work. The countries are also obliged to stop illegal excavations and to cooperate across borders to prevent illegal export of archaeological objects. According to the Convention the parties are also responsible to inform their citizens about the importance of archaeological values as the foundation of society. Information can also be used in order to raise public awareness on activities that may devastate ancient remains and other sites of archaeological and historical interests.

Programs etc. within the Arctic Council and Barents Regional Council that in Certain Contexts Concern Laponia.

The Arctic Council is a forum for consultation and cooperation between governments in the Arctic countries and in which Sweden is included. The most important task of the Arctic Council is to work with and protect the Arctic environment and to participate in economic, social and cultural development in the north. The work is organized in fixed working groups and a large part of the cooperation concerns environmental protection and climate issues.

The Barents cooperation is managed through the Barents Euro-Arctic Council (BEAC) for cooperation between the governments of Finland, Norway, Russia, Sweden and the European Commission and through the Barents Regional Committee (BRC) for cooperation between the regional administrations of the area. The aims of the Barents cooperation are to maintain peace and safety as well as creating sustainable social and economic development in the area and in Europe as a whole. The most important tasks of the Council are to promote economic development and infrastructure, but also environmental protection, culture and tourism.

The Region includes land areas around the Barents Sea and includes Laponia. The region has around six million inhabitants. A number of indigenous peoples live within the area , e.g. the Sámi, Komi, Veps and Nenets.

The Barents region faces large environmental challenges. Climate change will result in serious consequences for the environment and ecosystems. In addition to an environmental working group, the environmental cooperation includes sub-groups on cleaner production and sustainable consumption, nature protection and water issues.

The work by the regional Barents cooperation is based on five key areas: industry/infrastructure, competence/education, environment/health, welfare/culture and indigenous issues.

Photo: Carl-Johan Utsi