Nordic Council of Ministers

Nature interpretation in the Nordic countries

A book about experiences, learning, reflection and participation when people and nature meet

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PHOTO: EVA SANDBERG

INTRODUCTION

"Nature interpretation is the mediation of feelings and knowledge of nature. The goal of nature interpretation is to create an understanding of fundamental ecological and cultural interconnections, as well as people's role in nature. Through nature interpretation, positive experiences are created that can increase environmental awareness, both for individuals and for society as a whole."

Nature interpretation acquired a common definition (as shown above) for the Nordic countries in 1990 through a project financed by the Nordic Council of Ministers. Twenty years later a new collaboration was initiated between representatives of the Centre for Outdoor Recreation and Education at the University of Copenhagen and the Swedish Centre for Nature Interpretation at the Swedish University of Agricultural Sciences, as well as officials responsible for nature interpretation at the Metsähallitus in Finland and the Norwegian Nature Inspectorate. Those involved were in various ways engaged in developing nature interpretation.

Funding from the Nordic Council of Ministers in 2012 enabled the group to carry out a project that resulted in the TemaNord report *Nature interpretation for children and young people in the Nordic countries.* A number of principles were established as guidance for nature interpretation with the potential to contribute to learning for sustainable development.

A workshop at the Forest and Landscape College in Denmark in April 2016 gathered about 20 nature interpreters from all the Nordic countries, in order to further develop the conclusions of Nature interpretation for children and young people and work on ideas for the core content of a Nordic handbook of nature interpretation. The group identified important aspects of knowledge and approaches and the result was a synopsis for this book.

Funding from the Nordic Council of Ministers' Working Group on Biodiversity (previously TEG Terrestrial Ecosystems Group) made it possible to produce the book 2019.

Learning for sustainable development is based on our shared responsibility for and dedication to the world around us – on issues of biodiversity, climate and democracy. Nature interpretation is a way of creating arenas for that kind of learning.

Nature interpretation in the Nordic countries

In addition to the Nordic editing group, the authors of the book's articles are professional nature interpreters, educationalists and researchers who took part in the work on the synopsis or who have been asked to contribute with knowledge in their various fields of expertise. In addition, nature interpreters from all the Nordic countries have provided concrete examples from their work, as well as thoughts on interpretation and the qualifications required for nature interpretation.

The target group of this book is practising nature interpreters who are interested in professional development and in contributing to developing the profession. But also, for students at colleges and universities, lecturers and other teaching staff. Those working within public sector natural and cultural heritage management or in organizations within nature and environment management and outdoor recreation, as well as businesses within nature interpretation and eco-tourism. We also address others with an interest in working with nature experiences and communication about the natural world or in co-operation with nature interpreters, for instance within education, public health, and health and social care.

The basic aim of the work on nature interpretation in the Nordic countries is to contribute to increased knowledge and understand-

Nature interpreters from all the Nordic countries got together at the Forest and Landscape College in Denmark in 2016 for a workshop to prepare the work on this book. Here they are testing the college's nature parkour trail. Photo: Mette Aaskov Knudsen

ing of the relationship between people, nature and our cultural landscapes. To promote care of nature, commitment to the natural and cultural heritage, and environmental issues. Achieving this requires both strong leadership and the ability to use speech, text and pictures to inspire and create a focus on the values and stories of a landscape. It also requires the ability to engage in dialogue and contribute to a sense of shared ownership. The concept of environmental citizenship and democratic management of our natural world is an important foundation. Learning for sustainable development is based on our shared responsibility for and dedication to the world around us – on issues of biodiversity, climate and democracy. Nature interpretation is a way of creating arenas for just such learning.

PHOTO: METTE AASKOV KNUDSEN

READING GUIDE

Nature interpretation in the Nordic countries can be read in different ways. It can be a textbook if you want to expand and deepen your knowledge of nature interpretation and how it is done in the Nordic countries. It might also be read as a collection of examples and as a description of the current state of nature interpretation in our natural and cultural environments. It has roots in the nature conservation of the 20th century and is looking ahead to future opportunities and challenges. We also hope that it might get picked off the bookshelf and read as an inspirational anthology offering fresh perspectives and methods for nature interpretation. We are not putting forward one single recipe for how to plan and carry out interpretation but rather present several different approaches. The book contains texts offering examples, models and reflections from professional nature interpreters, teachers of interpretation and researchers, within a framework of five chapters bringing out important aspects of nature interpretation.

Each chapter starts with an introduction written by members of the editorial group, and the theme is then explored through articles providing theoretical background and practical examples. We also refer to other literature and sources for those who wish to take their study further.

Chapter 1 recounts the historical development of nature interpretation in the Nordic countries, how it is connected to nature conservation and outdoor recreation, its impact in the past and the present and

Exploration spots in Abisko guide visitors to interesting natural phenomena. Photo: Per Sonnvik

its future potential. Nature interpretation is important for the care of natural and cultural landscapes, as well as for popular education, advocacy, democracy and participation in the management and protection of our environment and our landscapes. Nature interpretation also adds value for the tourism and experience industries. Growing numbers are also interested in its potential benefits for public health and social and health care. Concepts such as outdoor recreation, popular education, sustainable development and values added with nature interpretation are discussed in the Nordic countries.

This is followed by reflections on the same theme by Riitta Nykänen of Metsähallitus in Finland, who writes about the relationship between people and nature, the importance of protected natural spaces and the connection between nature interpretation, nature conservation and the preservation of biodiversity. Niklas Cserhalmi, agro-historian and the head of the Museum of Work – Arbetets museum in

Norrköping, describes how human history and human habitats have always been shaped by the natural landscape and how a landscape is always the outcome of both natural and cultural history.

The first concrete example in the book takes us out nature interpreting with Brita Homleid Lohne and group of school children. A trek through time and space to the land of the wild reindeer on the Hardangervidda plateau, which brings us very close to the reindeers – without actually meeting them. Live Solbrækken Danielsen muses about the link between nature and health and about the "primeval tone" of nature. She explores with friends what really happens to us out there, in touch with nature.

Chapter 2 deals with the context, purpose, special characteristics and methods of nature interpretation. We assess its contribution to knowledge and interest, the importance of the nature interpreter's own attitude to the work and to participants, and that "meaning" is individual and unique. We also stress the importance of learning through direct sensory experience whenever we move in natural spaces. Klas Sandell writes about the ideas of nature and landscapes and the importance of being able to help participants "read" and interact with different types of landscapes. He stresses the teaching benefit of multiple use landscapes being accessible through the right of public access in Sweden, Finland and Norway. Lasse Edlev and Benny Sätermo, in their contributions, clearly show why direct experience of nature is so important for learning. Tomas Carlsson writes about traditional storytelling, while Lena Fagerwing describes how podcast interpretation vividly portrays everyday life on one of the islands of the Vega Archipelago World Heritage Site for a wider audience. We go white-tailed eagle watching with Ole Sørensen who also interprets a cultural habitat. Kjersti Hanssen and school children discover the life in a stream and finally we gather round the fire, burn runes and ponder the skills of the hand with Thomas Larsen Schmidt.

Chapter 3 goes deeper into the work of the nature interpreter, how he or she may choose to assume different roles in their encounter with participants and what talents and skills are required for mastery of these roles. Lars Hallgren describes what actually happens when meaning is created collaboratively by the nature interpreter and other

participants in contact with the phenomenon – a pine needle, traces of a forest fire, or an entire landscape – that is the focus of the interactive encounter. Interpretation is about facilitating other people's learning and experiences. It takes a lot of practice to become able to step back from the role of guide and instead facilitate dialogue and shared learning in a group, but this ability is important – particularly when controversial and sensitive subjects are debated. The role of the facilitator and the importance of reflection is the theme explored by Poul Hjulmann Seidler. The growth of digital data means more opportunities for people to become active co-researchers, for instance in the monitoring of biodiversity. Marianne Graversen of the Natural History Museum in Aarhus talks about the role of the nature interpreter in work such as "BioBlitzes", concentrated species surveys which bring in large numbers of people, even those lacking prior knowledge. Linda Thelin from the Large Carnivore Centre in Järvsö addresses how nature interpretation, associated with an exhibition about predators, can bring out different perspectives on sensitive subjects. Johnny Skjoldborg Krog and Tine Nord Raahauge contemplate the different roles of the nature interpreter and the internal and external spaces of interpretation, based on their respective work.

Chapter 4 illuminates the process of planning for nature interpretation in an area or a locality. We describe the meaning of "interpretive planning" – in the Nordic context. Lars Hallgren proposes a planning strategy based on purpose, visitors, place and conditions for the encounter and the planning process. Mette Aaskov Knudsen describes a method of collegiate planning used by networks involved with Danish nature interpreter education. We also discuss other examples of planning and development methods, for instance World Heritage Sites and other tourism destinations. Lateral collaboration, contribution to other people's development in networks of nature interpreters, and joint projects with other professions, are all tools for accelerated development, both in terms of the individual nature interpreter and for the profession in society. Simon Høegmark provides an account of a nature interpretation project for people in crisis (stress, depression, cardiac problems etc.) and considers the role of nature interpretation in the health care of the future. Jakob Walløe Hansen describes broadly based strategic collaboration on planning and implementing

nature interpretation in the UNESCO Geopark Odsherred. An interview with Kajsa Grebäck and Adil Sadiku from Örebro reports on work where recent immigrants have been recruited as guides for multicultural encounters in nature.

Chapter 5 deals with learning for sustainable development and tools for "making a difference" as well as a wider environmental education concept which includes nature interpretation. A concept which works towards stronger connections between people, nature and the environment as a contribution to nature conservation, sustainable development and development of democracy. Empowerment, ownership and participation are essential for all learning for sustainable development. Sanna Koskinen writes about nature interpretation from this perspective and how links with nature can contribute to a sense of responsibility for the environment. She also writes about environmental citizenship as a concept and as a potential outcome of nature interpretation. What does it take to make nature interpretation draw people in and let them share in landscape planning and management? Maria Aroluoma brings us along to Haltia – the Finnish Nature Centre and talks about their work to connect people with nature in practice.

THE CHAPTERS IN BRIEF

Chapter 1, Nature interpretation – its role and values, deals with the history of nature interpretation, what links those who work with nature interpretation in the Nordic countries and what nature interpretation can contribute today.

Chapter 2 Nature interpretation – context, purpose and method, describes how nature interpretation and direct experience of nature are unique forms of communication.

Chapter 3, Nature interpretership, talks about the characteristics of good nature interpretation – facilitation of positive experiences, learning, reflection and dialogue.

Chapter 4, The strategic nature interpreter, deals with what it means to plan for and work strategically with nature interpretation jointly with other actors in society.

Chapter 5, Citizenship for sustainability, concludes by discussing how nature interpretation may contribute to learning for sustainable development and environmental citizenship.

AUTHOR INTRODUCTIONS

Adil Sadiku is a nature interpreter at Örebro Nature School. Since 2015 he has been learning about Swedish nature and the significance of nature in Swedish society. Adil guides in three languages: Swedish, English and Albanian. He is a guide for newly arrived children, families and students about Swedish nature in the nature and culture reserves of Örebro municipality. He also teaches new nature interpreters in Örebro County.

Anna Kettunen is Head of Education at SYKLI Environmental School of Finland, running courses for teachers, educationalists and nature interpreters, with an emphasis on sustainable development and outdoor education. Here Anna writes on active citizenship and participation as tools for creating a sustainable lifestyle. She is involved with Nordic co-operation and is one of the editors of this book.

Benny Sætermo is a nature interpreter with ten years' experience and now works as head of the nature section of the Nordland National Park Visitor Centre. Benny is interested in finding the educational possibilities of different aspects of outdoor life. Here he writes about creating learning and learning motivation by stimulating children's cognitive processes.

Brita Homleid Lohne was until recently a nature interpreter at the Norwegian Wild Reindeer Centre in Skinnarbu on the Hardangervidda plateau. Brita has been a key originator of materials and methods for nature interpretation concerning wild reindeer in Norway. Brita has been a member of the Nordic working group on nature interpretation.

Eva Sandberg is a specialist in biology and earth sciences with focus on communication and head of the Centre for Nature Interpretation at the Swedish University of Agricultural Sciences. Eva is engaged in development and education within interpretation and is particularly interested in how nature interpretation might contribute to well informed commitment to nature conservation and sustainable development. She is involved with Nordic co-operation and is the project manager and main editor of this book.

Jakob Walløe Hansen is employed as geologist and nature interpreter at the UNESCO Global Geopark Odsherred. Jakob sees nature interpretation as a tool for the creation of a sense of local identity and understanding of the importance of the landscape for historical human development possibilities. Jakob writes about his work on integration of nature interpretation in the work of the Geopark at the strategic level.

Johnny Skjoldborg Krog is head of operations and nature interpreter at the Farum Nature School and the Haver til Maver gardens in the municipality of Furesø, which support schools and day-time activities. Johnny has worked as a nature interpreter since 1999. His particular interest is in using gardens and farms to show how our everyday life impacts on the global climate and natural environment.

Kajsa Grebäck is an activity developer at the office for Örebro and Värmland of the Swedish Society for Nature Conservation. She is an artist and a nature guide and has worked on the nationwide educational project Local Nature Guides. Recently Kajsa has trained nature interpreters with various language backgrounds in the projects *Språka mellan tallarna [Talking between the trees]* and Naturvägledning på olika språk [Nature interpretation in different languages] jointly with Örebro municipality

Kjersti Hanssen is trained as a fresh-water ecologist and teacher. She worked for seven years as a nature interpreter for the Norwegian Nature Inspectorate. The Programmes dealt with wild salmon, life in the Namsen river, and biodiversity, ecology and human interference. Kjersti accompanied school children in local nature areas and trained teachers. At present Kjersti works as senior adviser on water environmental issues at the County governor in Trøndelag.

Klas Sandell is Professor Emeritus of Human Geography at Karlstad University. Klas' research spans 25 years and covers outdoor recreation, nature-based tourism and outdoor education. He has also been an outdoor teacher at a folk high school. He is interested in attitudes to nature, human ecology and relationships with landscapes – for instance the educational opportunities provided by the right of public access in relation to sustainable development.

Lars Hallgren is a university lecturer in Environmental Communication at the Swedish University of Agricultural Sciences. His research addresses conflict, co-operation and dialogue in the management of natural resources, and he is particularly interested in forms of dialogue that make it easy for participants to disagree together. Lars is also engaged in critical analysis of planning and communication within nature interpretation.

Lasse Thomas Edlev has worked as a nature interpreter in countless contexts since 1986. He is interested in nature didactics, nature awareness and nature therapy. Lasse has worked as a teacher of nature interpretation and has written Natur og miljø i pædagogisk arbejde [Nature and the environment in education work] (2015) and Naturterapi – oplev naturen – styrk livet [Nature therapy – experience nature – strengthen life] (2019).

Lena Fagerwing is a marine biologist, with a degree in fisheries management from the University of Tromsø with special reference to education as a tool for minimizing the ecological impact of marine tourism. She also worked for many years within the marine tourism industry. Lena was for several years engaged at the Vega Archipelago World Heritage Foundation. Now she runs her own business; Taste of Salt AS.

Linda Thelin is a nature interpreter at the Large Carnivore Centre in Järvsö. She is passionate about creating commitment and interest in nature. Linda has experience of both practical and strategic work on communication about animal life and nature. Her article describes how you might approach nature interpretation about controversial issues and what the roles of a nature interpreter might entail in such a context.

Live Solbrækken Danielsen has worked as a nature interpreter within the Norwegian Nature Inspectorate. She is particularly interested in the precense of the meeting between people and nature and how this can contribute to sustainable development. She writes about matters such as a peace-building techniques within management planning, which aims to make use of the participants' experience of water as a resource rather than arguing about what is right or wrong.

Maria Aroluoma works as a nature teacher in the nature school at Haltia – the Finnish Nature Centre in Espoo. Maria is enthusiastic about creating opportunities for young people to develop a close relationship with nature, to understand how nature works and to enjoy being outdoors. Here she supplies concrete examples of how the goals of nature interpretation can be reached at the nature school at Haltia.

Marianne Graversen is a nature interpreter at the Mols Laboratory which forms part of the Natural History Museum in Aarhus. Marianne is interested in communication about biodiversity with children and adults in large groups. She runs courses for teachers, educationalists and nature interpreters. Her article describes how to use a BioBlitz as a tool for nature interpretation about biodiversity.

Mette Aaskov Knudsen is Head of the Centre for Outdoor Recreation and Education at the University of Copenhagen. She also worked for 20 years as a teacher of nature interpreters in Denmark. She is particularly involved with course management and adult education methodology. Mette is involved with Nordic cooperation and is one of the editors of this book.

Niklas Cserhalmi is Director of the Museum of Work in Norrköping, which provides support for over 1,400 working life museums in Sweden. Niklas has worked as a landscape educationalist at the Swedish Local Heritage Federation and travelled the country arranging field treks focusing on agrarian history. He has written the book Fårad mark [Furrowed land], which provides guidance on how to use historic maps when interpreting present-day landscapes.

Ole Sørensen is a qualified teacher and nature interpreter at Odder Museum and coordinates the Cultural History Network for nature interpreters in Denmark. Together with Thomas Larsen Schmidt (see below) Ole is responsible for further training of members of the network. Ole is an amateur ornithologist, has been interested in cultural history all his life and is an enthusiastic promoter of interpretation of cultural environments.

Poul Hjulmann Seidler is a project manager at the Centre for Outdoor Recreation and Education at the University of Copenhagen, among other things working as a course leader and teacher on the nature interpretation programme. Poul works with methodological development, teaching and mentoring, as well as with special needs education and therapy with nature as its arena.

Riitta Nykänen works as a specialist planner at Metsähallitus in Kainuu. She stresses the importance of biodiversity as the basis for all life. According to Riitta it is an important goal for all education about nature and the environment to make people aware of and appreciative of this diversity. She also writes about the importance of protected areas for nature interpretation and for people's wellbeing.

Sanna Koskinen is an expert on environmental education at the Worldwide Fund for Nature (WWF) in Finland. Originally Sanna was a pre-school teacher, with training within environmental protection. She has a doctorate in environmental education, with a thesis entitled Children and Young People as Environmental Citizens. She has over 20 years' experience as a teacher within environmental education and is an expert on participation and empowerment (action competence).

Silja Sarkkinen is working as a teacher at SYKLI Environmental School of Finland. Silja is a biologist with a varied background within the field of nature and the environment. She runs courses for teachers, educationalists and nature interpreters, with emphasis on learning for sustainable development. In this book Silja writes about active citizenship and participation as tools for creating a sustainable lifestyle.

Simon Høegmark is head of nature interpretation and didactic development at the Naturama in Svendborg. He is a qualified teacher and nature interpreter with a degree in natural science, physical education and health education. Simon has developed the so-called "wild man courses", offering rehabilitation through nature therapy with nature as the co-therapist. The target group is men in a crisis situation (stress, anxiety and depression).

Thomas Larsen Schmidt has been working since 2018 in charge of the nationwide programme at DGI Outdoor, where he promotes increased access to nature for sports. Prior to this he was in charge of nature interpretation, projects and funding applications at the Aamosen Nature Park. He was joint coordinator with Ole Sørensen (see above) of the Cultural History Network for nature interpreters in Denmark.

Tine Nord Raahauge works as a teacher at Slagelse Nature School. Tine is particularly interested in how nature and nature interpretation can contribute to the creation of "storytelling spaces" for participants. She writes about the importance of the nature interpreter supporting participants in creating and reflecting on the story of themselves and nature.

Tomas Carlsson is a project manager, producer, interpreter and nature focused storyteller at the storytelling company Fabula Storytelling. He has many years' experience as an ornithological guide and is an advocate of interpretation as the approach to communication about natural and cultural heritage in Sweden. Tomas was previously an educationalist at the Swedish Exhibition Agency (Riksutställningar).

Torfinn Rohde is the coordinator for the World Heritage Site Røros Mining Town and the Circumference. He has worked in nature and environment management for many years and was head of the section for nature interpretation at the Norwegian Nature Inspectorate from 2010 to 2017. Torfinn is interested in using nature and culture interpretation as implementation tools for environmental policies. He is involved with Nordic co-operation and is one of the editors of this book.

You are one of the readers of this book. And the 30th author. In the end of the book you will find some space for your own notes and reflections. We hope that you will be one of the participants in the further development of and future story of nature interpretation in the Nordic countries.

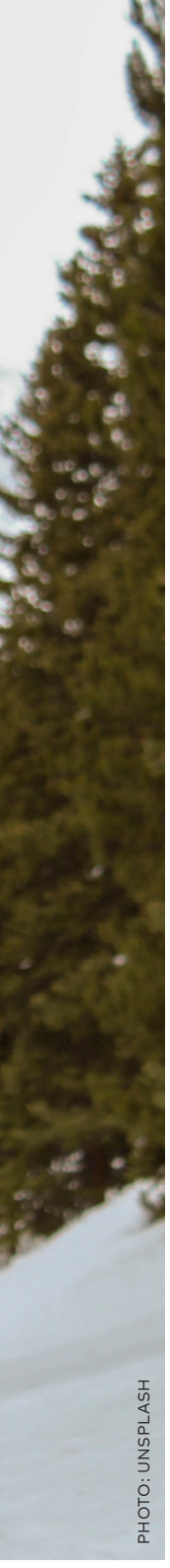


PHOTO: UNSPLASH

1 NATURE INTERPRETATION – ITS ROLE AND VALUES

TORFINN ROHDE

The values and social role of nature interpretation are connected to the growth of ideas about the need for protection of natural areas, fauna, flora and natural monuments. It has also strong roots in the heritage of Linnaeus' systematization of species, the Romantic period's yearning for nature as well as demands for outdoor recreational activities.

From the early medieval period nature conservation has been a question of resource management concerning game, fish and forest. Already in the 13th and 14th centuries we hear about prohibition of trapping methods such as pits and fishing by net in rivers with spawning grounds. Regulations concerning deforestation were introduced during the 16th century in both Norway and Sweden as a reaction to excessive felling linked to timber export and mining. In Denmark increasing areas of the country were cultivated and turned into grazing land so that the forests disappeared. By the time the Fredsskovforordningen [Forest Protection Ordinance] was introduced in 1805 only a very small portion of the country had any forest cover.

In the 18th century the ideas of the philosopher Jean-Jacques Rousseau (1712–1778) became popular in Europe and the Nordic countries and untouched nature formed an important part of the ideas of the Romantic era. Caring for something beautiful and untouched for its own sake, and for the satisfaction of human longing for experiences, became a new approach to the idea of conservation. By the end of the 18th and the beginning of the 19th century we also see the development of outdoor recreation for the upper classes and for visitors from other countries. The Norwegian Tourist Association was founded in 1878 and the Swedish Tourist Association in 1885 – both with the aim of making people like nature, especially mountain areas.

The growth of industrialization generated a more rationalist view of nature – nature should be made use of for development. The use and exploitation of natural resources increased further and there was concern, particularly among natural scientists, that nature was being destroyed. The geologist A.E. Nordenskiöld in Sweden, the physicist H.C. Ørsted in Denmark and the botanist F.C. Schübeler in Norway are a few examples of prominent scientists who interested themselves in nature conservation.

Sweden introduced its first nature conservation law in 1909. Similar laws were enacted in Norway in 1910, in Denmark in 1917 and in Finland in 1923. The same period saw the foundation of voluntary associations for nature conservation. The Swedish Society for Nature Conservation was the first one, in 1909, with Denmark following in 1911, Norway in 1913 and Finland in 1938.

Both nature conservation and tourism associations included dissemination of knowledge about nature and landscapes as impor-

The chair of the Swedish Society for Nature Conservation, Rutger Sernander, visiting Värnamo Heritage Society in 1934.
Photo: Swedish Society for Nature Conservation

tant aspects of their action ideas. In the statutes of these organizations we see elements of the European Enlightenment's faith in human rationality and the ability to learn and reach well founded decisions as well as of Romanticism's desire to go back to nature.

USA and Germany inspired the establishment of national parks; the very first of them, Yellowstone, was created in USA in 1872. The ideas came principally from Henry David Thoreau (1817–1862) in his book Walden, and John Muir (1838–1914) who was responsible for turning ideas into actual protection. In the Nordic countries and in Europe these ideas were first successful in Sweden and as early as

1909 a total of nine national parks were established, among them Sarek and Abisko.

In neighbouring countries other forms of nature conservation dominated, and Finland saw its first national parks in 1938, Norway in 1962 and Denmark in 2007.

Nature interpretation – its values and development

Modern nature conservation is based on four fundamental values. And nature interpretation is seen by conservation managers as a tool for dissemination of knowledge and understanding of, and commitment to, these values among the wider public.

Nature has intrinsic value

Nature has inviolable rights, i.e. rights to protection from violations. All forms of life have an obvious right to exist. Humans do not have the right to exterminate species or ecosystems. There is value in knowing that a species exists. Nature's intrinsic value is also founded on reverence for life itself, whether for religious or other reasons.

Nature has utility value

Nature has utility value for human beings. We depend on nature for food, to be able to breathe, for raw materials, for the climate, and so on. Protecting nature ultimately also means protecting the basis for human life and our survival on Earth.

Nature is a source of experiences, belonging and learning

The closeness to nature that shaped human prehistory has fundamentally influenced our emotional life. We experience longing to be in nature, and nature is present in our cultural means of expression, such as the visual arts, music, tales and legends. The firm status of The Right of Public Access in the Nordic countries also has its roots in the significance of nature experiences in people's daily life. Natural as well as cultural landscapes mean a great deal for people's belonging and identity, and nature has always been regarded as an arena for learning.

Nature has ecological value

The ecological value of nature is a question of interaction in the ecosystem, represented by species diversity, interaction between species and ecological processes that also involve abiotic factors. Ecological value is of great importance for humanity through its contribution to the maintenance of nature's production of goods and services (ecosystem services). This includes both natural ecosystems and man-made ecosystems (cultural landscapes).

Nature interpretation – its importance for nature conservation

When the first national parks were established, a need to create an understanding of basic principles of nature conservation among all visitors developed. The concept of "interpretation" was established in USA as a way of describing the methodology of this type of communication.

Interpretation is used both for nature and culture guiding. A modern definition runs: "Interpretation is a mission-based approach to communication aimed at provoking in audiences the discovery of personal meaning and the forging of personal connections with things, places, people and concepts." (Ham, S., 2013)

When the first national parks were established, a need developed to create an understanding of basic principles of nature conservation among all visitors.

In the book Interpreting Our Heritage (1957) the author and journalist Freeman Tilden (1883–1980) presented the National Park Service´s basic idea underlying interpretation: "through interpretation, understanding; through understanding appreciation; through appreciation, protection". The book has become a standard text on interpretation and nature guiding. Read more about this in Chapters 2 and 4.

In the Nordic countries nature interpretation was brought forward as a measure to compensate for the urban population's reduced contact with and knowledge of nature and the environment, to teach people to be considerate in vulnerable natural areas and to prevent conflict between outdoor recreation, landowners and workers in land-based occupations. The right of public

access is well established in the Nordic countries and the need for knowledge about both rights and obligations, when visiting the natural world, was an important reason for public bodies to become involved in nature interpretation.

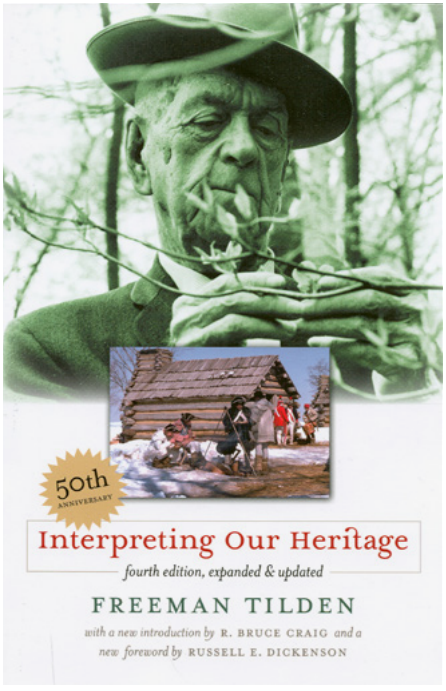
In 1990 the Outdoor Recreation Group of the Nordic Council of Minister produced a report entitled Nature interpretation in the Nordic countries. The report set out seven objectives for nature interpretation, which remain an important part of the values informing nature interpretation in the Nordic countries.

Nature interpretation is defined as a means of:

In the Nordic countries nature interpretation was brought forward as a measure to compensate for the urban populations reduced contact with and knowledge of nature and the environment.

- → encouraging simple outdoor recreation in tune with nature and in accordance with Nordic tradition;
- → counteracting destruction and damage in vulnerable natural environments;
- → increasing understanding of the need to protect nature and the environment;
- → fostering mutual understanding between those who live and work in natural and cultural landscapes and the general public engaged in outdoor recreational pursuits;
- → generating a better understanding of human use of nature from a cultural history perspective;
- → disseminating knowledge of how human activity influences ecosystems;
- → promoting societal development that is in greater harmony with nature and natural resources.

The Brundtland Commission published the report Our Common Future in 1987. It placed the concept of sustainability at the heart of development: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The action programme resulting from the Rio Conference in 1992, Agenda 21, links protection of nature and the environment to economic and social development in the developing countries, at the same time as it requires the indus-



On behalf of the US National Park Service Freeman Tilden defined the basic principles of heritage interpretation in the book Interpreting Our Heritage (1957).

The Brundtland Commission published the report Our Common Future in 1987, the concept of sustainable development was defined. Since then this has been an important starting point for Nordic nature interpretation.

trialized countries to restrain their traditional growth ambitions and redirect growth towards ecologically sustainable goals.

Promotion of sustainable development soon became an integral part of the basic values of nature interpretation, and expanded its focus from simple conservation of the natural and cultural heritage to a more comprehensive societal perspective.

As a follow-up to the 1992 Rio Conference, the Nordic countries ratified the Biodiversity Convention, the Climate Change Convention and the Aarhus Convention among others. These conventions require states to involve their citizens in the management of nature and the environment, through provision of information about the condition of the environment as well as facilitation of participation in planning. The right to environmental information is for instance stated in Article 112 of the Norwegian Constitution:

"Every person has the right to an environment that is conducive to health and to a natural environment whose productivity and diversity are maintained.

Natural resources shall be managed on the basis of comprehensive long-term considerations which will safeguard this right for future generations as well.

In order to safeguard their right in accordance with the foregoing paragraph, citizens are entitled to information on the state of the natural environment and on the effects of any encroachment on nature that is planned or carried out.

The authorities of the state shall take measures for the implementation of these principles."

The same right is stated in Section 20 of the Finnish Constitution: "Nature and its biodiversity, the environment and the national heritage are the responsibility of everyone. The public authorities shall endeavour to guarantee for everyone the right to a healthy environment and for everyone the possibility to influence the decisions that concern their own living environment."

This right also appears in the Swedish Constitution: "The public institutions shall promote sustainable development leading to a good environment for present and future generations."

With the implementation of modern environmental policies by the Nordic countries a comprehensive view of society, an intergenerational perspective and the right of the population to participation in the management of the environment also become part of the values underpinning nature interpretation. This is clearly reflected in the 2005 Danish action plan *Naturveiledning i det 21 århundrede* (Nature interpretation in the 21st century), which defines the aims of nature interpretation as:

- → strengthening people's understanding of nature, biodiversity, environment and cultural heritage;
- → strengthening people's access to outdoor recreation;
- → promoting people's direct participation in and influence over the management of the natural and cultural environment;
- → providing inspiration for a healthier and more sustainable lifestyle.

Nature interpretation today

Initially nature interpretation in the Nordic countries was principally linked to the need for the environmental protection agencies to create an understanding of nature conservation, to contribute to people's knowledge of the natural world and to provide opportunities for good nature experiences. Nature interpretation still maintains this role, for instance through centres for nature information, or "naturum", often located in association with national parks or other protected areas in all the Nordic countries.

Where it borders to outdoor based education, nature interpretation also has an important role in supporting people's search for knowledge and experience of the natural world. Children and young people in the schools constitute an important target group for nature interpretation and nature interpreters in all the Nordic countries. Both voluntary organizations and public agencies often address students and teachers directly.

Denmark, for instance, now puts much emphasis on "outdoor schools", and nature interpreters act as mentors for teachers in participating schools.

Every year Nordic nature interpreters organize thousands of open access outdoor events, often in the form of guided walking tours and events involving physical activity. In this way nature interpretation can also contribute to people's physical and mental health. Many events and activities also target people with mobility or other impairments (visual, hearing or neuropsychiatric).

In addition to nature conservation, nature interpretation can contribute to outdoor based learning in schools, public health, integration, health and social care, tourism, dialogue and the development of democracy.

All the Nordic countries aim to use nature interpretation and outdoor recreation as important elements in their integration policy. Public sector nature interpreters in for instance naturum [nature centres] as well as voluntary organizations carry out activities with immigrant groups, which provide knowledge of the natural world, knowledge about the right of public access and an introduction to Nordic outdoor recreation culture – at the same time as providing the nature interpreters with knowledge about conditions in other countries.

Nature interpreters have in recent years also found roles in new areas, for instance in social care of the elderly or people with mental illness. Both research and experience demonstrate that being in nature often can provide positive stimuli, a sense of calm as well as energy. By combining knowledge of nature and educational skills the nature interpreter is able to both work directly with these target groups and act as a mentor for care staff, enabling them to use nature and nature interpretation in their day-to-day work.

Tourism based on nature and culture is a growing industry throughout the Nordic countries. Experiences involving the natural and cultural heritage are often included as part of a package together with accommodation and food. Some businesses recruit trained nature interpreters as tour and event leaders. Others bring knowledge of nature interpretation in-house through courses, education and exchange of experiences. Many nature interpreters see it as important to bring out and discuss heavy or sensitive subjects such as species extinction and climate change, or issues related to different views of nature, the aims of natural resource management or management dilemmas. One example of the latter is large carnivore management, where the role of the nature interpreter might be to bring out knowledge and questions from both sides of the conflict. Interpretation about hunting and the importance of hunting in the management of wildlife is another area where the nature interpreter can balance different points of view and contribute to mutual understanding between the different parties. In the balancing act between the exercise of the right of public access and regard for grazing lands, wear and tear and maintenance of paths, rules about making fires etc., nature interpreters can play an important role both in disseminating facts and rules and regulations and in providing advice.

The European Landscape Convention (2004), promotes the social importance of the landscape and the importance of people's active participation in evaluation and management of landscapes.

The European Landscape Convention (2004), promotes the social importance of the landscape and the importance of people's active participation in evaluation and management of landscapes.

The Nordic countries endorse the Convention, undertaking among other things:

- → to increase awareness of the value and importance of landscape in civil society, in private organizations and among public authorities;
- → to promote participation in decisions and processes relating to the landscape, locally and regionally;
- → to develop a comprehensive view of the values attached to the landscape and their sustainable management;
- → to exchange knowledge and participate in European co-operation on issues concerning the landscape.

Nature interpretation may contribute to these goals through conversations about values attached to the landscape, about sustainable resource management and about how the natural and cultural heritage in our Nordic landscapes can be managed into the future. One of the most important tasks for nature interpretation is to implement the message of the Convention by contributing to participation and dialogue, democracy and empowerment of those who wish to take part in such a development.

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NATURE INTERPRETATION AS A PART OF NATURE CONSERVATION

RIITTA NYKÄNEN

The relation between people and nature develops through interaction with nature. Experiences in the natural world can open the mind to the value of nature and its importance as a life-giving environment. Riitta Nykänen writes about protected natural areas as a resource for nature interpretation and the possibility of creating lasting relations with nature.

Human beings are entirely dependent on nature. The Earth and all its processes provide the preconditions for life: air, water and nourishment, raw materials for industry, the energy we need and the foundations of our cultural life. Caring for nature and these functions is more important than anything else.

Protecting our living environment is growing in importance at the same time as it is becoming increasingly threatened. Protecting the diversity of nature, its species and natural environments is of fundamental importance for a viable world. If we are going to be able to protect nature and all its functions it must be seen as important.

We also need to know how to live more simply and use less energy and fewer resources. This is a precondition if we are to protect natural diversity.

"But nature is everything!"

Jussi Huovinen, farmer, traditional singer and instrument maker

If we are going to be able to protect nature and all its functions it must be seen as important. Photo: Unsplash

People's actions are guided by our inner perceptions, and what we consider that we need is also guided by these perceptions. What we want to be responsible for depends on how we perceive the world and what we find important. Knowledge as such is not sufficient to really change how we think, not even when we are sure we know what is true about the world. Mainly it is our feelings that need to be engaged if people are to take personal responsibility. Willingness, courage and concrete action all derive from a willingness to take responsibility and to care.

The relationship between people and nature

Knowledge and feelings never operate entirely independently of each other, even when you are doing all you can to keep them apart. Commitment is basically an emotional process. However, it does not develop without knowledge that has been transformed into understanding.

Responsibility is based on sensitivity to the surrounding world, on curiosity and on caring, on useable knowledge and on a conviction that what I do and keep myself busy with is important. The components of responsibility can be acquired in many different ways. One well-established pathway to the goal begins in a budding forest full of birdsong.

The relationship between people and nature develops through interaction with nature. If there is no such interaction nature might be felt to be alien, uninteresting and without importance or value. There is no reason to take nature into consideration when you make various life choices.

People who are out and about in nature are exposed to the fundamental elements of life: wind, rain, hunger, physical exhaustion, changes in the landscape and the need to look after yourself. Such experiences opens the mind to the value of nature and its importance as a life-giving environment. People who repeatedly encounter the challenges of nature are probably more prepared to act in the best interest of nature than those who never do. Experience gets refined into knowledge and perhaps into wisdom and acceptance of responsibility. Good nature interpretation can help create such relationships.

"We cannot function without knowledge, but we do not want to function without feelings."

Arne Næss

Our relation to the surrounding world also guides how we use our time and what we consume. The less we seek self-realization through consumption that is through using up physical resources the more natural resources and diversity are preserved. Nature interpretation can make people more likely to expose their consumption habits to critical evaluation. Protected natural areas are an important resource for nature interpretation and for the creation of lasting relations with nature.

The value and diversity of protected areas

Nature reserves and national parks do not only protect natural diversity, ecosystems, biotopes and habitats for species diversity and richness. They also preserve the living environments of rare species in danger of extinction and support intra-species diversity, which in turn strengthens the resilience to environmental change of both individual species and the whole ecosystem. They are also important as gene banks: genetic diversity is a crucial resource for the future of humanity. The areas must be sufficiently extensive to allow nature's own processes to function undisturbed.

The protected landscapes and surrounding areas offer ecosystem services not only for people but also for all the other participants in the ecosystem, as well as breeding areas for animal life. Scientific research requires reference areas as little disturbed by humans as possible, for comparative studies of human impact on nature. In many such areas there is also protection for biotopes created through human intervention and other kinds of cultural heritage. Protected areas are an invaluable resource for education and nature interpretation in that knowledge about nature and how valuable the areas are is there for all to see.

Protected areas also provide opportunities to enjoy the beauty of nature. In many people, the history, silence and sheer force of nature create a sense of wonder, wholeness and connection, which is often absent from the artificial environments of everyday life. Forests, mountains and the sea are permanent sources of inspiration for both artistic expression and everyday happiness and strength.

The landscape, the weather, the changing seasons and the variability of nature also make protected areas popular for physically challenging pursuits. For many people developing a healthier and stronger body is an important part of their nature experiences.

The importance of nature interpretation for nature conservation

We need nature interpretation to understand how nature works to keep people and everything else alive. Nature itself can act as teacher,

classroom and textbook. The nature interpreter helps people meet nature with a map, a dictionary and an understanding of how it all hangs together.

Excursions in protected natural areas offer experiences. The task of the nature interpreter is to guide people to the sources of these experiences, to contribute knowledge and skills, to expose them to nature, to teach them to pay attention to life, connections, significance and how we are dependent on the natural world. Functioning ecosystems and species diversity is something we can all use to illustrate the use and abuse of nature, to offer experiences of beauty and silence and to enhance happiness and health. Nature provides the invitation and the nature interpreter inspires people to come back.

Diversity opens up

Diversity is the foundation for all life and for the natural processes that are necessary for human life. Ecosystems would not function without natural diversity and when this is reduced so is nature's ability to produce ecosystem services. Nature interpretation on site in nature is especially important for our understanding of diversity and how its interweaving strands function. Experiencing this diversity and seeing for ourselves the work of nature's diverse interactions can provide a sense of wonder as well as insights that spur us to seek more knowl-

NATURE INTERPRETATION CAN CONTRIBUTE TO:

- → An individual, experience based relationship with nature, strengthening our ability to move around in nature, with enjoyment, attention, affection and a desire to understand.
- → Familiarity with nature, knowledge and understanding of natural laws, preconditions for life and the diversity of nature.
- → Knowledge and understanding of people's dependence on nature.
- → Knowledge and understanding of how people affect nature and knowledge and ability to repair damage done.
- → A sustainable and life-affirming way of acting, ability to make choices that promote a sustainable lifestyle and respect for work and life.

(Inspired by Steve van Matre)

Nature interpretation can contribute to knowledge and understanding of human dependence on nature – and our impact.
Photo: Ruska Tornista

edge. Ecosystems in the protected areas provide the best environment for this.

Information turns to knowledge, knowledge to understanding – with all our senses

Moving around in, studying and relaxing in the natural world we are using all our senses. This makes experiences richer, and we learn faster and remember better. Moving around has the same effect: we become more attentive and the brain manages information better. Undisturbed time in the natural world is needed if we are to absorb the diversity of nature and how it works. The more we can absorb, the better we can integrate the new information with our existing experience, understand it and evaluate it. Concrete and applicable examples are important within environmental education and nature interpretation.

If nobody notices?

Paying attention, noticing and recognising different things is a skill that has to be learnt. When we move around in nature in the com-

pany of a skilled nature interpreter our mind and soul opens up to our surroundings and we process what we see. The endless stream of information that pushes into our lives through all sorts of media (Internet, TV, advertisment) reduces our ability make observations and weakens effective learning from observation. A readiness to observe and note makes it possible to monitor the state of the environment and the changes that are taking place. It also makes it easier to make decisions about how and when to act.

A readiness to observe and to note makes it possible to monitor the state of the environment and the changes that are taking place.

Skills and models

Nature interpretation can offer fresh perspectives on knowledge about the natural world, inspiration for nature as a leisure interest and motivation for studying nature. How the nature interpretation is carried out – in terms of choice of routes, transport, food and structure. But also how the nature area is maintained in actual practice – becomes a model and inspiration for how the visitors will protect nature and see its value. A personal nature experience combined with new knowledge will help enhance understanding and appreciation of nature conservation work.

Security, strength and wisdom

These days knowledge is often fragmented. The information that reaches us is contradictory and increasingly difficult to understand. Evidence-based nature interpretation is important and can be used as a basis for choices and decisions. Individual consumption patterns and uses of time have both direct and indirect impact on the wellbeing and diversity of nature. Society's joint decisions and choices are of even greater and more long-term importance. If we are to be able to influence such decisions favourably we need to be aware of connections and links and be aware of how different interests influence decisions and their consequences. We need many people to understand how nature functions and the consequences of human interventions. This is a necessary precondition if decision-making is to take account of the value of nature.

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EVERYTHING AROUND US IS THE RESULT OF ITS OWN STORY

NIKLAS CSERHALMI

All these landscapes carry stories well worth listening to. Use the stories as a way of generating interest in the landscape and thus increasing the willingness to preserve and develop its qualities. Ask questions to the landscape!

Everything around us is of course the result of its own story. This might be a banal observation but nevertheless useful in the interpretation of landscapes. In the landscape surrounding us, there are still traces of the events that created the landscape, and these traces can be interpreted. Be it in the city, on the industrial estate, in the agricultural landscape or in more untouched areas.

The traces are the result of everything from primeval geological processes to political decisions made in our time. In this way present-day landscapes, as we meet them every day, resemble archives, where different eras share the same room. If we want to understand more about the past of the landscape we can ask questions and demand answers based on what we encounter. Here all knowledge is welcome and useful: the geologist, the botanist and the biologist all make the landscape richer through their respective kinds of expertise. But the human oriented historian can also contribute a great deal.

Working life museums are an industrial and cultural heritage remaining in the same place where they were once constructed. They belong to their surrounding landscapes, which they have often shaped. Forsviks Bruk in Västergötland. Photo: Magdalena Åkerström, Arbetets museum

Humanity's hand in the landscape

Human impact on the landscape is, as we know, becoming stronger for each technological leap forward. But this is not a new story. In the Nordic countries of today we can see and interpret traces of basically all the major technological changes that have taken place since our countries were first settled: permanent settlements of the Stone Age, linked to emerging agriculture; Bronze Age fields shaped by oxen and plough; Iron Age meadowlands, made possible by the scythe; the ditches of the Middle Ages that could be dug thanks to the iron edged spade; or present-day totally stone free fields due to tractors and modern technology. We literally stumble across these traces on our ordinary walks in the landscape. If we ask the questions we can discover many stories.

Beyond the agricultural sphere human beings have, during almost as long a time, marked the Nordic landscapes with traces that can be interpreted. Ironmaking during the era of the Great Migrations

The relics of industry are becoming increasingly interesting for nature conservation. On the slag heaps the environment might resemble that of the bare mountains or the barren skerries in the sea. The abandoned bloomery furnaces provide nesting places for predatory birds.

(500 A.D.) left bloomery furnaces, slag heaps and charcoal pits. Blast furnaces and eventually entire ironworks and even later gigantic industrial landscapes developed from the Middle Ages until the present day. If the agricultural landscapes are characterized by long-lasting structures whose history is relatively easily accessible, it is rapid and drastic change that has marked the industrial landscapes. But it is still possible to see and interpret lengthy periods of time within the most up-to-date production spaces.

Working life museums – industrial society's cultural heritage in the landscape

Sweden has a unique popular movement represented by our working life museums where enthusiastic volunteers work on preservation of the local industrial and cultural heritage. Arbetets museum (the Museum of Work) in Norrköping has a searchable database with information about 1,450 working life museums. Just like other objects in the landscape the working life museums can be regarded as relics of activity that make it possible to interpret and understand what has taken place in the locations. Today the working life museums remain in the same place where they were once constructed. They therefore belong to their surrounding landscapes, which they have often shaped. A clear example is the charcoal barns of the ironworks, gigantic red storage buildings for charcoal, and the charcoal pits that surround smelters and works in the extensive surrounding areas.

The relics of industry are becoming increasingly interesting for nature conservation. On the slag heaps the environment might resemble that of the bare mountains or barren archipelago in the sea. The abandoned bloomery furnaces provide nesting places for predatory birds and the water filled pits become a paradise of biodiversity.

All these landscapes carry stories well worth listening to. As a nature interpreter you can use the stories as a way of generating interest in the landscape and thus increasing the willingness to preserve and develop its qualities.

THE WILD REINDEER AS GUIDE AND INTERPRETER

BRITA HOMLEID LOHNE

Let us go a long way back in time, to when the inland ice cap stretched down to Germany and the ice was beginning to melt. This was when green growth was emerging from the soil, necessary shoots that could feed the animals that followed the receding edge of the ice northwards. Behind the animals came the people, who were dependent on them. Now we are going to move in the tracks of the wild reindeer.

What did the people bring in their northward trek? It turns out that they brought tools like combs and spoons, as well as ornaments. These were incredibly fine master pieces with even utilitarian objects being decorated. Clothing was made from reindeer skins. They also brought tools such as arrows, fishing hooks as well as spear and arrow points. Materials for decoration, such as needles and leather.

We are on the Hardangervidda high mountain plateau and we have a sense of animals being in the far distance. However, we are not going to move to follow the reindeer, they will be left in peace. They need all the food and all the peace that they can get during autumn and winter.

Therefore, we leave the animals alone now that autumn is on its way! It is also the hunting season with much anxiety for the animals.

The wild reindeer are an obvious subject for nature interpretation on the Hardangervidda plateau, where we also find one of Norway's wild reindeer centres with an exhibition and information.
Photo: Olav Strand

This is why we do not want to disturb them unnecessarily. With good binoculars or a spotting scope you might still be lucky enough to see them in the distance.

Today we have a class of students with us, from a secondary school in the area, 25 students and two teachers. They have travelled by bus for a couple of hours to reach the high mountains. When the bus arrives, the students face the cold Skinnarbu air and rub the sleep out of their eyes. They have come to take part in an activity with the reindeer in focus.

The autumn air is chilly, and we sit down by the fire for a little while. Some warmth in the body and something warm in a mug could be nice before getting going. There is time for a piece of bread and butter as well before we start our trek. First we prepare the group for what they are going to experience today. One question comes at once: "Will we see reindeer?" We don't know, but if we are lucky it might happen! At any rate we are hoping that the students will absorb as much reindeer knowledge as possible today – about the biology of reindeer and the challenges they meet. They are welcome to ask questions on the way!

Everyone is getting ready and the students are given a reindeer skin each to sit on. Now they are happy, and the trek along the path can get started. It becomes increasingly steep and soon it is time to "stop and catch your breath". We are now quite high up with a beautiful landscape all around us. This is a view you just have to stop and enjoy. "It would be good if you could place your skins in a ring and sit down so everyone can see and hear." It has been a sweaty climb and the water bottles are brought out, lovely to get a few mouthfuls of water.

We have planned a few activities for the day, and we are going to do one of them now. It is about the biology of the reindeer. We have four sackcloth bags to pass around the circle. Each sackcloth bag contains one or more reindeer objects. The task is to identify the objects by putting your hand in the bag and feel the thing that is in there. You should also be able to describe the object for the others to form an idea of what it might be as well.

> "Remember that you should not look inside the bag, just put your hand in the bag and touch it. Take your time and think about how to describe what is in the bag."

Tools made from horn and thighbone. Photo: Heidi Vognild

Object 1 Jawbone from a reindeer

What can the students say about this jawbone? It is quite hard, and it has many teeth. When we count the number of teeth in the mouth of a reindeer it turns out that we humans have the same total number of teeth as the reindeer. That is 32 teeth, for the reindeer too. However, they are not placed in the same way as in us humans. Looking at the front of the lower jaw of the animal you can see that there are eight narrow teeth there. At the front of the upper jaw there are no teeth, just a cartilage plate and membranes enabling the animal to graze for food. The eight narrow teeth can quickly pick out food from what grows on the high mountain. These teeth get worn down quite quickly because they bring in sand and grit during grazing. The grit wears down the reindeer's teeth. The most common cause of death among reindeer is worn-out teeth.

Object 2 A reindeer skin

This bag also appears to interest the students. They have discovered that the bag contains a piece of skin. At the back of it a square centimetre area has been marked out. This is meant to show how many

Bull antlers and hooves of reindeer. Photo: Are Endal Rognes

guard hairs and how many under hairs the reindeer has. One square centimetre contains 700–800 guard hairs together with a few thousand under hairs.

The skin is wonderful, and you can use it as a soft mat, to sleep on outdoors.

> "Right now, you are sitting on reindeer skins so you can study them a bit more closely. When you feel these skins, you can no doubt imagine how well insulated reindeer are."

Object 3 Reindeer hooves

Reindeer hooves serve many purposes, especially in the winter. The animal can use its hooves to dig in the snow to reach food. They can also widen their hooves so that they don't sink into snow. We can clearly see that this animal was born with snowshoes. If there is a lot

of snow and perhaps several layers of ice within the snow it can be difficult to scratch to get at the food.

The reindeer has strong hooves and they are good for digging but ice can cause difficulties. They can also reduce the body heat in the lower leg, to conserve heat – ideally the lower leg's internal temperature should be two degrees Celsius.

Object 4 Reindeer antlers

The last object is the antlers. Among the wild reindeer both cow and bull have antlers. The bulls lose their antler after the autumn mating season, while the cows keep their antlers until the calves are born in the spring. When the bulls have lost their antlers, it is the cows who are the chiefs of the plateau!

The antlers grow fairly quickly, up to two centimetres per day.

We collect our stuff and carry on along the path. We follow animal tracks further up to an area of soil with many different species of lichen. The students lie down in a large circle to mark out the grazing areas of the wild reindeer," summer grazing and winter grazing". They are introduced to how the wild reindeer utilizes the plateau during

After a day in the footsteps of the wild reindeer the students have taken in a lot of knowledge and developed a closer relationship with the reindeer.
Photo: Brita Homleid Lohne

the different seasons, depending on where they find their "plate" and what is on it in the different areas. It is also dependent on where the cows choose to have their calves.

The students contribute their own knowledge of lichen, but what they find surprising is that lichen only grows a few millimetres per year. In other words, if the lichen we have here inside the circle is grazed down today it will take nearly 30 years for it to grow back to the size it is today.

This provides a perspective on both the length of the time lichen needs to grow and on why the reindeer have a need for large areas for their grazing.

After the activity with lichen and grazing we extend the circle over a larger area and put a longer rope as a frame around the "living area of the wild reindeer". The students are now reindeer inside this area and get a bit of a feel for the challenges the animals meet in the high mountains in the form of barriers and human activity.

Before we start this activity the students get told the following:

During its several thousand years' long history in the high mountains the reindeer have developed a pattern of movement based on how the animal utilizes the resources of the landscape. As a result of topographical variations, the reindeer are "channelled" through the natural linear structure of the landscape during their movement in search of food. To a great extent the movement pattern of the reindeer is guided by water courses, valley bottoms and long mountain sides, and they might follow these for long distances before finding a place to cross.

Historically humans have made use of this by placing small stones in a line, like a fence, towards hunting pits. Today's reindeer have continued this inherited movement pattern, and they might therefore experience roads, power lines and human activity as barriers and disturbances.

With this as a background the students are grouped as cows, bulls and calves and begin their wandering inside their "living area". Quite soon the guide interrupts them with the following remark: "The municipality has received a planning application from somebody who wants to excavate gravel from their property and use it to construct a new road to his farm. At the same time, he applies for permission to construct a road to the gravel pit which is inside the living area of

the reindeer. The municipality is positive to his application and gives permission. The road is approved at first attempt. "The reindeer" are again running around in the area, which is now somewhat more restricted. Some of them dare to cross the new road while others are searching for an alternative route.

"Should we encourage holiday cottages? Of course we should", one of them says, while others want to be a bit more restrictive. There are many dilemmas. The landowner is applying to the municipality for permission to build 40 holiday cottages – with an option to build a further 20. Several landowners would like to see more people in the area, whether holiday visitors or more permanent residents. Most people in the area are in favour of it, while others stay silent to keep the peace. Management of the wild reindeer and its living space ought to be of central importance.

The reindeer have now lived on the Hardangervidda plateau for generations without breeching the long lines. This is probably how the reindeer will continue to live.

Using the wild reindeer in nature interpretation and teaching provides an extra strong dimension. As you have seen we use objects from the reindeer. This might be hooves, antlers, skins, jawbones, teeth and other things.

Placing, as we now do, the reindeer in an experience and learning perspective, we have already experienced danger in the body. The reindeer, in their herds, are continuously learning both when on their feet and when they are resting. In the herds you can see that the leader makes sure that this happens again and again, and they will most likely not forget anything they have experienced. Out there in the high mountains the reindeer communicate with each other using particular sounds from their hooves and/or legs.

If you want to use the wild reindeer as a phenomenon there are a multitude of approaches. If we allow the reindeer to be present throughout and let itself be shared in the form of various objects and stories we can create a strong relationship with it without actually meeting it. How do we really learn? Good objects can be a valuable help. Another is to do as we did in this example, move around in the reindeer's landscape and walk in its footsteps for a while.

WHAT HAPPENS IN US OUT THERE?

LIVE SOLBRÆKKEN DANIELSEN

When working as a nature interpreter for the Norwegian Nature Inspectorate I asked myself the following: How can we best communicate the value of nature experiences? To find an answer I interviewed people about their experiences in the natural world. Here is the essence of what I found out.

A spider had spun its web between two branches of a red elderberry bush. It was early in the morning. The sun was shining on the dewdrops caught in the web. The wind stirred the branches and the web expanded and contracted with the movement. It did not break. Just imagine – such a thin web and yet so strong that it does not break! I sighed. It suddenly seemed less daunting to think about all the things I was juggling at the time.

What really is the significance of such nature experiences, of spider webs, campfires or still water surfaces?

Researchers have provided many answers pointing to the positive impact of the natural world on our health. Feelings of depression might be reduced, the production of health-promoting hormones increases, we feel more cheerful and our blood pressure settles down.

Nature has a universal and profound significance which is undervalued in our culture.
Photo: Unsplash

Explaining the importance of nature is a challenge. Not least in its not so concrete aspects.
Photo: Torfinn Rohde

This means that you cannot really draw a distinction between experiencing nature with your internal and your external self. But the research also generates some questions. Do all of us have genuine ability to experience nature? What actually happens inside a person experiencing nature? And does everybody have a need for this? Nature is a health promoter, that is clear from research. But do we need to train and develop our ability to really experience nature?

Several reports and proposals tabled in the Norwegian Parliament make clear that we have to facilitate – and guide people in – outdoor recreation so that more of us have more and closer contact with the natural world.

I have thought a lot about my childhood and how this influenced my relations with the natural world. Recently I've thought about my father. According to my mother he was always a man of few words and little communication. That is not how I remember him. We spent much time outdoors together. He would carry me in his arms, and we were clutched closely together, and I remember that I could understand how he related to nature. These days I felt him communicating with me without words in the way father and daughter can do. Perhaps that is why I have become interested in the experiences that nature can give us, including those experiences that I receive directly with my body and have no language to express or explain?

The essence of being human

Nature seems to touch something in our fundamental humanity. And perhaps this is how we are made? After all it is only during the last few generations that we have been living so separated from nature. Perhaps our nervous system is biologically coded to take inspiration and "nourishment" from nature, if we are to keep a healthy emotional state. Per Espen, one of my interviewees, expressed it like this:

"I take in very clear signals from nature, like a radio. If I spend too much time out of signal I can be grumpy and irritated and surly and miserable, and woolly. I have lost the connection."

The interviews confirmed something for me that many people have described to me. But then something unexpected happened. I felt that I was dismantling something very personal and valuable in my interviewees.

There was something I couldn't grasp. Logic and analytical mapping failed. Everyone was searching for words. Eirik said this:

> "An eagle was hovering 40 metres above me in the Jotunheimen once. That was very special. Somehow you weren't just sitting there on a pile of stones. Something was happening then and there. I can't quite understand what it was, I can't define it. Something that a human being is somehow privileged to experience."

This is because a significant part of the experience happened in a silent language. There was an experience, but nobody could quite express what it was. The silent language comes into existence when we open our senses and dare to listen beyond what we can express in words and logic.

The magic of the senses

We have several senses that we don't make use of at the office or in town. These can open the door to nature experiences. As an adult I have learnt to smell that an elk just passed along the path. Previously I hardly used my sense of smell when I was outdoors. Emma said that she was not properly outdoors if she didn't use her senses. The sense of smell and bodily touch were important to her:

> "The first thing I noticed when I entered the forest was the scent. It is like diving in the sea, a feeling of belonging and being part of something. It was an entirely new experience when I went with bare feet and in direct contact with the ground. I started shivering and felt my whole body trembling. There was so much more contact! And there it goes..."

My interviewees communicated a kind of biological ability to experience profound and nourishing contact with nature. Afterwards I was surprised, almost envious! of the variety of experiences that were brought forward only when I began to ask questions.

An underlying primeval tone

Two people shared with me experiences that they had never before told other people, about what was most important when they were outdoors. Steinar told me about the "sounds of silence" that always waited for him when he came outside in Østmarka. I had never before heard about this:

"I experience it as a calm, pleasant, subdued transitional tone from the sounds created by the wind or similar. How can I explain it... well, what is the blue colour of the blue hour? It is like a kind of underlying primeval tone in the background. I think the sound is something arising from the great variety of plants and water, rock, stone, animals, all sorts of things. I imagine – that is what I say because of course I don't know – that a sound is created in the space where you are that contains all these elements. The first time I experienced the sound of silence was when I was out fishing with my father as a little boy. Since then I have never been afraid of the dark."

After talking about them, the experiences also became clearer for the people I had interviewed. They had to put words to something they had previously only felt. Even if many nature experiences were highly individual I could see some common traits. Nature gave rise to a form of symbolic language. What does it feel like to see the sun rise? The language of symbols triggers something in us. Fire, water, high mountains, spiderwebs and flowers can lead us on in thought and feeling.

Sitting like a stone

Do many people seek nature to find inspiration in a biological primeval rhythm that has disappeared from today's rapidly moving mass production society? Julie used the natural world to get in touch with something that was timeless and to get the better of everyday life. She particularly liked sitting on the ruins of some old stone fortifications in the forest.

"There is a space in between that is actually not quite real. Where I am allowed to just sit and almost not exist. There is nothing separating me and where I sit. I just sit on the stone and feel like a stone that is here for all eternity just observing passers-by. But I am not my everyday self. Time is ever present in my ordinary life. I never have enough of it (laughs). I have children, a husband, a house,

I just sit on the stone and feel like a stone that is here for eternity.

pets, scout groups and this and that. But when I turn it off I turn it off completely. Ever since I was little I have just never given up attempting to be a stone."

Are these experiences that have been told to me representative of people in general? I had chosen people I knew of, who were out in the natural world regularly and who were able to share personal insights. Even if this is a potential source of error I dare to maintain that nature has a universal and profound significance that is undervalued in our culture. And I am not alone in this belief.

Into time

I am aware that many people will find such nature experiences as I have described a bit odd, romantic or unusual. Explaining the importance of nature is a challenge. Not least in its not so concrete aspects.

The Norwegian Ministry of Climate and Environment has produced a report on the economic value of the benefits of nature (NOU 2013). They conclude that it is impossible to allocate a monetary value to everything, such as nature experiences.

The American author Richard Louv introduces nature as "vitamin N". He believes nature can contribute to the restoration of mental balance, so that you can once more feel that life has a meaning. Researchers at the Swedish University of Agricultural Sciences in Alnarp have researched sensory gardens as therapy, resulting in over 60 percent of people on long-term sick-leave returning to work. They explain that the natural structures send signals to our minds which start up conscious and unconscious processes in us.

The biologist Edward O. Wilson is of the opinion that we have a genetically based love of nature, which has been developed through several thousand years' contact with nature as a result of evolution (the biophilia hypothesis). He

Perhaps it is the same as with our muscles. The ability to be present and listen with all senses, the nature experience muscle, has to be exercised before we can get maximum benefit.

Touching and handling the natural world makes it easier to learn.
Photo: Helge Søfteland

believes our mind has developed to sense the natural world and that it can indirectly use nature experiences to serve our own development.

The American Wilderness Awareness School makes use of the presence of nature to build a person's inner stability. This, they believe, may create an interest in nature and form positive links between nature and culture.

Nature experiences can be communicated

It is likely that most people have the potential to develop their contact with nature. How can you communicate this to those who do not use their potential?

Perhaps it is the same as with our muscles. The ability to be present and listen with all senses, "the nature experience muscle", has to be exercised before we can get maximum benefit. Especially in our

By expressing our experiences in words, we give them a meaning that can be shared with others. Photo: Live Danielsen

times. We might practise observing and we might acquire increased knowledge of plants and animals. This is precisely the purpose of verbal and logical nature interpretation. But the innermost experiences are personal, artistic, wordless and to some extent unconscious. Some of the experience of for instance a wild reindeer will therefore always only exist in its wordless form. Deep down a nature experience consists of silent knowledge that can be made available to people through guidance on seeking nature experiences and on how to develop these skills on their own. An understanding of the importance of attention, sensory impressions and the silent language is vital.

At the same time, it is important to try to find words for your experiences and share them with others – as far as possible.

If we are to succeed in this we need to be humble and open. This helps us to be more aware of our experiences, and by thinking about them in such a way we can get more out of them. When previously

silent nature experiences are put into words and shared, other people will be interested and we can express more of what nature means to us and by doing so contribute to an exciting development of our culture.

Body memory

I remember being bored studying about nature at university because I did not enjoy revising for exams. Now, several years after I carried out the interviews, I have understood that the body's positive experience of nature is more important than I had thought. We learn better when the body is relaxed and enjoying what we are experiencing, according to one learning model. Not when we are stressing about getting top marks. We learn better when several of our senses are activated at the same time and we are aware of what that feels like. This means that more nerve paths are created, helping us establish new patterns of thought, feeling and action. Information provided one single time might well provide inspiration, but recurrent nature interpretation, stimulating several of our senses, contributes to behaviour change. I believe that in the future nature interpreters will combine enjoyment, knowledge of the silent language, neurobiology, body awareness and mindfulness. They will include all the senses, including scientific knowledge, in their interpretation and contribute to the development of new patterns of thought and feeling.

FURTHER READING

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This is an edited version of an article published in Grevlingen 5–2014, the membership magazine of the Oslo and Akershus section of the Norwegian Society for the Conservation of Nature.

MIKKEL OSTERGAARD/BAM/RITZAU SCANPIX

2 NATURE INTERPRETATION – CONTEXT, PURPOSE AND METHOD

EVA SANDBERG

This chapter is about the contexts where nature interpretation takes place, physical spaces in the landscape that offer direct contact with nature, and about communicative spaces where nature interpreters and visitors meet. How nature interpreters think about, relate to and understand the people we meet, and what happens in these spaces, influences how we design and carry out interpretation. Therefore, it is important to be aware of these contexts and to reflect on our own ideas and practices when we develop nature interpretation programs and activities.

Being able to rely on first-hand experience is one of the main strengths of nature interpretation. This includes the participant's encounter with phenomenon and processes in the landscape, as well as with the nature interpreter and the other participants. Activities like guiding, dialogue, storytelling, play and drama provide opportunities for first-hand experiences. These encounters often take place in groups, but the individual participant's experience is always unique. By helping each participant to discover concepts and words expressing their experience it is transformed into something that becomes a lasting part of their knowledge. Read about this in Lasse Edlev's and Benny Sätermo's articles below, about the importance of direct experience for learning.

In addition to direct experience, the following aspects are particularly important in understanding the context of nature interpretation and help to highlight the opportunities and choices we make when thinking about and preparing for interpretation:

1 how interpreters use the landscape as a space for experience and learning
2 what interpreters wish for and can achieve in the encounter with the visitor and
3 the relation to the participants and their perspectives.

Making a difference

How nature interpreters think about interpretation and what they want to achieve might vary, but a common idea about "making a difference" is expressed by many interpreters, as contributing to the following aims:

→ increased knowledge about nature, understanding of what happens in nature and how people have an impact on nature.
→ enhanced appreciation, or for people to come into contact with and create their own relationship with nature and natural areas.
→ involvement, stewardship and influence on nature-related attitudes and behaviour.

Nature interpretation can contribute to knowledge, appreciation and commitment. Training of nature interpreters at Ronneby Naturum.
Photo: Anders Arnell

All these outcomes are possible, and one does not exclude the others. But which of the aims an individual nature interpreter will stress depends on the specific tradition and context where the interpretation activities take place.

Traditionally, emphasis has been on communication of facts, both as an aim in itself, and as a tool arising from the premise that the more thoroughly participants acquire evidence-based knowledge the firmer the ground on which their involvement is built (see page 30).

Appreciation and positive experiences as an aim in itself is something that many nature interpreters stress. They often point to a lack of contact with nature as the missing piece in people's lives and believe that unless many citizens share such appreciation, future nature conservation might lack resources and legitimacy. Yet another perspective focuses on how nature interpretation can influence people's attitudes and behaviour in terms of everything from the ambition to reduce pollution to overall commitment to the environment and a sustainable lifestyle.

Studying traces of a meteor crash in a geological landscape space. Visitors to the Styggforsen Nature Reserve in Dalarna. Photo: Eva Sandberg

Of course, it is also possible for art, literature, journalism, education generally and a large number of other communicative activities to contribute to the aims set out above. What distinguishes nature interpretation from these situations is the direct encounter with nature, with all the senses active. And it is this direct experience that creates a basis for learning. The combination of the activities the nature interpreter offers, the visitor's interest in taking part in them, and the first-hand experience they have leads to meaning and significance.

Experiences in landscape spaces

Nature interpretation takes place in "landscape spaces" – the environments where we meet our participants and jointly focus on the encounter with different objects and phenomena, their values and how people use and influence them. Klas Sandell refers in his article (page 82) to the common division between natural and cultural landscapes as something that is more a feature of our traditional ideas

and the perspective of the observer than something inherent in the landscape itself.

He distinguishes between two types of landscape in Sweden, Norway and Finland. First, there is protected nature – nature or culture reserves, national parks, biosphere areas and other areas that have been subject to joint decisions about protection and conservation. Second, there are the areas that are accessible under the right of public access, the cultivated landscape where we all have the right to move around freely and responsibly, but where agriculture, forestry, fishing and industries, towns and roads are sharing our claims on the landscape. Both categories of landscapes offer opportunities for education. In the border areas between the two there is a third environment where the significance of human decisions is especially visible. Sandell explains how different attitudes to landscapes for outdoor recreation provide different opportunities for the nature interpreter. Areas protected for nature conservation reasons like national parks and nature reserves, offer certain types of opportunities. Areas that are designed for exercise and outdoor recreation in the vicinity of towns and cities, and areas used for pursuits such as hunting, fishing

RIGHT OF PUBLIC ACCESS

The Right of Public Access (Swedish Allemansrätten) is everyone's right of access to other people's land, to stay there temporarily and also to collect berries, mushrooms and certain other plants. This right is combined with an obligation to be considerate and careful towards nature and animals, towards the landowner and towards other people. The Right of Public Access in Sweden, Finland and Norway is based on a common tradition, even if the rights differ somewhat between the different countries. The right to access on foot, overnight camping and collection of berries and mushrooms is included in all the countries. The rights are often reduced in conservation areas. Denmark lacks the equivalent of the Right of Public Access and the attitude to public access to private land is considerably stricter. You may not freely access private land; in principle you may walk on private roads and paths, but there is often the difficulty that the roads traverse farms or that the landowner closes them off. There is no overnight access to the forests at all. Land owned by the state or municipalities is more accessible, and you can now camp in some state-owned forests.

and excursions offer others. Each location selected for nature interpretation contains different opportunities. Each location has its own history, its culture, its stories, events and values.

For the nature interpreter to bring out the values and "sense" of a place and explore it together with the participants helps create a relationship with the place. The place and what can be experienced there may confirm or become part of the participant's own identity. Creating relationships becomes a basis for engagement, protection and development in respect of the place and its natural and cultural heritage.

Knowledge and understanding of how relationships with the place can be strengthened and developed is a central part of the work of the nature interpreter. This is both to ensure sustained interaction with the location where the interpretation takes place and to ensure engagement with nature and the environment generally.

Many nature interpreters work with children and young people. What we remember from our childhood landscape is influenced by the opportunities we get for direct experiences through play and exploration in our surroundings. The bond that is created between children and their childhood landscape forms part of our identity. Skilful nature interpreters can contribute to our lifelong building of such relationships.

The encounter between nature interpreter and participants

The landscape spaces are important in nature interpretation but the social and communicative spaces we create together with our participants are just as important. How we carry out nature interpretation is influenced – as we have seen above – by how we ourselves think about and understand nature interpretation, what we want to achieve in the encounter with the visitor and what we think about who our visitors are.

Traditionally nature interpretation has a desire to inform, teach facts and skills, but just as often to be an opportunity for enriching experiences where all the senses are engaged and any obstacles to contact with nature can be reduced. Sometimes we regard interpre-

Childhood nature experiences and landscapes become a part of our identity. Skilful nature interpreters can contribute to our lifelong building of such relationships.
Photo: Eva Sandberg

tation as an opportunity to influence attitudes and behaviour among our participants, to create engagement and strengthen democracy. Usually all these desires co-exist within interpretation. We want to teach and share factual knowledge, we want to draw the participants' attention to things they might not notice by themselves, contribute to positive, enriching experiences and make a difference through our meeting with the visitors by inspiring them to deeper critical thinking and engagement.

Communication as information or joint creation of meaning

Traditionally nature and culture conservation talks about the importance of communicating information to the general public. This is also true of the Nordic definition of nature interpretation from the early 1990s, which states that nature interpretation is about "mediation of knowledge and feeling". These concepts are often used in discussions

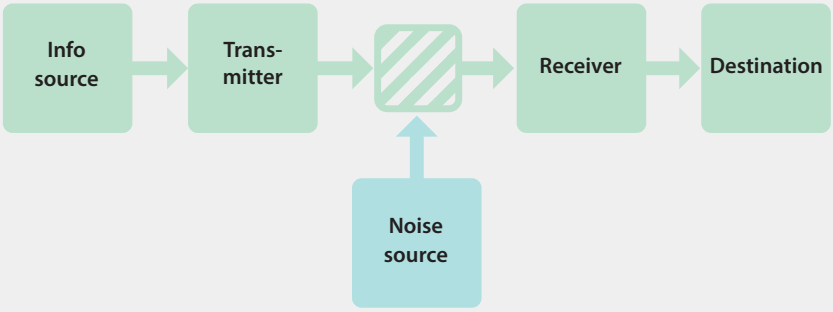

Figure 1

Figure 2

on how to foster commitment to our natural and cultural heritage: "If only we (who know so much!) get a chance to tell visitors to the natural world (who don't know very much!) about the value of what exists here, they will come to love nature and want to preserve it for the future."

Participants as well as nature interpreters have often been quite happy with this arrangement. Interested participants have been given access to the expert knowledge of the nature interpreter. When the same expert writes leaflets and produces information panels, design and content have often been determined by the expert role and the idea of transmission of facts. This model of transmission of factual knowledge – from transmitter to receiver – is found in many contexts. See Figure 1 for a classic version.

Figure 1.
The classic model from the 1940s (Shannon 1949) describes communication as a transmission of information from transmitter to receiver. Factors having a negative influence on the transmission are called noise.
The transmission model moves us to believe that just by removing disturbances that prevent the receiver from hearing our message we will be able to influence behaviour. This is rarely how it works in real life. The interpretation triangle (Figure 2) is a much better model if you want to understand and develop the process of communication in nature interpretation.

An alternative way of understanding communication is as a mutual exchange, where the encounter between nature interpreter, natural phenomenon and visitor takes place as a social interaction. Nature interpretation as a joint enterprise, where the participant's prior understanding, ability to find words for the experience, ideas about the nature interpreter and what is going on with the other participants, are at least as important for the creation of meaning as the nature interpreter's carefully constructed script. Nature interpreters' own a language for describing nature, and have their own ideas both about what is important to notice and about who the visitors are. And so do the visitors. Both nature interpreters and participants seek to understand what is happening based on their own prior understanding, questions asked and other aspects of the encounter. The interpretation triangle is a model of this relationship. Read more about this in Lars Hallgren's article in Chapter 3 (page 157).

Figure 2. The interpretation triangle describes the interaction between the participant, the nature interpreter (media) and the object or phenomenon that is the focus of attention.

Interpretation as an approach to communication

Many nature interpreters feel comfortable with interpretation as an approach to communication to move beyond the transmission-model.

In Chapter 1 we described heritage interpretation as a part of the history of nature interpretation. In the 1950s the journalist Freeman Tilden was given the job of writing an instruction manual for visitor guides in the national parks in the USA. He objected to what he saw as a pure communication-as-transmission perspective and devised six principles for quality communication (see below for Tilden's

Six Principles), or interpretation of the natural and cultural heritage. According to Tilden interpretation is a form of artistic expression – an interpretation of the place, like music, poetry and drama, seeking to move from the particular to the whole and vice versa. He stressed the importance of relating to the participant, to be relevant and link interpretation to the visitor's experiences and interests. Tilden emphasized that interpretation should always seek to stimulate reflection and help the visitor discover "greater truths", based on, but beyond (the necessary) factual knowledge

The book *Interpretation: Making a difference on purpose* (2013), written by Sam Ham, takes as its starting point that virtually all nature interpreters want to "make a difference" and stresses Tilden's "provocation or challenge" as a key element. Drawing on several theories from communication psychology, Ham demonstrates that it is its ability to stimulate participants to do their own thinking that makes interpretation into more than entertainment and transmission of facts. Thematic interpretation makes use of a guiding theme as a tool for this. The theme supplies a "moral of the story" or the heart of the matter where nature interpreter and visitor can "meet". Reflection on the theme can generate changes in attitude and behaviour, which in turn can "make a difference" (Ham, 2013). Read more about this on page 205.

Many nature guides are interested in using the interpretive approach to communication. Not least because the development and

TILDEN'S SIX PRINCIPLES

- → **RELATE:** Start from the participants, what they are thinking and what they want to get from their visit.
- → **REVEAL:** Interpretation is based on facts but goes beyond superficial explanations.
- → **NARRATE:** Make nature interpretation an art – use your imagination and creativity.
- → **PROVOKE:** Avoid ready-made answers, stimulate individual thought and action.
- → **CREATE CONNECTIONS:** Make sure that what you mention is seen in a wider context.
- → **ADOPT THE CHILDREN'S PERSPECTIVE:** Be especially thoughtful about how to communicate with children. What you do for children often works well for adults too.

use of themes can contribute to moving focus from fact transmission to opportunities for all participants to "Aha! effects" and paths to deeper understanding. Thematic interpretation, as described by Ham, does not conclude with a knowledge quiz, but rather with a question of what thoughts are now stirring in the mind of the participant. With this way of measuring impact, "successful interpretation" is judged not simply in terms of the visitors' knowledge of which species are to be found in a national park, but also in terms of how the visitors are now thinking about people's engagement with nature conservation.

Learning for sustainable development

Some nature interpreters will object to the description given above and argue that the real skill lies in not communicating with words at all, but rather to guide the visitor to wordless experiences that create relations between nature and the human. Mindfulness exercises with the forest as the physical space, or forest bathing where the forest is actively absorbed with all the senses, taking its inspiration from Japan, are increasingly popular activities. Nature interpreters often describe their purpose as not just a health-promoting activity but also a way into the creation of a relationship with the place and with nature. Others again object and claim that we need more than positive nature experiences if the aim is to create involvement and commitment (Knudsen, 2013). We need knowledge about the place, its history and value, and a focus on choices to make about its future, as an important foundation. Or nature runs the risk of being reduced to a stage set for meditation or other outdoor recreation. While the participants remain ignorant or indifferent in the face of for instance the reduction in biological diversity. Opportunities for engaging in nature conservation, such as mowing a meadow, restoring a water course or putting up nesting boxes, also contribute to a sense of participation, ownership and ability to influence. This can lead to mental protection for a place but also to learning for sustainable development. Read more about this in Chapter 5.

Nature interpretation as an arena for democratic dialogue

There are also those who criticize thematic interpretation for what appears to them to be a singular focus on influencing attitudes and behaviour through a message. A theme aiming to "make a difference"

Part of the exhibition at the Sommen Naturum. Here visitors can feel and compare the furs of different wild animals.
Photo: Eva Sandberg

in such a way – is that really a tool for engaging with visitors and their perspectives? Or is the theme simply the nature interpreter's way of focusing on a specific perspective and exercising power? Should not nature interpretation rather be an arena for democratic dialogue?

The answer to this depends on what you as the initiator want to achieve in the encounter and this is something you need to be clear about, at least in your own mind. To what extent thematic interpretation invites to dialogues depends on how you chose to design it, what you focus on and how you ensure that participants' perspectives and possibilities to interaction are taken into consideration. The theme can be the focal point where dialogues on controversial issues, different point of views and a discussion of open-ended questions depart. Today, there is a growing interest for audience-centered experiences and development of techniques for involvement of participants. The National Park Service in the USA stress and teach for instance dialogic interpretation techniques such as facilitated dialogue.

The idea is to invite participants to explore sensitive, controversial and value-laden issues during their encounter with the national parks and their staff. By using an "arch of dialogue" the interpreter constructs a shared space of trust with clear rules of play with all partici-

pants. Starting from the visitors' personal values and controversial issues connected with the park a joint effort is made to deepen the understanding of different perspectives, ranging from the personal to the universal.

A dialogue perspective has long been present in the Nordic countries and in the education of nature interpreters. In Denmark the role of facilitator is given special emphasis in the training syllabus. The writers of this book take the view that it is essential for nature interpreters to be able to facilitate an enlightening and engaging dialogue between participants. Chapters 3 and 5 deal with how nature interpretation can be learning for sustainable development.

Audience, visitors or participants

Nature interpretation is often directed at the general public, that is visitors – families, adults, local inhabitants and tourists. They might have been dragged along rather against their will by a relative, or they might be experts who want to know everything and who are looking for deeper understanding. The only thing they really have in common is that they are visiting a nature centre or an event like a guided tour in their free time and have ended up in an informal learning situation. In practice a large part of nature interpretation activities in Nordic countries are aimed at schools, as a part of formal (curriculum based) learning away from the four walls of the school. These are two different situations and they require different approaches.

In the literature (Ham 2013) these main groups are categorized as "non-captive audiences" ("free choice learning" or a self-selected sample of leisure visitors) and "captive audiences" (for instance school students who are essentially obligated to pay attention and process information).

Are the visitors customers, guests or participants, and does it matter... ?

Common to all interpretation, whether as part of formal or informal learning, is the direct experience and the opportunity to involve all the senses. There is also a common focus on the idea of providing positive experiences and creating contexts and relationships between people and the place with its nature, culture and stories.

Outdoor education and the need and ability of the school to support teachers and students engaged in outdoor based learning are central for many nature interpreters. All the Nordic countries have literature for further study of the specific ways in which the schools can use the outdoors as an education resource.

Helping school students reach their learning objectives is a key skill for nature interpreters. Read for instance Maria Aroluoma's article about the activities for groups of students in the Haltia Nature Centre in the Noux National Park (page 281) or Brita Homleid Lohne's article about the children's meeting with the wild reindeer on the Hardangervidda plateau (page 46).

Addressing the general public as your target group means a lack of definition that can make planning difficult. Interpreters need strategies for understanding and categorizing participants and visitor groups. What kind of visitors do you want and how do you define

FALK'S VISITOR TYPES

- → **Explorers** are full of curiosity. They read a bit here and a bit there to get an overview of the exhibition, but they don't spend much energy on detailed study of every part of an exhibition or signposted path.
- → **Facilitators** are visiting the place to bring other people, such as children, grandchildren or friends. They are mostly looking for nature interpretation that makes it easier for them to get others to enjoy the place.
- → **Experience seekers** don't see it as that important to absorb detailed information. Mostly they want a positive experience.
- → **Streakers** don't have time to stop. They take a quick look at some part of the exhibition or nature path and then move on.
- → **Rechargers** feel that what is most important is to experience the feeling of being in the area. They are recharging their batteries and are looking for deep contact with and presence in the place.
- → **Professionals/ hobbyists** are very interested and often both committed and knowledgeable. They read and absorb all information on offer. This group is usually a very small proportion of the visitors. It is a common mistake to focus specifically on this group when planning (often they are just as enthusiastic about the subject as we are ourselves!). The drawback is that a large part of the others might get lost in all the information and feel excluded.

What is important for the nature interpreter is to try to understand the visitor's perspective, driving forces and experiences.

your target groups? What word do you use for the visitors – an audience, guests or participants – and does it matter which expression you use? In this book we have chosen to mostly speak about participants, since we want to stress our ambition to include participants in the experience and create interest in and commitment to the place and its value.

It is common to categorize visitors on the basis of social situation and relation to the place – groups of visitors to for instance protected areas are then described as "active middle age", "young individualists", "outdoors enthusiasts", "special interest groups", "local inhabitants" or "school student groups".

Falk's visitor types (Falk, 2000) provide another classification that can be of use to nature interpreters (see the box to the left). It is based on visitors' behaviour patterns in relation to, for instance, an exhibition in a nature centre or visitor centre.

Irrespective of the method chosen for categorizing visitors or choice of target group, what is important for the nature interpreter is to try to understand the visitor's perspective, driving forces and experiences.

Groups with special needs

It is becoming increasingly clear that nature interpretation can support social goals other than nature conservation. Many nature interpreters are engaged in projects aiming to develop nature interpretation for people in society with special needs, such as integration, health, inclusion of children and adults with impairments (as for instance difficulty concentrating). Growing numbers are working jointly with other professions to help enhance wellbeing through activities in nature. Read more about this in Chapter 4.

Nature interpretation – methods and tools

Some nature interpreters are employed by nature centres, museums and visitor centres, dealing with both groups of school students and the general public. Others work in nature conservation, with a job that

includes information about the values of nature and how nature conservation work is carried out. Guided tours, but also indirect nature interpretation such as information panels, digital information and leaflets, are typical methods and tools for this group. Some belong to voluntary nature conservation organizations and want to share their knowledge and create enthusiasm for nature, while others are active in nature tourism and are above all eager to offer their visitors positive nature experiences.

Sometimes the tools of the nature interpreter can therefore consist of a whole visitor centre where the natural world has moved in – with exhibitions, aquariums, stuffed birds, beehives, digital information, a bear dwelling to crawl into, magnifying glasses, binoculars and historical pictures – designed to demonstrate and inspire further experiences in the natural world outside.

Often the method on offer is a guided presentation or tour with the nature interpreter. Sometimes the nature interpreter only meets the participants indirectly through information panels, apps or natural or cultural heritage paths. The choice of methods depends on factors such as the purpose, who the visitors are, the nature phenomenon and values in focus and not least on available resources. Read more about why choice of method should always be the last element of a planning process in Chapter 4.

The traditional guide situation offers many more possibilities than the fixed information panel. This is true for the knowledge-hungry butterfly enthusiast who, accompanied by a nature interpreter, not only learns the names of the species they come across but also the story of the butterflies' life and conditions in our landscapes. Or for participants for whom the nature interpreter is a dialogue facilitator, who guides them through the history of the landscape in terms of human decisions and who provides ideas for how the participants themselves might act in the future.

However, the strength of the traditional information panel is that it is always present in the location, without being intrusive but prepared and ready for the visitor who wants to find their way to the treasures of the place, deepen their knowledge or get a fresh perspective. How well such concentrated nature interpretation is designed is of central importance for its success. Much remains for nature interpreters to do and to learn and there is much support in the literature.

This also applies to the large numbers of technological and electronic tools, from apps to audio-guides, where a virtual guide can replace the physical nature interpreter. One example is a podcast for young people at the Vega Archipelago World Heritage Site in Norway (page 132).

Below you will find some more examples of tools and methods: Kjersti Hanssen using nets to discover life in a river together with a group of school students; a guided tour in natural and cultural landscapes in search of white-tailed eagle, with Ole Sørensen; as well as Thomas Larsen Schmidt, who creates runes burnt on wood. Tomas Carlsson focuses on oral storytelling as a tool, while Marianne Graversen uses citizen science and Live Solbraekken Danielsen dialogue with decision makers on a walk along a water course.

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LANDSCAPE RELATIONS – THEIR EDUCATIONAL POSSIBILITIES

KLAS SANDELL

A nature interpreter always has to act in harmony with the landscape. This might be about how the group has to huddle together in a circle to be able to hear each other in wind and rain. Or about drawing attention to how the sun is just this minute peering through the crown of the big aspen tree with its trembling leaves. Or perhaps how a rusty tin that someone found in the mossy undergrowth makes parts of the planned programme turn into a treasure hunt instead.

Not least does the nature interpreter act in harmony with the landscape by seeking out different types of landscape, or different parts of the landscape, for different purposes. If the nature interpreter fails to take the landscape properly into account, the educational outcome is likely to be considerably less good. The whole situation might even turn dangerous if no attention is given to the interaction between the group, the landscape, the time of year and the weather. But what exactly is a landscape? Are there recurring patterns for how we relate to landscapes? What are the educational advantages and disadvantages of landscapes that have been planned and shaped with a variety of intentions? And what in particular are the educational possibilities offered by our ordinary everyday landscapes, where the right of public access creates multiple uses and a great need to be considerate?

A landscape with the right of public access offers great opportunities for environmental education.

This article will address these issues one by one, starting with establishing in principle what constitutes a landscape and where nature is situated. This is followed by a presentation of four general and recurrent approaches to the landscape ("eco-strategies"). These represent different landscape models that physical planning, politics and nature conservation might work towards – and they therefore constitute the very basis of nature interpretation. For the nature interpreter the choice of type of landscape to seek out becomes important, and there are educational advantages and drawbacks associated with each one of these four landscape models.

Here we also discuss how the nature interpreter might act in the landscape selected for the work. Finally, the article goes more deeply into one example of the connections between different landscape models and education, by pointing to the great opportunities for environmental education offered by the landscapes and attitudes associated with the universal right of public access.

What is a landscape?

Figure 3 shows a "landscape", as seen from a small hill somewhere in central Sweden. It is a didactic illustration of the landscape concept: a group of people walking along in a relatively natural landscape. All the time they are leaving their footprints on the ground – distinct and visible on damp clay soil, barely noticeable even for the most accomplished tracker on hard and stony ground. The footprints are becoming stronger as more people walk past, but less clear as time goes on after they were left. From this picture we can identify three components that create the landscape: natural conditions, the cultural imprint and the processes of natural change.

1. Natural conditions. What kind of area is it through which the people are making their way? What is the underlying bedrock, has there been an Ice Age and has the area been under water? Where on the Earth is the area situated in terms of sunshine,

seasons and distance to coasts and oceans? Which plants and animals are native to the area?

2. Cultural imprint. What kind of footprints are the walkers leaving, what are the patterns of the soles of their shoes, how many are they and how hard are their soles (bare feet, walking boots or studded running shoes)? In the totality of the landscape this corresponds to all the "imprints" that human beings leave in the form of buildings, roads, stone walls, ditches, cultivated hedges, jetties, empty beer cans, cities... There are loads of different imprints, large and small, and new ones are forever being added, often entirely obscuring the earlier ones. How lasting an imprint is does not just depend on how forceful it is, for instance a narrow path compared with a wide tarmac road, but also what the natural conditions are where it is placed.

Figure 3
A "landscape": natural conditions, cultural imprint and the processes of natural change – taken together at a specific point in time and with a geographic boundary that can be surveyed. Illustration: Matz Glantz

Returning to our picture of the group walking along in the landscape, you would need a very highly skilled tracker (compare with archaeology) to identify any traces of the imprints of the first few people when the whole group has gone past – unless for some reason one of first few people put their footprint a little bit outside those of the others. And it is therefore outside cities and other areas with constantly superimposed new cultural imprints that we often find traces of older imprints, for instance stone walls that have fallen down and ruined farmhouses in the forest.

3. Processes of natural change. Very soon after our walkers have passed through the landscape in the picture the grass will begin to stand up again. Rain and snow will come, and in a very long time-perspective, in our part of the Earth, even ice ages. All of this will alter and often entirely obliterate the cultural imprints on the landscape. These are the constant processes of natural change. Processes that mean that a house that has stood empty and untouched for a long time eventually begins to "return to nature" through the activities of fungi, ants and wild weather. This represents the struggle against – or interaction with – the forces of nature which are constantly levelling and erasing cultural imprints of people's everyday life, everything from weed clearing and house painting to repairing potholes in the roads and reinforcing eroded shore banks. Therefore, the cultural imprints that we are looking for in the landscape are often difficult to find. This might be because other imprints have been left on top, as when the old fallen down stone wall gets hidden by a spruce plantation or a new road. But it can also be that when cultivated ground was abandoned, bushes and trees took the place over. It became harder and harder to discover the fallen down stone wall.

These three components – natural conditions, cultural imprint and the processes of natural change – taken together at a specific point in time and with a geographic boundary that can be surveyed constitute a landscape in the sense of the word that I am using here. The three components overlap each other in various ways and can often be difficult to keep apart in practice, but this is the actual point of it

(as opposed to narrowly sectorial perspectives like botany, history or geology). Carlestam & Solbe (1991) and Cresswell (2004).

Where is nature situated?

In the example of the group walking and making imprints in the landscape "nature" was present in several ways (Figure 4). Natural conditions (such as climate, bedrock and fauna) and the processes of natural change (such as erosion and grass growth) changed the human cultural imprint. The concept of nature – or rather all the different concepts of nature – are cultural constructs. What we call nature and how we charge this concept with various positive and negative associations is culture dependent. It means different things for different people and it changes over time. But this does not mean that "nature"

Figure 4
"Nature" is always present in the landscape in various ways. Illustration: Matz Glantz

All the different concepts of nature – are cultural constructs.

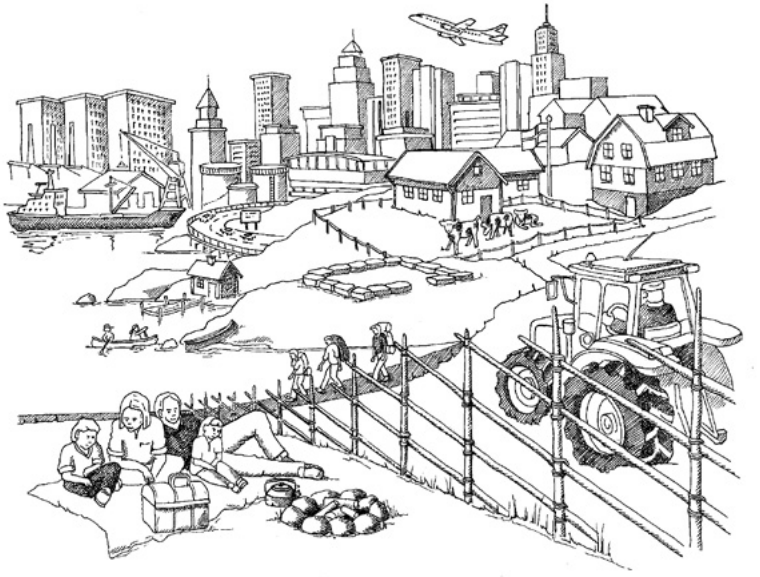
is only a cultural construct, something we can choose to care about or not. Simply by remaining in one place for long enough we allow nature to make itself very noticeable, initially in the form of thirst, hunger and a need to go to the toilet – eventually in the form of death and decomposition.

In spite of this complexity it is of course still important to try to clarify what you mean by the concept of nature – not least if you are a *nature* interpreter. I have earlier proposed "what is not controlled by the human" as a working definition of nature (Sandell 2016b). Our relation to nature then becomes our interaction with those parts of our bodies and surroundings that we are not in control of, elemental natural and environmental processes. Different landscapes entail varying degrees of presence of nature, from the relatively sparse examples in a cityscape to nature's increasingly obvious presence in a forest, in the furthest skerries of an archipelago or in the Arctic.

But nature makes itself heard even in a city office through everything from gravity and a mouldy sandwich to a beating heart or a buzzing fly. At the same time, it is important to understand the limitations of human control, and we might even note an interest in conscious abstention from control, for instance by preferring living pot plants rather than artificial ones, or by setting aside national parks where the cultural imprint is strictly limited.

Where is culture situated?

Based on the above it should be clear that culture is present in most landscapes. Likewise, that the human cultural imprint, in the shape of everything from footprints and increased carbon dioxide in the atmosphere to megacities and sunken ships on the ocean floor, interact with natural conditions and natural processes. In other words: nature and culture interact all the time, and in the landscape we can see the result of this interaction in a specific place and at a specific time (Figure 5). When you sometimes talk about a "cultural landscape" – like the corresponding concept "natural landscape" – this would therefore indicate a landscape that has to a particularly high degree



been formed by cultural imprints. This means that a cityscape and a distinctly agricultural landscape can both be described as cultural landscapes. But cultural imprints are present to varying degrees in most landscapes and rather than trying to distinguish between natural and cultural landscapes it would make better sense to regard them as different points on the same scale, from the clearly overwhelmingly natural (like in the high mountains or far away from any road in Siberia) to the clearly overwhelmingly cultural (like Stockholm or Holland).

Preservation of a cultural landscape requires human intervention because of the always present forces that we earlier referred to as "processes of natural change". This means that if you decide that you want to preserve a particular cultural landscape you also need to determine how to prevent new cultural imprints and the natural forces of change.

One of the most important environments for our relationship with nature is our own body! This is a direct counterpart to the discussion of the relationship between a natural and cultural landscape. "Nature" as well as "culture" is always present in our bodies. This is a matter of natural forces such as ageing or the digestion of food in the stomach,

Figure 5
In broadly speaking all landscapes "the culture" is clearly present.
Illustration: Matz Glantz.

Figure 6
One of the most important environments for our relationship with nature is our own body.
Illustration: Matz Glantz

and cultural forces such as how we use the power of thought to move our arms and legs (Figure 6) (Sandell & Sundberg, now Öhman, 1997).

Are there recurrent patterns in our landscape relations?

A particular physical landscape – natural conditions, cultural imprint and the processes of natural change, taken together at a certain point in time – might be experienced in very different ways by different people and different groups (Figure 7). Some aspects are relatively easy to change, for instance through choice of activities or new knowledge. But the differences between different experiences of the landscape might also be more profound, like when an experienced reindeer owner and a casual tourist regard the same high mountain valley. It is a question of who you are and which group you belong to. It is also a question of how different attitudes to the landscape – "views of the landscape" – are established and change depending on time period, form of society, upbringing etc.

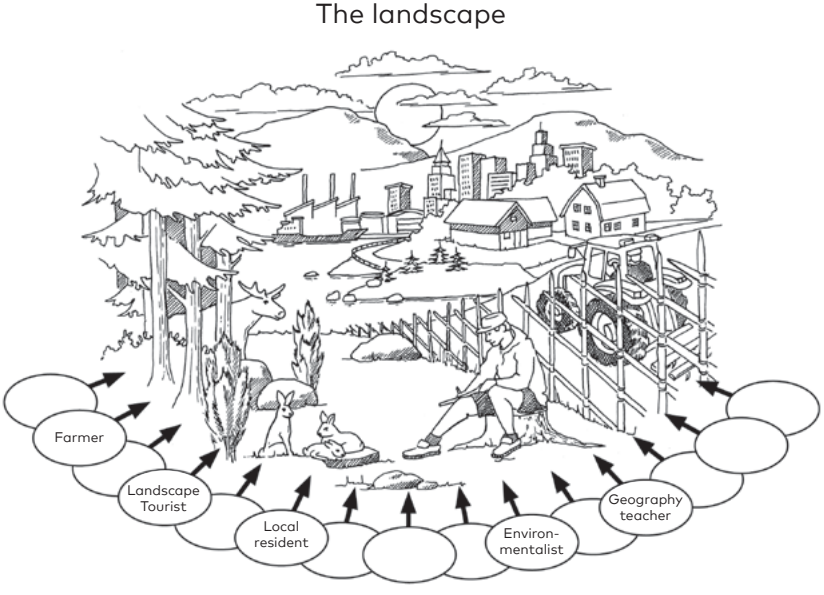


Figure 7
A particular physical landscape might be experienced in many different ways by different individuals and groups. These different approaches show up (are manifested) in action – what you do, say or write – for example concerning how the specific landscape should be used, managed, experienced, changed or not changed.
Illustration: Matz Glantz.

The landscape

Different perspectives on landscape

"Eco-strategies" is a way of describing the overall patterns of these different landscape perspectives. It is a question of what is in some sense of the word "available to us", for instance which types of landscape a nature interpreter might seek out, and in what way we think a certain landscape should be changed or preserved. The eco-strategies constitute a conceptual framework (Figure 8) based on opposition:

– between an approach where some specific value (benefit) is the starting point, as against a specific landscape (the horizontal two-way arrow); and

– between wanting to use and change the landscape, as against wanting to conserve and protect it (the vertical two-way arrow).

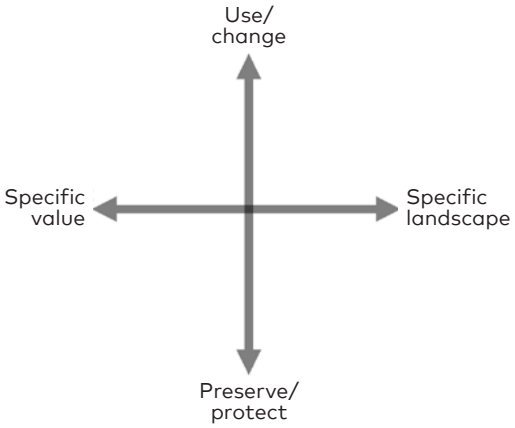


Figure 8
The basic approach to nature and landscape of the eco-strategical conceptual framework.

Landscape relations – their educational possibilities?

Looking at the different eco-strategies in the four corners of the conceptual framework, focusing on those contexts that are particularly relevant for nature interpreters, the field of tension could be illustrated as in Figure 9.

In the bottom left corner, we find an eco-strategy devoted to large scale (frequently global) efforts to identify specific landscape values, based on concepts such as biodiversity, a scientific reference area, tourism or cultural identity, and then to try "freezing" and "conserving" these values through various measures. The landscape as a museum for remotely controlled consumption. A "museum" because the values are to be preserved and displayed; "remotely controlled" because what is of value is identified from outside, often at a global level, for instance by international organizations; and "consumption" because the enjoyment of these values is consumed in a market, for instance as tourism.

In the top left corner, we find an eco-strategy aiming to actively change and exploit the landscape on the basis of specific purposes

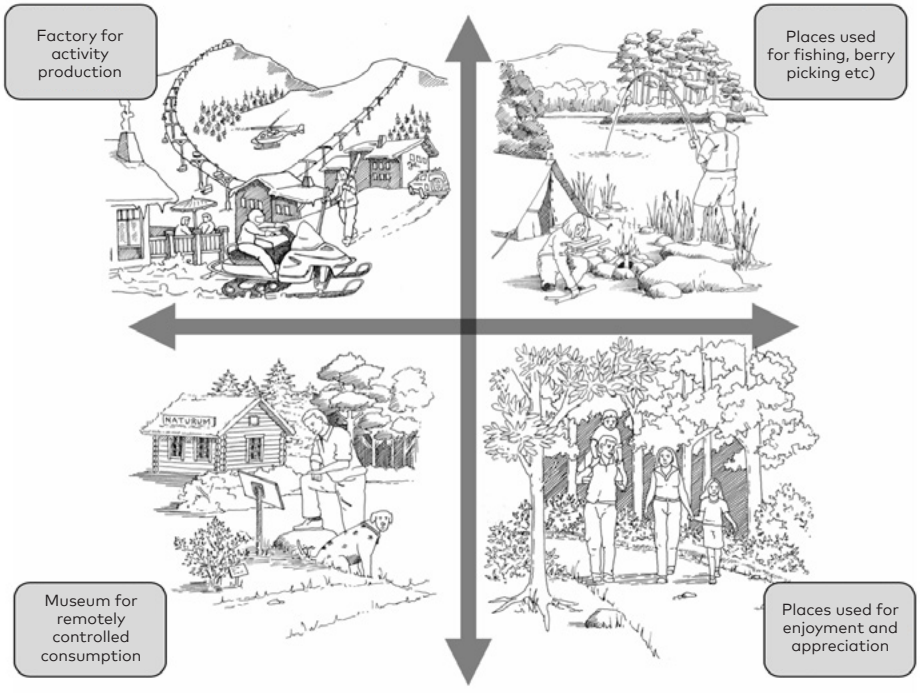


Figure 9
The four main directions of the eco-strategical conceptual framework are pictured in drawings focusing on relations to landscape that are relevant to nature interpretation. Illustration: Matz Glantz

and activities. Here the landscape is regarded as a factory for the production of these activities and goods. Landscapes are identified (this is true of both "museum" and "factory") and rebuilt or refashioned or even constructed (applies to "factory") to satisfy the demands of these activities (adventure lands, ski resorts, climbing walls, adventure pools etc.).

In the top right corner of the figure we find the use of a specific landscape that one has in some way taken possession of. Perhaps one has lived there a long time or visited regularly during a long time – and feels an identification with precisely this place. Here the local natural and cultural landscape is seen as something that could and should be used for a number of different purposes. In terms of leisure pursuits this is where you find a great deal of things like hunting and fishing and traditional outdoor activities such as berry or mushroom gathering, or making a campfire with wood collected on site.

The fourth eco-strategy, enjoyment of the places that you have taken possession of, in the bottom right hand corner, is – like the previous one – rooted in a particular landscape but now without a wish to shape and change the landscape. This is true for many people in their everyday contact with the local landscape – something to identify with and, ideally, appreciate. Enjoyment can be as passive as looking at the view out of a window, but can also be something that the individual does actively, such as hiking, skiing, taking part in guided tours or taking the dog for a walk. But even if you are a very diligent exercise runner, the basic approach still is that you accept the landscape as it is and that you don't want to change it through your activity. On the contrary dog walkers, mountain bikers and joggers might instead be regarded as problems if they really begin to have an impact on the landscape through littering, noise or wear and tear.

This sometimes generates demands for greater use of strategies that are further to the left in the eco-strategy representation. Either towards the factory perspective, through specially constructed mountain biking trails, exercise yards for dogs and exercise circuits (perhaps with special surfaces, lighting and exercise equipment). Or towards the museum perspective, with its emphasis on protective measures, perhaps in the form of nature reserves and rules and prohibitions concerning dogs, cycling, horse riding etc.

Both the location-focused eco-strategies to the right in the figure are characterized by a need for and an interest in adjusting what you are doing not only to the more permanent features of the landscape, such as mountain, forest and coast, but also to seasons and weather. This can range from obvious considerations, such as thinking of going skiing in the snows of winter, to more subtle ones, like seeking out specific locations in spring, or choosing a different route for your woodland walk when it is raining. These choices differ from the eco-strategies to the left in the figure, where you seek out a suitable landscape for the activity you want to carry out, for instance skiing, irrespective of season or weather where you live. You would then either look for a more "protected" landscape, in line with the museum strategy, such as a bare mountain with a low degree of exploitation, or a more "developed" one, in line with the factory strategy, a ski resort with ski lifts and artificial snow or perhaps even a ski slope inside a building.

Each of these four eco-strategies – approaches to nature and landscapes – have different consequences, advantages and drawbacks, seen from the perspective of a nature interpreter. The factory approach means that the guide often has access to a great deal of programmes and activities "for free". The landscape itself tells the guide and the group what to do and the activities on offer are often exciting and attractive, and safety aspects are taken care of. At the same time these landscapes require the visitors to incur expenses, for travel, accommodation and entrance fees. There is also often only limited freedom to engage in other activities than those prescribed.

The landscape of the museum strategy also offers the guide great opportunities in terms of exciting experiences and "ready-made" suggestions for activities, in a similar way to the factory strategy. These activities and experiences are precisely what the landscape has been constructed for (in the factory strategy) or preserved for (in the museum strategy). But the museum strategy usually does not come with costs that are as significant as those of the factory strategy (perhaps travel and possibly accommodation but no entrance fees, as with a nature reserve). There is also often greater opportunity for alternative activities in the museum landscape, compared with the factory landscape, but the rules laid down for the reserve might mean restrictions, and participants are likely to expect an experience of exactly the feature for which the area is known.

The two eco-strategies to the right in the figure – using or enjoying places you have in some way taken possession of – require the guide to have "taken possession of" the place to a reasonable extent. It doesn't work so well if your get there at the same time as your group and only then find out what is available (something that is possible to a greater extent in case of a ski resort or a nature reserve with a nature centre). At the same time the process of "taking possession" of the place offers great educational opportunities both in the direction of use (towards top right in the figure) with log fires, fishing, hunting, meadow mowing etc. if you have an agreement with the landowner. Or, correspondingly, when it is a question of enjoyment (towards bottom right in the figure) in the form of well-prepared walks, "discoveries" of ruined farmsteads and beautiful views, as well as every opportunity to adjust the activities to the group and to the weather – the picnic spot that works well even in

rain and wind, the shortcut through the forest when the group seems to be tired. All told, and whenever it is a question of educational work, it is the active choices and how well they are founded that determine the quality of experiences and information. Being able to choose the landscape that is best suited to the group, the purpose, the time of year and the weather, and then make use of its possibilities.

This chapter is moving towards its conclusion and we can now look back on how it began, with consideration of what a landscape is and where nature is situated. After that we introduced the four eco-strategies and their consequences for the educational work the nature interpreter can carry out in the landscape. As a way of integrating and illustrating this sequence – from what "a landscape" fundamentally is, via the introduction of different eco-strategies, through to their educational consequences – we will conclude this chapter by bringing out the possibilities of environmental education in the landscapes that are available to us through the right of public access.

Right of public access and landscapes for sustainable development?

In Figure 10 I have marked the core aspects of the right of public access and its outer limits within the eco-strategical conceptual framework.

The Nordic countries, in particular Sweden, Norway and Finland, have an extensive legal right of public access, and this landscape, with so many different users and so much need to be considerate, is a very important education resource (Sandell & Svenning, 2011; Reusch, 2012; Williams, 2001; Øian et al., 2018).

In Figure 10 we can see how the "core area" of the right of public access has been positioned within "enjoyment of landscapes we have in some way taken possession of". A visitor must be able to "read the landscape" to know what is appropriate or inappropriate to do in different locations and different situations (how closely you may approach a house, when it is permitted to make a fire etc.) while at the same time we should basically pass through without leaving a trace. In Figure 10 we can also see the "outer limits" of the right of public access, bordering the other three eco-strategies.

The outer limit next to "use of places we have in some way taken possession of" addresses the reach of the possibilities given by the right of public access in terms of affecting and changing the landscape (picking flowers, berries and mushrooms, collecting firewood for a campfire etc.). There is also a border area in terms of the opportunities for the factory landscape to charge for their facilities ("plant") and where the difference between having the possibility of using these and being forced to pay for them is not always obvious (wilderness passports for canoe trails, charges for ski runs etc.). When a landscape is largely turned into a "factory" for the production of certain specific activities, this also often for purely practical reasons means that other uses of the area are excluded, even if this is not through entrance fees or prohibitions. There is also a border area relative to the museum strategy, where restrictions on access are justified by considerations of how this particular area is to be preserved. This might be a question of prohibition of access during certain parts of the year, complete prohibition of making fires, prohibition of camping or camping only in specifically designated locations. All landscape

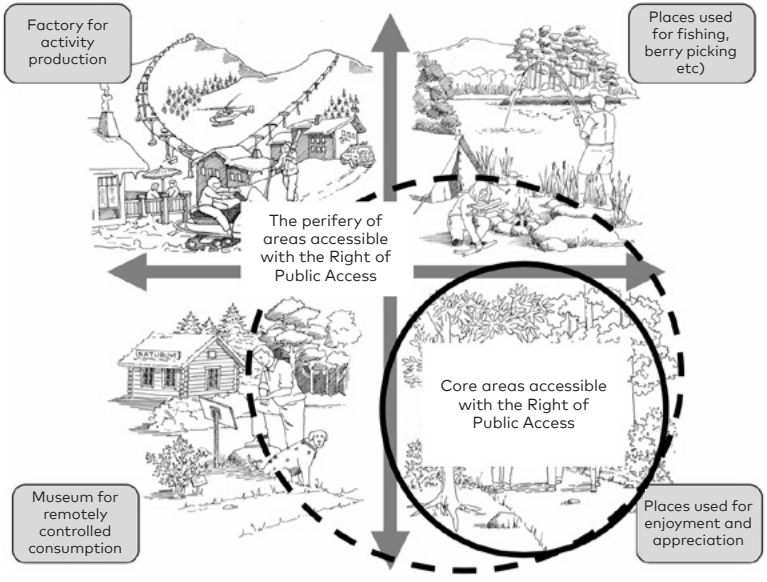


Figure 10 The positioning of the right of public access within the eco-strategical conceptual framework. Illustration: Matz Glantz.

relations involve choices and it is particularly important to reflect on these choices and their consequences in our increasingly mobile and multicultural society. Here the perspective on the landscape formed by the right of public access brings out the need to adapt what you do to what is suited to the landscape. This applies both to adaptation to the more permanent features of the landscape, such as mountain, forest and coast, but also to inhabitants, agriculture, forestry, seasons and weather. This is different from the strategies to the left in the figures, where you seek out a protected or constructed landscape in order to do what you want to do – and assume that inhabitants, agriculture and forestry have to adapt to this!

The right of public access therefore means multiple uses and a need to show consideration: not just recreation and education but also production of food and building materials, as well as exploitation in terms of for instance infrastructure and water resources. All of these uses of the landscape, including that of nature interpretation, have to co-exist in a spirit of mutual consideration, which in fact is a good illustration of the characteristics of a sustainable society! Even if it is true that all the eco-strategical approaches can serve a nature interpreter well, there is every reason to think about the educational opportunities of particularly the eco-strategy we have called "enjoyment of landscapes we have in some way taken possession of" – our everyday landscapes of multiple uses and much need for consideration.

This also means that there is every reason for nature interpretation proactively to monitor the role of the right of public access in the constant shaping and re-shaping of the landscapes of the future.

This chapter is based on earlier texts and more extensive discussions. More references can be found in for instance Sandell (2015), and additional practical experiences and applications can be found in Brügge et al. (2018).

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DIRECT NATURE EXPERIENCES

LASSE EDLEV

One of the most significant aspects of nature interpretation is the direct experiences it can offer. Creating learning and knowledge through direct nature experiences is perhaps among the most unique aspects of the work of a nature interpreter. Therefore, it is important to have the skill to understand and manage the possibilities of direct nature experiences in practical nature interpretation. This is what this chapter is about, starting with the very concept of direct nature experience.

Experiencing nature could be defined as having "a sensory meeting with the surrounding world, where feelings and curiosity are activated in a particularly stimulating or unexpected way, and which urges us to interpret and create meaning from the simplest observations as well as the entire reality one is concerned with." (Edlev, 2015)

Experiencing nature directly therefore involves having a first-hand experience as opposed to mediated presentations. It means that the individual is able to feel the touch of genuine nature on his or her own body, manage his or her attention and direct it at precisely those specific and personal impressions that are especially stimulating and surprising.

A direct nature experience means experiencing nature with your own senses. Photo: Unsplash

The same situation might be experienced entirely differently by different individuals. Photo: Lasse Edlev

A direct experience is therefore – unlike a mediated presentation – not a message sent out by another person, and therefore there has been no selection or interpretation in advance. It is the individual who must let their own body and senses be enveloped by nature – directed by their own curiosity and desire for wonders and revelations.

This means that we, as nature interpreters, can easily end up in a paradox: We might wish to give other people nature experiences, but when looking at this more deeply experiences is something you can only take for yourself. Or to put it differently: The more eager we are to communicate something specific, the greater the risk that we deprive the individual of their own, direct experience.

Nature experiences derive their force from the entirety of the individual's collected sense impressions, bodily reactions, feelings and thoughts. Experiencing nature directly is therefore not just a question of decoding nature's data. Rather it is about a phenomenon of subjec-

We might wish to give other people nature experiences, but experiences is something you can only take for yourself.

tive consciousness, arising from the surrounding world as well as from inner states of mind (Schouborg, 1982).

The same situation may be experienced in very different ways by different individuals. An experience is something which takes place within each individual person. However, this is not to say that you cannot have a nature experience in the company of other people. But it means that it is extremely difficult, if not impossible, for a nature interpreter to plan a situation in such a way that it generates a specific, well defined experience in all participants.

Even if many people claim that they have their strongest experiences when they are on their own in the natural world, organized nature interpretation nevertheless finds its strength in the interpersonal dynamic that can be created. We can initiate something. We can direct attention. We can create an atmosphere. We can mirror each other. We can allow ourselves to be carried away. And we can join together to express and communicate what we feel and experience. To the extent that the participants share background and experience they will be able to recognise and enter into each other's nature experiences.

Learning to experience nature

Whether an experience is good or bad can be determined on the basis of whether it has a suitable balance between the unexpected and the expected (Jantzen 2011). This means that if an experience is to be good it is not enough for it to be entertaining, thrilling and exciting. It must also be enlightening and meaningful in the sense that it challenges your understanding of yourself and the world around you. A good nature experience creates surprise by activating body, feelings and thoughts creatively. Previous habits and opinions turn out to be inadequate. New experiences and insights are created. You learn something new about both yourself and the world around you. To sum up: both agency and self-awareness grow.

Put simply the process of experience learning could be said to contain three stages: change, surprise and transformation (Jantzen, 2011):

A good experience challenges our understanding of ourselves and the world around us. Photo: Lasse Edlev

Change in the course of the experience is about sensory perception affecting the body physically so that tempo, pulse, breathing, direction and rhythm are changed. The body instantaneously goes on the alert, attention is more focused, and the mood becomes different.

Surprise in the course of the experience is when what we are feeling and experiencing in body and emotions does not fit with our initial expectations and ideas. This amazement makes us reflect on what is actually taking place here, so that both our self-image and our assumptions about the world are set rocking.

Transformation in the course of the experience is about changing perspective on oneself and the surrounding world, so that earlier understandings and expectations are revised while new experiences, understandings and abilities are developed.

The extent of an experience's potential for learning depends on the degree of change, surprise and transformation. This is a circular process which is capable of being re-activated afresh in response to new sensory experiences and newly aroused feelings.

Experiencing nature – the learning perspective

Educational development theory has refined the concept of a nature experience as an experience of natural phenomena (Breiting 1995). With this definition a nature experience should consist of something more than just an activity outdoors with nature as its background. Instead nature and natural phenomena become the objects of direct observation and interaction.

As already mentioned there is something paradoxical in the fact that there is great potential for learning from nature experiences, but exactly what is learnt might not be possible to predict. Therefore,

Too specific learning objectives might make the direct nature experience lose its value. Photo: Lasse Edlev

Catching crabs. Water, seaweed and ocean floor offer a genuine nature experience. Photo: Lasse Edlev

nature experience and nature interpretation are not necessarily two sides of the same coin. The more specific the learning objectives set out by the teacher or nature interpreter, the more you run the risk of the direct nature experience losing its value.

Experience-based education values the child's whole register of individual abilities and interests. John Dewey (1974) set great store on independent activity, experimenting and problem solving, moreover in an enjoyable, realistic and meaningful way, where experiences generated life skills. It was the child who was to encounter and experience the world actively – not the teacher who was tasked with providing the pupils with a certain amount of knowledge.

It is possible to argue that today's education system adheres to a narrower ideal, considering the focus on topic, targets and tests. There is also a widespread view that scientific education requires the student as far as possible to ignore subjective and peripheral cir-

cumstances around the object of observation and learning. Scientific education therefore does not always welcome the fact that direct experience of nature is an invitation to subjective sensory impressions, physical sensations and feelings.

On the other hand, it is possible to argue that today's society needs people capable of independence, originality and critical thought, and that it is precisely experiences, a degree of freedom and courage that is required for professional and innovative enhancement (Willerslev, 2017).

A third area trying to incorporate people's inherent need for experiences is the tourism and recreational industry. Since the start of the new millennium there has been significant development of experience design, experience products and experience economy (Jantzen, 2011).

While nature experiences might thus be said to include everything from life enlightenment and education to outdoor recreation and tourism, the nature interpreter must try to find a personal direction.

The didactics of the nature experience

Within practical nature interpretation you might choose the classic experience activity, of moving out into nature together with the participants, aiming to catch spontaneous nature experiences.

Or, you can do the opposite, try to stage nature experiences. This can be done by determining objectives and consciously and strategically selecting location and framing. The participants might have an expectation of experiences and there might be specific preparations on the way there, to attract and retain their attention.

Finally, you might seek a middle way in the form of the so-called double move. Here you try to offer a space that gives the participants the freedom to have their own experiences but at the same time is saturated with learning opportunities. That is, the place should include eye-catching natural phenomena and the potential for deeper subject knowledge which can be accessed as and when it is noticed by the participants.

For a closer description and definition of the didactics of the nature experience you might look at the following stages: intro, sensory perception, feeling, surprise, experience and identity.

The children are catching crabs from a jetty by the sea. Initially they are scared, because of watching a frightening video clip on TV, with a giant crab crushing the shell of a smaller one and eating it alive. Photo: Lasse Edlev

Intro

The selected natural environment should ideally be genuine and possess an abundance of opportunities to engage senses, thoughts and understanding. The place needs to be presented in an exciting and evocative way which kindles curiosity. On the one hand the opportunities provided by the space should be accessible, suitable to the age group, identifiable and meaningful. At the same time, it needs to offer unique, surprising and special moments that generate wonderment. There is a balance between the expected and the unexpected.

In the example of the children catching crabs the frame is an activity that appeals to senses and feelings. Water, seaweed and ocean floor offer a genuine nature experience. It feels safe to sit on the jetty with an adult nearby, and at the same time be a bit scared at the thought of the crabs down below.

Sensory perception

When your whole body is alert and all your senses engaged, the nature experience becomes comprehensive and enriched. We might kick off with a sensory activity to provide the participants with equipment, tools or natural materials. The approach might well be playful, with

freedom to experiment. As a nature interpreter you have a choice between leading the way as a role model and be the first to leap into the activity. Later on, you might walk side by side with the participants, experiencing and exploring as equals. You might also choose to follow behind the participants and only intervene when they need help. By switching between these approaches in the right way you can help the participants forget themselves and enter into a state of flow.

In the example of the children catching crabs, sensory perception is encouraged by having fishing equipment in your hands and freedom to experiment. The sound of gently moving water provides an evocative soundscape and the children are absorbed by their hunt for crabs.

Feelings

It is typical of sensory experiences that they change the state of the body, which might manifest itself as a tense tummy or release into laughter. Experiences set off feelings and change feelings. Perhaps you feel moved, get pulled along or feel scared. The younger the children, the greater the need for the nature interpreter to offer affective reconciliation. This means that you must help the child balance excitement, exhilaration or tears. You do this by retaining your integrity but at the same time behaving with empathy, through voice, eye contact and body language (Stern 1991).

In the example of the children catching crabs their body language shows that they are hesitant about the crab. By calmly holding it up and taking time to talk about it in a cheerful way, the nature interpreter is able to balance the children's feelings.

Surprise

To create surprise, you need a disturbance. On the one hand the experience must be so startling that it does away with ingrained ideas. At the same time the sense of security must not be threatened.

Once the startling feelings begin to be under control there is more room to engage in investigation, experimentation, reflection and knowledge-seeking.

In the example of the children catching crabs they are able to study the crabs from close up. They catch big ones and small, soft and hard. They get answers to their eager questions and become bolder until they dare cautiously to touch a crab.

They catch big ones and small, soft and hard. They get answers to their eager questions and become bolder until they dare cautiously to touch a crab. Photo: Lasse Edlev

Experience

Direct contact with nature provides opportunities to gather experience that is physical as well as emotional, intellectual and creative. The experience is crystallized in the course of a learning process in which change leads to disturbance followed by transformation. New experiences may be reinforced by talking, asking questions, finding similarities, setting up hypotheses, seeking knowledge and creating contexts. It is often possible for the nature interpreter to achieve this

Once you have a wealth of experience and understanding of the natural world you can move in it with greater assurance and comprehend it in a more profound way.

simply through a productive dialogue. You might also choose to emphasize those aspects that are valuable from an educational perspective.

In the example of the children catching crabs they are absorbing experience of the look, behaviour and habitat of the animals. They are also learning something about their own reaction to fear, how dangerous the crabs are in reality and the opportunities provided by catching and investigating.

Identity

Once you have a wealth of experience and understanding of the natural world you can move in it with greater assurance and comprehend it in a more profound way. Experiences also contribute to the growth of self-awareness and a feeling for inner resources and values. Experiences harvested through direct encounters with nature seem relevant, useful and meaningful. There is often a desire to enter them in your own individual story and identity. Research has demonstrated that the experiences you actually had do not always match what you can later remember and recount (Løvoll, 2012). Some people therefore reject descriptions of experiences as reflections of the actual sensory perceptions, feelings and insights of the moment, and instead regard them as stories created afterwards (Lund, 2005).

In the example of the children catching crabs they later on have an opportunity to express their experiences by doing a drawing. Right at the top of his picture, Pelle finally draws a treasure chest on an island. Beneath the island is the home of the crab, showing that the crab has now found a place in the child's own universe.

Nature experiences are for life

With increasing age people change and develop their preferences when it comes to nature experiences. Younger children are usually captivated by things like small, live animals. They love places that invite them to play, build shelters and climb trees. They enjoy collecting things that are pretty or can be used for some purpose. And they

are fascinated by meeting and interacting with animals. Excitement, discovery and physical challenges in the natural world appeal to most children. It is only as teenagers that they begin to understand the landscape as a greater whole. Profound nature experiences can be milestones of personal philosophy and attitude to nature for both children and adults. Maslow (1964) defines the concept of peak experience, linking it to the highest level of self-realization. Peak experience in the natural world might be a profoundly moving situation of feeling entirely engulfed by nature in a state of pure being and happiness. Profound, existential insights might be created leading to a sense of humble respect. The moment of peak experience might be the closest you can get to your own inner self and the grandeur of the universe. Experiences of this kind occur above all when you are on your own in the natural world or are engaged in nature therapy (Edlev, 2019).

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THE NATURE INTERPRETER AND GOOD LEARNING PROCESSES

BENNY SÆTERMO

Human beings have the unique ability to understand contexts and construct knowledge on the basis of experiences and cognitive processes. Often you discover that you had the same thoughts as other people in similar situations, for example in response to the same external stimulus. It might be something you hear, a scent you notice or if you are facing a challenge. Our ability to react to something is to a certain extent based on natural instincts, but our ability to understand contexts, construct knowledge and resolve challenges is based on learning through experiences.

For the nature interpreter it is worth noting that the source of experiences has undergone vast changes in the modern era. Traditionally, knowledge was inherited through being handed down or through participation across the generations. Children learnt from parents and family and then extended this knowledge through their own experiences. Such experiences might reinforce what had been learnt from the older generation, but they might also lead to changes in the application of this knowledge. The latter is a natural consequence of changes in the situation where the knowledge is to be applied.

In this article I would like to describe in greater detail how the nature interpreter, through the learning processes applied, can make use of the human ability to construct knowledge.

Cognitive processes result in knowledge

Pedagogical research considers the concepts of assimilation and accommodation as central to an understanding of how we acquire knowledge. Assimilation refers to how we build on knowledge we already have in a field, while accommodation is about how we adjust this knowledge throughout life so that it is, at any one time, as appropriate as possible in terms of where the individual stands ("the Earth is flat until we learn differently").

The processes of accommodation and assimilation are among the most important ones for the nature interpreter's work. It is only very rarely that nature interpreters work with groups who have no pre-existing knowledge of the overall theme. If you ask people: "do you know a lot about the universe?" most will answer with a clear "no". But if instead you say: "tell me a little about the universe", virtually everybody will be able to tell you a lot. People who take part in an activity with a nature interpreter will virtually always have a certain amount of knowledge about the theme of the day. Even if this is very scrappy knowledge it will nevertheless supply an important starting point for the knowledge that the nature interpreter will build up (assimilation).

It is also very common for a participant in a teaching situation to have knowledge that is not just based on facts, but rather is a mixture of personal experience, facts, films, stories and things that are treated as facts (like rumours and people's common beliefs). We might use the brown bear as an example. "Everyone", almost irrespective of age, knows something about the bear. For me as a nature interpreter this general knowledge about the bear almost without exception appears as a mixture of facts, stories, common opinions about the bear, plus people's general views as they suit different local societies, depending on to what extent "bear" is of relevance to the local society.

Children's knowledge of the bear is often limited to what it looks like, that it hibernates and that it eats meat. Guided assimilation processes enable the nature interpreter to build on this knowledge by

To demonstrate that the bear does not just eat meat, the children get to compare the teeth in the skulls of a bear and a crocodile.
Photo: Benny Sætermo

adding new knowledge. This might for instance be through teaching that demonstrates to the children that the bear also likes to eat grass and berries and that the bear's teeth are "proof" of this. This knowledge is then confirmed through participation and activities leading the children to discover this connection for themselves (the connection between teeth and choice of food). The point that the bear does not only eat meat can be illustrated by an examination of the teeth of another animal that, unlike the bear, only eats meat, and a look at the big differences there are (here I make use of a crocodile skull). But when it is a question of species that are also the object of a certain degree of fear and superstition, like the bear, it is very important to work in a conscious way with the accommodation processes. These processes are meant to reveal minor misapprehensions and replace them with more correct knowledge (accommodation). In terms of the bear it might be a useful opening to consider why a bear stands on two legs. Because this is something that all children know that the bear does, and they also know why. –> A bear who is standing on two legs is about to attack.

This is the answer that children almost always give when asked why the bear stands on two legs. So far this child has got everything

right. The child knew what the bear looks like, that it hibernates and that it eats meat. But when asked why it was standing on two legs it transpired that the child had a misapprehension (the bear was about to attack). The nature interpreter discovered that there was a need to replace old knowledge by new insights through a process of accommodation. In this case we praise the child for knowing that a bear can stand on two legs and then we address what is the real reason for a bear sometimes standing on two legs. We will return to this accommodation process a little further on in this article.

For us nature interpreters it is really good if we manage to expose knowledge that no longer represents what is most correct in relation to a theme. Only if we can discover this do we have the possibility of consciously changing this person's knowledge.

Sometimes it can be difficult to figure out how the nature interpreter can discover gaps in knowledge or misunderstandnings or work out where there is a need for knowledge. Occasionally this challenge is also compounded by various social situations, for example the agenda of the media. The nature interpreter often develops a fair degree of awareness of the areas where participants are most frequently lacking in knowledge.

How to create cognitive processes

This is about kick-starting those thought processes that result in the individual having better knowledge of a theme or a subject. A child's knowledge that the bear eats meat, for instance, will not develop if nothing new happens that can set off those thought processes that are linked to this specific item of knowledge: the bear only eats meat. This knowledge will remain the static and persistent opinion about a bear's eating habits until some form of insight generates a movement in the cognitive processes that are linked to precisely this knowledge. Only then will the person change or modify their knowledge of what the bear eats. The task of the nature interpreter is first to discover the need for knowledge, and then to develop teaching strategies that activate the appropriate cognitive processes.

The same applies to fear of bears and the knowledge of why the bear is standing on two legs –> it is about to attack you. As in the case

of what the bear eats, it is entirely dependent on the nature interpreter's conscious accommodation processes if this misapprehension is to be replaced by genuine knowledge.

The study of how learning takes place took off in earnest early in the 20th century, with a number of researchers studying how humans construct their knowledge. Bruner, Vygotsky, Piaget and Dewey are among the best-known theoreticians and remain influential in present-day education. Common to their studies is that activities, participation, the senses and "ownership" are central to the initiation of good cognitive processes.

To return to the example of the feeding habits of the bear, activities where the children get to compare the different mouths: the bear's, the crocodile's and their own, can help them see the connection between teeth and favourite foods. The ability to identify such connections is typical of human beings, but the ability to remember the connections varies. In the example of the bear's food, the child's own body (the mouth) was also involved, which greatly helps the process. In this case the child's own body serves to reinforce the learning. Moreover, different learning objectives can often support each other. It is for instance obviously positive that the children discover that the bear eats a lot of things in addition to meat and if this is then combined with corrected knowledge of why the bear actually stands on two legs, the two points taken together will help reduce the child's fear of bears. The old knowledge: the bear only eats meat and it is about to attack when it is standing on its hind legs, is replaced by awareness that the bear is omnivorous, like us humans, and sometimes needs to get a better view and therefore rises up on his hind legs.

The lesson plan "CO2 Day" is another example, which focuses on creation of thought processes by letting the children use their own body and their own ability to understand connections. A large part of carbon dioxide emissions in the world comes from cars and there are many ways of reducing the emissions. A common feature of almost all such reduction measures is that children have absolutely no influence over them (increased car taxes, increased tree planting, international treaties etc.)

In situations like that, where it is easy for the individual to feel insignificant in the wider context and incapable of changing the environment, it is especially effective to demonstrate the opposite. By letting

the pupils record the tyre pressures of their own family's car they were able to establish how many of them had insufficient pressure. In theory, low tyre pressure equates to such and such an impact on carbon dioxide emissions. But this experiment only really got the cognitive processes going when the pupils transferred the tyre pressure of the family car to a wheelbarrow. One pupil was in the wheelbarrow and another pupil was pushing it around, once with too low tyre pressure and once with the right tyre pressure.

All the pupils got to try this out, and all the pupils understood the connection between consumption of energy and the environment. There is a noticeable difference between running with a heavy wheelbarrow with not enough air in the tyre compared with a wheelbarrow with the right tyre pressure.

Approaches like this have several advantages. Firstly, because it is easier and more effective for the children to construct new knowledge when they are themselves taking part and using their own body to discover connections. Secondly, because this approach proves to them how important each individual's action is, both for the environment and for their own parents' wallet. You have replaced the children's preconceived idea that their actions are irrelevant by letting them discover the opposite for themselves. After the end of the experiment the pupils were given as homework to make sure that their own family's car always has the right tyre pressure. With 500 pupils doing this, there was considerable impact on the environment as well as on the family money. The CO2 Day got an award for its combination of teaching methodology and environmental knowledge.

Other nature interpretation projects and motivation to learn

Old textbooks show us tables and diagrams of the workings of water-powered mills and sawmills. We can read about making snares to catch the eagle owl. There was a time when this was current, important and very relevant knowledge in relation to what was then the current concerns. To have themes that express current concerns is very important for us nature interpreters if we are to stimulate good thought processes that generate learning and knowledge.

Picture 1: One pupil was in the wheelbarrow and another pupil did the pushing. Once round with too low tyre pressure and once with the correct tyre pressure. It was obvious how much easier it was with a well inflated tyre. Photo: Benny Sætermo

Picture 2: After the end of the experiment the pupils were given as homework to make sure that their own family's car always has the right tyre pressure. Photo: Benny Sætermo

A simple explanation is that this has to do with motivation to learn. Unless someone has a genuine interest in water-powered sawmills and therefore strong motivation to learn, this is a difficult theme to use in a current teaching situation. Water-powered sawmills are old-fashioned, not used by anybody anymore, and few people have seen one.

However, this does not mean that the topic of water-powered sawmills is out of date. The topic – water-powered sawmills – could very well be used in nature interpretation, but then in connection with an approach where the theme might be something like people and nature or the cultural history of a natural area, where the teaching objective is to create an understanding among the children of how important the natural resources have been for people living in this area, and knowledge about how they were able to make use of them with the assistance of the "simple" means available in those days. Here the sawmill might act as the main framework that reinforces what is learnt, since the pupils are positioned in an environment that is historically connected to the theme. If the nature interpreter fails to draw this out the participants will soon become demotivated towards the nature interpretation, thinking I don't need to learn this – this has nothing to do with me. Thinking about this was also of central importance in the lesson plan for carbon dioxide, which made it obvious how the actions had a direct impact on the environment and on the family's own economy.

The education authorities and the current national curriculum also emphasize the importance of developing activities that have immediate relevance. You become attractive to the schools by offering good lesson plans and approaches, which the schools themselves might not have the resources or expertise to implement with as much success. Here the framework of nature interpretation has a part to play due to the fact that the nature interpreter often has access to exhibitions or other nearby facilities that add value to the activity in a way that is not at all possible in the traditional classroom. Having this in focus when developing a lesson plan is sensible also in terms of being able to reach out to schools and persuade schools to want to spend time on this. Considering that nature interpretation is a relatively new and unknown concept for people and authorities it is of course very important to have an approach that is up to date. If we can develop lesson plans that address immediately relevant themes and then implement them in a way that gets the children's cognitive processing going, this will be seen as positive and important for our society. In this way the nature interpreter is established in society as the bearer and communicator of important and relevant knowledge, and someone society cannot afford to do without.

STORYTELLING AS A NATURE INTERPRETATION METHOD

TOMAS CARLSSON

Storytelling, narrating or oral tradition cover a wide range of meanings. Nature interpretation can be seen as narrating. But storytelling is a specific method to be distinguished from for instance lecturing, which might sometimes also be part of interpretation. Storytelling is an age-old art form, perhaps humanity's most ancient way of communicating messages and traditions. It is a method that works well in nature interpretation.

Storytelling is a form of expression and an art form that develops in collaboration with the listeners. The spoken story creates pictures in the listener's mind. The method uses concrete, detailed language. The "pictures" bring out the story. The listener can quickly absorb contexts, feelings and events.

Listening to an interesting lecture I became aware that the lecturer would sometimes touch on personal familiarity with the subject

and tell about this as a series of subjective experiences. The descriptions became concrete and rich in sensory impressions, which created pictures inside my head. As soon as the lecturer switched language, from objective analysis to subjective description of feelings, it was as if a wave moved through the audience. People sat up straight, with excitement in their eyes. Within nature guiding this will not be as obvious, since the group is moving through a living environment. But it is still true that a story creates inner pictures that stimulate imagination and memory. When it is at its best, storytelling also promotes a sense of togetherness, with laughter, comments and questions. Those guide talks or lecture fragments I have listened to myself, and still remember, have been predominantly in the form of stories.

Storytelling is an age-old art form, perhaps humanity's most ancient way of communicating messages and traditions. Photo: Mette Aaskov Knudsen

Sometimes I have had the comment: "That was the best nature guiding I have ever been at!" In those cases, a large part of the excursion has contained stories. For many years my guidings mostly consisted of lecturing – even if sometimes a funny episode or real-life story happened to get included, mainly because this gave pleasure to myself. Eventually I realized that something happened to the audience in those moments. It was as if a light was turned on in their eyes.

Sometimes I do urban guided walks about sparrows, domestic pigeons and other common birds. What particularly seems to stimulate the listeners is the meeting of nature, people and imagination. There is for instance a mass of popular belief and stories about the common sparrow that fascinates the participants.. Stories about domestic pigeons can have even stronger impact. There are hardly any birds that have been so denigrated as these. To make it possible for the participants to understand how interesting domestic pigeons actually are, I tell the story of "The Lost Battalion" from the first World War.

> The squad of 200 soldiers had just sneaked in behind enemy lines, when their own artillery – unaware of their presence – began bombarding the area. The battalion could not escape in any direction since the enemy was also shooting at them. Many were killed while there were desperate attempts to contact headquarters by sending carrier pigeons. But every single pigeon was shot down by enemy snipers. Finally, there was only one left, Cher Ami. A message saying "For God's sake stop shooting. You are shooting at your own people", was attached round its leg, before sending her up in the sky. The pigeon was attacked by a shower of bullets, leg and wing injured, but continued bravely back to general HQ. Soon the rain of grenades ceased and the 100 or so survivors could escape. For this Cher Ami was awarded a medal, and she can still be seen in the National Museum in Washington.

I use this story as an example of carrier pigeons' amazing navigation skills and determination to fly home. It is also an example of these birds' survival ability, not least during contact with people. They deserve both admiration and respect.

Stories like that about "Cher Ami", that are taken from real life, work well. There is a lot of cultural history surrounding pigeons and other birds and animals.

I use old tales to help participants distinguish between the different sounds the pigeons make. Many explanatory tales, sometimes linked to Bible stories, provide imaginary explanations of why birds sound or look in a particular way. These stories always generate amusement among the participants.

There is one such tale that I use to talk about the birds' breeding season:

> Once when the raven had proudly finished her nest of sticks and branches, she caught sight of an ant, dragging along a big pine needle: Hah, that's not much you are carrying! she cried with contempt. The ant hissed: – I am carrying ten times my own weight! The raven was a little surprised and followed her to the anthill. There she was overwhelmed by jealousy at such a fine dwelling and tore it to pieces. Then the ant cursed the bird: – Your eggs and your chicks will never again be left in peace! The raven took fright and flew off. Every time she built a nest up in the tree the ants came along and destroyed her brood. It made no difference however high she put her nest. This is why the raven ever since lays her eggs just when winter turns to spring, before the ants have woken up.

Another type of stories is often called "life stories". These are stories about events in your own life which are often easy to tell, but they might have to be fine-tuned for dramatic effect and narrative technique. It is important to rehearse your stories, whether legends, fairy-tales or life stories.

When I talk about bird migration many people are surprised to hear that many birds migrate during the night. I then illustrate it with something that happened to me during a so-called lighthouse night:

> I was standing beneath the lighthouse on Utklippan. It was a misty October night and increasing numbers of small birds were gathering around the rotating lighthouse beam. Towards dawn there were thousands and thousands of thrushes, warblers, robins and other species circling the light-

house. In the darkness I could hear a cacophony of calls, there were clicks and whistles in all directions. When the lighthouse beam swept past it looked like a cascade of glittering stars.

It even happened in the old days that weather observers reported "visibility good – starry skies" during nights like this. In the green and red light of the lighthouse lantern hundreds of kingfishers looked like colourful hummingbirds as they fluttered in front of the glass. With the first faint light of dawn about 30 screech-owls appeared on silent wings, like a deadly troop, catching and gorging themselves on a seemingly endless feast of birds.

After telling this little story I then go on to talk about where these birds might have come from, about bird migration, navigation, weather and migration routes.

Storytelling is an excellent method for nature interpreters, generating a sense of fun, a good atmosphere and feelings of belonging. And it helps the participants create links to their own experiences and to remember the guided tour.

NATURE INTERPRETATION AND CULTURAL HERITAGE

OLE SØRENSEN

Kulturhistorisk Netværk (Cultural History Network) is a network for Danish nature interpreters who make use of cultural heritage in their nature interpretation. As coordinator of the Cultural History Network I am responsible for planning, organization and arrangements for further training of the members of the network. Here I will share how I integrate natural and cultural heritage in my own nature interpretation.

Natural and cultural heritage are closely linked in interpretation. For some tours or events natural history forms the primary subject; for others it is cultural history that is the point of departure. One example of cultural heritage being of primary importance is events such as Open Excavation. Here it is the archaeological excavation that serves as the frame for the event, and I and my archaeologist colleagues demonstrate exciting finds and share information about the history of the specific location where we are. While it is archaeological finds and history that are communicated, they are at the same time placed in their natural context. One example of this is an excavation from the Stone Age hunter era, where the nature interpreter grills oysters on an open fire for the participants to eat, or an Iron Age excavation where we have a taste of Iron Age porridge. It is important to involve all the senses during the event – seeing, touching, tasting and smelling.

The white-tailed eagle is the main attraction – but the story of the cultural landscape where you find the eagles might turn out to be just as fascinating for the participants.
Photo: Shutterstock

Our Danish natural landscape is a landscape shaped by culture. Ole Sørensen guiding.
Photo: Ole Sørensen

The cultural landscape

As a nature interpreter employed by the Moesgaard Cultural History Museum's annex in Odder, I communicate both natural and cultural heritage. My personal opinion is that the connection between nature and culture provides an amazing wealth of interpretive activities, whether during public or specially arranged events. It feels like having access to all the colours of the palette!

My tours and events for children as well as adults take place in the cultural environment where the history, the events and developments took place. You can position the place in its historical framework, so that it – in addition to being a place with lots of exciting nature – also becomes a place with a history. Our Danish natural landscape is a landscape shaped by culture.

My personal opinion is that the connection between nature and culture provides an amazing wealth of interpretive activities, whether during public or specially arranged events. It feels like having access to all the colours of the palette!

In the kingdom of the white-tailed eagle – nature and cultural heritage on Alrø

One of my favourite events is "In the kingdom of the white-tailed eagle – nature and cultural heritage on Alrø."

On the island next to Alrø, Vorsø, there is a breeding pair of white-tailed eagles, who have been there and been very successful since 2012. During the winter the eagles look for food in the gigantic larder of sea birds spending the nights on the south side of Alrø. Here it is possible to study the eagles through telescope or binoculars – particularly exciting when they are hunting.

Every year I arrange three or four white-tailed eagle tours at Alrø. One of these tours turned out to be something very special. For one thing there was a very large number of participants, 125, and then we also got to see the pair of white-tailed eagles giving a real exhibition of the techniques and strategy of the hunt. The display lasted for over an hour, with a short break, while the smaller male "caught his breath" leaning his head on the somewhat larger female. Really idyllic. Unfortunately, the eagles did not have any success with their hunting on that day, but the participants were enchanted.

Cultural heritage

Cultural heritage then? Well, even if the white-tailed eagles are the star attraction, I use the time while we wait for the eagles to show up, or the walk around the eastern end of Alrø, for stories about this amazingly exciting island. Cultural interpretation links historical and present time and provides an understanding of why the place looks like it does today. This is the story about Jost Rosenmeier, the founding father of Alrø, about the ferry link, about the storage buildings, about the mill, about the ford, about the "fight" over the stranded whale and much more. And of course, we are also at the same time listening to the bird chorus: the beautiful flute sounds of the widgeon, the melancholy voice of the curlew and the haunting melody of the golden plover!

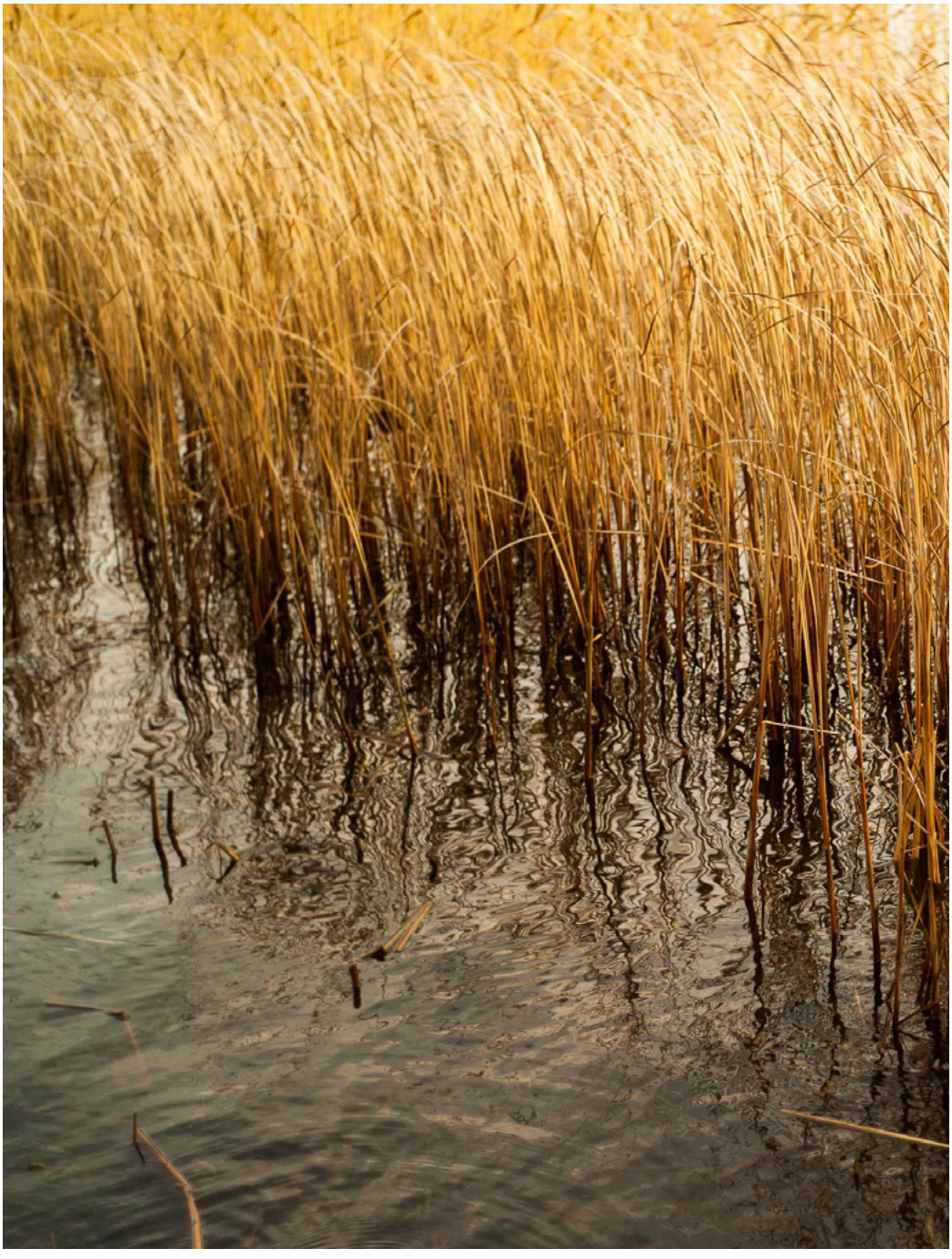
GET TO KNOW LIFE IN THE WATER!

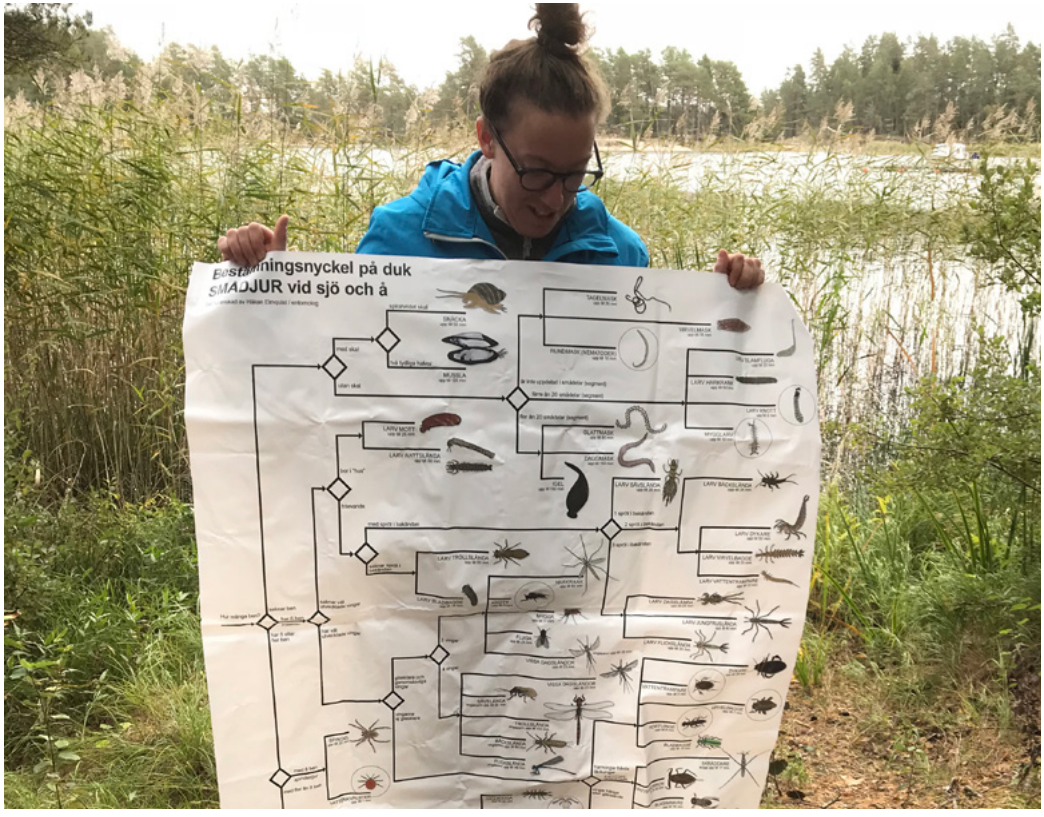
KJERSTI HANSSEN

Many schools and pre-schools are close to a little stream, or a small river, and a place like that is a good starting point for learning about life in the water. Catching creatures on the riverbed and observing them is something that all ages find fascinating and it is an excellent pupil exercise with opportunities for further development and exploration at everyone's own speed.

White boxes or empty ice-cream containers and robust landing nets work well. A cloth with identification keys is a good tool for the pupils to find their own way to decide what they have caught. At this point I usually first give them some advice about where best to look for animals, both with and without a net, and divide them into groups. If I observe the groups a little at the start, it becomes easier to see which groups will need some help with the collecting. Wearing good wellies is important, but often one or two of them get wet feet. That's where the spare pair of socks in the bag comes in handy. It is never easy to learn if you are wet and cold!

Lots of life is hiding under the surface in our everyday environments, like at the water's edge. Photo: Unsplash





If in addition there is fish in the little stream it becomes easy to arouse enthusiasm and fascination, especially in those pupils who are full of energy, but with a bit of planning everyone can be drawn in. Electrofishing equipment makes it relatively easy to get hold of live fish, but you can also set traps. Just make sure you check the legal position first! Live fish bring out different feelings from dead fish and it has been my experience that many children spontaneously give the fish names and care about them. By letting the pupils move the fish from containers to plastic bags you can give them individual challenges, each at their own level. Someone steps outside their comfort zone by carefully catching and transferring a fish by hand; others grow

A cloth, water and outdoors resistant, and with a species identification key, can be useful for identifying animals from a water course. Photo: Eva Sandberg

by holding the bag while a more experienced pupil transfers the fish. There is space for everyone to experience a sense of achievement!

Something else I like doing with the school children is a game of smells. I begin by quickly going over the life cycle of the wild salmon, from roe to fertile salmon, and visualizing with the help of peas how many die on the way. In this way I hope to bring out how well adapted the survivors are. After that the pupils are given a piece of paper with the name of the river they belong to. I usually make up names, such as Strawberry River and Banana River. After briefly congratulating the pupils on having managed to hide from the big trout, swim away from the heron and avoid the keen eyes of the common seal, I welcome them to the Norwegian coast and to their home river with the exhortation: "Smell your way there, wild salmon, ready to spawn!" Once they have reached their river (actually the closed cup that gives off "their" smell) we work out how many salmon have returned to the different rivers. By making the population sizes different and looking at the gender distribution we find out that we have to manage the rivers in different ways so as to conserve the different salmon populations. I usually finish the game by "polluting" one of the rivers with vinegar and asking "How easy is it to smell your way to the Strawberry River now?" before sending the polluted cup around the classroom. A sensory experience like this is a wake-up call for body language and makes it possible to understand how animals use nature and their senses in an entirely different way from us humans. This also makes it easier to discuss how our garbage and pollution can affect life in the natural world.

On days like these, we do not explore the large protected areas that are well known and have many visitors, instead the more insignificant little streams and ditches. The children seem amazed at how much life everyday hidden nature can conceal. By being allowed to explore their surroundings for themselves with real tools they have an opportunity to get to know nature close at hand and to associate water with good experiences. It is of course important to find a stream or a river that is safe for the pupils and where there is a possibility of finding life.

So, my message must be, please take your pupils out there and let them get to know life in the water; this will generate play, wonderment and learning!

VLOGGING – AN INNOVATIVE TOOL FOR COMMUNICATION AND MANAGEMENT

LENA FAGERWING

The Vega Archipelago achieved World Heritage status in 2004. In its statement UNESCO's World Heritage Committee writes: " The Vega archipelago reflects the way generations of fishermen/farmers have, over the past 1,500 years, maintained a sustainable living in an inhospitable seascape near the Arctic Circle, based on the now unique practice of eider down harvesting, and it also celebrates the contribution made by women to the eider down process." A sustainable lifestyle is the basis for the status of World Heritage. Vega has also been designated a sustainable destination, which adds to the need to regulate the traffic of future visitors. Innovative products, school activities and sustainability experiences are therefore being developed.

Nature interpretation here addresses two target groups: tourism and educational visitors. The Vega Archipelago World Heritage Foundation uses tools that make the area accessible to a broad target group, without at the same time damaging its characteristics.

This creates challenges. Because of breeding seasons and weather conditions the Vega Archipelago World Heritage Site is not always

The Vega Archipelago World Heritage Site, known for the tradition of building living spaces for eiders and of harvesting eider down after the breeding season. Photo: Ina Andreassen

accessible to groups. The question then arises: does the visitor have to be on site physically for nature interpretation to work?

The communication strategy for the Vega World Heritage Centre stresses that it should be an active and interactive arena for learning. An exploration of trends among young people indicated that YouTube might be a principal channel. As a result, the "vlog" (video blog) was selected to serve as an experience space that could attract the interest of young people. It should be possible to experience the World Heritage Site "live", irrespective of the season and of physical ability.

The vlog “Straight from the island” created a virtual experience space where those who were interested could follow everyday life on the island through short videos.
Photo: Henriette Næss Ebbesen

The vlog in practice

On the island of Store Emårsøy there is a renovated farm, where 22-year-old Henriette Næss Ebbesen and her family have worked hard to re-create local cultural characteristics. They want to communicate the values of the World Heritage Site, taking the authentic farmstead environment as their starting point.

The farm has neither electricity nor piped water and life has to be lived quite differently from what today’s young people are used to. For a while Henriette was living on her own on Emårsøy. The island is small and there is only one farm. Her only companions were two little lambs and two cows.

She showed us her activities on the island – from building huts and nests for eiders to mowing the wildflower meadows, looking for edibles at the water's edge, recycling, studying plant life, looking after the farm environment, learning about the culture of the coast and about cooking local food etc. She brought along a video recorder. The vlog "Straight from the island" functioned as an experience space, where her daily life was presented in the form of video clips. These were uploaded on social media and on the YouTube channel vegalive.no. This channel can work as a future technological experience station. Contents can be continually updated, and the product becomes dynamic.

The intention was to use the farm activities to inform about management and protection in a nuanced way. In addition, the vlog works as an innovative tool for nature management. With the aid of video clips, the world of the islands and the eider down tradition could be experienced also during the sensitive period when the eider moves up to be on land.

World Heritage in a box

The product "heritage in a box" takes the vlog a step further. The box contains a pair of VR (virtual reality) goggles and a leaflet introducing a subject theme. The leaflet serves as a guide and includes four QR-codes. These codes take the "visitor" to 360 clips that can be experienced through the VR goggles. The box strengthens existing management tools by, like the vlog, making it possible to experience the Vega Archipelago World Heritage Site from a distance. In addition, you can bring the experience home with you. "Heritage in a box" can market the area to new and returning visitors.

Vlogging is a success

The vlog as a tool has proved successful, for both older and younger people. Using YouTube as a channel for communication about the natural and cultural heritage is a "simple" way of reaching many people. It is a dynamic tool and contributes to sustainable development. A

Collecting mussels on a sunny day in the Vega Archipelago. Photo: Ina Andreassen

YouTube channel is a relatively modest investment, considering how many people can be reached via Internet. The concept of "nature interpretation" includes many more opportunities than just that of a group meeting a nature interpreter for a brief period of time.

Some locations require more nuance and more communication tools to reach out effectively. The Vega Archipelago World Heritage Foundation is very much committed to measures that can attract people to live on the islands. Tools that can contribute to a desire in coming generations to take on responsibility for a living cultural landscape. The vlog has turned out to be a good start!

CULTURAL HERITAGE INTERPRETATION WITH RUNIC LETTERS

THOMAS LARSEN SCHMIDT

In the Åmosen Nature Park there are many exciting archaeological finds, including some from the Viking period. It can be difficult to communicate the Viking period in a way that activates all the senses. Difficult to understand, grasp, feel and get enthusiastic about. We want to make sure that senses, body and mind are engaged, and therefore we have developed an activity where we create a connection with the Viking age through runes. We call the activity "rune burning" and we have commissioned a set of branding irons with the letters of the runic alphabet.

From a practical point of view a nature interpretation activity for a group of school students can take many different forms, depending on the focus requested by the specific group in relation to learning objectives etc. When the group has arrived, they can help with preparations for lighting the fire and with collecting the rune irons. These are things the children can easily help with and at the same time they

provide good opportunities for talking about behaviour and rules to do with the fire.

The idea is for each child to burn their own rune into a piece of wood. If there is time the children might cut out their pieces of wood for themselves and drill a hole in the piece for a string. The hole is so that the pieces can be used as medals or amulets to hang around your neck. The activity therefore provides each child with an object to bring back home, to serve as a memento or for further activities in the classroom.

In connection with this activity there is ample opportunity to talk about the many different subjects that rune burning might suggest, such as safety, understanding language, wood, the Danish language and spelling.

Reflection

Rune burning is a bit like the egg of Columbus. It can actualize a number of different things and therefore it is capable of flexible adaptation to different curricula and requests.

Fire activities

Both children and adults feel their senses stirring when they gather around the fire. Throughout the history of the human race, fire has been a necessary condition for life, always speaking to the senses, touch, sight, hearing and smell. The fire helps the nature interpreter attract the interest and attention of both children and adults.

Safety

Activities around a campfire always provide a natural occasion for talking about safety and respect for fire. In connection with rune burning, where you are waving red-hot iron bars about, safety needs to have top priority and the nature interpreter should raise issues such as taking care of the group and communication with the emergency services.

Understanding language

Runic script is a prehistoric version of our modern language and we got the idea of the runic alphabet through contacts with the Roman Empire during the first four hundred years AD.

"Rune irons" are heated in the fire and used by the students to burn runes into pieces of wood. Their own piece becomes an excellent keepsake to bring back home from the visit to the nature school. Photo: Thomas Larsen Schmidt

At that time the Roman Empire was an incredibly strong power in Europe and a source of much influence. One part of the activity is to talk about what language is and what it comes from, both spoken and written language. For instance, that the Danish word for letter "bogstav" comes from the words "bøg" (beech) and "stav" (stick), so a letter, for instance the letter A, in Danish is a beech stick, perhaps with a rune burnt into it!

Reflection on spelling

Runic script is notable for not being based on spelling and therefore being significantly different from modern languages. This means that

the children are allowed to make their own decisions about spelling, and they have the opportunity to reflect on the fact that correct spelling is a modern invention and that things were different in the old days.

Experiencing wood

Participants in the activity will be dealing with wood and they will always experience with their own hands what wood feels like. Handling wood is a robust activity with opportunities for seeing, touching, smelling and hearing.

Nature and technology

Red-hot irons are exciting to look at when teaching Nature and Technology, but the fire itself, the wood, and what happens when you burn it with red-hot iron is interesting in this context.

Wood and its structure

The morphology of wood is also part of the whole. The strikingly different look of the runes, with their absence of horizontal lines, is because most runes were scored or cut into wood. Fresh wood might close up again if you score or cut with the grain. So, in order to be sure of not losing parts of the runes in the fresh wood you only used runes consisting of vertical lines and cross lines. This detail about the runes is a terrific starting point for talking about wood and its structure, its ability to soak up water and much more.

Recommendations

If you want to work with rune burning you need to get hold of a set of branding irons, designed as runes. Many blacksmiths have the skill to make such irons to order, but if you would like a set like the one in the picture you can contact the Åmosen Nature Park, www.naturparkaamosen.dk, to find out where they can be ordered.

If it seems too difficult to use rune irons you might use marker pens, but then the need to use the fire and the learning opportunities are different.

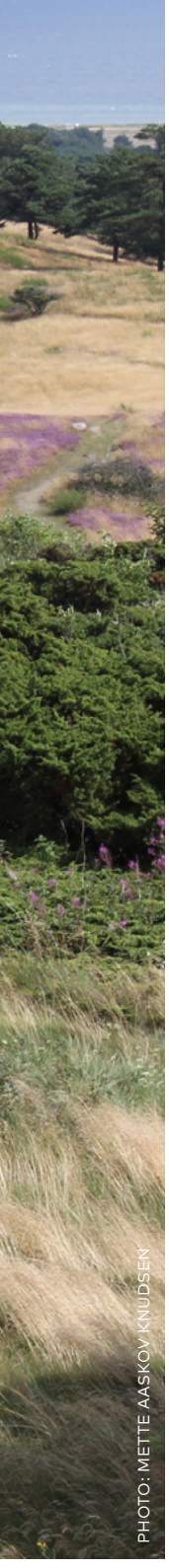


PHOTO: METTE AASKOV KNUDSEN

3 NATURE INTERPRETERSHIP

METTE AASKOV KNUDSEN

In many countries, the Nordic countries included, there has been a kind of shift in how nature interpreters regard their role. Fundamental to this is a change away from an idea of nature interpretation as a science based, one-way communication about concrete natural phenomena, specific to the location, with clear messages from sender to receiver. Instead there is increased focus on a type of communication that is dialogue-based, facilitating and experimental. Communication working towards engaging the participants' senses, feelings and understanding. This chapter, and the articles in it, describes why it is important to focus on the participants – in both planning and implementation.

Nature interpretation is not just about standing in front of your visitors, distributing your knowledge of nature and the landscape. Nature interpretation also involves all the processes and all the work of planning, implementing and developing interpretation. The nature interpreter must be able to understand and make use of theories about interpersonal communication and pedagogy. This requires multiple skills, including the ability to plan your interpretation and to make use of different roles in the communication situation, as well as to have the courage to take a step back to give space for the participants' own experiences, knowledge and reflections. These roles are described in greater detail in Chapter 2. Nature interpreters should also be capable of self-examination through reflection on their own practice and be prepared to change, adapt and develop themselves as nature interpreters.

The ability and the total sum of skills that are needed if you are to assume different roles before, during and after an interpretation activity – this is what we have chosen to call nature interpretership.

The ability and the total sum of skills that are needed if you are to assume different roles before, during and after a nature interpretation activity – this is what we have chosen to call nature interpretership and this is at the core of this chapter. We dive into and delve deeper into several of these roles, either through articles that discuss the significance of the roles from a theoretical perspective, or through examples from nature interpreters in all the Nordic countries who describe in their own words how they make use of different roles in their nature interpretership.

This book primarily focuses on the type of communication that we might call direct nature interpretation (face to face). But many visitors to the natural world also come across it unattended or self-guiding in the form of information panels, leaflets, apps and websites. Many of the principles brought forward in this chapter apply to both forms of communication.

Nature interpretation addresses a large number of target groups, from pre-school children, groups of school and college students, to families and visitors of all ages who take part during their leisure hours. Nature interpretation usually takes place outdoors and in a combination of talk, dialogue and activities. It takes its starting point in the natural conditions as they are and in natural phenomena that speak to all the senses.

The mantra for many nature interpreters is: Show, don't tell or in another version: Don't tell it – make people think for themselves. The task of the nature interpreter is to draw attention to and share knowledge of nature and natural phenomena, cultural heritage and the environment, and to help the participants be active and observant in the natural world. The participants should experience being involved through all their senses and emotions, and feel that their own opinions are taken seriously and included, so that they can later make their own active choices and act against a background of experiences and knowledge. At the same time, they have also become aware of, and reached an understanding of, other people's interests and actions. This can take place against a background of sensory experiences, alone or together, in dialogue, and with feelings in full play.

Practical nature interpretation

To be able to plan a good communication situation the skilled nature interpreter must be able to read, adapt to and challenge their visitors.

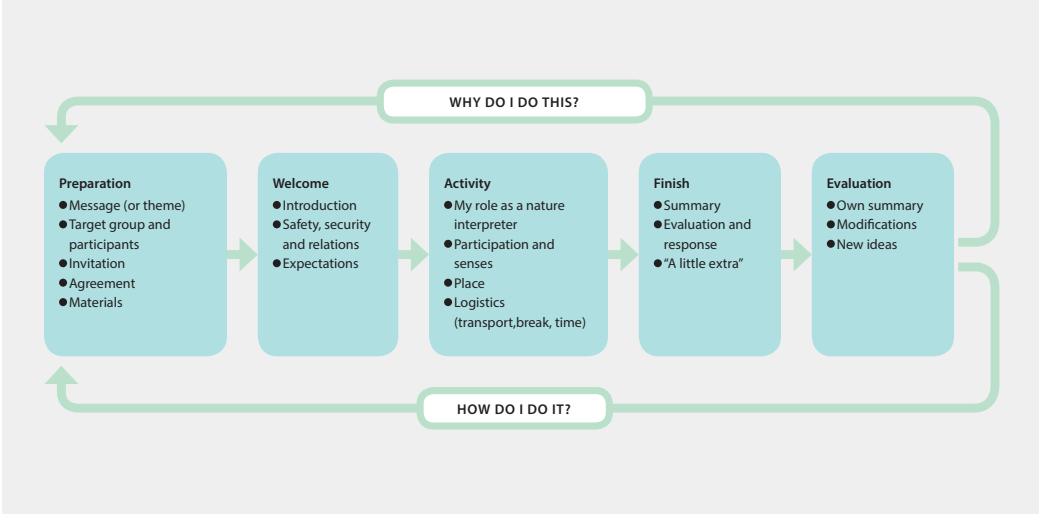


Figure 11
Planning model for a nature interpretation activity.

The nature interpreter can help develop a sense of trust in the natural world, both in the individual participant and in the group as a whole, and this will make it easier when they encounter things that appear unfamiliar and different. Photo: Mette Aaskov Knudsen

Here we present a planning model for a nature interpretation activity, which ensures that you include the components that have to be in place ahead of an event and that you do this in a well-thought-out and structured manner. This is a planning model that takes the target group as its starting point and includes the wishes and needs of the intended participants.

Figure 11, above, shows an overview of this model, which you can use as an aid in your own planning.

Preparation

When planning interpretation, it is crucial to have good knowledge about the target group. What expectations, understanding and perspectives do the participants bring and what is their relationship with each other? There are many ways of carrying out a target group ana-

lysis and it can be a time-consuming project, but at bottom it is about being curious and trying to discover the participants' background, motives and perspectives. See also the section on audience, visitors or participants on page 74.

An important part of the preparations is of course also to visit the location and to make sure that all contracts and agreements are in place. It might be a question of access to the location, how many participants are allowed, how marketing is to be carried out, and any safety aspects that need to be considered.

Welcome

At the start of an event it is important that the nature interpreter establishes the framework and clarifies what will be happening during the next few hours, thus creating good relations between nature interpreter and participants. There are many ways of doing this. The approach might be surprising, humorous, reassuring, engaging or something entirely different. Irrespective of the chosen method, the beginning is very important for the atmosphere and for the level of concentration that will characterize the entire experience. Read for example about how Johnny surprises a group of children by being dressed as a troll at the start of a tour that is about nature and mythology (see page 181).

It is also at the start of the activity that the nature interpreter needs to create a sense of security within the group and within each participant. The nature interpreter can help develop a sense of trust in the natural world, both in the individual participant and in the group as a whole, and this will make it easier when they encounter things that appear unfamiliar and different.

It is important to consider how the nature interpreter can develop and make use of relation-building activities to foster the sense of security. This might be activities targeting the individual, the whole group or relations within the group. Through various minor activities the participants can become involved right from the start. It might be a "quiet" walk away from the meeting place and into the forest. Or it might be that the participants are arranging themselves along a line (preferably horseshoe shaped so they can see each other) that reflects their opinion on a certain topic or a dilemma that is central to the overall theme of the activity. After this they are given an

opportunity to talk with each other in pairs about their position on the line. This focuses attention, helps create a point of concentration and can be used to check the respective expectations of the nature interpreter and the participants.

The content of the activity

The main content of the activity might have different formats. Perhaps a guided nature walk along a planned route. It might also be an event designed as an open workshop with different activities all linked to an overall theme. Irrespective of format it is important to plan the individual activities carefully and to remember that the message needs to be clear and related to the theme of the event. Sam Ham (2013) recommends that you don't include more than four different angles to the overall theme of an event (such as a guided tour). That is, communication of the content must not be drowned out by information and activities, but be kept clear and simple.

When you are planning for activities it is essential to remember how and when to set aside time and opportunities for dialogue and reflection. There will be more about this further down and in the article about "Deeper meaning and insight through reflection" (on page 167).

Finishing off, and "a little extra"

When the event is moving towards the end it is important to provide space for a good finish. Perhaps there are questions to answer. Perhaps the nature interpreter has an ace up their sleeve, or perhaps you want to finish with "a little extra something" – the positive surprise or the unexpected that makes the participants leave with a smile on their face, an Aha! experience and a nice feeling.

Evaluation and development

It is also important to bear in mind the need to evaluate the activities. This might usefully be done together with the participants as a shared finishing-off. Tine Nord Raahauge describes some simple methods for getting a response from participants in the course of the tour (see page 196).

This makes the evaluation process inclusive and gives the nature interpreter an opportunity to share some of the participants' deeper reactions. Thoughts taking shape in the mind of the nature interpreter

against the background of such an evaluation might be well worth preserving by writing them down, for instance in an activity log or by discussing them with colleagues afterwards. Remember to set aside time for this. You should also read about the thought-listing technique in Chapter 4 (page 215).

Interpreting through different roles

One of the main strengths of nature interpretation is the ability to work with the participant's immediate experience. Both in the encounter with what happens in the natural world and in the encounter with the nature interpreter. Activities might be addressing the individual participant or the gathering (the group).

Nature interpretation can be staged in different ways, for instance through activities, dialogue, storytelling, games and role-play generating different experiences. It is the individual participant's own impressions that constitute the experience. Through reflection and communication, the participant can find words for these impressions; concepts and feelings can be clarified – experiences become experience.

Nature interpretation is reinforced by being carried out in a variety of ways, such as:

- → dialogue with and between the participants
- → sensory experiences followed by dialogue
- → discussion of scenarios, dilemmas, values and meanings with concrete application to the landscape
- → conversation about the opportunities the specific place and the area offer those who live there

Nature interpretation that, in a determined way, grounds itself in the participants' own feelings, stories and individual experiences activates three different types of memory – episodic, implicit and semantic. Episodic memory is linked to the experience, implicit memory to the action and semantic memory is supported by individual thought and analysis and by dialogue.

By including both physical and sensory experience and at the same time making space for thought and dialogue you create the best

possible conditions for an experience that lingers on in the individual participant's memory.

Communication therefore means social interaction between the nature interpreter and the participants, and this interaction creates the possibility of understanding and the creation of meaning. In the light of this the choices the nature interpreter makes, in terms of methods, staging, guiding and way of facilitating communication, assume decisive importance for the participant's whole experience.

Communication therefore means social interaction between the nature interpreter and the participants, and this interaction creates the possibility of understanding and creation of meaning.

The nature interpreter must have the ability to assume a clear leadership role, which means one moment being the communicator of factual knowledge and the next functioning as instructor and generator of activities, games and reflection. The nature interpreter must feel comfortable in the role of leader for a large group and be able confidently to provide the participants with knowledge and information about the place or about the theme that the interpretation addresses.

At the same time the nature interpreter needs to be able to assume the role of interested fellow explorer, side by side with the participants while they investigate the place and together find new meanings and perspectives in a shared creative process.

Nature interpreters also need to be able to step aside completely in their encounter with the participants. Allow their own and/or their organization's knowledge and values to remain in the background, act as facilitator and in this role make it possible for the participants' own experiences and values to take centre stage. Here the nature interpreter primarily acts as discussion moderator, ensuring that all voices get heard and supporting participants who need time to shape their own opinions and perspectives. This creates space for more points of view and experiences and facilitates discussion and reflection on the basis of equality.

Therefore, the nature interpreter has to master different roles, both in planning and implementation and afterwards, during the evaluation of the event. To be able to do this the nature interpreter needs to understand the communication situation and the processes in play, when communication is taking place.

The nature interpreter must have the ability one minute to be the authority in front of a large group, communicating factual knowledge, and the next to be the generator of games and activities, and sometimes to step aside to allow the participants' knowledge and reflections take centre stage.
Photo: Mette Aaskov Knudsen

Lars Hallgren describes this in his article about "Nature interpretation as social interaction" (page 153). Here he illustrates both pitfalls and insights that are important to take into account when planning and implementing interpretation activities. In Chapter 4 (page 222) he also describes how to plan interpretation with reference to the participants' situations and prior understanding. Reconciliation of expectation is of decisive importance and the reasons for taking part can vary. This is something the nature interpreter must understand and manage.

Poul Hjulmann Seidler's article Deeper meaning and insight through reflection (page 167) is about how the nature interpreter can facilitate the participants' own reflections on their experiences, and in this way influence their values, feelings and opinions. Taking on the leadership role during nature interpretation therefore includes planning both the framework, the conditions and the contents of the interpretation in such a way that the participants feel that they are welcomed, feel secure in the situation, have their understanding challenged and can return home with new knowledge and new possibilities for action.

Reflecting on your own practice

An important skill for nature interpreters as well as for many other professions is the ability to reflect on your own practice.

Reflection is a particular form of thinking, in which we investigate and evaluate our professional activities as nature interpreters. The aim is to create opportunities for insights that might make the individual develop their work through changes to goals and methods, or to hold on to those elements that work well. Reflection might be about content, an investigation about a problem, or a challenge. Here we must reflect on why we understand, think, feel and act in the way we do. What is the problem?

It might also be about the process and an evaluation of the problem-solving strategies we use. How we carry out the action, which methods we use, how successful it is, what happened etc.?

Finally, reflection might be about the premises, when the problem itself or our fundamental assumptions and individual values are put under the spotlight. Why have I understood the problem in this particular way? Which assumptions and values lie behind my actions? Do my assumptions and my actions agree?

Nature interpretership therefore is not just about planning nature interpretation activities and carrying them out. An important skill that nature interpreters share with many other professions is the ability to reflect on your own practice. This is about being able to reflect on your field of work or a specific situation and, using this reflection, act and perhaps act differently in the future, in relation to the given framework. Reflection skill is the individual's ability to reflect on events and experiences in a given situation and using this as a basis for self-education and development.

Tine Nord Raahauge from Slagelse Nature School in Denmark describes in her account (page 196) how she approaches such reflection in her own work. This might happen through evaluation jointly with participants by using reviewing techniques, or by her bringing examples of her activities to a group of colleagues who set time aside for debate and other techniques that support Tine in her own reflections.

NATURE INTERPRETATION AS SOCIAL INTERACTION

LARS HALLGREN

This is not an article about the characteristics of good nature interpretation as opposed to bad nature interpretation. It is not an article about good methods or about how you can improve your nature interpretation technique. It is an article about how we understand nature interpretation, irrespective of whether it is good or bad, so that once we have understood we can decide whether it worked and if we want to make any changes.

This was not one of the days when visitor numbers at Lake Hornborga nature centre (naturum Hornborgasjön) break all records. It is just after Midsummer. Two raincoats with sou'westers have turned up for the morning guiding session on Fågeludden. The bigger raincoat is a farmer whose farm is within sight of the nature centre, the smaller one is his son, and they are here because the son has suddenly developed an interest in bird watching.

The guiding session takes place on the long wooden jetty and the guide talks about the history of Lake Hornborga and the lowering of the water level.

The smaller raincoat punches his Dad, pointing at some bird that he recognises. The guide tells about the restoration of Lake Hornborga.

The boy looks down into the water and discovers a coot's nest. The guide talks about how the reeds that were close to filling up the whole lake have now, after the restoration, disappeared almost entirely because of strong grazing by increasing populations of geese. Populations of birds that are dependent on reeds, such as hen harrier and bittern, have been reduced. The boy looks at a tern that is fishing. The rain keeps coming down and creeping up under the sleeves of the oilskins. The guide gets her binoculars out and says to the boy: Come, let's go and watch some birds. And they do. For half an hour they point out birds to each other. Both of them seem to enjoy it.

Understanding through social interaction

This article is about social interaction between participants in nature interpretation, and suggest that understanding is achieved though social interaction, not thorough "transmitting messages". It is since the guide and the boy in the story are collaborating in communicating with each other that they both understand something. The guide is not conveying a message, but the guide and the boy together create meaning and understanding through their social interaction. This article will deal with this process and with the theoretical distinctions between seeing communication as "transmission of feelings and knowledge" and seeing communication as joint creation of meaning. It will also look at what this means in practice. Our point of departure is the sociological theory called symbolic interactionism. If you want to learn more about symbolic interactionism I suggest you read books by for instance Herbert Blumer, George Herbert Mead, Ragnar Rommetveit, Joachim Israel or Emma Engström.

To understand nature interpretation

We will begin by investigating how understanding is created between people who are engaged in conversation. Later on in the article we will show that the same type of process is involved when understanding is created at an exhibition, when visitors read information panels, look at videos, listen to audio recordings, use mobile phone apps, or in

An information panel about birds is sometimes exactly what you want when you are interested in birds.
Photo: Scanpix

other situations when those who are communicating are separated in time and space.

Let me just be clear about what we are trying to achieve in this article, and also about what we do not intend to do. This is not an article about the characteristics of good nature interpretation as opposed to bad nature interpretation. It is not an article about good methods or about how you can improve your interpretation technique. It is an article about how we understand nature interpretation, irrespective of whether it is good or bad, so that once we have understood we can decide whether it worked and if we want to make any changes.

The episode at the beginning of this article comes out of everyday nature interpretation and is both typical and not typical of nature interpretation all over the world. It is a situation that through its very ordinariness demonstrates the importance of interaction. Interaction is always important in interpretation, but in this particular situation

it becomes visible for an external observer how interaction influences the form and content of the nature interpretation. Here is a guide who has planned the form and content of her guided walk on the basis of an expectation of what is important and interesting, and here is a visitor, the young boy, who attends the guided walk with quite a different and specific expectation; to watch birds. When the boy discovers that the guide is talking about things that he is not interested in, and hadn't expected, he engages in his own alternative creation of meaning, which is more in line with his expectations: he looks at birds and he communicates with his Dad about what he sees. The guide notices this alternative meaning-creating project and after a while she decides to move towards the boy's perspective and suggests that they go "bird watching". The interaction between the boy and the guide creates shared meaning of what this situation is about: a situation where it is not relevant to talk about water levels but relevant to watch birds.

An atypical peculiarity of this nature interpretation situation is that the differences in expectations are both noticed and resolved. The boys attitude of inattention of the story the guide is telling, which conventionally would be considered impolite but which in this case, in combination with the guide's admirable attentiveness and ability to understand the boy's expectation, allow them to recognise and resolve the differences in expectations and to together generate common understanding. In many other nature interpretation situations, it is never discovered that the differences in perspectives between the people communicating result in failures to create a common understanding of the interpreted objects. Participants in interpretation are often polite enough to conceal their lack of interest and their disappointed expectations, and therefore the guide does not receive the information that they are not interested and are engaging in alternative constructions of meaning. Often many participants with different interests are taking part in the same communication situation. Nature interpretation often takes place in communication situations where those communicating (guide and visitors) are separated in time and space, as is the case with for instance information panels, signposted paths, guidebooks, mobile phone apps and exhibitions, and in those cases there is of course no possibility of observing and adapting form and content to the reactions of the participants.

However, the moral of this story is not that it was good that the guide adapted what she did to what was interesting for the boy, even if it that indeed was good. The moral of the story is rather that understanding was created through interaction, which becomes visible because the guide adapted in the way she did. But even without adaptation, the meaning would have been mutually constructed in interaction.

Irrespective of context, method, content and which actors are involved, and how big or small the physical distances or differences in perspective between them are, a common characteristic of nature interpretation is that it takes place between actors engaged in meaning making who are reacting to the situation, each other and each other's actions in interaction. If we are to understand and ultimately optimize the conditions for interpretation we will have to understand how this happens.

Misleading communication models

Before I present a more developed proposal for how communication in nature interpretation should be described if it is to serve as a basis for nature interpreters in their planning and reflection, I'll express some critique of a few other common ways of understanding and talking about communication. The reason for starting with this critical part of the theory is that these models are so common and permeate ordinary discourse as well as professional thinking about communication to such an extent that it is difficult to discuss the subject without generating unspoken associations to these models. I am thinking about when communication is referred to as transmission of a message. This mechanical metaphor for communication occurs frequently in discussions of communication and nature interpretation and has put its stamp on phraseology, values, working methods and evaluations. The Nordic Council of Ministers, for instance, in a report (1990) defined nature interpretation as "transmission of knowledge and a feeling for nature". The same conceptual family as the transmission metaphor also contains large numbers of other related expressions such as "conveying a message", that successful communication consists in "reaching out" and "delivering the message" and that the participants in nature interpretation should "take the message with them home".

Participants in nature interpretation are active co-creators of meaning. Understanding, meaning, knowledge, feelings are created when the participants in a nature interpretation give meaning to those sounds, pictures, signs, symbols present in the location. Photo: Mette Aaskov Knudsen

We are now going to investigate these expressions and see what kind of understanding of communication they reflect and what the consequences are of such an understanding for the nature interpreter's professional attention and reflection.

The problem with the transmission metaphor

The transmission metaphor originate from a model for analysing radio communications, developed by the mathematicians and systems scientists Shannon and Weaver in the 1950s (see figure in Chapter 2). According to this model communication takes place when a sender sends a message to a receiver. The extent to which the message reaches the receiver depends, according to the model, on whether the signal strength of the sender exceeds any noise, and whether the transmission contains the necessary information to enable the receiver to decode the message. This model, originally devised for analysis of purely technical information systems, has since become dominant

also in discussions about communication in social systems. When this model, or its underlying transmission metaphors (sender, transmit, transfer, deliver, send, arrive, reach, receiver, audience etc.), is used to describe and plan nature interpretation this will direct attention to communication as a one-way process, where the sender is active and the receiver passive. It is as if information, knowledge and meaning are ready-made packages that the sender dispatches to a receiver via a transmission process. The sender appears to be the only one who wants something and the only one who can take initiatives. But the image of the passive receiver does not fit with how nature interpretation happens in practice. Those actors that are called receivers in the transmission model are extremely active: they take initiatives, they are knowledgeable, and they are interested. They have (often) actively sought out the location where the interpretation takes place, they come with hopes and expectations and it is not unusual for them to have both experience of, feelings for and knowledge and opinions about the phenomena dealt with in the nature interpretation, and they make use of this prior understanding when they – to use the language of the transmission model – decode the message.

They are not receivers of knowledge and feelings transmitted to them, irrespective of how cleverly the message is formulated: instead they are active co-creators of meaning. Understanding, meaning, knowledge, feelings are created when the participants in nature interpretation give meaning to those sounds, pictures, signs, symbols present in the location, some of which have been constructed by the nature interpreter.

Participants in nature interpretation are also active in deselecting messages that they are not interested in and that they don't find trustworthy or that it does not suit them to think about during the action sequence they are currently giving priority to: buying ice-cream, going to the toilet, chatting to each other, or looking at something else that they find more interesting.

The boy who participated in bird guiding in the story at the beginning of the article made active choices when he chose not to pay attention to the guide's account of water level management and the restoration of Lake Hornborga. The transmission metaphor would describe this as a situation where the "message" about the importance of water level management and restoration for today's bird life "does

not reach him" because of noise. But that would be to underestimate and misunderstand what happened. It is not the properties of the message that make it incapable of "getting through noise". What is needed is not for the message to be honed until it is sharper and more penetrating, nor for the signal strength to be amplified. The boy does not have a passive and unchanging noise barrier, which to some extent resists messages that are too blunt or have too weak signal strength, but that could be forced through if the message is made more pointed and the signal strength amplified. Contact is established between the guide and the boy when the guide says "Come, let's go and watch some birds" but this is not because this message has greater penetrative power.

Pay attention to the participants

If the guide were to reflect on what happened she would benefit from paying attention to what she did right. She did right when she listened to the boy's perspective. When she reflects after the event, on the situation that arose, she would benefit from using terminology that helps her notice that she did the right thing when she listened to the boy and imagined the situation from his perspective. She would not benefit from a terminology for reflection on communication that only offers reflection like: "my message did not get through", "my message was not sufficiently pointed and strong to get through the noise", "I managed to transmit that it is fun to look at birds but I did not manage to transmit the history of Lake Hornborga". Such an analysis of what had happened would move the guide towards trying to improve the message, make her think more about lake restoration and rhetoric and less about listening to and recognising the interests of the participants. She would be better helped by a model for reflection on communication that moves her towards thinking: "Today there was a boy who was interested in looking at birds, but who was not interested in the history of Lake Hornborga. I wonder how I could respond to his interest in birds and at the same time suggest that it is important to restore lakes in the right way so that the birds are comfortable there."

The transmission metaphors are based on a very fragile theory of knowledge, namely that knowledge can be transmitted, handed

over like a parcel. It is an imprecise model. In the wake of the doubts of the transmission model and its metaphors in terms of knowledge theory, there are also practical problems. This way of speaking and thinking about communication and interpretation directs the nature interpreter's attention towards:

– The sender as being the only active part of the communication process, which in turn makes the sender's need to send and reach out seem more important than the needs and interests of the so-called receiver. This model makes for a self-centred sender, which has the paradoxical effect of counteracting the aim of the sender, to communicate with other people.

– The message and the design of the message: in planning and reflection you run the risk of thinking too much about the form of the message and its internal rhetorical logic, and not enough about those contexts and perspectives that are important for the communication partner.

– The signal strength of the sender: the transmission model describes successful communication as a question of penetration and ability to overcome noise and alternative perspectives. The model is more likely to persuade you to think about how to turn up the volume than about how to bridge different perspectives by showing interest in the other.

Application of one-sided transmission models and metaphors run the risk of tempting nature interpreters to be loud, self-centred and use narrow perspectives, instead of being sensitive, dynamic, broad-minded and accessible. In the next section I will introduce an alternative communication theory which demonstrates that all communication contains an underlying element of listening, which if this is taken seriously will encourage the nature interpreter to develop democratic tools for nature interpretation, rather than demagogic ones.

Communication through mutually taking the perspective of the other

Human minds are always in some way separate from each other and there is actually no way for me to experience what you experience, and no way for me to directly transfer what I experience to you. Shared

understanding does not arise from transmitting feelings, knowledge, experience, ideas, perceptions – that route is closed. Shared understanding is created through a more complicated process: through sharing of perspectives with help of gestures. Communication is when one person imagine how another person experiences the current, immediate situation, including how they experience the gestures (body movements, sounds, symbols, signs) performed by the other as well as by themselves.

We have different experiences, different memories, different languages, different abilities, different expectations, different hopes, different futures and different perspectives, which makes us experience the same situation and the same phenomenon in different ways. Nevertheless, it is possible to coordinate ourselves with other people and reach a (temporary) shared understanding, due to two related processes: interpretation of symbols and taking the perspective of the other.

When people communicate with each other they use symbols, gestures or objects that both the producer of the symbol (the speaker) and the observer of the symbol (the listener) agree mean something more than their face value. The symbol is something in itself, a sound, an image, an object, a movement, but it also represents something else for the observer. A picture, whether sketchy or detailed, of a tractor is not in itself a tractor, but the person looking at the picture might remember their own concrete experience of a tractor: the picture represents the idea of "tractor".

If a certain symbol is to be useful for communication it is necessary for those communicating to both share enough experience of the phenomenon represented by the symbol and have sufficiently similar experience of the use of this particular symbol for communication, so that they understand that the symbol is a symbol and what concrete and abstract things are normally associated with the symbol. We acquire knowledge of what a symbol represents by acquiring experience of what the responses are that the symbol normally brings about.

Both producers of symbols and observers of symbols give the symbols their meaning, that is they interpret them.

That it is nevertheless possible to align ourselves with other people and reach a common understanding depends on two related processes: interpretation of symbols and taking the perspective of the other.

That it is nevertheless possible to align ourselves with other people and reach a common understanding depends on two related processes: interpretation of symbols and adoption of perspectives.

When a symbol is produced, for instance when someone waves a hand and makes the sound [Hi], this is done in the expectation that the sound and the gesture hold some meaning for the person who hears and sees. And when someone hears and sees someone else wave and make the sound [Hi] they imagine what the gesture and the sound mean for the person who produced them.

This is what we mean by taking the perspective of the other: that people who are communicating imagine what the gesture means to the person they are communicating with, irrespective of whether they are themselves the producers or the readers of the gesture. Understanding is created through mutual ascription of meaning. This is a radically different model of communication than the transmission model we described and criticized earlier.

Here we are saying that meaning is created in communication through mutual ascription of meaning to the gesture, not that meaning is transmitted.

Let us now consider a person who wants to be understood by someone else and wishes to get a specific reaction from the other person. Perhaps I want you to pass the salt. To generate that effect, I must adopt your perspective, look at myself through your eyes and imagine what gesture I could use that for you would have the meaning "pass the salt". When I gesticulate I therefore do so by looking at myself through your eyes, with your perspective. And when you decode my gestures you do so through my eyes, by asking yourself what my gestures mean to me, what it is I want to say. We should stress that this is not an idealized model, not something it is important to think about if communication is to work; rather this is how it works as soon as people are aware of each other. You are sitting on the bus for your daily commute and you are reading a newspaper. A passenger gets on and walks down the bus looking for an available seat. Your eyes meet for a brief moment. You assume that the other person's glance means something to them, and you are prepared to give it the same meaning you think it has for them. It happens immediately and without conscious thought.

Understanding and meaning within nature interpretation are created through social interaction, not through "transmission of messages".
Photo: Maud Lervik/ Ritzau Scanpix

Two people who are engaged in communication are thus at the same time engaged in imagining what the symbols, sounds and gestures that they are creating together mean to the other. Taking the perspective of the other is to constantly asking oneself: Why is she doing this? What does what she does mean to her? What does what I do mean to her?

Communication consists of two processes: use of symbols and sharing of perspectives. This applies to all kinds of everyday situations, between people who know each other well and between people who have never met. It happens in the same way between people who have the same language as between people who have no common language; in the latter case the availability of useable symbols is limited but as long as the actors take each other's perspective they will have a few basic symbols and gestures that they can use, and gradually they will create shared understanding based on mutual experiences of the use of the symbols.

Use of symbols and taking the perspective of the other are of course also involved in all types of nature interpretation, irrespective

of method and context. A participant in an interpretation activity gives meaning to the sounds, gestures and objects that she encounters during guided tours, on trails and at exhibitions, and she assumes that these sounds, gestures and objects have a meaning for other people as well. She relates the meaning these sounds, gestures and objects have for her to the meaning she imagines that they have for other people.

Many of my examples are about use of symbols and perspective sharing in a situation when the communicating actors are present, and when the symbols they use are in the form of sounds and gestures that are perceived simultaneously by all who are involved. In such situations it is possible for the people who are communicating to interrupt each other, complete each other's unfinished sentences, touch each other and reinforce and confirm that the other person's interpretation of their action is correct by nodding vigorously. Sometimes participants indicate their understanding of the other (and disagreement) by distancing themselves in a chilly, silent manner, arms crossed and avoiding eye contact. We all know that it is not possible to not communicate. What we do when we are together with other people always has a meaning, for them and for us. People are always busy interpreting what other people are doing, as if what they are doing is meant as gestures, and always conscious that what they themselves do also has a meaning in other people's eyes. Anyone who has worried about their dress after discovering an unbecoming spot and been told "But surely nobody cares about what you are wearing..." knows very well that somebody does care about it. We tend to look at ourselves through the eyes of others. But the same communication theory is also valid for situations when those communicating are not present in the same room. Imagine the following situation. Somebody is sitting on a beach, in the evening, perhaps on the stony beach on the island Blå Jungfrun. She writes the following letters on a piece of paper: "I feel so lonely and sad. It is very beautiful here." She puts the piece of paper in a bottle, puts the cork in and throws the bottle in the Baltic Sea. The bottle floats away.

The person leaves Blå Jungfrun. Returns to ordinary life and work. Lives her life. Dies. The bottle floats around in the Baltic Sea. Is washed up on a beach south of Copenhagen, but drifts out to sea again and into the inlet at Kiel, but the wind turns round and the bottle keeps moving north.

Many years later the bottle is found on a beach in Lithuania by a child, who opens it, removes the piece of paper and reads the letters. And even if this particular child cannot read, I think we can assume that the child imagines that the letters have been written by another person and that they meant something to that person. The child regards the piece of paper as a meaningful message, even if she knows that she has not fully understood it. And we can probably assume that, even if the person who wrote the letters did not imagine that the bottle would be opened by just that child in Lithuania, she too thought of the piece of paper as a message with the potential to mean something for someone other than herself. And when the child has grown up and is on a visit to Runö in neighbouring Estonia she shows the piece of paper to a friend who speaks Swedish and can translate the words, and then perhaps they wonder who it was that wrote the letters, and they imagine what that person was feeling and thinking. Perhaps they feel a bit sad, like the writer. Or they might think that the writer was naïve and melodramatic. Whichever happens, communication has taken place through the mutual adoption of perspectives and through the mutual, albeit uncertain, allocation of meaning to symbols. Communication through social interaction has taken place at a distance.

The same is true of all preserved expressions of culture: the smile of Mona Lisa, Paul's letter to the Galatians, Lysistrata, the Iliad and the Odyssey have all been created with an idea of meaning something for somebody, and even today they are approached with the question of what they meant for Da Vinci, Saint Paul, Aristophanes and Homer. And the same is of course true of a text about ladybirds in a mobile app for nature interpretation: it is written with a generalized reader in mind, and it is read by a reader who imagines that the writer meant something. This doesn't necessarily mean that the reader is well-disposed towards the writer or vice versa. It simply means that they mutually provide meaning for the message through taking each other's perspectives and use of symbols. A post-it note in the common utility room of a block of flats with the text: "Just b...y well pick your fluff out of the tumble dryer!" is also a case of social interaction through adoption of perspectives and use of symbols.

DEEPER MEANING AND INSIGHT THROUGH REFLECTION

POUL HJULMANN SEIDLER

This article should be seen in the light of a wish for nature interpretation to help participants find new, meaningful understandings and contribute to a better understanding of – and solutions to – societal challenges. Nature interpretation here moves from being communication about nature through nature experiences to something that engages participants and where the experience can be used as a starting point and opening to interpretation as something with particular meaning for the individual participant. A contribution to solving and disentangling important challenges, such as the preservation of natural diversity or the use of nature as a health-giving space.

Nature experiences may facilitate reflection – but for this to happen the nature interpreter must be capable of bringing out reflections that help participants move towards new insights, values and opinions.

According to Allan et al. (2012), "Human perceptive quality is driven by the brain's ability [...] to interpret and act upon incoming sensory

Nature interpretation may provide opportunities for reflection.
Photo: Poul Hjulmann Seidler

information as a whole. […] This adaptive quality allows people who learn in multi-sensory environments to perform better across a range of physical and cognitive tasks than those in uni-sensory environments".

Environments that are experienced as exciting and that provide the possibility of stimulus for many different senses therefore have a greater potential for learning than environments that feel dull and boring.

Allan et al. also stress that emotions are of decisive importance for the creation and retrieval of memories, and that learning takes place in complex interaction between the earliest and the most recently evolved structures of the brain, and include the brain's centres for emotions and memory and the centre coordinating our senses.

Activities in the natural world can stimulate many senses, enabling learning processes that link emotions, physical experiences and cog-

nition. This also stresses the importance of involving and connecting emotional aspects, practical action, insights and reflection in a way that supports turning experience into meaning.

Deeper and more personal reflection, involving values, emotions and opinions, can be especially valuable and important for the creation of fresh insights and understanding in a specific field.

Encouragement to think about values and opinions means an expectation of abstract thinking and reflection on what you believe and the thoughts you create for yourself around a subject. In such a situation the brain often engages in concentrated and focused work requiring much attention. For many people this might be a demanding and challenging process. Being encouraged to join and be involved in such reflection therefore risks being a little too challenging and might be seen as, or actually be, "unsuitable" for any individual participant.

Luckily the nature interpreter has nature as framwork. A frame providing many opportunities to work with situations and activities that engage the participants, and that involve senses and emotions to a significant extent (see also Chapter 2). Such activities and situations make it possible for the nature interpreter to stimulate the participants to valuable reflection. Nature has those multi-dimensional qualities that Allan discusses. This means possibilities for nature interpretation that stimulates and awakens emotions such as joy, fear, excitement, belonging, courage or geniality.

When the nature interpreter makes use of emotion to facilitate reflection he helps create good conditions for learning and for more personal and significant thinking among participants. This might for instance be reflections on the wish for a better life or a problem such as better preservation of the natural world.

To put it in another way: When nature interpretation utilise activities that involve participants' senses and stir up their emotions it is easier for them to notice and stay focused on an area that is of importance to them. In this way nature interpretation supports the initiation and development of participants' own creation of meaning.

Working in a concentrated manner and with more personal reflection presupposes a trustworthy and secure environment, and therefore a certain degree of trust between participants, the nature interpreter and any other people present. Shared physical and sensory experiences, where emotional processes form a natural part (for instance

with the help of humour), are often able to create trust, act as door openers and motivate both children and adults to deeper reflection.

Experiences that create wonderment, surprises, positive closeness, problems or a sense of success and of being on top of a situation, are particularly good at motivating people to tell about and share such experiences with other people. This will also stimulate the participants to reflect on what is significant in the story.

Therefore, it might be an important question to consider, when the nature interpreter is planning his activities:

> *In which nature interpretation situations and activities are you able to encourage opportunities for the participants to experience: wonderment, surprise, challenges, a sense of shared joy and closeness, and have the opportunity to master a task or challenge?*
>
> Further:
> *How can you facilitate a process where the participants make use of these experiences to create valuable reflection?*

Depending on the situation and the aim of the nature interpretation, such reflections might be about something that gives the participants the possibility of a fresh insight, or of finding meaning in something they are interested in, or it might be a reflection linked to the theme the nature interpreter is focusing on during the session.

Facilitating direction – goal-directed reflection

Activities, tasks and questions offered by the nature interpreter have considerable impact on the thoughts, awareness and inspiration that the participants experience. This means that the nature interpreter is able to influence the themes and directions that occupy the thoughts of the participants. If the nature interpretation is intended to support a particular direction for what the participants take away from the activity – or to help them experience and agree to take on-board an important problem – it is essential for the nature interpreter to be aware of the force and significance of different types of questions,

Activities involving challenges, joy and closeness are an important part of nature interpretation. Photo: Poul Hjulmann Seidler

as well as activities and processes that make reflection easier for the participants.

Both the US National Park Service and Interpret Europe have published training materials about the use of open-ended questions and different ways of facilitating reflection through interpretation (Ludwig 2015). Denmark and Sweden have positive experiences of methods introduced by Roger Greenaway, where physical exercises are used as part of reflection processes (Greenaway 2017). The Swedish Centre for Nature Interpretation has published reports where exploration of the visitors' thoughts and ideas has been used in the evaluation of the nature interpretation offered by naturum nature centres (Centre for Nature Interpretation 2015), as well as studies of the different roles a nature interpreter might adopt in order to facilitate reflection and dialogue (Thiel 2015). The Danish Centre for Outdoor

Life and Education at the University of Copenhagen has published Udeskolevejleder – eksterne formidlere i skolen [Nature school guides – external communicators in the school] (Ejbye-Ernst & Seidler 2016).

Our own stories create meaning in our existence

Education of nature interpreters in Denmark has been inspired by a narrative theory, whose hypothesis is that we are continuously creating meaning in our existence by creating stories about our experiences. Many of the methods and exercises found in nature interpreter education involve the nature interpreter working on the creation of reflection and meaning through processes where they, either alone, in conversation with others, or together with their target groups, create stories/narratives about something that is important to them. This theory also talks about the concept of agency (cf. empowerment, page 273), which corresponds to the individual's feeling of having influence over their own life and of having the abilities, talents and skills needed to steer it in the desired direction.

In their training the nature interpreters concentrate on tasks that facilitate reflection on their own abilities and skills. The aim of this is to strengthen these and to sensitize the nature interpreters to these in the implementation and development of their nature interpretation in the way that they themselves prefer and where they see the greatest value.

Open questions support reflection

In this approach use is made of open, interested questions that lead to reflection with the aim of creating meaningfulness and providing the participants with fresh insights and knowledge.

To support this type of reflection it is essential that the nature interpreter has a certain amount of awareness of the participants' prior knowledge and their experiences, requirements and wishes. Such awareness is important if you are to design questions and activities that are based on and can be integrated in the participants' own lives and therefore generate meaningful reflection. The nature interpreter helps the participants create their own meaningful stories with

the aid of opinions and insights that are important to them and that involve opportunities for understanding and action within a specific theme, for instance the preservation of biodiversity in the forest.

Examples of interested and open questions, addressed to adults, which help discover what the participants know and what is important to them, are:

→ What significance does the forest/the natural world have for you?
→ What have you found interesting to experience or be part of?
→ Is there something you have been surprised or amazed by?
→ Have you experienced something that gives you inspiration to do something new/different when you get home?

In the case of children, the questions could be formulated like this:

→ What have you done before in the natural world that made you happy?
→ What have you found most enjoyable to do?
→ Which animal – or tree – would you like most to know more about?
→ What have you experienced with your body today that made you happiest?

These questions are entirely open and explore what is most important to the participants. Questions with the aim of finding out what has been particularly important or made an impression. Knowing this is helpful for the nature interpreter so that he can support the participants in their further reflections and interesting activities in areas that are important to them.

Open thematic questions

Depending on what the theme of a nature interpretation activity is, questions can be open but at the same time point in a specific direction.

For example:

- → Which of the trees we have worked on/talked about do you think have the greatest importance for the natural world – and for people?
- → Which parts of the natural world that we have seen today do you find most valuable?
- → Once you are back home where you live, are there any natural areas there that are particularly valuable to you? Are there any plants or small animals that you like?
- → What can you or your family do to take care of them?

The nature interpreter selects such directive questions in order to make the participants think about a theme, without first putting up any norms for the correct way of thinking or acting. This helps the

Which parts of the natural world that we have seen today do you find most valuable? How can you help take care of them?
Photo: Poul Hjulmann Seidler

participants seek and create meaning for themselves from what they experience in company with the nature interpreter, and this is essential if they are to feel that a theme belongs to them.

Two sample activities that help reflection

Below you will find two sets of sample activities with the aim of helping reflection in a group of children and in a group of young people/adults, respectively.

During the different activities and questions in the first square Michael, the nature interpreter, is very aware of the need to be interested in what the children themselves find important and interesting. The children are all the time challenged through exercises that direct

REFLECTION EXERCISE WITH CHILDREN

Michael, a nature interpreter, is in the forest together with a group of 10-year-old children. For this tour he has given himself a little rule – minimize the amount of facts and instead generate knowledge and curiosity in the children.

Michael demonstrates and shows in a lively fashion how to find animals in the ground in the forest and under the bark of trees.

Now the children are to work in pairs and collect six different animals that they think look particularly exciting and put them in some beakers.

After that they are to think about and agree – first alone and then with a friend - what is particularly exciting about the animals they have collected. Finally, they are to tell, together, another pair why they think the animals are exciting.

Then Michael asks the children to:

- → Investigate the ways in which a particular animal moves once it has been set free.
- → Investigate in which ways it is smart for the animal to move if it is to survive.
- → Use their own body to imitate some of the movements that they think are important if the animal is to survive.
- → Based on this the children are to perform a little sketch and a story for the other groups, which includes a situation that is dangerous for the animal.
- → Finally, all the children separately and by themselves are to find a tree where they can sit and write a few words or do a drawing that tells something about why the animal is important and when and how they managed to work successfully with the other pupils in the group.

Shared experience of a tree. Photo: Poul Hjulmann Seidler

their attention towards the things that they themselves find exciting and what might be important characteristics or actions for the animals they catch. Michael tries to engage the children's emotions during the activities and to connect this to what they are finding. His hope and intention is that this approach will strengthen the children's interest in the animals and inspire them to make their own explorations in the natural world. The children are asked both to think privately and to speak aloud together with a friend. There are different ways of creating reflection. Having a chance to think privately about what is exciting about an animal that the child has caught and held in her hand acts as a stimulus for individual thought, creation of meaning and emotions around what the child has experienced. Talking with someone else is also valuable. When you hear your own thoughts and words spoken they acquire more substance and clarity for the child. At the same time there is joint reflection and exchange of opinion in order to reach a common understanding.

Michael hopes that, when the children investigate and imitate the animal's movements and evaluate what is most important for its survival, they become emotionally and physically engaged and therefore

have a better background and motivation for the reflection needed to carry out the final two exercises, the dramatic sketch and sitting by themselves beside a tree.

The last exercise, by the tree, is intended by Michael and the teacher, to encourage the children to reflect on how they promote co-operation and good feeling. This is an area that the teacher wants to work on further in the classroom and which he thinks might be easier for the children to relate to after having experienced social, physical and emotional activities together with the nature interpreter.

The nature interpreter's enthusiasm as an obstacle

The nature interpreter can help participants create and shape thoughts, values and opinions that are meaningful to them, but the he also needs to be very cautious about forcing his own values and opinions on them. Such "forcing" does not fit well with the concept of ownership and the strength there is in developing this.

It is not always easy to be profoundly curious, walk in the participants' shoes and try to understand their needs and wishes and to shape the nature interpretation on this basis, which is what this chapter is about.

The nature interpreter's own fiery enthusiasm, good knowledge about the natural world and great desire for other people to understand the things that they themselves understand can be a big challenge and sometimes an obstacle to being able to help the participants develop, shape and create their own meaning. A nature interpreter might for instance have a missionary zeal for the promotion of biodiversity, but unless he takes account of and is curious about the participants' own emotions and thoughts around diversity in the natural world he runs the risk of, at best, speaking to deaf ears and, at worst, creating resistance.Therefore, it is important that the nature interpreter is skilled in methods and exercises that support processes that motivate the participants to taste and digest new impressions and experiences.

The participants must have the possibility of "conquering" the new material by themselves, make it their own and in doing so shape and recognise new and meaningful contexts that are of significance

REFLECTION EXERCISE WITH YOUNG PEOPLE/ADULTS

Freja, the nature interpreter, is doing a tour with a group of young people aged between 18 and 22.

During the first part of the three-hour tour, Freja has involved the young people in various activities around the use of the forest and forest plants. She has activated their senses in several ways, and they have for instance gathered, smelt and tasted edible plants. Freja has also carried out a couple of activities incorporating fun, rhythm and movement, as well as a task where the youngsters challenged each other in some activities they invented themselves, which were about animals that live in trees.

For the last part of the tour Freja divided the young people in four groups with 3 to 4 participants in each. Each group made a small "work of art" according to the following instructions:

- → Group 1. Make a small work of art to symbolize the fresh and important insights you have reached today.
- → Group 2.Make a small work of art to symbolize important things about the plants of the forest.
- → Group 3. Make a small work of art to symbolize life and death.
- → Group 4. Make a small work of art to symbolize humanity's dependence on the natural world.

After this all the groups visited each other and tried to guess what the "works of art" symbolized.

Then the groups were given a new task, where each of them had to agree on a new theme they thought it would be especially important to tell the others about and make a new "work of art" to symbolize this. After that the groups visited each other again – made their guesses and were told about the theme.

During Freja's nature interpretation she spent the first hour on information and experiences she was keen to give the participants.

She used activities where the participants could use their senses and their bodies in different ways.

After that Freja wanted to use their "works of art" to make them reflect on various themes from the tour. She had chosen the themes because they were connected to the experiences and activities they had carried out at the beginning. At the same time Freja was interested in what the young people themselves thought had been most important and what had moved them, and she was keen for the young people to reflect on something that had caught their own particular interest. That was why they were asked to make a "work of art" on a new and important theme that they themselves thought up.

Freja's intention was to use the different activities to arouse the young people's interest in the natural world and make them reflect on some values that the natural world might have.

One participant has drawn a little figure on the trunk of the birch tree, and this is a metaphor for the reflections he is engaged in during his learning process in the natural world. Photo: Poul Hjulmann Seidler

to themselves. There is no pure and ready-made method for this, but it is important that nature interpreters use their own curiosity, take as their starting point the interests and experiences that the participants themselves bring along, and have the patience to listen to the different needs, insights and interests that exist among the participants.

We can use the image of the nature interpreter needing to cross the bridge and meet the participants where they are in terms of abilities, knowledge and needs. Walking across on the bridge he or she should for the moment forget their own ideas and opinions and open themselves to a profound eagerness to see and understand the participants.

Listening and understanding

The two examples in the boxes demonstrate different methods that Freja and Michael used in order to listen to and understand what was happening in and among the participants. In addition to concentrat-

ing on their own nature interpretation and the processes that facilitate reflection Freja and Michael devoted part of their attention and concentration to the participants in order to listen and understand what was important for them. At the same time, they wanted to let the participants' wishes and needs influence their own roles and the ways in which they involved the participants.

Doing this presupposes a certain degree of generosity in the nature interpreter. It means letting go of control, being willing to depart from the prepared structure and plan and open up the possibility of the participants themselves having influence over parts of what happens during the tour with the nature interpreter. This is not something that is easy to handle, but through conscious attention and training the nature interpreter can facilitate processes that support valuable reflection and strengthen new meanings, insights and perhaps values and opinions in the participants.

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MY MANY ROLES AS A NATURE INTERPRETER

JOHNNY SKJOLDBORG KROG

As a nature interpreter I have always felt that having different target groups in different locations and during different times of the year requires you to vary and adapt your role as a nature interpreter. In some situations, it might be suitable to give a lecture, in others to be an initiator, in yet others to do role-play, tell stories, be the observer and so on. And then there are of course situations when we have to communicate indirectly, in writing, through pictures and in other media like radio or TV. However, my reflections are based on direct communication. This is where I see the real strength of the role of nature interpreter.

One of the most important aspects of my nature interpretation has been to make use of the informality of the teaching space through informal methods. I have always done my best to go against my own experience of a comprehensive school with old-fashioned, white painted, square classrooms.

I remember an uninspiring classroom with a torrent of words and a curtain that was pulled down too far to suit most of my classmates, me included. Perhaps a really good communicator can fill a boring room and keep the receiver awake. Fortunately, I had one of those as well. But, as far as I am concerned, a boring lecturer in an inspiring outdoor room has lost the battle. I opted to set off on a journey instead, with Robin Hood, Astrid Lindgren's Emil or Dr Lieberkind, into the wide green world, with the torrent of words from the speaking waterfall making a noise in the background.

For me a good story has often served as the backbone when I have planned out nature interpretation for my target groups. Sometimes I have kept the stories in reserve and brought them out when needed. But the most effective stories have been those where I have stepped out of the role of nature interpreter and into another, fictional, role instead. Here are a couple of examples where the target group was children in primary school.

We nature interpreters have a well-established excursion, which involves a visit to a pond in spring. Typically, this starts with an introduction to the water and all its life forms and with exhortations to show consideration for the natural world and for each other. The aim of the instruction is to make sure that there are keen eyes taking care that the little animals in the pond don't end up trampled by a foot, or that the vegetation at the edge of the pond doesn't get too much of a hammering. There is a risk of this when a group of 20 children are busily exploring this new world. There was a time when I saw myself as a military officer going through a drill to exhort the pupils to be considerate of the animals because I said so. A colleague and I sat down together (by the pond) and put together a story about "the cruel little animal". It is a story that describes the world that the pupils are to investigate, based on the life cycle of the dragonfly. We compromised a bit on the strictly natural and gave the dragonfly thoughts and language. We felt that this made the pupils themselves develop an opinion about life under water and as a consequence they chose to show consideration for the little animals and the place where they live.

Another popular theme is nature and natural phenomena in a context of living myths. Stories about fairies, the land under the mountain, water sprites, trolls and will-o'-the-wisps can be told in such a way that nobody will forget them.

Why not let the troll itself tell the story? Photo: Thomas Vitting

But why not let the troll itself tell the story. In response to a challenge by a teacher in the school where I was working I dressed up as a troll and took a class of 25 pupils by surprise in a bit of woodland close to the school.

The troll told them about roaring church bells, about how he flung a big rock at the church and hit it, so that you can still see the pieces of rock beside the church wall. About maidens held captive under the mountain, about boys who went crazy and about people who lost their mind to the water sprite. These stories and the troll were never forgotten. The pupils are still discussing who the troll was in reality and if the stories are true or if perhaps they are just fantasies that have come up because someone has seen something out in the wilderness that they are unable to explain.

These are a couple of examples of things that worked well but that needed a bit of time to put into practice. My sense is that the listeners get absorbed in the stories and that these create strong memories, which in turn means that the message stays. The method might demand a lot of time and energy, but it is tried and tested and has been used on many other occasions.

This doesn't mean that all I do is tell stories and dress up. I also do interpretation by simply sharing my enthusiasm about the natural world and what is in it. After all, what is most important for a good nature interpreter is to be passionate about the things you want to communicate and that you have absolute empathy with your participants.

The level of knowledge imparted must of course be related to the target group you are meeting. Enthusiasm is of decisive importance for successful nature interpretation, together with the courage to embark upon something which might or might not work.

Once convinced, as a nature interpreter, that certain methods and spaces are a real boon for learning, you also feel a desire to share this with others and to expand the circle of invitees to include teachers, colleagues and educators. I couldn't help thinking about what we do with the teachers and educators who join the visits.

We evaluate every visit to the nature school, the nature centre, the farm or the outdoor classroom jointly with the adults. What was good and what might have been done better? Not necessarily in any formal way, just as informal reflection. This means that every nature interpretation occasion becomes a training course for me and the other adults.

And the primary school methods described here have been tried on groups of adults several times. Just imagine a group of municipal politicians mucking out stables while an old farmer, alias the nature interpreter, bosses them about. This has actually happened...

WATER AS A COMMON RESOURCE

LIVE SOLBRÆKKEN DANIELSEN

In my hometown of Ås there is hardly any visible running water. Most of it is carried in pipes and culverts. Increasing rainfall means that the area must find a better solution for the water which sometimes causes flooding. Personally, I would love to see more water in my town. But how can I arrange a "water walk" that can create wonderment and awareness without generating heated discussions that end in locked positions?

In 2016 a three-year project, Waterwalk, was started in California, and this inspired me to arrange a water walk in my own town. The greater part of the water supply for Los Angeles comes from the Owens Valley, a desertified area with dried-up oases. The previously existing river traversed Native American territory and affected their traditional use of the area. I was moved by how the water walk was organized. All those affected were invited to join in and walk parts of the length of the current water conduit. The aim of the walk is not to reach a decision about how to manage the water. The aim is to gather together politicians, indigenous people, Los Angeles water administrators, landowners and other interested parties, so that they can tell about their water needs and their relationship with the water during the walk. Focus is on water as a resource, without considering what constitutes good or bad utilization.

A water walk can make people aware of the value of the waters in their neighbourhood. The Aurland Valley in Norway.
Photo: Lars Petter Ytterstad

Create awareness rather than "right and wrong"

I often notice that decision-making processes are more about winning a discussion than about bringing out all value considerations and taking the decision that is best for all. With the water walk I wanted both to help the participants be more aware of what water means to them and to disseminate factual knowledge and communicate stories and experiences that are significant for the individual. This approach contains the first steps towards a decision-making model based on consensus. This is the most peace-building decision-making model I know, and I believe we have a lot to learn from it in our modern society. Even today consensus is an important principle of The Great Law of Peace, which was agreed 400 years ago between five big Native American nations in North America, and which continues to be practised there.

Start small

I started by asking a friend who works for the municipality what she thought about the project, and that is how it began. It turned out that there was an up-to-date plan for flood water in the municipality. Since this was the first time I organized this kind of walk I didn't want to make it too big. We were a small group of seven people, representing newcomers and people who have lived there for generations (owners of agricultural land), a municipal water and environmental consultant, the Green Party and the Norwegian Forest and Landscape Institute. We walked from the source of one of the two small streams towards the centre of town. I stressed that the aim of the water walk was to get to know the water in Ås and what water means to us who took part.

The pedagogy of gratefulness

I began the walk by inviting the participants to mention something to do with water that they were grateful for. Sharing gratefulness around a shared theme is a way of helping to create a sense of belonging and reduce conflict. This was a tactical choice in order to avoid the walk turning into a discussion of what to do or what not to do about the water. Finally, all the participants were asked to share their dreams for the future of the water in Ås, without starting a discussion. Talking about your dreams helps create awareness of your values, contributes to creative solutions and is the beginning of involvement. I included myself among the participants and responded to all the questions in the same way as the others, to illustrate that all voices have the same value, whether you are a leader or a participant. Sustainable development in a community must be based on the interests of those who live there. A water walk like this helps bring out people's wishes and give the inhabitants ownership of developments. There was much positive energy in the group even though in the end there were also wishes that were contradictory. One of the participants talked, holding back tears, about her father who has Alzheimer's and was sorry that she had not been interested in his local knowledge before his memory deteriorated. My role was not that of the expert, but of facilitator and participant in the walk.

BIOBLITZ – GETTING PARTICIPANTS INTERESTED IN WILDLIFE SURVEYS

MARIANNE GRAVERSEN

Many people who have been on a tour guided by a nature interpreter might recognise a situation where the nature interpreter walks at the head of the group, loudly and vividly telling them: "Look at that butterfly – it is an Admiral. It migrates from Southern Europe to Denmark each spring to breed offspring who then in their turn migrate south in the autumn." Or: "In this area the grazing cattle help restrain the growth of brushwood so that for instance the sand lizard, Lacerta agilis, can find sandy and sunny spaces to lay their eggs" or: "Look! A buzzard..."

The guide undoubtedly provides many excellent stories, and there are participants who prefer this type of nature interpretation – but it is not particularly inclusive or engaging. To achieve deeper understanding of the concept of biological diversity the participants themselves must be made to be active. By using a so-called BioBlitz the starting point gets turned back-to-front – it is members of the general public that are to find the species, be observant and also search for species that are less visible.

BioBlitz is a hunt for species in a defined area within a defined period of time. Photo: Natural History Museum of Denmark

BioBlitz is – very briefly defined – a hunt for species in a defined area within a defined period of time. The idea originates in the USA, where BioBlitz is used for species surveys in national parks. They are often carried out under the guidance of a university or a natural history museum, with student volunteers helping researchers find as many species as possible within a limited period of time – such as 24 hours. The advantage of BioBlitz as a form of nature interpretation is that each species is only counted and registered the first time it is discovered and that the hunt then progresses to new species. Searching for something new sharpens the focus and makes participants more motivated. It also gives them an idea of how many different species it is possible to find in a limited area. If, for instance, the BioBlitz is organized for groups of school children, you might introduce a competitive element: which group can identify the largest number of spe-

Participants might need help identifying the species they find. Photo: Nature Historical Museum of Denmark

cies? I have myself made good use of a few cheap stamps bought in a paper shop.

Each time a participant comes back with a new species they get a stamp on their hand; it is surprising how motivated some people can be by a simple stamp. But this also requires a sufficient number of people – in relation to the number doing the surveying – to help identify the species the participants bring back. Otherwise the species identification itself will soon present challenges. It is a good idea to involve volunteers in the local area – bird watchers, local botanists or mycologists. These get an opportunity to meet potential new members, and at the same time the nature interpreters are able to develop closer contacts with the associations. The associations also have an opportunity to get together as experts within their respective areas of knowledge and interest.

The challenge of the BioBlitz lies in registering the species and in finding a way of sharing with the participants what the others have found and what the total result of the survey is. This can be done in many ways, electronically or manually. My experience from over fifteen BioBlitzes is that using simple A2 or A3 sheets of handwritten lists is

the most effective way of showing how many species have been identified. However, you often have to carry out a second count after the event in order to eliminate possible duplicates or errors.

For my own part I use a few pre-printed lists of different relevant orders/groups such as mammals, birds, botany, fungi, insects and spiders. This makes it relatively easy for the participants to enter a species and at the same time they are reminded that there are many groups within which they might find species – that you don't have to focus just on animals, but also on plants and fungi. This can also inspire participants to search for species in groups that are underrepresented.

If you have a sufficient number of experts to be certain that the species identification is correct, data might be input straight into databases (the different Nordic countries have different possibilities), from which data can then be downloaded for use in research or in work on protected areas in the municipalities. Communication about the species in the course of the day is important, as is the final result. The participants are keen to find out if they have found 54 or 290 species. This is also useful in that it makes it possible to follow up the result if you repeat the event over several years. Since the focus of a BioBlitz is always largely at the level of species, it is important always to have a few good nature interpreters present; their amazing stories are needed to get the audience going, to help those who are perhaps a bit hesitant to get started, to hold a pair of water binoculars or a landing net, or find a magnifying glass to search for a new fungus.

Carrying out a BioBlitz requires several very different skills, where the most important – as I see it – is to have faith in yourself and your species knowledge, or have a few good helpers who can assist with the species identification. As a nature interpreter, if you decide to try the BioBlitz concept, it is best to start from your own resources. If you personally are an skilful botanist, mycologist or ornithologist, this is a good basis for arranging a BioBlitz limited to your area of specialization. For my own part I have arranged a botany blitz of only two hours – that is roughly the length of time a group of ten-year-olds can manage to keep their concentration. In addition, a BioBlitz of course requires a certain amount of logistic ability, to ensure that volunteers/experts, identification literature, trapping gear, equipment, participants and the location join together to create a whole. Last but not

A BioBlitz can lead to close contact with nature.
Photo: Bo Tonnesen

least you must, as a nature interpreter, accept a certain amount of chaos; BioBlitzes take on "a life of their own", where unexpected discoveries bring people together.

One of the major obstacles we have encountered when organizing BioBlitzes – is the name itself. Almost all nature interpreters who have been responsible for BioBlitzes in Denmark, have had smaller attendances for the BioBlitz that for other events. This might be because it is difficult to explain what a BioBlitz is without making people feel uncertain of what will happen, while also making them feel sufficiently secure to dare come along without worry about landing themselves in a situation where they have to identify a species or are expected to know something that they don't know. It might therefore be an advantage to treat the BioBlitz as one component of a larger nature event or a nature festival, where participants receive a lot of support. They might be less worried if there is help finding a specific meadow or going to the edge of a wood to look for some flowers, preferably very small ones that nobody else had found yet.

Here is a link to a Danish website with further experiences and materials about BioBlitz: www.bioblitz.dk

THE BIG FIVE – NATURE INTERPRETATION ABOUT SENSITIVE SUBJECTS

LINDA THELIN

The Large Carnivore Centre "De 5 Stora" ("The Big Five") is an information centre and meeting place focusing on the large carnivores. The need for the kind of nature interpretation carried out at the Large Carnivore Centre is connected to the fact that the re-establishment of large carnivores in Sweden has created conflict. The large carnivore debate is polarized – unfortunately often on the basis of inaccurate facts. The discussion is made even harder because the large carnivores seem to have become symbols of tension between the rulers and the ruled, between rural and urban areas – and also symbols of ethical positioning around humanity's right to dominate other species.

The aim of the Large Carnivore Centre is to disseminate evidence-based and balanced information about the large carnivores and to provide an insight into how different interest groups are affected by the presence of large carnivores. Increased knowledge about large carnivores and better mutual understanding of other people's realities will hopefully lead to more constructive dialogue, which can help reduce conflict and improve the chances that Sweden will be in a position to provide habitats for large carnivores in the future.

Since the Large Carnivore Centre seeks to provide an as comprehensive picture of the large carnivore issue as possible to as many people as possible we need to disseminate a broad spectrum of information and do this via different forums and methods.

In terms of content we communicate information about the biology and history of the species, about the framework and development of their management, and about how the large carnivores affect people and other species in their surroundings. Our communication tools include two websites (one for children and one for adults), an exhibition, a large carnivore school, lectures, seminars, courses and dialogue meetings. We also take part in trade fairs and produce printed materials.

Irrespective of forum or method it is essential that our nature interpretation quickly makes the audience aware of how complex the large carnivore issue is. In the exhibition and on the websites we try to do this through a clear visual structure where different aspects are presented, for example "large carnivores and domestic animals", "large carnivores and tourism", "large carnivore management".

We want our nature interpretation to be full of life and to stimulate our visitors' own thinking and therefore we try to create space for personal reflection. For instance, we use short and pithy texts rather than trying to be exhaustive, and we also use quotations and open-ended questions.

For the same reason the exhibition has large amounts of pictures and photo montages and the visitor has opportunities for direct experience of the large carnivores through their skins, sound, film and various interactive stations. Visitors can also see the large carnivores live in the zoo that shares the location with the visitor centre. As a further stimulus for thought we have included the human as the fifth large carnivore in our concept. We find it makes a strong impression when we describe our own species and our impact on the environment and other species in parallel with information about the four-legged large carnivores.

During personal interaction, both the content of the nature interpretation and our role as nature interpreters become more nuanced and varied. If we come across a person who does not have any strong views on large carnivores but who has many questions, our role as nature interpreters becomes more of a regular communication of facts, which will then make it possible for the person to form their own opinion on the large carnivore issue. If we instead come across a person who is distinctly positive or negative to large carnivores, we will listen and engage in dialogue on the basis of what the person tells us. If during the dialogue we notice that the person seems to have missed out on some of what we consider relevant information we top

The human is one of the Big Five in the exhibition at the Large Carnivore Centre. Here is a "female in winter coat". Photo: Linda Thelin

it up so as to provide a broader basis for reaching an opinion. In this way we assume different roles depending on the actual situation and we often act as a channel for other people's and organizations' opinions and experiences. On occasions when several people with different points of view are present it falls to our lot to act as facilitators of the meeting and support dialogue.

Nature interpretation can mean many different things, but for us it is a combination of disseminating facts and serving as a meeting place where everyone's opinion can be heard and where there is space for reflection. If we are to be the kind of meeting place where constructive dialogue about sensitive subjects can flourish, we believe it is necessary that everyone feels welcome. For this to succeed we have to be seen as neutral and trustworthy communicators of fact, and also clearly show that diversity of opinion is respected. This in turn requires the nature interpreter to be knowledgeable on the subject and have good contacts with relevant associations, researchers and authorities. We feel that the large and well-established network built up by the Large Carnivore Centre is essential for the credibility of our enterprise.

INTERNAL AND EXTERNAL SPACES IN NATURE INTERPRETATION

TINE NORD RAAHAUGE

During recent years my work as a nature interpreter has made me very interested in how to create the right framework for the story – a space for the good story. Both the story I build around myself in an interpretive situation and the overall one about our nature school, where each nature interpreter works in an individual manner within a common framework. But I am particularly interested in the story about the natural world that I create jointly with the participants in the course of an event.

What is it that makes us move from being in a general way curious about nature to being completely absorbed in an encounter with a dead shrew on a woodland path?

What is it that happens when borders are expanded, and we put aside our "standard Danish arachnophobia" and allow ourselves to be delighted by the fascinating sight of a garden spider?

The foundation of my work as a nature interpreter is my own intuitive happiness and enjoyment when I am in the natural world.
Photo: Tine Nord Raahauge

And what is the underlying force that suddenly transports us into a state of harmony with the present, the spider and the dead shrew?

I can't provide a simple answer, but I would say that the story and the space and framework that create it are an important part of the answer. Both the concrete evidence-based story of the spider that makes us interested in a close-up inspection of the web of the garden spider. But also, to a great extent, my own story of "me as someone who is fascinated by spiders" that might slowly begin to take shape in the back of my head.

How should we understand "the space" and "the good story"?

The foundation of my work as a nature interpreter is my own intuitive happiness and enjoyment when I am in the natural world. This is a personal experience that I bring along as an important part of my work as a nature interpreter – and as a part of my story about myself and the natural world. During the last three years I have also worked a great deal on the narrative perspective. One of the basic elements of narrative work is precisely the story, and this made me see a connection between my happiness in nature and my view of nature and also my ability to create space for a story that reflects this. In this context the concept of space should be understood in two different ways.

First as the physical location where you are in relation to what is to be communicated: you get a much better intellectual and sensory experience of the life of the water scorpion if we are out there in our wellies and with our hands at the water's edge! Secondly the space should also be understood to mean the mental space that can be created in the communication situation if the nature interpreter knows how to catch – or create! – the moment when the participants are ready to receive what I want to share and the natural world.

For instance, the moment when an unfocused boy in year 3 abruptly stops and is amazed by the empty crab-shell in the sand just in front of his feet.

Here it is a question of seizing the moment and forget all I had originally planned for us to do, and instead create a new space during a moment that lasts exactly the time it takes for the crab-shell discoverer to have his curiosity satisfied.

This mental space might only last for a short time. But it might also manifest itself as a state of flow lasting all morning. On occasions like that the nature interpreter is in heaven.

That much about the space – now to the good story. Because even if the space is a precondition for the creation of the good story, it is not enough to bring the

This mental space might only last for a short time. But it might also manifest itself as a state of flow lasting all morning. On occasions like that the nature interpreter is in heaven.

pupils or the pre-school children along to the lake and expect magic to result.

Undoubtedly there is a lot of wonderment and interest in doing your own exploring. But for me as a nature interpreter the greatest satisfaction comes when my own story and the nature interpretation merge on a higher plane and I manage to engage not only those who have picked up an interest at home but also those who never would have thought that shore crabs or spiders could have something to offer them.

When we are outside

When we are out in the woods it is important to me that the participants feel that they are part of the story that we jointly create in the course of a tour. That we are together and experience connection and synergy with the natural world we together are moving in, and that the activities that I introduce along the way contribute to the experience.

Here you might want to point out that my view of nature and my personal experience of nature might differ from those of the participants – and that their experiences might differ one from the other – and this is correct. We are different people – with different backgrounds and different degrees of ability to become absorbed in a nature experience. But as I see it, this makes it even more important to focus on what creates the good story – both for the individual participant and for the group as a whole.

My role as facilitator is not static, in my meeting with the participants it needs to have fluidity. It starts from a position where I personally feel nature speaking to me by providing me with the happy experience of wonderment, learning, curiosity or belonging, and moves towards a position where I can feel that the same emotions appear to emerge in the participants.

And it does not have to be the same space. You might ask yourself why it is important that I focus on my own good nature experience when my aim is what other people experience? But for me this is self-evident: I don't think I could do interpretation in a good way if I were only to focus on how far the participants have reached. That

When we are out in the woods it is important to me that the participants feel that they are part of the story that we jointly create in the course of a tour. Photo: Susanne Borg

would create a stunted nature experience, with any old nature interpreter – in this case me – who is narrating in a manner that cannot escape being indifferent and mechanical, in contrast to a situation where a nature interpreter creates a particular narrative space that is attractive to most people – to a great extent because of enthusiasm and personal involvement.

Reflection on personal practice

I try to reflect on my role as nature interpreter both in the course of a tour and afterwards, at home. When I work with a group I often make use of reviewing methods that can provide a quick overview of

the participants' experiences and interests. How much experience do the participants have, is one example? And what is their motivation for taking part, how interested are they?

Reviewing methods are good tools for constructing the basis of a story. They give me an idea of who the people are that I am with, and often also of how I might best create a story and communication

When the tour or the event approaches its finish I sometimes choose to end by doing a reviewing exercise that can provide me with feedback on the day. One of my favourite choices is "the rope", where you place a rope in a broken circle on the grass. One end expresses a negative attitude and the other a positive attitude to the question I ask. The participants position themselves along the rope in accordance with their evaluation and all of them share their thoughts. In this way the evaluation is inclusive, and I get good opportunities to ask questions about what I hear.

Later on, I incorporate the participants' evaluation in my own evaluation of the event. What had the participants noticed and how did that fit in with what my focus had been?

To the extent that time and opportunity permit I include examples from my work in a study group on narrative that I take part in. Here we keep interviewing each other based on various techniques that I feel can identify a problem or question effectively. And the narrative interview form, combined with the fact that the other participants in the study group don't have a background in nature interpretation, provide me with new angles to my evaluation relative to the thoughts that I am continuously creating and developing about my practice as a nature interpreter.

FOTO: METTE AASKOV KNUDSEN

4 THE STRATEGIC INTEPRETER

EVA SANDBERG
AND METTE AASKOV KNUDSEN

In this chapter we will discuss what it means to work strategically as a nature interpreter – how to plan interpretation in order to achieve its aims. The previous chapter stressed the nature interpreter's personal skills in planning and executing the different nature interpreter roles. Now we will take it a step further – and discuss why planning, follow-up and evaluation are crucial, as well as the importance of being relevant to and involving participants and their perspectives in planning and implementation. We will also address how nature interpreters might collaborate with colleagues and with other professions to achieve as many societal benefits, positive experiences and learning opportunities as possible.

Nature interpretation can help create more profound awareness of the natural world, facilitate positive experiences and stimulate engagement by influencing attitudes and behaviour. The immediate contact with the natural world and with the other participants that we describe in Chapter 2 is valuable in many other respects as well – both for the individual and for society as a whole. This is especially true when there is an aim to strengthen democracy or offering alternative learning paths in the school, for instance for children and young people with neuropsychiatric disorders. It is also valuable for anyone who quite simply will learn more and in different ways when in immediate contact with their natural and cultural heritage. Nature interpretation also creates opportunities for cultures with different approaches to the natural world to meet. It can thereby offer space for integration, support recovery from stress and trauma or promote public health. Nature interpretation can also create jobs, for instance in the tourism industry, by offering experiences in the natural world to tourists who pay for their experiences. The strategic nature interpreter is aware of this multitude of opportunities and how to exploit them. But also of how to work collaboratively with others so as to make nature interpretation accessible to as many as possible.

All planning involves some standard questions: why, what, where, when, for whom and how.

Planning of nature interpretation

It is not unusual for the daily life of the nature interpreter and the conditions affecting their work to be shaped by a challenging combination of broad ambition and narrow budgets. There is a danger that available time and resources are devoted to "doing" as much interpretation as possible, with the strong commitment that often fuels the nature interpreter. In spite of the lack of resources the result is often good and both nature interpreter and visitors are pleased. Genuine commitment and interest tends to rub off!

Nevertheless it is essential to set time aside for planning and evaluating what you do (and not to rely exclusively on your commitment as resource) if you want to make full use of the potential of the encounter with the visitor, if you want to make a difference

through nature interpretation and if you want to develop professionally. It is also essential if you really want to understand what actually happens when participants experience your interpretation. A strategic nature interpreter carries out planning, evaluates, reflects, learns and plans again.

A method used in Denmark is "the travelling expert group", a collegiate planning method, where a group of nature interpreters from different organizations meet for a few days and help a colleague to plan new nature interpretation for a specific location (page 217).

All planning involves some standard questions: why, what, where, when, for whom and how. All the questions require well-thought-out answers as well as models to handle and utilize the answers. First of all you need a clear idea of what it is you hope to achieve with the planned interpretation – do you want the participants to be able to identify a certain number of plants, do you want to arouse wonderment and fascination, do you want to change a specific local behaviour (e.g., littering) or do you want to generate debate and commitment to nature conservation? These are questions with answers to the same "why" that is floating above the time axis in the model on page 145.

Planning and interpretation

Chapter 2 discussed interpretation as an approach to communication. Interpretation offers several structured planning models. Sam Ham's TORE model (Ham 2013), is a good basis for understanding thematic interpretation: a strategic approach to communication with the aim of making it possible for visitors to create personal relations to those objects (places, people, phenomena or ideas) that are being discussed. Necessary qualities are, as described on page 208, having a theme (T), organization (O) making it easy to follow, relevance (R), making it matter to individual visitors, and making the interpretation enjoyable (E) for audiences to process.

To encourage the visitors' own reflections and thoughts the interpretation is structured around a theme. The theme (or sometimes several themes) is a response to the statement:

I think it is very important that visitors I meet understand that ...

The theme helps the nature interpreter to "stick to a line" and to make the "train of thought" visible in the delivery, no matter what its form. Photo: Mette Aaskov Knudsen

That is, a theme is not the same as the subject addressed, but rather it is the overall idea that the nature interpreter wants to bring out, closely connected to the reason to offer the interpretation at all.

Subject: Nature conservation in hay meadows.
Theme: "The rich diversity of these hay meadows is a result of human activity evolving through a thousand years—a process you are now part of"

The theme above works as a sort of lighthouse, helping the nature interpreter to stay focused and be selective among the materials and all the possible facts and experiences that might be offered to the visitors.

A panel guided by the theme above could be expressed as follows: "The rich diversity of these hay meadows is a result of human activity through a thousand years. Once it was for people's survival, since they needed hay as winter fodder for their animals. Now it is maintained because people living locally are committed to keep the landscape open. Your visit here makes you part of the history and future of this meadow."

The theme helps the nature interpreter to "stick to a line", to make the "train of thought" visible in the delivery, no matter in what form it

is presented. This means that the theme is designed to stimulate and direct the visitors to think and reflect upon the aspects that the interpreter or the organization considers important (the message or main point). Briefly put, its function is to help the nature interpreter and the visitor in their common endeavour of "meeting". Thematic planning forms the basis of most interpretation planning models. Some of the more popular can be found in the American literature, as for instance in *Interpretation for the 21st Century* (Cable, Knudsen & Beck) and *The 5-M Model* (Brochu & Merriman). A well-established manual is *A Sense of Place* by James Carter, which is available to download from the Internet, and which concentrates on the questions to ask and the perspectives to consider when answering interpretation's why, for whom, what, when and how. It also stresses the importance of planning interpretation jointly with all stakeholders who are part of the story of a place or a phenomenon.

Carter developed this further in *Interpretation: kommunikation för utveckling av kulturmiljöer* [Interpretation: communication for the development of cultural heritage environments], commissioned by

THEME EXERCISE

This exercise is helpful when you are defining a theme and need to distinguish between subject, content and theme.

Complete the sentences one by one.

1. Our subject:
Our nature interpretation deals with, for example...
→ birds of prey in the national park.

2. Our content:
In particular we want to talk about...
→ the nesting trees of the golden eagle, which are usually over 200 years old,
→ the gyrfalcon pair that returned to the same sheltered rock ledge year after year,
→ the prohibition of boat traffic during the early summer, which is good for the ospreys during their breeding season.

3. Our theme...
What we really want the visitors to understand about out subject is that:
→ the fact that the area is protected as national park has facilitated the survival here of several threatened and spectacular birds of prey.

This exercise is taken from the book Naturvägledning i natur- och kulturområden [Nature interpretation in natural and cultural areas] (Swedish Environmental Protection Agency, 2018).

the Swedish National Heritage Board (Carter 2016). Collaboration and partnerships can be difficult and time-consuming and can mean that some of the control of the narratives will have to be shared with others. But the visitor might have a more profound experience, and planning and implementation might be anchored in a way that extends their temporal and spatial reach – read more about this in the article about UNESCO Geopark Odsherred (see page 242).

Message before media

Irrespective of the scale of the project to be planned – whether it be a single guided tour, multiple audio-guides, an exhibition hall, a system of outdoor information panels, or an entire suite of guiding events for a new national park – all planning models have in common that they emphasize that nature interpreters should not begin the planning process with a ready-made answer to the question "how?". The choice of media should only be made on the basis of the totality of the answers to the other questions – why, what, for whom, when and where.

It is easy to be persuaded by, and perhaps also get funding for, new communication technology, which is to be introduced and filled with content. However, this means that the communication method itself becomes the starting point which then determines the rest of the planning. If instead you start from what you want to achieve and from what the visitors' needs are, the conclusion might be that an entirely different method is more effective or suitable. Look again at the model on page 145 where the question WHY has been placed above the timescale and HOW underneath it. Letting the question HOW be based on the answers to many other questions, instead of being the starting point for these, is also one of Lars Hallgren's conclusions in his article about planning, below.

Planning from different perspectives

Lars describes a model that is related to a developing trend seen in many countries and organizations, with increasing focus on visitor experiences and perspectives, and on participation and democratic

forms for nature interpretation and shared creation of meaning. This is a change driven both by visitor expectations and by the profession's own development – especially in the museum world. It demands a lot of the nature interpreter's skills.

On one hand it means being a reliable communicator of scientific facts and knowledge and with strong feelings for the natural world. On the other hand, an interpreter must function as a facilitator with a focus on the visitors and with the ability to create opportunities for dialogue-based learning. Many natural and cultural heritage interpreters speak about this as a drastic shift in the self-image of the museum and interpretation world. There is an ever-growing interest in the use of dialogue as a tool, in possibilities for discussion of sensitive subjects, and in highlighting different perspectives. The visitors' own experiences take centre stage and methods are developed that make it easier for local actors and visitors to become co-creators of their own and other people's experiences. This is especially relevant for those who use nature interpretation as a learning tool for sustainable development, as it is closely associated with efforts to create

SAM HAM'S TORE MODEL

According to Sam Ham interpretation should be Thematic, Organized, Relevant and Enjoyable

- → **THEMATIC:** A theme is the guiding idea that directs your narrative and helps you and the visitor be selective among all the things you might touch on. The theme makes it possible for you to meet mentally.
- → **ORGANIZED:** Communicate in a way that makes it easy to follow guiding and information panels – just enough information and facts linked to the place and what you can experience there.
- → **RELEVANT:** What is included needs to matter to the visitor – to the specialist, to the grandparent and grandchildren, or to the casual visitor who only fitfully pays attention to the interpreter. By drawing attention to the unique characteristics of the place and the visitors and universal perspectives such as responsibility, guilt, love and hatred, the story can become relevant for many people.
- → **ENJOYABLE:** Good interpretation must be enjoyable for the visitor and provide opportunities for reflection and involvement.

participation, empowerment and ownership, which are all ingredients needed for this kind of learning. Read more in Chapter 5.

One challenge for nature interpretation is to fully absorb the fine-tuned feeling for the visitors' needs and interests from the tourism and experience economy, but at the same time not to lose sight of the popular education aspect of nature interpretation – its ethical compass. In practice this means offering deepened knowledge and opportunities for reflection instead of entertainment with superficial and one-size-fits-all experiences. To build relations with the place and to have the courage to believe in conversation, even about complicated contexts, difficult questions and shared societal challenges connected to the place. It turns out that when this happens, tourists often highlight nature interpretation as the factor that added most value to their travel experience (Ham 2013).

Collaborative nature interpretation

The ability to devise and support cross-boundary collaboration and contributions to colleagues' development through networks will create a lively professional culture and tools for driving development forward. It is important for both the individual's and the whole profession's development and role in society to identify border zones and opportunities for collaboration with other related professions.

The strategic nature interpreter collaborates with others to remain attuned and responsive to evolving social needs and interests. That is, we must be attentive to these signals and trends and be able to integrate and manage them through collaboration with other parties.

Nature interpreters are experts in communication of facts about the natural world but can be much more than that. In Denmark, where nature interpreters constitute a clear profession with common educational standards, they might for instance help solve issues in the municipality, where the natural world provides the framework, but the issue is about development, bridge-building or the creation of communality between different groups of citizens. Those who are employed by municipalities might be working across administrations and areas, which puts them in the position of "spider in the web" or catalyst for

development projects. Their overview and networks might become useful for the development of new multi-administration initiatives.

Many nature interpreters (also in the other Nordic countries) are therefore able to act as a kind of change agents, capable of bringing together different expert groups in projects where nature is the starting point or precondition for another activity. In this way the nature interpreter makes it possible to solve issues that concern the entire municipality, but which had previously been handled in the individual administrations.

A survey of Danish nature interpreters employed by municipalities provided examples of areas of activity for the strategic nature interpreter to focus on:

Multiplier effect

For nature interpreters, employees who are in daily contact with citizens are important professional groups for collaboration because of their potential "multiplier effect." By collaborating with and training other categories of employees their efforts will reach a much larger group than they would have been able to reach through direct contact.

Typical areas in the municipal sector where nature interpreters can be useful are:

- → Children and young people
- → Older people
- → Health
- → Integration
- → Technology and the environment

One example of how the nature interpreter can approach working with health and nature is Simon Høegmark's description of his use of nature therapy (see page 247).

Many municipalities want to create projects involving several expert groups and activity areas, since this might generate new ways of solving current problems. Because of this there is clearly potential for nature interpreters to join and coordinate broad projects with the natural world and nature interpretation as one component, and which stretch across several administrative units.

The nature interpreter might organize activities and train staff in areas such as care of older people. Photo: Bo Tonnesen

Several such examples have demonstrated how the nature interpreter can create opportunities for dialogue between groups of citizens and a municipality in the form of voluntary projects within nature conservation, local nature interpretation and the establishment of facilities in support of outdoor recreation. The nature interpreter's strategic angle in such a case might be to find a position between citizens and municipal decision makers and in this way become the driving force ensuring success of the project and communication within the project.

Attracting attention

In Denmark many nature interpreters contribute content or articles in print media and input to digital media. Generally speaking, their contributions are popular both with the editors and their audiences. The

nature interpreter can use such media strategically and proactively, as this helps create visibility and a stronger profile for the municipality, the nature areas, nature schools and the nature interpreter personally. It is particularly interesting for the local press to write about children, young people and the natural world. Often the nature interpreters are among the most talked about and quoted employees of a municipality. This also has significant strategic value.

In times of cutbacks it therefore becomes crucially important for the nature interpreter to have thought and expended effort strategically in terms of collaboration, visibility and problem solving. By helping to solve important and relevant social problems you also create visibility for yourself and publicity for how your nature school/workplace can become more important within the community. Therefore, the nature interpreter needs to think about how to become visible to the decision makers. How and when to interest your board, the head of the relevant municipal administration, local politicians and others? It is also a question of considering how your daily work as a nature interpreter can be made more visible, not only to visitors and customers but also to decision makers and municipal leaders looking for solutions to problems, often with limited resources. Here nature interpreters have a great deal to offer. Read more in Jakob Walløe Hansen's article about partnership work around a Geopark in Denmark (page 242).

Evaluating interpretation

Evaluating nature interpretation and trying to understand how it achieves its aims is important for several reasons.

First, it provides opportunities to improve the activities on offer, or perhaps to redefine aims and goals. Second, it provides nature interpreters an opportunity for professional development. Third, it supplies feedback, decision support and motivation for those who finance and invest in nature interpretation.

Many people argue that nature interpretation, with all the characteristics brought out in this book, has great power to make a difference in various ways. Many nature interpreters are driven by their own commitment to and feelings for the natural world. They are convinced that, given the opportunity to share it with others, given the oppor-

tunity for other people to have the same contact with the natural world and access to the same knowledge interpreters themselves have, then they will feel and think in the same way. Attitudes and behaviour will therefore also be affected. Our awareness of our own practice has an influence on what we as nature interpreters can actually achieve. Cf. Chapter 2 and Lars Hallgren's article on page 153.

If nature interpreters aim to support democratic dialogue about nature conservation or issues involving conflicts of interest, exploitation, large carnivore policies or other sensitive issues, then it is their success as facilitators that needs to be assessed. That is, how well were different perspectives brought out, how was dialogue between the participants facilitated and how have they been enriched and strengthened by the conversation that took place. Read more in Live Danielsen's article about creating a forum for discussion of the management of a water course in Norway (see page 185).

Is the aim to generate interest in spending time in the natural world, to contribute to the wonderment and inspiration many people experience from deeper contact with nature? Many nature interpreters state that it is precisely these types of emotions and experiences with existential and spiritual dimensions that they are primarily trying to create. In such a case, an emotionally profound relationship with nature is the principal aim of the nature interpretation. And that means it is precisely this relationship that needs to be evaluated. The growing interest in nature interpretation as a contribution to health belongs with this aim. Methods that contribute to mediate first hand experiences with the natural world become particularly important. Read more in the article about relations to nature on page 54 and about Simon Høegmark's nature therapy project (see page 247).

But nature interpretation aiming to focus on specific problems or phenomena or to influence attitudes and behaviour cannot rely solely on wonderment and positive attitudes to the natural world. How we act does not follow directly from knowing that we should act. It is a great deal more complicated than this. Liking the natural world might be a precondition for involvement in nature conservation but it is not something that immediately makes us act to protect the natural world. It is not possible to claim anything about the effects of nature interpretation unless we consider our aims carefully and

determine which components of what we do in our encounter with visitors are necessary for our specific aims to be realized.

In his book Interpretation: Making a difference on purpose (2013) Sam Ham develops this line of thought. He criticizes sweeping statements about what something called nature interpretation can achieve, and argues that if interpretation is at all to be able to influence attitudes and behaviour it must not just have certain characteristics, but also address precisely the behaviour that is to be modified. For example, if the aim is reducing litter in a nature area then this is precisely what must be in focus for the encounter with the visitor. But if it is about generating involvement in nature conservation generally a different focus would be required.

Thought listing, zones of tolerance, and reviewing

Ham stresses that the key to "making a difference" is that participants are led to think and reflect more deeply around the theme of the interpretation – through thought provocation and curiosity rather than instruction. He introduces the concepts of thought listing and zones of tolerance as tools that nature interpreters can use to assess the outcome of an encounter involving nature interpretation. If you invite people to an interpretation activity (an exhibition, a nature path or a guided tour) you have an idea of what you hope to achieve – that is, what you hope that the participants will feel, think and do after they have taken part in the activity. By interviewing visitors and asking open-ended questions about what they think instead of, or as a supplement to, standard evaluation and knowledge questions (did it meet expectations, was the nature interpreter good, or were you satisfied), you can instead find out how well you succeeded precisely in terms of the "difference" you were hoping to make.

Do the participants give roughly the answers the organizer of the whole thing was hoping for in response to an open-ended question about what thoughts they had during the guided tour? Then the answers would probably fall within the organizer's zone of tolerance. This also applies if the participants had quite different thoughts, but which also seem positive and acceptable to the organizer of the interpretive encounter. However, if a nature interpreter discovers that the partici-

pants have completely misunderstood the intention or come to entirely different conclusions than he or she hoped for, then the answers would probably fall outside of the interpreter's zone of tolerance. Nature interpreters who fail to ask evaluating questions of this kind, or don't even have a dialogue with their participants, are unlikely to have any indication of what is actually going on in the minds of visitors.

Using a so-called reviewing technique, which means that the participants are involved continuously, for instance throughout an entire guided tour, the strategic nature interpreter can secure dialogue with and response from the visitors. You can read more about evaluation using reviewing technique in Besökarnas röster [Visitor voices] (Centre for Nature Interpretation 2012).

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"THE TRAVELLING EXPERT GROUP"

METTE AASKOV KNUDSEN

Addressing major planning tasks can be difficult, since nature interpreters often have sole responsibility for their duties with no colleagues close at hand. The training and education section of the Danish Nature Interpretation Service has developed a training course idea called "the travelling expert group". This means that we gather together a group of nature interpreters from the whole country for a two-day working seminar, where the nature interpreters act as consultants.

The expert group will investigate the potential for nature interpretation in a specific area, work creatively on ideas development and present ideas and plans to a group of local and central stakeholders. Then they go back home, and the local initiator assumes ownership of the plan and the further implementation of the ideas. The area or region that provides the materials for the work of the expert group must have the potential for development of a nature interpretation

The travelling expert group will investigate the potential for nature interpretation in a specific area, work creatively on ideas development and present a proposed plan to local stakeholders.
Photo: Mette Aaskov Knudsen

plan covering both the natural and the cultural heritage of the local area and its individual characteristics.

It must be an area of great local importance, with local support and with a clear need that has been identified by local interests. Therefore, it is essential that local actors and decision makers take part in both the planning and the reception of the work – preferably with involvement of experts in other fields than those traditionally associated with nature interpretation. Social issues in the locality, or requests for multiple forms of use, need to be identified and incorporated in the planning process.

Several components of this "expert group methodology" are essential for a good process. We will now briefly mark out those components and frameworks that need to be in place for an "expert group" to be able to deliver a good outcome.

First of all, contact needs to be established with the local area or municipality that is interested in creating fresh developments in their nature interpretation efforts. The initiator might be a nature centre, a tourist destination or a local municipality. The local area must supply a coordinator who can take responsibility for a number of practical matters, such as local organization, contacts with key persons, practicalities and logistics, as well as planning for how best to ensure that the ideas once accepted become firmly rooted in the locality.

Three stages

Before the expert group sets out, certain clarifications and some planning must be in place. It is important to ensure that the coordinator of the expert group is aware of and understands local strengths and challenges. This means that the expert group coordinator needs to arrange one or two meetings before the whole group gets together. These meetings should allow the coordinator to meet local actors and decision makers, use these interviews to get an understanding of the focus of the task, and check that there is a common understanding of expectations in terms of level of ambition and financial framework. These meetings should achieve clarity about key desiderata for the task – which themes to address and which types of experiences to develop.

Next the expert group coordinator and the local contact person prepare a draft schedule of tasks for the expert group to address. The best way of rooting the project locally is for a local individual to assume ownership of the tasks. The coordinators are mainly responsible for designing the process and acting as a sounding board. Usually four to seven tasks are developed for one local area.

Example of tasks to be addressed:

How to design living workshops on the themes of Stone Age fishing, manufacture of Stone Age pottery, processing of hides, bow making and dugout boat building, based on a desire to:

→ Create a space where a visiting family is inspired to a more profound presence, among other things by offering experiences for families to share or share creating. The space might incorporate physical activity, for instance through play and authentic nature experiences. It might generate a "back to basics" feeling in the visitors.
→ Encourage the visitor to interact with the physical objects and living scenarios that they encounter during their visit.
→ Invite the visitor to take part in a dialogue about body, climate and culture, starting from the knowledge that the visitor has been introduced to at the Ertebølle Stone Age Centre.

When the tasks have been defined the members of the group tackle the material based on their own skills and experience. Before meeting up they are given access to relevant background material, maps and literature.

The second stage begins when the group of experts get together in the location, where the local contact person has organized food, accommodation and meeting rooms. The coordinator has carefully planned a programme during which tasks are further defined, roles are clarified, and attention is turned towards the tasks. This is done through presentations and activities designed both to liberate the imagination and to introduce methods.

The group is shown the local area where the tasks are to be implemented and they meet local actors who can then ask about possibilities and requests. After this the experts begin work, interrupted by joint sessions of their different groups for mutual inspiration and testing of ideas. We find that this creates openness, broader views and less constrained ideas.

The product that the expert group is expected to deliver needs to be clearly defined. It should primarily consist of a written report containing concrete guidelines for the implementation of ideas. Ideas are to be presented clearly and with accompanying justification. In addition, the report might be supplemented by 3D models or a short illustrative video.

Towards the end of the period when the expert group is working they get to meet key local individuals who will receive the report and possible other products. Such key individuals might be the chair of

the municipal council, managers of visitor centres, the chief tourism administrator, the director of the local museum, volunteer organizers, owners of hotels or campsites etc.

Common to the members of this reference group is that they need to be individuals with a position in local society and access to local resources, and therefore able to support the local implementation of the ideas. At the same time, it is important that the reference group has the freedom to be selective about the ideas. They don't have to accept ownership of every item proposed in the report.

The third stage of the work of the expert group is the responsibility of the coordinator, who gets in touch with the local contact person or one of the key local individuals, in order to follow up on implementation and the further processes. This takes place six to twelve months after the visit from the expert group.

We have solid evidence that those groups we have coordinated have helped build the foundations for successful applications for funding. New discussions and meetings between local actors have been initiated, and this has led to a stronger joint effort and created a direction towards new ideas and goals.

PLANNING FOR PEOPLE'S SHARED CREATION OF MEANING

LARS HALLGREN

Imagine yourself in the following situation: You have been given the task of developing nature interpretation for an area of wilderness of considerable natural value. The area is close to the coast and not far from a medium-sized town, and access using public transport is good. You have the use of a building of 200 square metres adjacent to the area; you have 10 million in a Nordic currency to invest in equipment and you have 4 million per year for operational costs. What do you do? And more importantly still, how do you decide what to do? Which are the questions you need to ask and answer to become clear about the form and content of the nature interpretation?

This article is about how to think when planning nature interpretation when we take the theory of communication as co-creation of shared meaning into consideration. This means that we assume that communication, irrespective of whether it is in the form of conversation, books, TV, oil paintings or sculpture, is always an encounter between actors with different perspectives, all of them engaged in creating

Of greatest importance in all communication planning is to acquire knowledge of the participants' expectations: What are they thinking, believing and hoping? Only when we have some knowledge of this are we able to judge how to engage with them.
Photo: Kent-Ove Hvass

meaning from the situation, each other and the objects that carry the meaning, on the basis of their individual perspectives (see page 153).

The most important requirement if you are to predict and direct this process, i.e. carry out communication planning, is to acquire knowledge of the perspectives, attitudes and expectations that different participants in the communication situation bring to the encounter. What do they think, believe and hope? How do they perceive themselves and the sequence of action they are in the process to perform? When we know something about this we will also be able to find out what to do to engage with them and their perspective. Should we speak or listen, lecture, explain, narrate, activate, provoke, debate

or initiate dialogue? Well, that depends on what prior understanding and expectations the other participants have about the place and the phenomena that are important in the place and in society and in relation to us.

The planning model I propose is intended to address these questions systematically, and the uncertainty that is associated with them. I propose that every professional communicator, irrespective of whether planning a short guided walk with a small number of participants, a costly and permanent exhibition, or a programme of activities over a longer period, should ask themselves the following questions:

- → Which perspectives, expectations, aims and goals do the participants have?
- → What are the conditions and frames for the communication situation?
- → Which phenomena or objects are involved and what are their characteristics?
- → What are the perspectives, aims and goals of the initiator (us)?
- → What are the conditions for the planning situation?

As we are asking these questions about an imagined communication situation we must keep in mind that the answers to the different questions are dependent on each other, and therefore we must deal with all the questions at the same time, in parallel and alternating. This means that it is not a very good idea to list the questions in the way I have done here. Instead we should imagine the communication situation as a meeting and that the questions about the different parts of the meeting are posed simultaneously, as illustrated in Figure 12.

The participants' perspectives

Participants in interpretation, or in any communication situation, approach the encounter with certain pre-existing ideas about the meeting, each other, and the objects, items, organisms and social processes that the nature interpretation will cover. How they react to things that the other participants say, express or do depends on how their

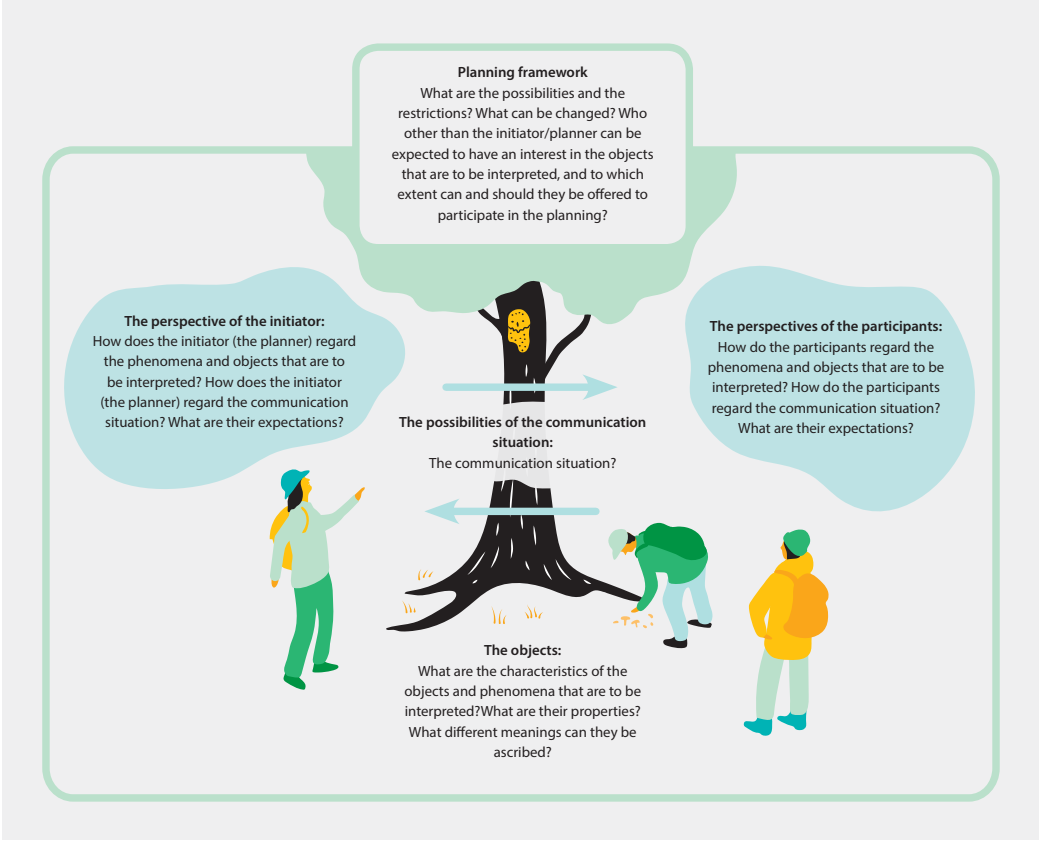

Figure 12 Planning model for people's shared creation of meaning. Illustration: Elsa Wikander, Azote

respective perspectives relate. They arrive with anticipation, curiosity, knowledge and engagement. They know something, believe something, hope for something, feel something, have learnt, or perhaps just as likely confused something about the place or the phenomena that the nature interpretation deals with.

Even in those cases where the interpretation deals with phenomena that the participants are completely indifferent to, they have a perspective that moulds their relationship with the phenomenon: indifference, lack of interest, ignorance – or perhaps rather, involvement in other issues. Irrespective of whether the perspective of the

participants is one of interest or indifference to the phenomena that the nature interpretation deals with, it is important to be aware of these perspectives, as if, as nature interpreter, you intend to engage with them.

When planning nature interpretation significant thoughts and data collection should be devoted to finding out with which perspectives the participants, or rather, different participants, arrive to the nature interpretation.

Perspectives are applied to all components of a situation. Participants in nature interpretation have perspectives on the natural world, but also on all sorts of other aspects of the occasion, including themselves and other people. Those who participate in interpretation are usually engaged in numerous other projects at the same time, and their perspectives on those projects tend to influence each other. For instance, a participant might simultaneously be interested in finding out more about seabirds, want an ice-cream, need to use the loo, find a rubbish bin and be depressed about something that might be happening tomorrow. These different projects, or action sequences, are concurrent and alternate in urgency, which has an effect on which perspectives are most active in a particular moment.

A participant might for instance at the same time be interested in finding out more about seabirds, want to have an ice-cream, need the loo, keep a look-out for a bin to throw away some rubbish and be depressed about something that might be happening tomorrow.

Of course, it is impossible to be aware of and plan on the basis of all the different perspectives of all the visitors. But the communication planner can pay attention to the general characteristics of perspectives. We can assume that everyone who in one way or another approaches a nature interpretation situation has the following types of perspectives:

→ Perspectives on phenomena, landscapes, objects. This is where we usually find the content and themes of nature interpretation. These perspectives might be expressed as interests and curiosity, questions, opinions, knowledge and experience: How do seals behave? Where can you spot them? How deep can they dive? It is a good thing that the seals have recovered from the seal virus epidemic of the 1980s. There are far too many seals, they destroy fishermen's equipment! I saw a seal

Nature interpreters must be aware that people have different thoughts for instance when they see a seal: I wonder how deep they can dive? How many pups do they have? Those marauders destroy fishing equipment! Photo: Keith Luke

once when I was kayaking, that was great. I think this is a beautiful place, but I am not interested in animals and nature. Normally I'm interested in animals and nature, landscape and history, but right now I am so busy with something else (find somewhere to eat, buy an ice-cream, change a nappy, go home) that I am not interested in any of those things.

→ Perspective on the communication and situation: This is about the expectations, hopes, anxieties, negativity the participants feel towards various forms of communication and various types of situations that attract or repel them: I want to listen to interesting and amusing stories. I like to experience things for myself at my own pace – information panels and clarifications interfere with my experience.

I want to read and look at pictures. It is important that it is informative and factually correct. I want most of all to have

fun and perhaps have a go at doing things myself, it doesn't matter too much what it is about. I want to get involved in discussion and debate.

→ Perspective on themselves: This is about how participants see themselves and their identity in the communication situation, in relation to other actors including the initiator, and in relation to those objects and themes that are present in the location and in the nature interpretation: I am curious and want to know everything. I want to co-operate to make this as good as possible. I am sceptical, don't think this will be very good. I don't know anything about this, and I want to learn everything. I don't know anything about this, and I don't want it to be too complicated. I am knowledgeable and I already know a great deal about this. I am worried that it might be dangerous. I find it exciting and am looking forward to the challenges. I am (for instance) a rock climber /kayaker /farmer /fisherman, which means I have certain opinions and interests when it comes to (for instance) steep terrain / stepping ashore on a rocky islet /damage to crops from grazing cranes /seals and the availability of cod. These identities might become more pronounced or more subdued, depending on location and communication. Consequently, participants in communication do not have a stable and permanent perspective on themselves: it does instead change as the situation changes, and communication is one of those processes that might activate particular identities.

→ Perspective on the nature interpreter and other participants: This is about the participants' expectations, hopes and fears concerning other participants' actions and communication: It is always nice to have a good guide. This person probably knows loads of interesting things that she can talk about. Somebody this young/old/xxx would hardly have much to offer. Museums are so pretentious. These modern exhibitions are nothing but a lot of gimmicks. It's great that so many people are here, that probably means it is good. It's a pain when there are crowds.

Above I have tried to give examples of questions and statements that might occur in among the indefinite amount of perspectives that might be held by participants in nature interpretation. It is not intended as a typology or classification of people, simply as examples of perspectives that people might have on a situation. As the sample questions demonstrate, we are not trying to define any firm attitudes when we are asking ourselves what the participants' perspectives might be. We are not trying to find out what the participant's perspective is on most situations they find themselves in, or what their perspective was last week.

I am not proposing that we carry out opinion polls in the whole population. What we need to consider when planning communication is how the participants can be expected to regard the objects, the situation, themselves and other participants in precisely this situation, when they are here and might take part in our communication activities. People's perspectives are local and temporary and dependent on the situation. A single individual might very well have different perspectives in different contexts and might change perspective within a relatively short timeframe. Communication in particular is one of the processes that can cause rapid and drastic changes of perspective. Therefore, we should not be satisfied with standard demographic data, such as age, gender, income level and the landscape type of the place where they live, when we are trying to tease out the perspectives of the communication participants for the purpose of nature interpretation. Just knowing that some of the visitors are middle aged working class men from a small town in a forested area of central Sweden, is not sufficient for conclusions about what they are curious about, what they know, believe and feel, and what they want to know more about, and what kind of activities they might consider taking part in. Instead the nature interpreter or planner of the communication activities needs to bring out their own experiences of how visitors usually relate to the landscape, the objects, the phenomena and the communication situation itself. If we want to get into a conversation with people about the things that are important, seen from our perspective, and not be met with a "yeah, yeah, but we must go now", then we have to understand how these issues fit in with their perspective.

The Large Carnivore Centre "The Big 5" in Järvsö (read more on page 193) has an interesting and provocative play on words in its name and in its exhibition. Normally the five large carnivores are listed as Wolf, Lynx, Wolverine, Bear and Golden Eagle, but at the Large Carnivore Centre they include human beings as large carnivores as well.

In the exhibition humans are presented just like the other animals, with information about weight, winter coat, breeding season, choice of food, family formation etc. It states that humans are omnivores, like the bear they eat a variety of foods. Most people find this an interesting twist, which fits well with their perspective. They recognise themselves, it is just sufficiently provocative, and it makes them think:

"Yes that's right, that's the way it is, we also kill animals for food." They are willing to go along with it. But two people I have spoken to or heard about did not react in that way, because they approached the communication situation with different perspectives. One of them is a hunter who says that he does not feel comfortable at "The Big Five".

He feels that the exhibition's comparison of humans and (other) large carnivores implies a criticism of hunters, and that the exhibition is meant to trivialize the negative consequences of increased populations of large carnivores. The other person is a vegan and perceives that the exhibition justifies human killing of animals. She believes it is wrong to describe the human as a carnivore, since she is of the opinion that humans can survive without eating meat and can choose a plant based diet. The same communication situation, the same provocative idea, but understood in three different ways, because we have different perspectives on the issues we are communicating about.

I'll give a few examples of perspectives. One nature interpreter told me how she tried in vain to encourage visitors to the nature centre where she worked to go and have a look at the beautiful beehives positioned 25 metres from the exit at the back. This nature centre is next to an old iron works with its mansion, formal gardens, forge, blast furnace and water wheel. This is how she described a typical situation: "Many people come to the nature centre to go to the toilet. After that they come upstairs and ask me if there is anything to buy, and I say there isn´t but why not have a look at the exhibition, it is free of charge. Then they take a turn there and when they are finished and are starting to go down the stairs I sometimes say: 'Why not go and look at our beehives with honey bees'. Then they say yes, but nevertheless walk off in the opposite direction."

Based on the nature interpreter's story we can learn a great deal about how these visitors' perspectives shape their actions in the situation she describes. First of all, they have chosen to come to this iron works with all its interesting cultural history and touristic attributes. They are expecting and are interested in stories about the life of the upper classes and industrial history. They look at the mansion, the forge, the water wheel and the formal gardens and these experiences activate further questions (perspectives) about life in these early industrial settings, about class differences in this society, about agricultural labourers, overseers, squires and fine young ladies. They take

Can you buy something here? Visitors and participants in nature interpretation sometimes have other expectations than to learn more about nature. The same person might display different degrees of interest in nature interpretation, depending on whether they are already engaged in another, unfinished action sequence when they receive the invitation to take part in nature interpretation. If you are expecting to be buying souvenirs you are not that interested in large carnivores.
Photo: Per Sonnvik

a walk in the gardens looking at roses, pumpkins and peacocks and they have a cuppa in the café. In this flow of cultural history perspectives, it is not certain that space is automatically available for those perspectives that are represented in the nature centre, which are about capercaillie and black grouse, environmental issues, solitary and social bees. It is also likely that these visitors are in the middle of an action sequence when they enter the nature centre.

Talk to people, listen to the public debate and use your empathic imagination.

They have been walking in the park, they have discovered they need a toilet, they have sought and found the toilet; after this they are ready to continue the action sequence they had already started, and whose ultimate goal might be to have an ice-cream at the other end of the area. If this is the case it is not very strange if these visitors fail to show much interest in honeybees and beehives, but it does not mean that it would be impossible for them to become interested. What the nature interpretation planner needs to mull over in a case like this is how beehives, solitary and social bees can be linked to and integrated with the already existing perspective around the mansion house and formal gardens that we have observed are of central importance for the visitors.

One way might be to initiate communication about bees already in the mansion house, the gardens and the café, for instance through stories about honey, honey cakes, tea sweetened with honey, or information panels or sculpture about bees guiding the visitor on towards the beehives and the exhibition. You have then connected the different stories in a way that takes account of those perspectives that are of central importance to the participants.

If we want to investigate what perspectives visitors to the area, our potential participants in nature interpretation, bring to specific phenomena, how should we go about it? What should we measure and collect and how should we use what we are collecting? I propose the following methods:

1. Talk to people: interview visitors to the area and people living in nearby towns (or further afield, if those are the potential participants) and listen to what the area means to them and what they are curious about and interested in. Ask, and inves-

tigate in other ways, how the visitors think about a visit and communication in connection with a visit.
2. Listen to the public debate: which opinions, interests, attitudes, knowledge and experiences, other than your own, exist in society? Assume that some of the people you want to communicate with have these opinions and experiences, these perspectives.
3. Use your empathic imagination: Consider a scenario where you, if you thought and believed as investigations 1 and 2 indicate, were about to visit the place and participate in communication with nature interpreters – what then would your expectations, hopes and fears around the communication look like?

An investigation in line with 1–3 does not have to be designed scientifically and quantitatively, but can represent random selections or identical interview situations. What is important is that it gives you high quality and deep understanding of the perspectives of the potential visitors, and likewise that there is width and variety in the survey of the many perspectives. It is not a question of working out exact frequencies and representativeness. Interviews do not have to be carried out in the same way with everyone: instead questions can be modified and adapted to the interviewees' ... yes, exactly that, their perspectives. What we are seeking is conversations, not questionnaire responses.

Let us imagine our coastal nature reserve (fictional; I have no experience of any such place and have not carried out an investigation like the one described here, it is an invention meant to explain what I mean by the participants' perspective) and let us imagine that walkers and canoeists in the area get to see seals.

We carry out our investigation according to steps 1–3 and can see the following: Some of those we speak to are surprised and curious to learn during the interview that there is a large seal population. They say that they thought seals were under threat, they remember the discussion about dioxins, seal distemper and the seal virus epidemic of the 1980s and about hunting of seals and clubbing of seal pups, and they believed that the seal population was almost extinct. Others who are themselves boat owners or canoeists and spend time in the archipelago confirm that they sometimes see seals and show that they

would welcome more information about the life of seals and how and when you can be certain of seeing them. A third category describes the seal as a serious threat to coastal fishing with an uncontrollably increasing population. They believe that the Swedish Museum of Natural History, who carry out the annual population count, use an unreliable survey methodology and that they drastically underestimate the size of the population. Some of those who say this are themselves fishermen and come across seals several times a week.

We recognise much of this from news reports and debates in the media. We also understand from interviews with the last group that they are disappointed that their experiences far too seldom are reported by impartial media or in exhibitions and nature programmes. It is clear that if they were to take part in nature interpretation they would rather talk about their own experiences than listen to those of other people. The question we need to ask ourselves is therefore

When planning for nature interpretation it is important to be aware of your own expectations, perspectives and assumptions, and how these relate to the participants' expectations. Mats Rosenberg guiding in the Oset Rynningeviken nature reserve in Örebro.
Photo: Eva Sandberg

how we, if we want to reach and be seen as reliable and relevant by individuals from all three groups, can relate to their different perspectives? Is it possible to design the interpretation in such a way that it is perceived relevant to all three types of perspective, or do we have to plan and provide different types of communication situations? Or should you resign yourself to doing something that is relevant to one or two of the groups but not to all three of them?

To answer these questions the nature interpretation planner also needs to start contemplating their own perspective: What do we want? Who do we want to talk to? In this text I am stressing the importance of considering the perspectives of the participants when planning interpretation. However, this does not mean that we must fulfil all expectations or that we cannot do something unexpected or provocative. It simply means that we must know and think about the perspectives the participants bring along. And when we don't know anything about their perspectives we must remember and take into consideration that we don't know.

The properties of the phenomenon or object

Nature interpretation is about something, a concrete or abstract phenomenon, which has certain properties. It is important at the planning stage to make it as clear as possible what these properties are and how they relate to the perspectives of the participants and the initiator. Examples of concrete phenomena occurring within nature interpretation might be species such as blue tit or eagle fern, ecological processes such as carbon storage or photosynthesis, biocultural phenomena such as transhumance or meadow raking. Examples of abstract phenomena might be biodiversity, conflict over large carnivore management, sustainable development.

Likewise, the phenomenon might be concrete: desired or undesired behaviours, such as littering carelessly or disposing of litter in a designated place, reducing your consumption of energy and raw materials, or not supporting trade in threatened plants and animals. At the start of a planning process the phenomenon is of course undefined, manifold and broad, since you don't yet know enough about the perspectives of the participants to be able to define it. At this

early stage you might discuss the potential of the place for communication on a range of concrete and abstract phenomena. As you gradually find out which phenomena are relevant to participants/ potential participants the phenomena may become more clearly defined and it might become easier to establish what the properties of these phenomena are and how they relate to the perspectives of the participants and the initiators.

The initiator's perspective

The initiator's perspective, i.e. that of the nature interpreter doing the planning and the responsible organization, consists of the preconceptions, aims, suppositions, hopes, goals and knowledge motivating the initiator to initiate nature interpretation. Perhaps the organization offering interpretation wants people in society to know more about the natural context, to feel better, to show more responsibility, or to do something different from what they are currently doing. Often these are things that the nature interpreter is already familiar with, but there are reasons to scrutinize what is taken as given. This is also the aspect that receives most attention in other communication planning models, which encourage the planner to consider the strategic aim and then define message and communication. The model proposed here deliberately places the participants' perspective ahead of "the initiator's perspective", not because it is more important or because there is a competition, but because the perspective of the participants is more likely to be forgotten or treated cursorily.

The model proposed here deliberately places the participants' perspective ahead of "the initiator's perspective", not because it is more important or because there is a competition, but because the perspective of the participants is more likely to be forgotten.

This applies for instance to the commonly occurring concept of "target group analysis", which of course is the initiator's perspective on who the communication is with, and which transforms the participant into a target of influence instead of being an independent and active creator of meaning.

In planning communication, it is of course important to think through why you communicate and what expectations and ideas you have about the topic of the communication, the communication sit-

uation, the person you communicate with and also about yourself as an active participant. It can often be useful to dig deeper into why it is important to your own organization that other people understand this thing that you want them to understand.

Circumstances of the encounter

There are often certain circumstances that direct and restrict what is possible to do in a communication situation, and it is important to be clear about those when planning interpretation. It might be questions of things like premises, equipment, circumstances relating to the specific place, size of groups, availability of guides, already existing exhibitions, weather and climate, seasonal variations etc. If, for instance, you know that normally 60–70 people take part in the half hour long guided sessions, then you know that it would be difficult to find time, and many participants would be too shy, for all of them to introduce themselves and tell about an occasion when they were scared in the wilderness, even if this, under different circumstances, would be a good activity.

Planning basis

Until now we have assumed that the framework for the planning of nature interpretation activities is clear, but of course this need not be the case, and if it is not this must be investigated. Important questions are: Who is affected by and might have opinions on the planned interpretation? What are the financial resources? Which infrastructure exists already, and which must be acquired? What can still be changed?

A planning example – microplastics

Let's now imagine our coastal nature area which is full of possibilities, and the exhibition space we have available to us. We assume we have been given the job of developing an exhibition and a supplementary interpretation programme about microplastics – problems and measures (once more, a fictional example). In our planning work we have

What do our visitors think about microplastics if we challenge them when they are having what they thought would be a relaxing coffee break?
Photo: Anders Arnell

therefore already settled one aspect of "the initiator's perspective": this is to be about microplastics as an environmental problem, and some of the circumstances of the encounter are also settled: it is to be an exhibition and a group activity led by a guide.

Our planning method now moves us to begin investigating "the participants' perspective". We carry out a few interviews and read daily papers and understand that many people have heard about microplastics in the media and know that it is not good for fish. People who are already environmentally aware seem to know quite a bit about the reasons as well. Those who are interested in the environment are concerned about the problems, others don't seem to either regard it as particularly serious or be particularly interested in learning more. This will give us a problem for our planning: those who are interested already know a great deal, and those who are not interest-

ed are … interested in something else. This means that we will not find out any more about relevant perspectives if we base our investigation on microplastics. Therefore, we look instead at what perspectives existing visitors to our existing exhibition have on the communication situation.

We can see that our visitors often are families with children, looking for an activity of suitable length, 90 minutes to 2 hours, capable of interesting both adults and children. Meals are important to them, coffee for the adults and soft drinks for the children. Where in this action sequence can we fit in a new activity about microplastics? Which perspectives can we activate if they are offered some plastic together with their snack, on the grounds that fish are "tricked" into eating microplastics? It would probably lead to a certain amount of denial, one important perspective for the participants is of course to enjoy themselves. The most popular experiences are usually petting live fishes in the aquariums in the exhibition, and the play corner.

Let's for a while assume "the initiator's perspective". We know that we don't want to create an exhibition where we make children feel sorry for animals; even if this might be tempting, it is the adults we want to communicate with, since it is adults who take the decisions that affect the scale of the microplastics problem. We look at "the character of the object": problems and measures associated with microplastics. Some of the sources of microplastics are fleece jumpers, cosmetics and artificial grass. The problems are rooted in consumption patterns that are deeply embedded in social systems and norms, and that are not easy to change even if you want to. If you want to avoid spreading microplastics you need a great deal of commitment and knowledge and good reading glasses – what you have to study is ingredient lists in small print with abbreviations of chemical products. It is likely that many people, even if they are already very interested, will feel hopeless when faced with the great difficulties involved in changing the consumption patterns of so many people. But the widespread occurrence of microplastics in consumption goods also offers an opening. Might people who are not interested in microplastics, fish or the environment as such, but who are interested in clothes, cosmetics and football become interested, if we can start from their initial perspective on clothes, cosmetics and football? We continue our investigation of perspectives by focusing on perspectives

on these objects. Perhaps we will then find an opportunity to make use of positive interest. Can we set up a lab where those interested might mix their own hair treatment free of microplastics (I think the recipe contains yogurt, honey and olive oil)? Popularize football on an old-fashioned gravel pitch? Might we collaborate with a company making woollen underclothes? And if such concrete and individualized solutions are available, well, the provocative offer of plastic pills with your coffee need not generate hopelessness or denial, but perhaps understanding.

Of course, none of these communications measures will lead to large scale solutions to the worldwide problem of microplastics in the oceans, but they might make more adults talk to each other about political and financial measures, perhaps while they are mixing their hair treatment or knitting their jumpers.

Of course, none of these communications measures will lead to large-scale solutions to the worldwide problem of microplastics in the oceans, but they might make more adults talk to each other about political and financial measures.

Conflict and tension

When you plan nature interpretation from the participants' perspectives it will become obvious that some nature and natural resource management issues are full of conflict. The participants themselves have widely diverging perspectives and this will become apparent during the investigation. However, you should regard conflict and tension as opportunities for interpretation: they show that there is strong interest in the issue and that there is something to communicate about.

But the presence of conflict places considerable demands on the design of both form and content of the communication. When it comes to conflict there is a need for flexibility and for all actors to have opportunities to express themselves without perceiving that they are forced to change perspective. Message oriented, strategically planned communication, whose participants feel that they are treated as recipients of information, often lead to escalation and deterioration of conflict.

Plan for communication before you start with visual design

A few years ago, a nature centre was given the opportunity to completely reconstruct its, by then somewhat old-fashioned, exhibition. The planning group decided, at an early stage, that the exhibition was to be constructed around black metal pipes symbolizing reeds. Another nature centre had as its design idea that the exhibition modules were to resemble islands in the nearby archipelago.

It is tempting, when you are about to carry out a major or minor change of your nature interpretation, whether a guide programme or an exhibition, to start thinking about form and content. To start shaping and designing, to devise messages and themes. In this article I have proposed beginning somewhere else altogether. I suggest postponing the decisions about colour and shape, letting the themes wait, and delaying work on the message.

Instead my proposal is that we make the encounter between different perspectives the focal point of planning. Decisions about form and content can come later.

A RESEARCH PROJECT ABOUT NATURE AND CULTURE INTERPRETATION

The perspective on the planning of nature interpretation that is described in this article is a partial outcome of the research project Planning for cultural heritage interpretation, which was carried out 2014–2016 with funding from the Swedish National Heritage Board.

Lars Hallgren had lead responsibility for the project in collaboration with colleagues in the Division for Environmental Communication and the Swedish Centre for Nature Interpretation of the Department of Urban and Rural Development at the Swedish University of Agricultural Sciences. Visitor destinations studied were the Läckö Castle Foundation and Huseby Bruk AB, as well as the Vänerskärgården, Lake Hornborga and Kronoberg nature centres. All contributed to the work of developing the planning model.

NATURE INTERPRETATION IN A GEOPARK – STRATEGY AND PARTNERSHIP

JAKOB WALLØE HANSEN

I work as a geologist and nature interpreter at the UNESCO Global Geopark Odsherred. Here I work with teaching, education and nature interpretation, both as an organizer and on a practical level. I have never cut loose from my earlier work as a researcher, which is why research on the geology of Odsherred receives high priority and is often incorporated into my interpretation and teaching.

Geopark Odsherred is included in UNESCO's International Geoscience and Geoparks Programme (IGGP) and the aims of the park include teaching, education and communication of the geological qualities of the park. A central aspect of the work consists in establishing an identity-creating teaching unit, at present with the working title mingeopark.dk. When the unit was established certain strategic aspects had to be considered.

The geopark is managed by a profitmaking foundation, and does not, as many people believe, belong to the municipality of Odsherred.

This means that authority and opportunity for teaching has to be self-generated. So far the geopark's contribution to education in the municipality has consisted in our involvement with the art and teaching project Geokids (see fact box). But at a time when the largest cultural institution in the world, UNESCO, is extremely aware of the problems potentially associated with not having a well rooted teaching system in the geoparks, the Geokids project is far from being enough. Therefore, focus lies on constructing a goal-directed and structured unit capable of taking on this task. One of my principal duties is therefore to develop the teaching unit and make it a firmly rooted part of the park.

Focus was originally, for political reasons, directed at covering all ages, from pre-school to senior secondary school. There was a focus on target groups rather than on the content and methods of the teaching. At present we have chosen to place our main focus on the compulsory school stages, since this enables us to reach the largest group of the youngest citizens. It has proved harder to reach the local senior secondary school, where they have long been waiting for a new curriculum. However, we still have hopes for the development of collaboration with the local senior secondary school, not least because my qualifications as a geologist might then (perhaps) be used in a different way.

Since the work of establishing the post happened at a time when I was doing my training as a nature interpreter, it seemed natural to me to try to base the teaching unit on the principles of interpretation, rather than on traditional school teaching. Initially this created a certain amount of unease about my strategy, since there was a view that Odsherred Nature School was already in a position to take care of nature interpretation in the municipality. However, it was and is a fact that the local nature school, which is a School of Production, has a large number of obligations that are not necessarily relevant to a geopark, which means that they have neither subject nor time resources to devote to this task. It is also important to stress that neither is it the task of the local nature school to assume responsibility for teaching and guiding in the geopark.

Therefore, my task was to clarify the importance of, and the need for, nature interpretation of relevance to the geopark. This was done by consistent use of interpretation, primarily in the local community,

and in this way inspiring people to themselves use and get to know the local area in a new way. In a small community like Odsherred this was quite infectious, and little by little people began to understand the use of nature interpretation as a tool and as a good way to make the geopark more tangible. At the same time, it also had the effect of sometimes making the work of the local nature school add to the relevance of the geopark, the effect of which should certainly not be underestimated. In this way Odsherred Nature School acts as an important partner in the effort to disseminate the message about the possibilities of the geopark. On a practical level the implementation of nature interpretation in the work of the geopark happens because we discuss interpretation in everything we do, from meetings in the secretariat about major projects where we collaborate across institutions and organizations, all the way to the actual teaching activities that I am in charge of. I believe that through this constant flow of information about nature interpretation all the parties will eventually include in their thinking such interpretation as is relevant to the geopark, and this will take us far. In addition to this – and no less important – there is ongoing political and strategic work at higher levels of the system on the implementation of nature interpretation of relevance to geoparks. These discussions are theoretical, and in practical terms they result in discussions about acceptance of what I and the geopark do, and, last but not least, in financial discussions about my/the geopark's strategy in relation to the municipal education administration.

Through my network of teachers right across subject groups, nature interpreters in the municipality of Odsherred, and to some extent through my membership of a network for natural science coordinators, I try to work interpretation into any teaching-related assignments I undertake. This provides the teachers with an understanding of the potential usefulness of nature interpretation for an understanding of the complex context of the geopark. Once the teachers are interested you are on your way to get their most senior managers interested in the project. In addition there is a need for the municipal heads of Culture and Leisure, as well as Pre-schools and Education, to be brought into to the joint effort of increasing the resources at present applied to culture and the nature school – so that the output of the Geopark Odsherred is not seen as an alternative but

Clay masks from Geopark Odsherred. Read more about the creation of the masks under the heading Geokids on next page.
Photo: Claus Starup

rather as complementing municipal education. With the support of various central managers, the ground is prepared for those politicians who will ultimately allocate the resources.

Such wishes may be expressed by representatives of various teacher groups and heads of schools and departments, through co-operation with natural science coordinators and in communications requesting the municipality's support for presentations in various political committees. However, this is a slow process and one which constantly encounters resistance, not necessarily resistance to the actual proposals but rather a question of the focus sometimes being concentrated on other projects within the organization.

Therefore, I have worked on parallel tracks: trying to influence my internal environment in the secretariat of the geopark by arguing for interpretation to be included in many of our projects – for instance by linking teaching activities to various projects.

My interest in nature interpretation's place in the geopark received unspoken approval from my employer in the spring of 2018, when I was given permission to join the committee of the Danish Rangers' Association, and later also permission to serve as the Chair of the Association – please note, this forms part of my working hours. This self-evidently provides an indispensable network and experience that could prove decisive in the ongoing work to improve the position of nature interpretation in the organization.

A high degree of professionalism and a focus on solutions that are viable in the long term are very important to me. People realize this and I believe this makes them more likely to believe in the project. So, armed with a great deal of enthusiasm, I am fairly convinced that I am, albeit using very concrete means, trying to "sneak in" interpretation through the back door of an organization that has previously not seen the need of it – from both a fundamentally practical and a theoretical way of looking at it.

GEOKIDS

Geokids was an inter-institutional and interdisciplinary teaching project, covering all the four themes of the geopark: landscape and geology, cultural history, arts and local produce.

The project operated between 2015 and 2018. Its steering group consisted of people from Culture and Citizens (Odsherred municipality), Odsherred Nature School,

Museum West Zealand, Geopark Odsherred, a local artist and several private stakeholders. The project came out of a desire to introduce the themes of the geopark to all the school children in the municipality. The pupils, one school at a time, took part in an outdoor school programme, a specially designed teaching programme carried out in a specific location in the geopark.

As a finish each pupil produced a clay mask which was in its basic form linked to the local history of the area in several respects. The masks were exhibited, as they were produced, at the Veddinge wind shelter, which, at the end of the project in the spring of 2018, held circa 3,500 masks, together constituting a very remarkable piece of earth art and representing an imprint on the landscape by practically all the local school children.

WILD MAN COURSE – NATURE THERAPY

SIMON HØEGMARK

The "Wild Man Course" is a rehabilitation programme for men (a similar programme exists for women) who are in a life crisis. The programme is based on nature interpretation and nature experiences. It is designed as a collaboration between Svendborg municipality, the Naturama natural history museum and the Department of Psychology of the University of Southern Denmark. The target group is individuals who suffers from stress, anxiety, depression, cancer, cardiac conditions, diabetes etc.

The nature therapy programme lasts nine weeks and we meet once a week for four hours. The course takes place at six different locations in a so-called supportive environment. This means places in nature that are easily accessible and where we feel secure. On four occasions we are at a fixed base that we have become very familiar with, and on five occasions at other places of natural beauty in the local area. The intention is for the men to be able to use the places themselves after the completion of the course. Between 2015 and 2017 nine courses have been run.

The theoretical approach of this therapy programme is a combination of evolutionary psychology theories about human primal instincts and a phenomenological approach which describes the phe-

The wild man courses take place in "supportive" natural environments, easily accessible locations where participants feel secure.
Photo: Simon Høegmark

nomena and emotions that develop between humans and nature if spaces are created where we can feel good.

The approach is based on four "pillars" for spontaneous awareness:

- → Safe natural environments, with nature experiences, nature interpretation and evolutionary psychology.
- → Awareness training. Breathing and meditation exercises adapted to the seasons and to the Nordic climate.
- → Body awareness/body sensation. For example, Qigong, nerve stretching, sensory exercises, balance exercises and yoga. Adapted to the target group.
- → Community and campfire therapy, together with the narrative method.

Practice

The fire is lit, coffee is steaming from the mugs and the men are beginning to turn up. We sit round the fire and the men report whether they have carried out the breathing exercises that form part of the course and whether they have visited the place where we were last week on their own. After this we carry out a few easy Qigong and balance exercises, followed by a silent walk, where we walk in single file through the natural space.

After 20 minutes we stop, and talk about nature on the basis of the theme chosen for the day. This might for instance be our senses and how you can use them to get to know plants and trees and nature's larder. After this they walk in pairs and tell each other about good experiences they have had in the natural world. The men do sensory exercises where they close off vision or hearing. Deprived of these senses they have to follow an animal track and "read" what the animals have done during the night.

Next we gather by a big tree and talk about how we lived as hunter-gatherers and survived natural crises, which primal instincts we carry with us from this and how we can use this knowledge to manage life crises today. The story of woodland craft is introduced here, how in earlier times we were able to register a wider area of wilderness by reading the landscape with the aid of our knowledge of nature and our senses which were sharper in those days. About why it has been important for survival to be able to find places in the natural world where we feel secure. Safe and secure natural environments, by researchers called supportive environments, have a healing effect. The men again talk to each other in pairs about places in the natural world that have meant something positive to them. After this they are to find, unaided, a place where they can lie down comfortably and do the breathing exercises we have practised. Finally, we go back to the campfire.

Per is there, having waited for them, since he has difficulty walking after an operation.

Now the others are coming back after they have been in the woodland doing sensory exercises. They sit round the fire and Per makes eye contact with some of them. He recognises their looks and postures and he knows and can feel what they have experienced. They

don't have to say very much to each other, there is mutual understanding of the different crises they have all gone through. He glances round at them.

They are men of all ages with different illnesses and different occupations, but here they are all on the same level. Somebody says something humorous and they all laugh. It isn't long before the atmosphere is boisterous and funny comments fly this way and that across the fire. The water comes to the boil and coffee is ready.

The nature interpreter starts telling a story about how people survived in the wilderness long ago when we were hunters and gatherers and how they managed the crises that they encountered. Per leans back, enjoying the taste of coffee and the story.

"It was in there, between the tree trunks, that the era of fire and legends began."

Reflections

Around the fire the men open up and talk about their problems. They receive good advice from other people's experiences, which creates positive group dynamics and synergy. The role of the nature interpreter is to keep the conversation on an even keel so that it can end in a good atmosphere.

Nature interpretation is a unique tool for nature therapy. Nature is neutral and has no prejudices and expresses no demands. You don't have to reach decisions – you only have to exist. Nature interpretation provides an opportunity to open up the surrounding natural space so that it is not just a green wall, but a multitude of positive experiences.

The course participants had not been aware that there were such opportunities to find peace, and with the help of nature interpretation it is possible to show them and allow them to discover the little breathing spaces there are in nature and how you can adapt to the different seasons, and show which nature areas fit different states of mind. Using a holistic approach combining interpretation, awareness training, body awareness and community, with campfire therapy and stories, phenomena and moods arise that give energy and activate our primal instincts in a positive direction. The autonomous nervous system is stimulated to heal the body and the immune sys-

The nature interpreter can open the door to nature as the new treatment rooms of the health care systems.
Photo: Søren Høegmark

tem is strengthened. Research suggests, for instance, that the process occurring in this type of nature interpretation contributes to enhanced quality of life, self-care and a sense that life has meaning.

As a means of retaining the participants after they complete the course we have established a wild man association consisting of former course participants. The association receives the course participants on the final day of the course, and is a key to continued rehabilitation.

Nature interpretation has an important role to play in future approaches to health. I believe that the important thing is how the nature interpreter approaches the group. The nature interpreter must act in harmony with nature, be neutral, not judgmental, and in this way introduce the participants to the benefits of the natural world.

The role of the nature interpreter is to create an atmosphere of security, to demonstrate the beautiful, calm and unbelievable nature we are lucky enough to be part of. The nature interpreter can open the door to nature as the new treatment rooms of the health care systems.

It is important for the participants to feel certain to be able to complete the course programme and not to have to break it off due to for instance having been signed off as recovered. This could have a severe effect and slow down the rehabilitation process.

NEW ARRIVALS FROM ALL OVER THE WORLD DISCOVER NATURE IN ÖREBRO

ADIL SADIKU

A mentor from the Swedish Society for Nature Conservation took us out into the nature in Örebro every day for six months. Since then I and my colleague Antonios have been employed as nature interpreters at Örebro municipality. Between us we speak five languages and have – with great enthusiasm and extensive collaboration with different municipal actors – guided over 5,000 visitors from all over the world in the Örebro nature areas. Here we will share our experiences of getting to know the natural world in Sweden and of sharing our knowledge about nature with new arrivals.

Before I came to Sweden I studied telecommunications in Kosovo. I grew up close to a mountainous area and have always liked outdoor recreation, but guiding groups was entirely new for me. The same is true of my colleague, Antonios Hanna, who was an agronomist in Syria before coming here. The natural world is not nearly as accessible in the countries we come from.

Young people discovering nature. Örebro municipality, jointly with the Swedish Society for Nature Conservation, is investing in easily accessible green areas for all, as well as guiding in different languages. Photo: Adil Sadiku

In Syria all land is in principle cultivated land, there is very little wild nature. The nature reserves that exist are quite strictly regulated and in some countries there are charges for entry. There are many cultural differences that need to be explained, and of course you have to find a common language. Antonios and I speak five languages between us: Albanian, Arabic, Syrian, Swedish and English.

Since May 2017 we are both full time employees of Örebro Nature School. It is a wonderful job. So far we have done over 600 guided tours with a total of 5,000 visitors from all over the world, for instance various associations, SFI (Swedish for Immigrants) students, Örebro

It is amazing to hear from participants that they have returned to the places on their own after our guided tours. Photo: Antonios Hanna

residents interested in nature activities, young people, youth clubs, unaccompanied asylum-seeking children, and children and families we have established contact with via family centres.

My Swedish has improved substantially and by now I can name considerably more species in Swedish than in my native language. When I guided some Albanians recently and they asked me what a particular flower was called in Albanian I had to check it out in a dictionary.

We always start our guided walks by asking what languages are spoken in the group and split the group if that is needed. We always also speak Swedish. We always bring along the book Vardagsnatur (Everyday Nature), published by the Swedish Society for Nature Conservation, which describes 90 species in 14 different languages.

Nature is important for many Swedes, so for us who were not born here this is an important route into society.

We always talk about the right of public access and sometimes we do specific guided tours with that as our theme. I usually emphasize that it doesn´t cost anything to visit natural areas in Sweden, many don't realize this is the case.

Initially we had to work hard to make people aware- that we existed. Now we sometimes have to say no to guidings because we are fully booked. We have had very good feedback. One of our participants told us it was the best day he had had since he came to Sweden.

To get out in nature even when there is deep snow and the thermometer is showing 15 degrees below zero was not something entirely obvious for us in the beginning, especially not for Antonios. The same applies to many of the visitors.

We have to struggle a great deal with the weather. Many people from for instance the Middle East ask us what we are doing during the winter; they prefer to keep warm and ideally to stay indoors then. But now they have learnt and are coming out with us anyway.

We have also learnt that we must be specific when recommending what to wear. Many find it difficult to dress appropriately.

It is amazing to hear from participants that they also have gone out on their own after our guided tours. I actually have an amusing story about this. We did a guided tour in a nature reserve close to town. We were seven people, some from Syria and some from Sweden. In this area we normally see woodpeckers, but not this time. A few days later one of the participants phoned me and was super pleased: he had gone back on his own and found a woodpecker.

I am convinced that this type of guided tours is a good way of working on integration. It doesn't have to be too complicated: get in touch and invite different groups that exist in your town. It means such a lot just to be out in the wild together. Nature is important for many Swedes, so for us who were not born here this is an important route into society. And I feel that I have an important task, to spread knowledge about nature to more people. I would never have believed that I would have a career as a nature interpreter, but it has been four years now. It has been a wonderful journey with a lot of experiences.

TRAINING NEW ARRIVALS AS NATURE INTERPRETERS

KAJSA GREBÄCK

I work at the Swedish Society for Nature Conservation in Örebro County and was mentor for Adil Sadiku and Antonios Hanna, when they supplemented their SFI studies with a six-month internship as nature guides. In rain, storm and sunshine, together we visited all 14 nature and cultural history reserves in the vicinity of Örebro.

We really got to know each other. It takes time to find words for everything, but their language developed enormously in step with their knowledge of the nature of the area and the right of public access. In addition, we have actually also seen an overall strengthening of co-operation between the municipality and other actors. Adil and Antonios initially had so-called municipal entry jobs (50% work and 50% SFI studies). The Swedish Public Employment Service covered part of the costs, the rest were covered by the municipality and the Hopajola nature conservation organization. The placement was at the office of the Swedish Society for Nature Conservation in Föreningarnas Hus (Association House), when they were not out in woodland and wilderness. After that they transferred to new-start jobs for a while and now they are employed by Örebro municipality. Now we are colleagues and have been for two years. Adil and Antonios still have their workplace here with us at the Society for Nature Conservation even though they are employed by the municipality.

It was a big investment for us but an important one. Like many others we want to find ways of better reaching out to all those who have come here from other countries.

When you are guiding a multicultural group of people it also becomes clear that you make different associations. Several participants have hesitated to follow a path marked in red, since they interpret red as "forbidden territory". Photo: Kajsa Grebäck

I was already convinced that the type of activities we carry out are an excellent way of working on integration. This conviction has only become stronger.

I soon noticed that Adil and Antonios worked well in their new roles, even though neither of them had done guiding before. Adil is used to the outdoors, but he has never had to name what he sees. Antonios is an agronomist with a scientific approach, but he has mainly worked with cotton cultivation, bees and poultry. Initially he was afraid of snow and he talks a lot about the need to "integrate people into the weather". The most important characteristics for a potential nature interpreter are being sociable, enjoying being out of doors and having a desire to share your knowledge, which is true of Antonios and Adil.

It has been amazing to have the opportunity to do so much together with Adil and Antonios. But of course, the cultural differences have created problems occasionally; at the beginning there might be misunderstandings due to language. Suddenly they would say something that didn't fit in at all, but this often ended in laughter and a better understanding. Initially I was present during their guided tours, but now they are independent.

Generally speaking, we have found it difficult to attract immigrants to our open guiding sessions. Now people know about us. It spreads by word of mouth and more and more are interested. Then they bring their friends.
Photo: Kajsa Grebäck

There is so much that you don't think about and that it is easier for them than for me to understand. In addition, I must stress that "immigrant" really is not a homogenous group. Just as when you are working with groups in general it is important to be open, sensitive and respectful and build on the participants' own knowledge and experience. Sometimes we have noticed that participants don't speak up when they don't understand but start whispering among themselves. When you are guiding a multicultural group of people it also becomes clear that you make different associations. Several participants have hesitated to follow a path marked in red, since they interpret red as "forbidden territory".

Opportunities for nature guiding in Örebro are good: all residential areas have easy access to nature. One of our participants had lived in an area here for 20 years. It is within 50 metres of a beautiful woodland, but he had never before entered it. Why should I do that? Am I allowed? That was how he thought previously, but we had an opportunity to "guide him across the threshold". Something like that is amazingly enjoyable.

The head of the nature school, Anna Ekblom, has said that their guiding sessions have made her aware of big cultural differences in

outlook on nature. Here many people use nature as a place for recreation and relaxation. In other parts of the world it means snipers, grenades, poisonous plants and animals and perhaps a place where you dump your rubbish. Here we have to explain that it actually is our forest, the forest that belongs to all of us and therefore we need to look after it.

Many have shown interest in our collaboration with Adil and Antonios and are asking what our recipe for success was. I usually reply that I believe it is important to think long term. In addition, you should try to work widely, not in an isolated group. Adil and Antonios have had a chance to make inroads into the voluntary world, the schools and the municipality.

This long-term and deeply rooted collaboration between the municipality and various voluntary organizations has developed gradually. This has really been excellent. For my own part I live in Nora and commute to Örebro, and I have also got to know the municipality much better. Adil is actually a member of the local committee of the Society for Nature Conservation and in his spare time he is involved with our children's activities.

Generally speaking, we have found it difficult to attract immigrants to our open guiding sessions. My advice is to reach out directly to different groups with specific invitations to create an entry point. This might for instance be SFI students or unaccompanied asylum-seeking children. We have tried both. Initially we advertised quite a lot and at first it was only Swedes who came.

Now people know about us. It spreads by word of mouth and more and more are interested. Then they bring their friends. It is a question of finding a few key individuals, sooner or later they will start coming to the open guiding sessions as well. During the last year Adil, Antonios and I have worked on training people with different native languages to have a go at being nature interpreters in four other municipalities in Örebro County. It has been a challenge and a good new development direction for our work. We have expanded our contact network and found additional individuals who want to take their countrymen (and others) into the nature, which has had the consequence that there are more people who have the courage and/or knowledge to find their way into the nature and learn about the right of public access.

PHOTO: UNSPLASH

5 CITIZENSHIP FOR SUSTAINABILITY

ANNA KETTUNEN OCH SILJA SARKKINEN

This chapter is about learning for sustainable development and the nature interpreter as a change agent. Here we describe nature interpretation as one component of a broader concept of environmental education and engagement with the pursuit of sustainable development. Nature interpretation with the aim of strengthening the relationship between humanity, nature and environment as a contribution to nature conservation, sustainable development and development of democracy. Empowerment, ownership and participation are crucial ingredients in all learning for sustainable development.

The nature interpreter can help strengthen people's relationship with the world around them and influence attitudes and behaviour. Nature interpretation at its best is a strategic tool for the pursuit of a sustainable future. This chapter stresses how important it is that the nature interpreter contributes to dialogue, participation and empowerment and encourages activities leading towards sustainable development.

On ownership and empowerment

Active and responsible participation and opportunities for all to influence society form the basis for a democratic and sustainable future. However, this requires each individual to have faith in their own influence opportunities and to have both the will and the skills that are needed. Interpretation can help create the skills needed for active and influential participation and encourage participants to take their own initiatives, for instance in respect of practical nature conservation. The outcome of this could be an environmental citizenship, but this presupposes experiences that reinforce the feeling that your own actions are important.

Nature interpreters can help by offering opportunities to create relationships with nature, and bring out different perspectives and routes towards influence. Read more about this in Sanna Koskinen's article below (page 272).

Ownership through participation – some examples from Finland

Caring about your surroundings and taking responsibility for them means being a participant. Participation often generates a feeling of ownership. In its turn the feeling of ownership often reinforces involvement and the assumption of responsibility for physical objects as well as activities and places. Nature interpretation can

"The very possibility of sustainable development depends on nurturing a generation of children who recognise the connection between human action and environmental sustainability and, most critically, can imagine themselves as being participants in achieving this end."

Heft & Chawla 2006

support the individual's interest in the immediate environment and nature areas and identify opportunities for participation.

Preparations for dealing with oil spills along the coasts are the responsibility of the public authorities. Finland has a well-developed plan for voluntary efforts, which would play an important role and be a significant resource in case of a large-scale oil disaster. It was WWF that established the volunteer oil recovery forces, who are ready to act if needed. This is volunteer work that we hope will never have to be used. But being prepared is in itself important. Those who wish to be trained can do this at different levels – from oil recovery to group leadership.

Junior Rangers is a US-inspired activity, combining outdoor recreation, practical work and nature experiences in conservation areas for young people. These activities provide an idea of the varied work carried out by the rangers or nature guides working in these areas. The Junior Rangers let youngsters participate in the work. The administrator might for instance arrange camps where the participants can get acquainted with the nature and history of a national park, learn – and also themselves search for answers to their questions. Why has the area been made into a reserve and how is it managed? Where are the best examples of natural and cultural heritage? How does it feel to lie on a flat, sun-warmed rock and watch the clouds move across the sky? How does a debarking iron work? The activities are based on practical work, on the principle that you learn best what you do yourself. Everyone acquires knowledge and personal experience of the valuable natural characteristics of the national park and about the work that is carried out there. You find out about research, services for visitors and building and restoration projects. I Noux National Park in Finland Junior Rangers have for instance restored a small stream by leading it back to its old course.

Growing into responsible citizenship

Nature interpreters can help show the way towards a sustainable lifestyle. Many nature interpreters are optimistic and life-affirming people, but it is just as important to be respectful and persistent – because the task is not always easy. The nature interpreter might take on the role of concretizing our hopes for a better future. The

SOME ACTIVITIES THAT CAN SUPPORT A SENSE OF PARTICIPATION

Finland uses various methods designed to make people feel that they are participating in the planning and realization of projects in nature areas and other places that are important to them. Here we present a few examples:

Walking tour is a walk with a leader where you explore people's immediate environment in cities and collect ideas, for instance on how courtyards and parks could be developed. Along the pre-arranged route, the group makes a halt in three or four spots. The participants investigate different places and objects during the tour and write down their observations. The best thing is if those responsible for environmental planning and decision-making take part in the tour. Compare this with Live Solbrækken Danielsen's water walk on page 184.

Different kinds of maps can help visualize valuable information from people living and working in an area about experiences and emotions related to it. It might for instance be about mapping the significance of various places for the participants. Meanings, emotions and experiences are marked on the map with the help of stickers of different colour or with different symbols. You then draw a line from each symbol to the margin where you note down why this particular place, according to this participant, is beautiful and valuable etc. This information might later be used as background for city planning etc.

Another good example of participation is citizen science, or contributions to scientific research that can be carried out by anybody. The participants are not the objects of research but its practitioners, and they do not have to be trained researchers. They can help collect, classify or analyse information that is of value to research.

For several decades Luonto-Liitto, the youth wing of the Finnish Nature League, has organized a phenology campaign called Follow the Spring. Phenology describes in which season or at what date something occurs. You collect the year's first signs of spring, such as when the first flowers or birch leaves open, when bird cherry or lily of the valley are in flower, the date when the chaffinch and other bird species return or when the hedgehog wakes up. Anyone interested in nature can take part in the campaign by reporting their observations in the database of the Finnish Museum of Natural History. More recently Luonto-Liitto has also launched the campaign Follow the Winter. Species included in this campaign are for instance mountain hare, fox, common swan and snowman. Observations are also carried out on snow, depth of snow and ice.

In Finland citizen science is also known as participatory science or crowd sourcing. A practical example can be found in Marianne Graverson's text about organizing a public species survey, a BioBlitz, in Denmark (page 188).

CITIZEN SCIENCE THROUGHOUT THE NORDIC COUNTRIES

See also the Naturens kalender (Nature Calendar) run by the Swedish National Phenology Network and the Artportalen (Swedish Species Observation System) at the Swedish University of Agricultural Sciences – one of the world's largest portals for citizen science.
Links to portals in Norway and Denmark can be found at citizenscience.no and citizenscience.dk.

environmental conference in Tbilisi in 1977 demanded the inclusion of environmental education in national curricula all over the world. At about the same time the concept of sustainable development began to be formulated.

One of the aims of nature interpretation is to contribute to learning for sustainable development. This means development that satisfies present-day people's needs without depriving future generations of the opportunity to satisfy theirs. Over time the concept has become more and more multi-facetted and acquired ever broader content, and at the same time it is becoming ever more urgent to realize it. The starting point is the human, but it has many perspectives – ecological, economic, social and cultural. The fundamental question is how to adapt human activity to the limitations of the ecosystems. Understanding what this really means is a challenge for us all.

In their work nature interpreters support feelings for nature, knowledge about nature and a positive attitude to nature. Feelings for nature is about the empathetic relationship with nature that each individual develops based on their own experiences and observations, together with the ability to pay attention to nature and the changes taking place there. Our relationship with nature and the environment includes everything we do in, for, as a result of or affected by the environment. Every one of us has our own dynamic relationship with nature and the environments that surround us. The foundation for this dates back as far as our childhood experiences of the natural world and contact with our immediate environment. Nature interpreters must understand natural laws and phenomena as well as the mental, cultural and social dimensions of the environment. Nurturing a positive attitude to nature and increasing environmental awareness are important aspects for many nature interpreters. The hope is that awareness will strengthen motivation (values and attitudes) as well as knowledge and ability to work for the good of nature, which can in turn increase the motivation for responsible action in relation to nature and the environment overall. Read more in the chapter on the strategic nature interpreter (page 202).

Nature interpretation can contribute to processes that develop a lifestyle that is better adapted to the environment and more sustainable. Examples of such environmental pedagogy might be to encourage excursions without littering, moderation and frugality, responsible

Every one of us has our own dynamic relationship with nature and the environments that surround us. Photo: Anna Kettunen

food management, saving of energy, and reduction of waste, for instance by re-use, repair and recycling. It is about everyday choices and actions at work, in consumption, family life and leisure. It is about choice of food, about exercise, about considering how to heat your home (in so far as you can influence that), waste sorting and buying things second hand.

Nature interpreters can also invite people to conversations about a life where happiness and wellbeing is not based on continuous economic growth.

By drawing attention to how every action has an impact on our environment it is also possible to focus on the importance of ethical responsibility and sustainable choices and actions. A sustainable lifestyle means caring about the ecological, economic, cultural and social consequences of our decisions – both globally and locally. Nature interpreters with an interest in environmental pedagogy can be an inspiration for a good everyday lifestyle. But also, for shared processes and decisions in society.

Agenda 2030 – a challenge for nature interpreters

The UN agenda for sustainable development, Agenda 2030, was signed by the leaders of all the member states at the UN summit for sustainable development in New York in 2015. The plan covers the years 2016 to 2030 and is politically binding. The goals of the plan are universal and apply to all of us: states, municipalities, businesses, schools and nature interpreters. The aim of sustainable development is to make the world a better place for us all. This is possible if we apply the perspectives of the environment, humanity, human rights and the economy simultaneously. Agenda 2030 is based on the Millennium Goals that were completed in 2015 and on the policy for sustainable development that was developed through the so-called Rio Process at the beginning of the 1990s. The 17 sustainable development goals in Agenda 2030 have a total of 169 sub-goals. The goals are global – you cannot deal with climate change, conflicts or economic development separately. A key perspective is that of taking account of climate change and the limitations of the planet, while at the same time trying to reduce inequality between people. The goals also take account of the importance of co-operation and human rights, which means that all citizens must be able to have their voice heard and participate in the work. A subgoal as regards to education is that all pupils, not later than 2030, will receive all information and knowledge required for the support of sustainable development. Education must address the importance of and preconditions for a sustainable lifestyle, human rights, gender equality, encouragement of a culture of peace, world citizenship, cultural diversity and the importance of culture for sustainable development.

Ecosocial education – a hope for a better future

An environmentally aware citizen is also "ecosocially" educated. The concept of ecosocial education was introduced by Arto O. Salonen (2015). According to him people's wellbeing depends on whether they understand the rights and obligations they have as human beings due to the fact that we are dependent on nature and on other people. An ecosocially educated person has a relationship with the world that is

responsible and based on compassion, moderation, communication and awareness of how your own behaviour affects the world around you.

Someone who is ecosocially educated understands that humanity cannot exist without a viable nature. The objective of ecosocial education is the creation of a lifestyle and culture that protects human dignity and the diversity and capacity for renewal of the ecosystems, at the same time as building a knowledge base for a circular economy based on sustainable use of natural resources. Ecosocial education especially stresses the need to understand the serious threat of climate change and the importance of sustainable action. Ecosocial education contributes to the hope of a better future.

Serious environmental problems and the emotions

Today many people are both aware of and very anxious about environmental problems caused by humanity. In particular do the threats associated with climate change generate anxiety in many people. Nature interpretation can help by being encouraging and hopeful even when discussing serious global problems. Nature interpreters can make a difference by helping to build a sense of participation and resourcefulness, active hope – by encouraging action. It can be a difficult balancing act – sometimes we nature interpreters are guilty of too much optimism and forget those feelings of worry, paralysis and anxiety that the state of the world can cause. On the other hand, we can sometimes unconsciously communicate emotions and attitudes coloured by cynicism and fear.

How then to talk about the environmental problems of the world and the emotions they generate? Should we avoid unnecessary optimism and confirm the need to treat the world situation in a realistic way? Should we confirm those emotions that are aroused in other people? The nature interpreter also needs support and tools to handle the emotional side of the work.

According to some research (Pihkala 2017) you should be very careful about how to communicate environmental issues. Using ancient methods of storytelling the most insignificant actions can be made to seem like great heroic deeds. Even if perhaps the outcome of the drama is not a happy one, participation contributes to under-

Agenda 2030 is a plan to make the world a better place for everyone. Photo: Anna Kettunen

standing and sympathy, perhaps even to a kind of feeling of purification. Stories about how the fight can be won in spite of what might seem like hopelessly strong resistance demand an attitude of courage, persistence and active hope together with an ability to imagine yourself inside the events. Within interpretation you can bring out both realistic tragedy and the importance of hope. Art and creative activity can be a way of helping to process emotions and existential questions and lead to profound, meaningful experiences.

Climate change as an example

Climate change is a big, complex and difficult question, which might well create anxiety. But both knowledge and concern are necessary preconditions for action. A willingness to act requires to be paired with confidence and a belief in the future.

Human beings act only if they believe that change is possible. A person who is positive and hopeful believes that the problems can be

solved if you try to get involved with the environment. Denial does not generate action.

Ordinary Western everyday life with home, travel and food causes unsustainable climate gas emissions. Lifestyle choices and the individual consumer's responsibility have long been stressed – but all institutions in society must participate in limitation and adaptation. Climate change is an ethical and moral problem and must be managed on many different levels at the same time. In nature interpretation it is possible to have conversations about this and about how society should handle the issues.

Climate change is an ethical and moral problem and must be managed on many different levels at the same time.

The nature interpreter as change agent towards a sustainable lifestyle

The nature interpreter might be the person who takes children on a woodland outing. The person who teaches environmental knowledge outdoors as part of the school curriculum and who brings out the importance of knowledge about sustainable development. The nature interpreter might be a museum educator in a cultural heritage environment. A nature guide who offers events, experiences and knowledge in a national park. Each and every one can in their different ways help strive for a sustainable lifestyle.

Nature interpretation reinforcing feelings of resourcefulness and a personal relationship with the environment, and inspiring to action is important. One of the most important roles for a nature interpreter is that of creating an atmosphere of security and reliability, which encourages responsibility, participation and influence in society both for the individual and for the community. Read more about this in Sanna Koskinen's article below. Maria Aroluoma finally rounds the book off with an article about how nature schools can strengthen the participants' relationship with nature and their understanding of the relationship between humanity and nature and of a sustainable lifestyle. The intention expressed in the definition of nature interpretation adopted by the Nordic Council of Ministers in 1990 in the early days of Nordic co-operation is still just as relevant.

The nature interpreter might be the person who takes children on a woodland outing. The person who teaches environmental knowledge outdoors as part of the school curriculum and who brings out the importance of knowledge about sustainable development. Photo: Anna Kettunen

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NATURE INTERPRETATION IN SUPPORT OF PARTICIPATION AND ENVIRONMENTAL CITIZENSHIP

SANNA KOSKINEN

Environmental citizenship is an environmentally responsible, active and participative form of citizenship. To live and act in society in an environmentally responsible way you have to have an understanding of your own actions being important. Environmental citizenship requires an understanding that what you do and what you think matters.

In nature interpretation you encounter the natural world with all your senses. In the natural world participants can think about their own lives and what in life is of genuine importance. By creating connections and bringing out new perspectives and possibilities the nature interpreter can support and reinforce participants' sense of environmental citizenship.

Through participation in the development of their immediate environment everyone becomes involved in a multifaceted learning process. The participants' skills, sense of responsibility and involvement grow and extend. By taking ownership of your local natural area you also reinforce your own relationship with nature and your sense of responsibility for the immediate environment. Nature interpretation is important because it offers meaningful learning experiences and activities that support individuals and groups competence and will to act in a more environmentally responsible way.

A school playground in need of intervention.
Photo: Sanna Koskinen

Participation and empowerment

The concepts of participation and empowerment have some common features. Participation is individual citizens' or interest groups' societal action which aims to influence planning, decision-making or public debate. In participation the social community is crucial, and it always include that you take action. Empowerment is a process, in which an individual's confidence in his or her own abilities increases. Empowerment is an individual's inner feeling of strength, a personal experience of capability and competence. Empowered persons believe in their own degree in influence, consider their own actions as meaningful, and wish to take action. Your surroundings and the group you belong to have a big influence on whether and how you develop a sense of empowerment. How much space does the group or society as a whole allow for individual participation?

Participation is a person's sense of having the willingness, ability and opportunity to exercise influence.

What is essential is for the change to happen gradually so that individuals learn to regard themselves as active and independent agents and to trust their own knowledge and skills and their own ability to make an impact.

For the ability of children and young people to participate and make an impact it is essential that adults take part in the process. The attitude adults have to sharing their power, and the role they assume in the process, to a very large extent determines the limits of the participation of children and young people. Especially in the early stages of an active process, children and young people need the support of an adult partner, who can create a secure and good atmosphere. The role of the adult or mentor is to make the process possible and to support it. The aim is to have participants who are active, take responsibility, and are acting as independently as possible.

Empowerment means believing that you have the possibility of exercising influence, seeing that your own actions have meaning, and being willing to make an impact.

Why is participation and empowerment so important?

Empowerment is essential if a person is to take responsibility for the environment, since this is what gives them a feeling that what they do and how they act are important. Environmental pedagogy and nature interpretation are largely concerned with developing empowerment and with creating a personal, meaningful relationship with nature and the world around us. It is a question of individual appreciation of nature and a sense that nature is significant and important on a personal level: you want to act responsibly, and you have confidence in your own ability and opportunity to make an impact – you feel that you are part of building a sustainable future. How then can interpretation encourage participation and empowerment? Personal experiences are of central importance when we humans create relationships with other humans and with places, and for the development of the motivation and skills needed for responsible action.

What is needed is personal experience of making a difference and in other ways being active, plus a sense that together we can make

The attitude adults have to sharing their power, and the role they assume in the process, to a very large extent determines the limits of the participation of children and young people.
Photo: Sanna Koskinen

a change. The practice of nature interpretation and environmental pedagogy has concentrated on strengthening feelings for the environment through personal nature experiences and through learning about environmentally friendly everyday habits. To a large extent focus has been on teaching the individual to act in a certain way while neglecting opportunities for community and group-based influence.

There have been studies of how children and young people learn participation and empowerment. These studies suggest that, in addition to acquiring certain citizenship skills to do with communication, discussion and decision-making, they have also learnt sensitivity and empathy with other people's opinions and needs. They have also acquired knowledge about how to make an impact and developed a willingness to participate in the future as well. Participation has also strengthened their confidence and belief in their ability to make a change, as well as the feeling of being part of a group, of being a participant, and having a sense of ownership of issues they have been involved in.

Participation as social learning

Participation might be regarded as a process through which you learn and become interested in the world around you and in society. You might also think of participation as a way of making people care more about their environment and take responsibility for it. At its best participation can develop into a sense of ownership. Ownership means that the individual has a sense of a process, a place or a physical object as belonging to them, and that they are able to influence them through their own actions. The feeling of ownership reinforces connections with or the sense of responsibility for an object or a place.

Participation offers opportunities for a social learning process. Social learning is a collective process linked to real-life situations and habits and participation in a shared and innovative problem-solving process. According to Etienne Wenger (1998) the social learning is shaped by four components: learning as doing, learning as belonging, learning as becoming and learning as experience. These components can be linked to the concepts outlined earlier (Figure 13).

This figure shows participation as actions and practices. Assumption of power is about belonging to a group or a society and the opportunities that the surrounding environment offer. The feeling of empowerment is an individual process related to identity and knowledge about the environment, which is based on accumulated experience and meaning. In this way nature interpretation might be regarded as an opportunity for learning through action, experiences, belonging and becoming something (new).

Activities and experiences have always been at the heart of nature interpretation, not in a societal sense but rather with a focus on experiencing and studying the natural world. The perspective needs to be broadened. During interpretation all senses are open to the surrounding natural world. By creating relationships and bringing out new perspectives and possibilities the nature interpreter can support and reinforce the participants' environmental citizenship.

Nature interpretation can provide support for active and competent actors as well as for their identity as full members of society. All of us have a strong urge to belong to a group and to be like others. This urge is particularly strong among young people. How can we help build an environmental citizen identity that questions many of West-

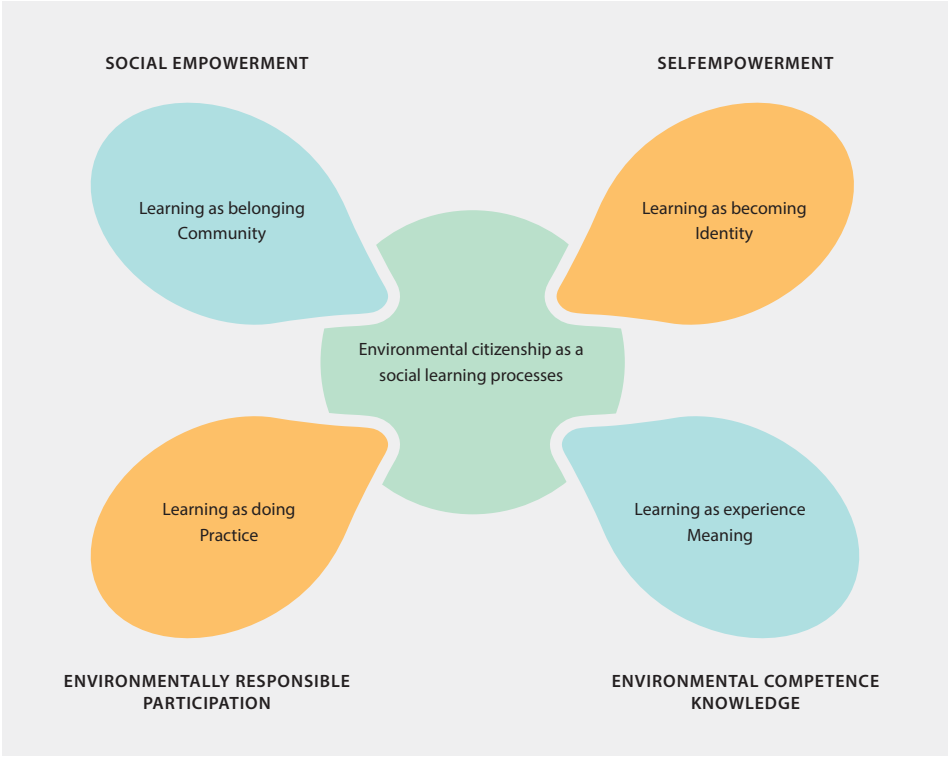

Figure 13
Environmental citizenship as social learning (Koskinen 2010). An application of Wenger's (1998) model of social learning and Koskinen's & Paloniemi's (2009) model of the learning process of environmentally responsible participation.

ern society's values and approaches? How can we reinforce the sense of belonging in a group where responsibility for the environment is normal and something to work towards?

Supporting participation through nature interpretation

Traditionally the role of the teacher has been prominent in nature interpretation, like in other forms of educational activity. The teacher plans activities with a specific aim and carries them out. The participants, or the students, enter the process after everything has already been planned out in the form of a programme, an exercise,

The worldwide climate demonstrations are a way for young people to create empowerment. Photo: Sanna Koskinen

an excursion or some other form of educational activity. This model works well in many respects. The question is whether it works when the aim is to facilitate a sense of empowerment and ownership and to support environmental citizenship. Not necessarily. Perhaps instead there is need for a leap into the unknown, towards new action patterns. The participant, or the student, should be offered a more active role: instead of being the ones to be tutored, participants should be encouraged to play an active role and to make a change. A day at a nature school might for instance be organized in such a way that the students are able to choose from different options. Might they even be allowed to influence the themes to be selected? Or take part in creating the whole themselves? It is certainly possible, but it requires time and practice.

When children and young people – and why not adults – have been accustomed to the relatively passive role of recipients of tutoring, a more active role might seem difficult and even unpleasant. It is easier just to sit still and listen or to follow along and do what some-

body else tells you. If an opportunity is provided for influence and for thinking about what you really want the situation changes.

Especially in the urban environment, children and young people have extremely limited opportunities to influence their own environment. You cannot even build a hut in the city woodlands. How can you make the environment your own and develop a sense of ownership if everything is ready-made and you are not even allowed to touch things? Opportunities to "take possession of" the immediate environment strengthen people's relationship with the environment and help the individual to take responsibility. It has been demonstrated that a reduction in vandalism is a clear effect of participation by children and young people. If the young people have been involved in the planning, and not least in the realization, of for instance skateboard parks in their own immediate environment, these have often been kept clean and tidy. Walls of school buildings that used to be covered in graffiti have been left in peace when the students themselves have been involved in planning and executing works of art on the walls. Similar experiences can be found in the case of underpasses and stations. Ownership strengthens the links with and responsibility for objects and places.

How then can you encourage a sense of ownership of the natural environment? How can you make the place your own – on nature's conditions and with respect for nature? Places you often visit for an outing become your own. If in addition you give the place a name, put up bird nesting boxes, study and maintain them and make sure that the birds get fed during winter, and keep the place tidy, it can become your own even more, "our wood". It is also possible to go further and join up with the landowner to try to increase the biodiversity for instance by allowing trees to rot down and as far as possible limit forest management. You might also reach an agreement that huts may be built so long as it is done with consideration for nature and the trees. You can build very nice huts from brushwood and branches, good enough to offer shelter from the rain and wind.

Taking part in developing your own immediate environment can be a multifaceted learning process. Nature interpretation can strengthen people's social activities and generate interest in their immediate environment. Information about participation opportunities is an important form of support that can be directed at citizens of all ages.

Most people don't for instance have any idea of how to influence the management of the forested areas of the municipality. A pre-school group will most certainly need help to find the right municipal official to ensure that more waste baskets are placed along the route to the best excursion site. Children and young people are often not able to storm the barricades on their own but need the aid of adults. If for instance it transpires at school that the pupils want to influence some things in the school's immediate environment it pays to include the parents in the work. It is often easier for the parents' association to tackle the issue than for the teacher or the school. Co-operation is strength in other ways as well when you want to have influence, and it pays to look for help with an open mind.

Wanting to take part and to take responsibility

Environmental citizenship is citizenship here and now. Children and young people – and adults too – need opportunities to be citizens and to learn how to do this by themselves taking action in their own environment. It is important to feel that you are taken seriously and that you are heard. Experiences of that kind create participation and a sense of ownership – ability and willingness to take part and to take responsibility. There is much anxiety about, and increased awareness of, the environment and the future among today's young people. As teachers and nature interpreters we have an important part to play: we need to support and encourage children and young people to believe in a better future.

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NATURE INTERPRETATION AT HALTIA – THE FINNISH NATURE CENTRE

MARIA AROLUOMA

I am a nature interpreter a Haltia – the Finnish Nature Centre, located in the Noux National Park in Espoo. Haltia is managed by Metsähallitus Parks & Wildlife whose responsibility it is to maintain the Finnish state's nature conservation areas (among other things 40 national parks) and cultural heritage objects, offer recreation opportunities, support wilderness tourism etc. The mission of Metsähallitus is described as follows: "Through an ecosystem-based approach and through bioeconomics Metsähallitus works to further sustainable use of natural resources as well as nature conservation, and to produce welfare services for present and future generations." In this article I talk about how we receive children and adults at Haltia.

Haltia carries out nature interpretation in line with the principles of Metsähallitus. Through its communications Metsähallitus works for responsible and sustainable outdoor recreation with consideration given to nature. The aims of the nature interpretation are to further

knowledge of the natural and cultural heritage, contribute to a positive attitude to nature conservation, support the wellbeing of the natural world and publicize the valuable characteristics of the nature conservation areas.

The key messages that Haltia wishes to communicate to its target groups are:

1. Finland's nature is unique and diverse.
2. Finnish identity is founded on nature.
3. Outdoor recreation promotes welfare.
4. A natural world in balance secures our future.

Source: Haltia's environmental education plan

The aim of nature interpretation at Haltia is to inspire visitors to spend time in the natural world. Cooking a meal out of doors is one of the tools. Photo: Jari Kostet

In addition to nature school days for years five to nine Haltia – the Finnish Nature Centre offers nature interpretation for all ages. Haltia's exhibitions receive groups from pre-school age to retired people. For each type of group, we provide tailor-made programmes. The main aim of the guided tours is to inspire visitors to spend time in the natural world. Guided tours for children place the emphasis on stories and activity. Young people and adults are inspired through joint reflection and stories. Children and school students are also guided along paths in the local nature area. The paths aim to provide an opportunity to experience nature with all the senses and understand the importance of biological diversity.

Events arranged at Haltia are another channel for nature interpretation for all ages. The events have the same aim as the guided tours, to inspire visitors to spend time in the natural world. Planning is carried out in conjunction with a wide network, which guarantees that we will approach the theme of the event from surprising perspectives. Established and recurring events are Nature in Winter Day, Finnish Nature Day, and Children's Nature Saturday. In addition, we arrange so-called Nature Saturdays with different themes eight times per year. Events combining different forms of art, science and outdoor activities have been especially interesting and popular.

A personal, experience-based relationship with nature

The target group for Haltia's nature school is pupils in years five to nine. The nature pedagogy of the nature school supports and concretizes the national curriculum for the compulsory school. The experience-based nature school programme for instance contains outdoor recreation exercises, exploration of the natural world, sensory exercises, games, play, drama and methods from adventure pedagogy. With reference to the aims for nature interpretation set out in Riitta Nykänen's article I will describe a few examples from the programme of the nature school.

All nature school programmes have the school students moving around in the natural surroundings and learning about sustainable outdoor recreation. Various exercises enable them to observe and ex-

perience nature with all their senses. In the outdoor recreation programme, they practise map-reading and orienteering. They walk blindfold beside a seeing student who leads them and describes the route. They learn about the right of public access via a drama exercise. They have a go at cooking food on a camping stove and experience sitting round the campfire.

Knowledge about nature, understanding of the preconditions for life and natural diversity

The older school students learn about biodiversity and experience how different populations are affected by environmental change by playing the Game of Life. In this game each student represents a population of one of the species in the forest. The species form nutritional chains, and in these groups the students then seek out different stations in the forest. At the stations they carry out exercises to do with biodiversity and population biology. The end result affects each population in different ways. The aim of the game is to create an understanding of why natural diversity is important and how it can be protected.

In the programme Forest Nature's Secret, the students learn about nutritional chains and about the forest as an ecosystem. In the Nutritional Chain game, the students themselves become producers, consumers and decomposers chasing each other. The students get to know different species in the forest by playing forest bingo, carrying out a species survey or investigating different tree species and their followers – that is, species living on and around the tree.

In the Birds' Spring programme, the students learn about the life of migrating birds, among other things by acting as judges in a Eurovision Song Contest of the birds and by trying to copy and re-create the nestbuilding of the birds.

Understanding of humanity's dependence on nature

In the programme Historical Traces in Nature the students learn about and experience how human beings have lived adapted to nature conditions during different historical eras. For example, they

In Haltia's nature school programme on the theme of outdoor recreation the students practise orienteering in the forest with the aid of map and compass. Photo: Jari Kostet

build miniature dwellings for Stone Age people from natural materials; they have a go at lighting a fire using steel, flint and tinder like in the Iron Age; and they draw contemporary rock paintings with chalks to show what is "holy" or important in their own lives.

In Haltia's nature school programme on the theme of outdoor recreation the students practise orienteering in the forest with the aid of map and compass.

In the programme Forest Nature's Secret, we also jointly consider the ecosystem services of the forests by asking each student to mention one thing we get from the forest (for example blueberries, relaxation, fresh air).

Understanding how people affect nature and how to reduce negative environmental impacts

In the Forest Nature's Secret, the older students can also plan and carry out a "research project" investigating the difference between commercial forests and natural forests. Among other things they investigate the amount of dead wood, and the age and species diversity

In the Birds' Spring programme, the students try to build nests using the same materials and techniques as the birds. Photo: Maria Aro-luoma

of the forest. Students in years five to six establish miniature national parks (3 square metres) where they mark out natural attractions and suitable places for activities and rest. Through these exercises the students learn to protect natural diversity.

Knowledge about a sustainable lifestyle

During the day at the nature school the students learn about sustainable outdoor recreation through exercising and talking about the right of public access: we do not leave litter or unnecessary traces, but we move about freely and enjoy the natural world. At the end of the programme we have a discussion where each student is asked to think about a way for themselves to protect natural diversity.

As nature interpreters at the nature school at Haltia we want to transmit to our visitors a sense of responsibility for nature, through positive experiences, by stimulating curiosity and increasing understanding of how nature works and by reinforcing a personal, emotional relationship with nature.

THE 30TH AUTHOR – YOU

We hope that you have found some inspiration, new perspectives and something you want to learn more about in this book. We also hope that you will be one of the participants in the further development of and future story of nature interpretation in the Nordic countries. Here is some space for your own notes and reflections:

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Nature interpretation in the Nordic countries

Nature interpretation in the Nordic countries is a book about communication between nature interpreters and their participants in our landscapes. It´s about first hand experiences of nature and the importance of paying attention to what is inspiring and fascinating, especially valuable or threatened. And about possibilities to reflect over the relation between human and nature.

Educators, researchers and interpreters contribute with articles about nature interpretation in theory and practice. The book is written for everyone who is interested in how interpretation can contribute to a sustainable future, nature conservation and areas in society like public health, democracy and the right for all citizens to visit and experience nature. The purpose is to inspire nature interpreters to offer more and even better experiences and learning in the Nordic nature and cultural landscapes.