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The Historical Roots of A. E. Nordenskiöld's (1832–1901) Conservational
Philosophy

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Seija A. Niemi's doctoral thesis discusses the Finnish-Swedish explorer and scientist
Adolf Erik Nordenskiöld (1832–1901) and his place in the history of Nordic
conservation.

The Historical Roots of A. E. Nordenskiöld's (1832–1901) Conservational Philosophy

One of the founding texts within the history of Nordic conservation is “Förslag till inrättandet af Riksparker i de nordiska länderna” (A Proposal for Establishing Nation’s Parks in the Nordic Countries) written by the Finnish-Swedish scientist and explorer Adolf Erik Nordenskiöld (1832–1901) in 1880. It is comparable to influential texts of American environmental history, such as George Catlin’s Illustrations of the manners, customs, and condition of the North American Indians (1845–1848) and George Perkins Marsh’s Man and nature (1864). The ideas developed in the essay are expressions of an environmentally literate person. Nordenskiöld perceived destructive developments taking place in the environment and set down proposals to prevent or remedy this undesirable situation.

This article will discuss the historical roots of Nordenskiöld’s conservational philosophy, such as the modernization process, patriotic ideas from the Romantic era, and, above all, the influence of American thinkers, most notably George Catlin, who proposed the opening of “nation’s Parks ... on the great plains of the West”.

The influence of Nordenskiöld on the subsequent conservation movement in Finland and in Sweden will be examined in detail. The first national parks in Europe were established in Sweden in 1909.

Keywords: Adolf Erik Nordenskiöld, the history of Nordic conservation, environmental literacy, environmental history

Introduction

National parks are viewed as “crown jewels” in many countries. In Europe, the idea of national parks was introduced in 1880 by the scientist and explorer Adolf Erik Nordenskiöld (1832–1901).¹ He was born in Finland, part of Imperial Russia at the time, and lived most of his life in Sweden. In his essay, “Förslag till inrättandet af

Riksparker i de nordiska länderna” (A Proposal for Establishing Nation’s Parks in the Nordic Countries), he proposed the establishment of national parks in the Nordic countries.² He had observed harmful processes in the natural world that had been caused by humans, and he wanted to remedy or prevent the threat of damages. The essay was published in *Per Brahes Minne* (The Memory of Per Brahe), a bicentennial volume in honour of the late Governor General of Finland, Count Per Brahe (1602–1680).³ The relatively short text covers less than half of a folio page, but still ranks as an important milestone in the early history of conservation in the Nordic countries.⁴

At the beginning of his essay, Nordenskiöld describes environmental changes brought about by modern inventions, such as railways, telegraph lines and saw-mills. He understands that this process has positive and negative sides: “[t]his transition brings happiness and welfare for millions and demonstrates the true measure of a country’s development [...] at the same time, there is a melancholy feeling that future generations will barely be able to imagine what the land of their fathers was like.”⁵ The beauty and history hidden in forests were about to vanish. He chose not to merely observe the changes, but also to propose a solution to this threatening situation: “There are extensive areas of publicly owned land in the Nordic countries, many of which yield insignificant or no profit. There would be no significant sacrifice involved in giving over a suitable tract that could be marked out and proclaimed a Nation’s park.”⁶

In Finland, Nordenskiöld enjoys the status of being the principal initiator of nature conservation. In Sweden, he is viewed as being one among a number of initiators, who also include Pehr Arvid Säve (1811–1887), a school teacher from Visby, Professor Rutger Sernander (1866–1944), and the botanist Karl Starbäck (1863–1931). In 1877, in an article entitled “Sista paret ut!” (The last pair out!), Säve recommended the enactment of a new law to ratify the relationship between humankind and animals.

Historians have overlooked the fact that he also discussed the observations made by Nordenskiöld on his expeditions to Spitsbergen in 1861 and 1864 regarding the destruction of Arctic animals.⁷ The recommendations made by Sernander and Starbäck on conservation were outlined at the turn of the twentieth century, in the wake of Nordenskiöld's pivotal essay. Their initiatives corresponded with Nordenskiöld's idea about national parks.⁸

Despite its seminal role in the history of early Nordic conservation, the roots of Nordenskiöld's "Förslag" essay have been rather cursorily studied.⁹ Lars J. Lundgren is one of only a few scholars who have examined Nordenskiöld's motives more closely. Lundgren argues that the USA served as the primary influence behind the model that Nordenskiöld proposed in "Förslag." Yet, since Nordenskiöld did not mention any models, his basic motives remain uncertain. As to the question of what Nordenskiöld suggested should be preserved and to whom, why, how and when, Lundgren answered: forests and meadows, hills and lakes and moors and marshes to "our descendants" so that they would be able to get "a real picture of their father's country as it was in the past, when there were only a few fields, as yet uncultivated lake shores, and virgin forests."¹⁰ Lundgren was of the opinion that Nordenskiöld planned to establish a park in Sweden, in a place where pristine nature would remain untouched as an open-air museum.¹¹ Martti Blåfield argues that Nordenskiöld's philosophy was influenced by a Finnish forester, Anton Blomqvist. George Perkins Marsh's writing on the damage being inflicted on nature was familiar to Blomqvist. Nordenskiöld might have obtained information from Blomqvist, since his propositions regarding national parks do resemble Marsh's ideas.¹²

In addition to the influence of Marsh, I argue that Nordenskiöld was inspired by the American painter, author and traveller, George Catlin, who proposed that national

parks should be established “on the great plains of the West” in his book *Illustrations of the manners, customs, and condition of the North American Indians* (1845–1848).

Nordenskiöld’s expressions resemble those of Catlin to such an extent that it is probable that there was a connection between the two men. Hence, I argue that Catlin is one of the key sources for Nordenskiöld’s “Förslag”.

In this article, I use the concept of environmental literacy as a tool to interpret Nordenskiöld’s “Förslag.” The American environmental historian Charles E. Roth introduced the concept of environmental literacy at the end of the 1960s. He defines it as “the capacity to perceive and interpret the relative health of environmental systems and take appropriate action to maintain, restore, or improve the health of those systems.”¹³ He names three levels of environmental literacy: nominal, functional and operational. The characteristics of the nominal level are the “ability to recognize many of the basic terms used in communicating about the environment and to provide rough, if unsophisticated, working definitions of their meanings.” Indications of the functional level are a “broader knowledge and understanding of nature and interactions between human social systems and other natural systems.” The operational level means “progress beyond functional literacy in both the breadth and depth of understandings and skills.”¹⁴ I have discerned expressions of these levels in Nordenskiöld’s writings and in his behaviour. Roth and his colleague John F. Disinger have outlined four basic issues from which environmental literacy derives focus: 1) the interrelationships between natural and social systems; 2) the unity of humankind with nature; 3) technology and decision making and 4) developmental learning throughout the human life cycle.¹⁵

The text of “Förslag” includes remarks that are clearly expressions of Nordenskiöld’s environmental literacy. Other such expressions can be found in his

accounts of his ten Arctic expeditions, which took place over a twenty-five-year period between 1858 and 1883. His accounts include numerous observations on the destruction of animals and warnings about the imminent extinction of whales, walrus and other animals. He also makes propositions for the prevention of over hunting and proposes initiatives to curtail the despoilment of nature.¹⁶

This article illustrates the historical roots of Nordenskiöld's "Förslag," such as the modernization process and the patriotism of the Romantic era. Apart from the abundant research literature, I have found fruitful material for undertaking an analysis of "Förslag" in his books, reports and letters. The Nordenskiöld Files are stored at the Centre for the History of Science at the Royal Swedish Academy of Sciences in Stockholm. Family letters are also available to consult at the National Library of Finland in Helsinki.¹⁷ My research on his life, including his expeditions and scientific career in Finland and Sweden, will give answers to many questions that have hitherto remained unanswered.

A. E. Nordenskiöld: An Environmentally Literate Patriot

A child learns environmental literacy from his parents, other adults and through peer enculturation. It is not an inherited skill, but is a learned process that continues throughout a person's whole life. The process varies between individuals, depending, for instance, on age, gender, education, profession or occupation, social position, political ideology, and where they live.¹⁸

Nordenskiöld was born in 1832 in the Grand Duchy of Finland, which had been a part of the Russian Empire since 1809. He studied natural sciences (mainly geology and mineralogy) at the Imperial Alexander University in Helsinki. At his graduation

dinner in May 1857, as the primus doctor, he delivered a speech that the Russian Governor General Fredrik Wilhelm von Berg judged to be too liberal-minded. The fallout from the speech provided Nordenskiöld a reason to leave the country. Hence, he moved to Stockholm, where, in 1858, he was appointed the Director of the Mineralogical Department at the Swedish Museum of Natural History and a Professor of Mineralogy at the Swedish Academy of Science. He held these positions for 43 years until his death in 1901. He became a celebrated hero after sailing through the Northeast Passage and around Europe, as well as off the coast of Asia in his ship *Vega* between 1878 and 1880. Later in his life, he became a well-known cartographer and collector of historical maps and books.¹⁹

In his childhood, Nordenskiöld lived on his family's country estate, Frugård in Mäntsälä in Southern Finland. The family had owned the manor since 1709. Many Nordenskiölds showed a keen interest in literacy and natural sciences. Adolf Erik inherited his forefathers' enthusiasm for mineralogy, botany and zoology. In the large library of the manor house he was able to study texts by renowned philosophers and natural scientists, such as Aristotle, Francis Bacon, Carl von Linné and Jean-Jacques Rousseau.²⁰ He also took care of the natural historical collection of the family library: this consisted of samples of metals and minerals, flowers, insects and birds that had been gathered by his forefathers.²¹

One prerequisite for furthering an individual's environmental literacy is having an older mentor as a role model.²² In Nordenskiöld's case, his father, Nils Gustaf Nordenskiöld, played a significant role in his life. Nils Gustaf was an internationally recognized scientist and the superintendent of the Finnish Mining Board. He travelled widely in Finland and in other European countries. From an early age, Adolf Erik accompanied his father on prospecting expeditions in search of mineralogical deposits

in Finland. In this practical way, he gained a sharp and reliable eye for identifying minerals, an ability which stood him in good stead later in his life.²³ In the rural milieu of Mäntsälä and in the excursions he undertook with his father, the young Nordenskiöld enjoyed direct experiences with nature. Indeed, the best way to promote environmental literacy, according to Golley, is to go out and sense the environment with all one's senses.²⁴

Nordenskiöld grew up at time of rapid modernization in Finland, which involved the transition from a society dominated by traditional agricultural society to one that was increasingly industrial. Railways, telegraph lines and mills, which he mentions in his essay, were manifestations of this process. Marc Cioc, Björn-Ola Linner and Matt Osborn have stated that "Europeans [...] were themselves deep in the throes of industrialization and therefore silent witnesses to one of the greatest transformations in human history."²⁵ In the beginning of "Förslag," Nordenskiöld refers to the modern inventions that would soon criss-cross the farthest parts of the countryside. This new infrastructure helped the rapidly developing wood-processing industry to take advantage of the power of large rapids, which had previously been too far away for the profitable transportation of products. By the end of the nineteenth century, dozens of wood-processing factories were established in the backwaters of Finland, Sweden and Norway.

In 1872, Carl Robert Mannerheim, Nordenskiöld's brother-in-law, became one of the founders of the Kuusankoski Aktiebolag paper mill, at Kuusankoski Rapid, in South-East Finland.²⁶ The area had previously been a backwater with only one small village. This process was a concrete model for Nordenskiöld's statement that "other kinds of mills are located deep in the wilderness and many people have gathered there in the backwoods."²⁷ He understood that industrial progress was unavoidable and even

beneficial for the country's economy. He shared the utilitarian and modern idea of continuous progress but, at the same time, he was worried about the loss of pristine nature. He realized that all development did not equate to progress. He had "broader knowledge and understanding of nature and interactions between human social systems and other natural systems,"²⁸ which Disinger and Roth have identified as one of the core elements of environmental literacy. He wanted to avoid the negative progress of welfare, which threatened the aesthetic values of forests, other words, he wanted to make correct choices vis-à-vis the use of technology. According to Disinger and Roth, "Technology and the making of choices" is one example of the issues out of which environmental literacy derives its focus.²⁹ Nordenskiöld chose to propose the establishment of national parks, which he believed would preserve areas of pristine nature for future generations.

Nordenskiöld lived in an era when new ideologies, such as nationalism and patriotism, had a strong impact on people's minds. Ideas related to conservation were also emerging. As the British anthropologist Tim Ingold has stated, new ideas do not flow in a historical vacuum, but respond to the dominant moral, political and economic concerns of the time.³⁰ Nordenskiöld adopted environmental ideas and opinions via exposure to his wide social network. He was born into the upper class of Finnish society: he was a son of a baron. He was also a scholar. He is an example of those members of the nobility and academia who were early promoters of nature conservation. He corresponded with emperors and kings, captains and admirals, scientists and researchers, business men, and common people. He was a founding member of various associations, such as Idun, a club for men from different walks of life; Svenska Sällskapet för Antropologi och Geografi (1877)(Swedish Society for Anthropology and Geography) and Svenska Turistföreningen (1885)(Swedish Tourist

Association). In Finland, he joined Societas pro Fauna et Flora Fennica as early as 1857. He was one of the leading figures in contemporary Swedish and Finnish scientific circles, where, as in many other countries, members of the nobility were active conservation pioneers.³¹

Johan Ludvig Runeberg, the national poet of Finland, was a member of Nordenskiöld's social network and had been his Greek teacher at Porvoo Gymnasium between 1845 and 1848. Runeberg was also a well-known advocate of the natural romantic movement. The idyllic landscapes of his native country are basic elements in his poetry. For the young Adolf Erik, Runeberg was an inspiring role model, who influenced his attitudes about the countryside and nature. In his autobiography, Nordenskiöld expresses his deep admiration for Runeberg. He recalls evenings in his student years when he sat in Runeberg's home with his friends and where they recited the newest works of the great poet until late in the night.³² Lorenzo Runeberg, the poet's son, was one of his best friends.

Nordenskiöld was also acquainted with another beloved Finnish author, Zacharias Topelius, who was also a professor of history, the rector of the Imperial Alexander University in Helsinki, a friend of Runeberg, and a great pioneer of the Finnish animal welfare movement. Topelius wrote dozens of historical novels, poems and plays filled with warm love for his native country and its nature. The Finnish historian Matti Klinge is one of many to emphasize the great influence of these two figures. They constructed an idealized picture of the Finnish native landscape.³³ Hence, Nordenskiöld adopted their ideal picture of landscapes. Moreover, he wanted to preserve these pictures for future generations:

In the near future, which is probably not far distant, it might be difficult to fashion a complete picture of the nature against which our ancestors fought their first battles, which has in itself always encouraged Northerners in their never ending love of freedom, and fostered our courageous fighting troops, which formed the

extensive museum in which all our researchers and painters began their studies, and which shapes the fundamental tone of our poets' songs, in our fathers' and in our own view of life.³⁴

The same ideas are present in a text by Runeberg, dating from 1839, which describes the beauty of Punkaharju, a six-kilometres narrow ridge that winds through Lake Saimaa, in the south-eastern corner of Finland. Punkaharju was declared a governmental park in 1842. In 1997, it was named as one of the 27 official national landscapes of Finland.³⁵ As Runeberg writes:

Hundreds of vistas depicted by the most professional artists cannot give the right impression of Punkaharju which, briefly said, at every step offers a new picture of the beautiful Saimaa. We ask: isn't it wonderful that these shores are the native country of poets?³⁶

It was fashionable at this time to compare a landscape to a "painting". Alexander von Humboldt, for example, used the term "Naturgemälde" (nature painting). A good artist could potentially paint a landscape so well that it also met the conceptual standard of a natural scientist. Humboldt emphasized the immediate experience of nature. He even urged that more artistic elements should be used in science so that art could be at central point of a scientist's world view.³⁷ Similarly, Nordenskiöld compared the landscape to a painting in "Förslag":

Even the most truthful and descriptive portrayal of nature is of little use. The author writes mainly for his contemporaries and has no need to portray nature in terms of what everybody can see with their own eyes. But that is exactly what is most essential to the picture, and if it vanishes or changes the quintessential elements will be lost to our descendants. The painter could, perhaps, fill in some of the missing detail but even the best artist is incapable of bringing back nature's full richness.³⁸

Nordenskiöld perceived the landscape through prevailing cultural, historical, social and communal factors. He comprehended aesthetic values and the history of a landscape in a way that reflected how he had been taught as a member of the upper class of the

Finnish society. The American environmental historian Richard W. Judd reminds us that primeval nature did not represent beauty for the farmers of the Romantic era, but rather an unfinished landscape that could be molded to a higher form of utility. Nature was an infinitely malleable adjunct to the farm's economy. Yet, the Romantic appreciation of nature extolled the benefits of natural beauty and an outdoor life. Furthermore, the expansion of the tourist industry created images of romantic landscapes that blended with traditional moral concerns and consequently laid the basis for the conservation movement.³⁹

Nature is a fundamental aspect of the cultural formation of countries. The German writer and historian Wilhelm Heinrich Riehl thought that nature, particularly forests, was the source of the reinvigoration of the "German people's soul" (the *Volkscharakter*).⁴⁰ In many countries, the welfare of forests had been a continuous issue. Nordenskiöld was presumably well aware of the contemporary debate regarding the place of forestry management in Finland.⁴¹ However, in "Förslag", he voices no concern about the loss of the forests due to the exploitation that was a most common concern of the time. Instead, he wanted to find a resolution regarding the problem of the vanishing history and natural beauty of forests. Hsu and Roth think that environmental literacy includes "skills and motivation to work toward the resolution of environmental problems and active involvement in working towards the maintenance of dynamic equilibrium between the quality of life and quality of environment."⁴² Nordenskiöld perceived forests as a source for creating a good quality of life; they were the roots of Northern culture and an inspiration for artists as well as the common people.

According to Disinger and Roth, "the unity of humankind with nature" is one of the basic issues out of which the concept of environmental literacy derives its focus.⁴³ For Nordenskiöld it was also important that future generations would understand the

importance of the history and the beauty of nature. He had a historical understanding of how various environmental issues had come to be. This understanding is essential for an individual seeking to become an environmentally literate person. Nordenskiöld understood the difference between contemporary nature, which was in the process of being altered by modern inventions, and ancient nature “against which our ancestors fought” and which was “the extensive museum in which all our researchers and painters began their studies.”⁴⁴ He displayed a knowledge of action strategies, positive attitudes and a strong sense of responsibility, which Roth names as being characteristics of environmental literacy.⁴⁵

Nordenskiöld also looked at the matter of national parks from an economic point of view. He suspected that some people would oppose the parks initiative as it threatened the economic use of the land. This was why he proposed that national parks should be established on publicly-owned land in faraway places, which yielded insignificant or no profit. Vast areas of land in both Finland and Sweden had been state property ever since 1542, when King Gustav Vasa of Sweden declared that the uninhabited wilderness belonged to God, the king and the crown.⁴⁶

In “Förslag” Nordenskiöld opposed zoos and disliked the idea that tropical animals should be imprisoned in cages in the Nordic countries, where harsh winters would make it difficult to take good care of them. The animals needed larger areas with tropical heat in order to be able to thrive in their cages. In his opinion, it was worthless to imitate all foreign institutions, which did not agree with the Nordic climate.

Nordenskiöld recommended that at least part of the money allocated for zoos should be used for establishing national parks. Consequently, Nordenskiöld argued that “it would not be many years before these parks would be among the most famous in Europe, and

future generations would remember with gratitude the day when the parks were established.”⁴⁷

American Impact

In the history of early Nordic conservation, Nordenskiöld is generally referred to as an essential link between the United States and the Nordic countries. Yellowstone National Park is considered to be the prime example for “Förslag.”⁴⁸ In 1910, Thor Högdahl, the secretary of the Swedish Society for Nature Conservation, referenced Nordenskiöld’s “Förslag” when he wrote “that a national park should be established in upper Norrland in a publicly-owned area in the same way as Yellowstone Park in the United States of America”.⁴⁹ However, Nordenskiöld never mentioned any specific place or model for “riksparker.” Indeed, his expression “riksparker” is in plural form.

It has been argued that George Perkins Marsh’s *Man and Nature* was a key inspiration for Nordenskiöld.⁵⁰ The book is not in his library, but, as Martti Blåfield proposes, he may well have been familiar with its contents through his friend Anton Blomqvist.⁵¹ In September 1881, for example, Blomqvist referred to Marsh’s writings in his address at a meeting of the Society of Finnish Foresters.⁵² He informed his audience about Marsh’s proposal for establishing a national park in the state of New York, which accorded with Nordenskiöld’s vision of a “rikspark.”⁵³ More specifically, Blomqvist quoted Marsh’s words from *The Earth as Modified by Human Action*:

It is desirable that some large and easily accessible region of American soil should remain, as far as possible, in its primitive condition, at once a museum for the instruction of the student, a garden for the recreation of the lover of nature, and as an asylum where indigenous tree, and humble plant that loves the shade, and fish and fowl and four-footed beast, may dwell and perpetuate their kind,⁵⁴

Marsh does not name any particular place where the protected region should be situated. In the chapter primer to the above quotation, he does write about the forests in the state of New York. This probably led Blomqvist to think that Marsh recommended a region in New York. Marsh does not use the expression “national park” in his proposal, but writes about a “region of American soil.” Compared to Nordenskiöld, Marsh outlines other kinds of motivations for establishing national parks, such as science, recreation and as a sanctuary for vegetation, fish, fowl and four-footed beasts. However, there are other justifications stated by Marsh that correlate with those of Nordenskiöld in some respects. For instance, Marsh writes the following in *Man and Nature*: “swamps and even lakes have been drained, and their beds brought within the domain of agricultural industry [...] These achievements are more glorious than the proudest triumphs of war [...] we have seen aerostation [...] the wonders of modern telegraphy.”⁵⁵ Nordenskiöld’s arguments are similar:

Lakes are diminished, bogs and marshes are drained, forests are felled, new forests are planted and the old free-growing woods shall soon be considered an inevitable sign of the incompetent forestry in the same way as meadows in their natural state may be thought of in terms of incompetent meadow management or slash-and-burn cultivation of poor husbandry.⁵⁶

Nevertheless, I argue, that, George Catlin’s *Illustrations of the manners, customs, and condition of the North American Indians* (1845) was even more influential than the work of Marsh vis-à-vis Nordenkiöld’s thinking about national parks. Catlin is well known as one of the pioneering figures in the history of national parks. He travelled around the American West five times during the 1830s, and was the first white man to depict Plains Indians in their native territory. Moreover, he foresaw the destruction of Native Americans. This explains why he wanted to preserve the striking image of Native Americans he had observed on canvass. As he wrote, he wanted to undertake “portraits of distinguished Indians, of both sexes in each tribe, painted in their native

costume; accompanied with pictures of their villages, domestic habits, games, mysteries, religious ceremonies, &c. with anecdotes, traditions, and history of their respective nations.”⁵⁷ This ambitious plan was necessary, he argued, so that they will “live again upon canvass, and stand forth centuries yet to come, the living monuments of a noble race”.⁵⁸

The imminent loss of pristine nature is a prescient threat in Catlin’s mind: “It is truly a melancholy contemplation for the traveler in this country, to anticipate the period which is not far distant, when the last of these noble animals [buffaloes], at the hands of white and red men will fall victims to their cruel and improvident rapacity.”⁵⁹ The same emotionality is perceptible in Nordenskiöld’s “Förslag”: “there is a melancholy feeling that future generations will barely be able to imagine what the land of their fathers was like.”⁶⁰ Catlin advocated the preservation of the Great Plains with the buffaloes and Indians “by some great protecting policy of government [...] in a *magnificent park* [...] *A nation's Park* containing man and beast, in all the wild and freshness of their nature’s beauty”.⁶¹ These words correspond to Nordenskiöld’s suggestion: “a suitable tract that could be marked out and proclaimed a Nation’s park (Rikspark).”⁶² I argue that Nordenskiöld translated ‘a nation’s park’ directly into the word ‘Rikspark’ (‘rike’ = ‘nation’).

The economy was also important to Catlin. He recommended the preservation of scenes without overall detriment to the country. He knew that “the tracts of country on which the buffaloes have assembled, are uniformly sterile, and of no available use to cultivating man.”⁶³ Nordenskiöld argued that “There are extensive areas of publicly owned land in the Nordic countries, many of which yield insignificant or no profit.”⁶⁴ Catlin aspired to be the founder of an institution such as a national park: “I would ask no other monument to my memory, nor any other enrolment of my name amongst the

famous dead, that the reputation of having been the founder of such an institution.”⁶⁵

Nordenskiöld also foresaw that “future generations would remember with gratitude the day when the parks were established”.⁶⁶

Catlin and Nordenskiöld had uniform rationales for their proposals. Derek Bousé, who has studied forest and wilderness preservation in the U.S., interprets Catlin’s proposal as “a plea to preserve the plains Indians’ traditional hunting practices and their relationship to their ancestral hunting grounds,” or “in a word, to preserve their *culture*.”⁶⁷ Catlin wanted to preserve more than just natural scenery in national parks. He was concerned with preserving Native American culture: their lifeways, customs, traditions, social practices, folkways and material artefacts. Similarly, Nordenskiöld was concerned with the culture of the Nordic countries. He wanted to preserve both the beauty of the forests, as well as the history of Northerners, which was hidden in forests. Historians may have sometimes mentioned both Nordenskiöld and Catlin in the same context, but they have never been directly connected with each other. Petteri Mäkelä, for example, mentions Catlin’s proposal and Nordenskiöld’s “Förslag” in his article on the history of Nordic conservation, but he does not make any causation from the former to the latter.⁶⁸

Nordenskiöld actively followed international discussions on scientific and environmental issues. There is one interesting piece of evidence in his library that also points to influence from the British Isles. It is in a series of the reports of the annual meetings of The British Association for the Advancement of Science. In the report of 1851, four scientists wrote about the destruction of Indian tropical forests: “In a single sentence, we would say that where human exigencies, whether for subsistence or for health, require the destruction of forests, let them be destroyed; but where neither life nor health is concerned, then let a wise system of preservation be introduced and acted

upon.”⁶⁹ The pages have been cut open for reading. It is, of course, impossible to tell if Nordenskiöld actually read the text, but the possibility exists that the ideas were familiar to him before he wrote “Förslag”.

George Catlin, George Perkins Marsh, the British scientists in India and Nordenskiöld perceived the alterations in their environment and responded to them. They made concrete proposals for improving the situation. While Marsh and the British scientists preferred conservation for the sake of utility, Catlin and Nordenskiöld recommended the establishing of national parks in order to preserve the culture and history of the nature of their native country for future generations. Their emphasis was aesthetic and cultural. According to Bousé, when Yellowstone National Park was established in 1872, “Catlin’s revolutionary point of view was rejected in favour of the strict protection of monumental scenery.”⁷⁰ Preservation entailed protecting landscapes. It was not concerned with the preservation of historical relationships between landscapes and people. However, Nordenskiöld had this latter understanding in his mind when he wrote his “Förslag”.

In addition to the above-mentioned connections to the United States, one possible influence on Nordenskiöld’s conservational ideas could have been his visit to the Centennial Exposition in Philadelphia in 1876 as an invited jury member.⁷¹ The Swedish historians Anders Ekström and Ingrid Jansson consider world exhibitions as places where new ideas and attitudes were disseminated.⁷² Conservation was a contemporary topic of discussion in North America at the time, as is testified by the opening of Yellowstone National Park four years earlier.

Nordenskiöld visited Niagara Falls during his stay in the United States.⁷³ Tuomas Räsänen has touched on the contradictory position of Niagara Falls in the history of tourism and conservation. In the early nineteenth century, it became the

symbol of America and Americanism; the icon of Romantic beauty for the whole of western civilization. Unfortunately, it was soon over-exploited by all manner of tourism entrepreneurs and its sublime beauty was buried somewhat under the edifice of tourism.⁷⁴ At Niagara Falls, Nordenskiöld perceived the negative side of the human exploitation of nature, which might have influenced his ideas in his essay.

A Pioneer in the History of Nordic Conservation

In Finland, scientists immediately paid attention to Nordenskiöld's essay. After the original essay was published in *Per Brahes minne*, "Förslag" was reprinted in 1881 in *Finska forstföreningens meddelanden* (Bulletin of the Society of Finnish Foresters), at instigation of Anton Blomqvist.⁷⁵ In the autumn of 1882, Blomqvist raised the issue at the annual meeting of the Society of Finnish Foresters. He proposed the establishment of model parks, in the spirit of Marsh, where trees and bushes that are able to cope with the northern climate could grow safely. He hoped such parks would be as popular as Punkaharju, the above-mentioned governmental park.⁷⁶ Blomqvist was also the first advocate of a single national park, instead of the development of several parks as Nordenskiöld had suggested. He recommended that a park should be established in Lapland, in the region of Aavasaksa⁷⁷ and, potentially, another one in southern Finland. The one-park pattern was repeated by both Finnish and Swedish scholars in the years to come. Natural scientific study was often connected to the idea of national parks, although Nordenskiöld did not mention science in "Förslag".

In 1891, Ragnar Hult, the chairman of the *Finnish Geographical Society*, put forward a proposal for implementing Nordenskiöld's national park plan at a society meeting. He also published an article on the subject which was cited in several

newspapers.⁷⁸ He augmented Nordenskiöld's original idea by adding some realistic and scientific suggestions. However, nothing transpired from Hult's revised plan. In 1898, Professor J. P. Norrlin, a botanist, raised the topic at a meeting of Societas pro Fauna et Flora Fennica, but again nothing concrete was set into motion.⁷⁹

In 1903, the Finnish senate created so-called saved forests, which were to be preserved as representative mementos for future generations and for scientific study.⁸⁰ In 1905, a committee began to handle the question of national parks in Finland.⁸¹ The area around Ounastunturi, Pallastunturi and Yllästunturi in northern Finland was earmarked as a suitable place for a national park. In 1914, a nature reserve at Mallatunturi was established in Lapland.⁸² A scenic hill, Koli, in eastern Finland was also added to the protected list.⁸³ However, the tumultuous political situation at this time ensured that little else was achieved in terms of conservation. Finland became independent in 1917, but soon descended into a civil war in 1918 and the efforts to build a new republic stretched the capacities of the young state. Thus, it took until 1938 for the first national parks to be established in Finland.

Mika Pekurinen emphasizes that Nordenskiöld instigated a discussion on the responsibility of every generation to protect the nature of their native country in "Förslag." This issue runs through the history of the Finnish conservation as a red line. The publication of "Förslag" ensured that Finnish conservation moved into to a new era. The protection of large areas of pristine nature in national parks and nature reserves became an important issue.⁸⁴ Minttu Perttula, a researcher at Metsähallitus (The State Forest Enterprise) in Finland, names Nordenskiöld as the pioneer of Finnish conservation ideology. According to her, he was the person who raised the natural environment to the status of a national treasure, alongside cultural.⁸⁵

In 1887, “Förslag” was mentioned in Sweden for the first time in the public domain in the encyclopedia *Nordisk familjebok*, under the heading ‘*nationalpark*.’⁸⁶ According to the encyclopedia entry, Nordenskiöld had suggested that “the state should set aside some remote district of a fell area for a national park which, after hundreds of years, would provide an illustrative picture of contemporary Swedish plant and animal life, as well as the physiognomy of the wilderness and cultivated land.”⁸⁷ The heading ‘*Nationalpark (rikspark)*’ was defined as “a region that a state has reserved to rescue the natural characteristics of the country from the hands of private owners and from damage and to create a long-lasting monument to the nature of the fatherland.”⁸⁸ The encyclopedia gave three examples: Yellowstone and Mariposa Grove national parks in the United States and Banff National Park in Canada.

In 1904, three years after Nordenskiöld’s death, the issue of national parks was again discussed in public, when Hugo Conwentz, a German botanist and an important initiator of conservation in Germany, visited Sweden. He lectured on conservation and praised Nordenskiöld’s ideas in an article in *Ymer*, the journal of the Swedish Society for Anthropology and Geography. In this article, he gave examples of nature protection in continental Europe and in Sweden. At the end of this essay he praised Nordenskiöld as being the ingenious initiator of the idea of conservation in Scandinavian countries.⁸⁹ Conwentz paid several visits to Sweden from 1889 onwards. He later noted that these visits significantly influenced his conservational ideas.⁹⁰

Bosse Sundin notes that Conwentz’s lectures and article “were the primary impetus for a motion in [the Swedish] parliament by Karl Starbäck proposing an inquiry into appropriate measures for protecting Sweden’s nature and natural landmarks.”⁹¹ Starbäck’s proposal won parliamentary support and was also endorsed by the Academy of Sciences. Indeed, the Academy executed the proposed inquiry. In September 1904,

the first Committee for the Protection of Nature was established, with A.G. Nathorst, a friend of Nordenskiöld, as one of the members. The committee stressed the importance of educating the public. The committee also advocated that lessons in schools and institutes should demonstrate a greater willingness to care for and protect nature.⁹² Today, this recommendation would be called a proposal for environmental education.

The first national parks in Sweden were established in 1909: Abisko, Hamra, Garphytte, Gotska Sandö, Peljekaise, Sarek, Sonfjällets, Stora Sjöfallet, and Ängsö.⁹³ The first three above-mentioned parks are situated in northern Sweden and the next three are located in central Sweden. All of them are in places that accord with Nordenskiöld's recommendation: "publicly owned land [...] which yields insignificant or no profit".

Conclusions

Nordenskiöld's "Förslag" is a tract written by an environmentally literate man. On several occasions, he writes about his observations and expresses his concerns about the threat of destructive changes in the environment. He also provides recommendations vis-à-vis how to prevent further destructions. One of his proposals was the establishment of national parks.

Forests occupy a central place in Nordenskiöld's "Förslag." They symbolize natural beauty and the long history of the Nordic countries. He wanted to restore the aesthetic and historical national treasures that were hidden in these forests for future generations. For him, forests were a symbol for respecting natural beauty, the desire to sustain spiritual welfare, and that a people knew about their nation's roots. "Förslag" was a starting point in the conversation about the importance of nature as a symbol of a

nation, as well as about the responsibility that every generation has in protecting the nature of their native country.

The ideas expressed by Nordenskiöld in “Förslag” were developed from his own observations and experiences and from the scientific books he read. He was also influenced by his social network, as well as the general spirit of the era. The historical roots of his essay include aspects of the modernization process, some patriotic ideas from the Romantic era, and a strong dose of American influence. He, in turn, influenced his fellow citizens by publishing his opinions. He made people realize and confront the threats he himself had witnessed. His concern for environmental problems was something new in Europe at the time. Many members of his social network shared his concern and continued his conservational legacy. Thus, Nordenskiöld was an important link in the chain of the history of conservation.

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¹ In the international literature Nordenskiöld is often referred to as Nils Adolf Erik Nordenskiöld or Nils Nordenskiöld. However, he himself used the name Adolf Erik. His three brothers also had Nils as their first name; Nils Gustaf Gabriel (1830–1891), Nils Otto (1834–1916), and Nils Karl (1837–1899), all after their father Nils Gustaf Nordenskiöld (1792–1866).

² In his texts, Nordenskiöld used the Swedish word 'nordisk' meaning the Scandinavian countries including Finland. That is why the word 'Nordic' is used in this text meaning all the Scandinavian countries and Finland.

³ Finland was part of Sweden over 600 hundred years from 1155 to 1809. The Governor General represented the king of Sweden in Finland. Per Brahe was a very much appreciated person. The sales of the 16-page publication were used for financing a statue of the count. Today, the statue stands in a park in Turku, the oldest town in Finland, next to the Cathedral, the Mother Church of the country.

⁴ See for instance: Conwentz, 'Om skydd', 36, 42; Hakala and Välimäki, *Ympäristön tila*, 28; Haraldsson, *Skydda vår natur*, 75; Lundgren, *Staten och naturen*; Myllyntaus, 'Suomalaisen ympäristöhistorian', 327; Palmén, 'Om naturskydd', 2–3; Sehlin, *Känn ditt land*, 41; Sundin, 'Från riksparker', 153–4; Wramner and Nygård, *Från naturskydd*, 15.

⁵ Nordenskiöld, 'Förslag', 10. The original text reads: "Förändringen medför lycka och välstånd för millioner och utgör den rätta måttstocken på ett lands utveckling ... det ligger derjemte

något nedtryckande i känslan att våra efterkommande knappast skola kunna göra sig ett tydligt föreställning om deras fäders land.”

⁶ Nordenskiöld, 'Förslag', 10. The original text reads: ”Nordens länder ega vidsträckta områden kronojord. Mångenstädes lemna denna föga eller ingen afkastning och utan nämnvärd uppoffring kunde därför en lämplig sträck utväljas och förklaras för Rikspark.”

⁷ Säve, 'Sista paret ut!', 70–86.

⁸ *Svenska Naturskyddsföreningen 50 år*, 5–6; Lundgren, *Staten och naturen*, 56, 82–112.

⁹ Palmgren, *Naturskydd och kultur*, I, 53–4; Söderberg, *Miljövården*, 4; Sundin, 'Från rikspaker', 153; Haraldsson, *Skydda vår natur*, 75; Myllyntaus, 'Suomalaisen ympäristöhistorian', 327; Lundgren, *Staten och naturen*, 38–50 etc.

¹⁰ Nordenskiöld, 'Förslag', 10. The original text reads: ”en verklig bild af fosterlandet sådant det fordom varit, medan åkerns omfång än var ringa, medan det än fans oodlade sjöstränder och skog som ej berörts af yxan.”

¹¹ Lundgren, *Staten och naturen*, 41–2

¹² Blåfield, 'A. E. Nordenskiöld', 60–2.

¹³ Disinger and Roth, *Environmental literacy*, 3.

¹⁴ Disinger and Roth, *Environmental literacy*, 4.

¹⁵ Disinger and Roth. *Environmental Literacy*, 4–5.

¹⁶ Niemi, 'Environmental Literacy', 105–107; 'How Fossils', 39–53; 'Exploring Environmental Literacy', 55–60.

¹⁷ Frugårds arkiv ca. 1600–1912, The National Library of Finland in Helsinki.

¹⁸ Disinger and Roth. *Environmental Literacy*, 4–5; Hares et al. 'Environmental Literacy', 5–6; Hsu and Roth, 'An Assessment of Environmental Literacy', 229–49; Ruotsala 2002, 331–2; Salzman 2003, 40.

¹⁹ Nordenskiöld wrote two books on cartography: Facsimile-atlas till kartografiens äldsta historia innehållande afbildningar af de viktigaste kartor, tryckta före år 1600 (1889) and Periplus : utkast till sjökortens och sjöböckernas äldsta historia (1895–1897). His extensive collection of historical maps, geographical literature and rare travel books are stored in the

National Library of Finland, in Helsinki. In 1997 the collection was included in UNESCO's Memory of the World register

- ²⁰ The American environmental historian David Orr thinks that certain books are important in explaining our deep environmental experiences. See Orr, *Ecological Literacy*, 88, 93. Frank B. Golley thinks that: "A person who is literate can understand what is written and place it into a context of meaning." Golley, *A Primer*, ix.
- ²¹ Nordenskiöld, *Nils Adolf Erik Nordenskiöld*, 4.
- ²² Orr, *Ecological Literacy*, 88.
- ²³ Nordenskiöld, *Nils Adolf Erik Nordenskiöld*, 4.
- ²⁴ Golley, *A Primer*, ix–x; Orr, *Ecological Literacy*, 88.
- ²⁵ Cioc, et al., 'Environmental History in Northern Europe', 396.
- ²⁶ Carl Robert Mannerheim was the first managing director of Kuusankoski Aktiebolag between 1872 and –1878. Mannerheim's brother-in-law, the physician Christian Lovén (1835–1904), a close friend of Nordenskiöld, was a shareholder and a member of the company's board. Mannerheim and Lovén were married to the von Julin sisters: Mannerheim to Hedvig Charlotta Helena (1881) and Lovén to Elisabet Johanna (Hanna) Emelia (1843–1941).
- ²⁷ Nordenskiöld, *Förslag*, 10.
- ²⁸ Disinger and Roth. *Environmental Literacy*, 4–5.
- ²⁹ Disinger and Roth. *Environmental Literacy*, 4–5.
- ³⁰ Ingold, 'General Introduction' (1994), xiii.
- ³¹ Milton, 'Taking the Pledge', 2006.
- ³² Nordenskiöld, *Nils Adolf Erik Nordenskiöld*, 5.
- ³³ Klinge, *Runebergs två fosterland*, 53.
- ³⁴ Nordenskiöld, 'Förslag', 10. The original text reads: "I en framtid, som sannolikt ej är långt aflägsen, skall det därför blifva svårt att få en fulltonig föreställning om den natur, med hvilken våra stamfäder hade att kämpa deras första strid, som närt nordbons aldrig kufvade frihetskärlek och fostrat dess djerfva krigarskaror, som utgjort det vidsträckta museum der alla våra forskare

och konstnärer börjat sina studier, som bildar grundtonen i våra skalders sånger, i våra fäders och vår egen lifsåskådning.”

³⁵ Flander, 'Punkaharju osana suomalaista luonnonsuojelua', 12.

³⁶ Runeberg, 'Pungaharju', 21.12.1839.

³⁷ Tiitta, *Harmaakiven maa*, 20; Waenerberg, 'Syysmaisema ja kansallismaisema', 207–8.

³⁸ Nordenskiöld, 'Förslag', 10. The original text reads: ”Äfven den trognaste och mest målande naturskildring blir här till ringa gagn. Skriftställaren skrifver nemligen för sin samtid, och vid en naturskildring behöfver han ej tala om det som hvar man sjelf sett. Men just detta bildar taflans hufvuddrag, och om det framdeles försvinner eller förändras kommer för framtida släkten det väsentliga att saknas i skildringen.”

³⁹ Judd, *Common Lands*, 8–9.

⁴⁰ Hölzl, 'Nature Conservation', 31–2.

⁴¹ One of the first texts on proper forest management in the Nordic countries was published as early as 1753. See Pehr Kalm, *Oförgräpelig tanckar om nödwändigheten af skogarnas bättre wård och ans i Finland*. Resp. Daniel Lithander. Åbo, 1753. In the 1850s, the German forester Edmund von Berg inspected Finnish forests and wrote a seminal report on the mismanagement of forests. The government created several committees in order to improve the situation. See, for instance, Edmund von Berg, *Kertomus Suomenmaan metsistä 1858 sekä kuvia suuresta muutoksesta*, 1995; C. W. Gylden, *Handledning för skogshushållare i Finland*, 1853; Matti Leikola, 'Suomalaisen metsäkirjallisuuden alkutaival', *Vuosilusto* 1996-97, 5-10; Anne Ruuttula-Vasari, "Herroja on epäiltävä aina – metsäherroja yli kaiken", 2004; Tapani Tasanen, *Läksi puut ylenemähän*, 2004.

⁴² Hsu and Roth, 'An assessment of environmental literacy', 232.

⁴³ Disinger and Roth. *Environmental Literacy*, 4–5.

⁴⁴ Nordenskiöld, 'Förslag', 10.

⁴⁵ Roth, 'Environmental Literacy', 8–9.

⁴⁶ Häggman, 'Kansallismaiseman hoitajat', 185.

⁴⁷ Nordenskiöld, 'Förslag', 10. The original text reads: "då skola många år ej förgå, innan dessa parker blifva bland de mest berömda i Europa, och med tacksamhet skall våra efterkommande den dag minnas, då parken grundlagts."

⁴⁸ Högdahl, *Naturskydd i Sverige*, 6; Pekurinen, 'Sivistys velvoittaa', 130; Sundin, 'Environmental Protection', 201; *Svenska naturskyddsföreningen*, 6;

⁴⁹ Lundgren, *Staten och naturen*, 40; Högdahl, *Naturskydd i Sverige*, 6. The original text reads: "att på något kronan tillhörigt område i öfre Norrland inrätta en "rikspark" efter mönster af Yellowstoneparken i Nordamerika."

⁵⁰ Blåfield, 'A. E. Nordenskiöld ja kansallispuistoate', 60;

⁵¹ Blåfield, 'A. E. Nordenskiöld ja kansallispuistoate', 60.

⁵² Blåfield, 'A. E. Nordenskiöld ja kansallispuistoate', 60–1.

⁵³ *Finska forstföreningens*, 155.

⁵⁴ Marsh, *Man and Nature*, 203.

⁵⁵ Marsh, *Man and Nature*, 45.

⁵⁶ Nordenskiöld, 'Förslag', 10. The original text reads: "sjöar sänkas, kärr och myrar uttorkas, skogen afverkas, nya skogsparker planteras och gammal fritt vuxen skog kommer snart att anses som ett lika säkert tecken på dålig skogshushållning, som naturliga ängar på dålig ängsskötsel och svedjning på dålig åkerbruk. Förändringen medför lycka och välstånd för millioner och utgör den rätta mattstocken på ett lands utveckling."

⁵⁷ Catlin, *Illustrations*, 16.

⁵⁸ Catlin, *Illustrations*, 16.

⁵⁹ Catlin, *Illustrations*, 256.

⁶⁰ Nordenskiöld, 'Förslag', 10. The original text reads: "Men det ligger derjemte något nedtryckande i känslan att våra efterkommande knappast skola kunna göra sig ett tydligt föreställning om deras fäders land."

⁶¹ Catlin, *Illustrations*, 261.

⁶² Nordenskiöld, 'Förslag', 10. The original text reads: "en lämplig sträck utväljas och förklaras för Rikspark, der skog och mark och sjö skulle få stå alldeles orörda, der träd ej finge fällas,

snår ej rödjas, gräs ej afmejas, och der alla djur, som ej vore verkliga skadedjur, året om kunde gå trygga för jägarens lod.”

⁶³ Catlin, *Illustrations*, 262.

⁶⁴ Nordenskiöld, 'Förslag', 10. The original text reads: ”Nordens länder ega vidsträckta områden kronojord. Mångenstädes lemnar denna föga eller ingen afkastning.”

⁶⁵ Catlin, *Illustrations*, 262.

⁶⁶ Nordenskiöld, 'Förslag', 10. The original text reads: ”med tacksamhet skall våra efterkommande den dag minnas, då parken grundlagts.”

⁶⁷ Bousé, 'Culture as Nature', 76.

⁶⁸ Mäkelä, 'Koskemattoman luonnon', 223, 230.

⁶⁹ Cleghorn et al. 'Report of the Committee, 78—102.

⁷⁰ Bousé, 'Culture as Nature', 82.

⁷¹ Nordenskiöld's letter to Otto Nordenskiöld March 2, 1876, in Frugårds arkiv ca. 1600–1912, The National Library of Finland in Helsinki (Hereafter FA); Nordenskiöld, *Nils Adolf Erik Nordenskiöld*, 37.

⁷² Ekström, *Den utställda världen*, 10; Jansson, *Svensk rapportering*, 5.

⁷³ Nordenskiöld's letter to Karl Nordenskiöld July 24, 1876, FA. The Niagara Falls were described scientifically for the first time by the Finnish explorer Pehr Kalm a professor at the Royal Academy of Turku. He studied the nature of the North America as a follower of Carl von Linné, between 1749 and 1751.

⁷⁴ Miles, *Wilderness in National Parks*, 10; Räsänen, 'Luonnossa', 165–7.

⁷⁵ Otto Nordenskiöld's letter to Nordenskiöld November 16, 1880, and Nordenskiöld's letter to Otto Nordenskiöld November 21, 1880, FA.

⁷⁶ *Finska forstföreningens meddelande 1881*, 155–9.

⁷⁷ Aavasaksa is a 242 metre (794 ft) hill in Ylitornio in Finnish Lapland. It is included in the list of National landscapes of Finland. Pierre Louis Maupertuis visited the hill as part of the French Geodesic Mission (1736–1737). The hill became part of the Struve Geodesic Arc and a

World Heritage Site. Aavasaksa is especially famous as a place to admire the midnight sun at Midsummer.

⁷⁸ Hult, 'Nationalpark i Finland'; *Hufvudstadsbaldet* 4.5.1891, 2; *Finland*, 12.1.1892, 1.

⁷⁹ Palmén, *Om naturskydd*. 2; Palmgren, *Naturskydd och kultur I*. 161–4, 174; Myllyntaus, 'Suomalaisen ympäristöhistorian', 321–31. J. P. Norrlin was the founder of Finnish plant ecology, and the teacher of Ragnar Hult.

⁸⁰ Mäkelä, 'Koskemattoman luonnon', 26; Nyysönen, 'Luonnonkansa', 100.

⁸¹ Häyren, 'Nationalparker i Finland', 690; Palmén, *Om naturskydd*; Montell, 'Den tilltänkta nationalparken', 10–17.

⁸² Nyysönen, 'Luonnonkansa', 100.

⁸³ Norrlin, 'Luonnonsuojeluksesta', 606–9.

⁸⁴ Pekurinen, 130, 159.

⁸⁵ Perttula, 'Suomen kansallispuistojärjestelmän', 15.

⁸⁶ 'Nationalpark' is the word used in *Nordisk familjebok*. *II*, 854.

⁸⁷ *Nordisk familjebok*. *II*, 854: The original text reads: "staten borde anslå någon obygd i trakten af fjällryggen till en nationalpark, hvilken skulle kunna ännu efter århundraden gifva en åskådlig bild af Sveriges nuvarande växt- och djurverld, vildmarks- och odlingsfysionomi."

⁸⁸ *Nordisk familjebok*. *II*, 854: The original text reads: "Nationalpark (rikspark), ett inom ett land för statens räkning afsöndradt område, hvars naturmärkvärdigheter hållas fredade för enskildas besittning och åverkan för att kunna utgöra likasom ett bestående monument af fosterlandets natur."

⁸⁹ Conwentz, 'Om skydd', 2–42.

⁹⁰ Conwentz letter to Nordenskiöld June 15, 1893, and March 12, 1894, Centre for the History of Science at the Royal Swedish Academy of Sciences in Stockholm E01:4; Palmgren, *Luonnonsuojelu ja kulttuuri*, 56.

⁹¹ Sundin, 'Environmental Protection', 202.

⁹² Sundin, 'Environmental Protection', 203.

⁹³ *Nordisk familjebok*, *19*, 543.