

Article

# Different Worldviews as Impediments to Integrated Nature and Cultural Heritage Conservation Management: Experiences from Protected Areas in Northern Sweden

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**Abstract:** In the management of protected nature areas, arguments are being raised for increasingly integrated approaches. Despite an explicit ambition from the responsible managing governmental agencies, Swedish Environmental Protection Agency and Swedish National Heritage Board, attempts to initiate and increase the degree of integrated nature and cultural heritage conservation management in the Swedish mountains are failing. The delivery of environmental policy through the Swedish National Environmental Objective called Magnificent Mountains is dependent on increased collaboration between the state and local stakeholders. This study, using a group model building approach, maps out the system's dynamic interactions between nature perceptions, values and the objectives of managing agencies and local stakeholders. It is identified that the dominance of a wilderness discourse influences both the objectives and management of the protected areas. This wilderness discourse functions as a barrier against including cultural heritage conservation aspects and local stakeholders in management, as wilderness-influenced objectives are defining protected areas as environments "untouched" by humans. A wilderness objective reduces the need for local knowledge and participation in environmental management. In reality, protected areas depend, to varying degrees, on the continuation of traditional land-use practices.

**Keywords:** integrated environmental management; cultural landscapes; stakeholder participation; landscape planning; systems thinking; group modeling; participatory modeling; conservation; wilderness; wilderness discourse

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## 1. Introduction

The division of society and nature into separate realms is a frequent Western perspective for describing and understanding nature [1,2]. Some scholars (e.g., Cronon (1996) [3]) have pointed out how the idea of wilderness is, to a certain extent, a construction and description of an alien but supposedly pristine environment, which, as a response to guilt over environmental degradation, should be protected from human actions such as industrialization. Whether or not these areas constitute a wildernesses in the sense that they are essentially unaffected by the influence of human actions has been a long-standing and polarized academic [4] and popular debate [5], both internationally and in Scandinavia [6,7].

This view of nature is also linked to a romantic, and to some extent nationalistic, view of nature [8], exemplified by the creation of national parks for the preservation of wilderness. Or, in the words

of the Committee Report, which formed the basis for subsequent Swedish national park legislation, (translation from Swedish) “... certain areas are to be set aside where life in nature may develop perfectly undisturbed by the influence of culture” [9].

Although there have been ample efforts to define what wilderness is, there is no universal definition. However, North American perspectives originating from the US Wilderness Act of 1964 have been influential in the parameters that are often included in the various definitions of wilderness. Human perceptions of nature and spatial scale are typically the foundations of the term wilderness rather than ecological parameters. For example, the experience of solitude and large and remote areas, in combination with a landscape typically perceived as unaffected by human activities, are common components in the term wilderness (see, e.g., Lupp et al. 2011 [10] for a more comprehensive review of wilderness descriptions). In a Scandinavian context, an early analogue was the identification of “wilderness core areas” in a government inquiry (SOU 1971:75) [11], defined as contiguous areas larger than 1000 km<sup>2</sup>, more than 15 km from any road or railway and without designated hiking trails and facilities for overnight stays. Protections for these areas have subsequently been developed in the Swedish Planning and Building Act (Ch. 4, §5 Planning and Building Act) by delimiting areas of “unbroken mountain areas”, i.e., large contiguous areas unbroken by roads and with severe restrictions on building. Similarly, in Norway, areas may be designated as wilderness-influenced and given special status and management, but ecological uniqueness or biodiversity are less relevant components in the ideas of wilderness compared to the absence of human interference [12]. Thus, as the examples above illustrate, it is not ecological qualities per se that are meant to be preserved in the idea of wilderness, but rather the absence of human use and artifacts.

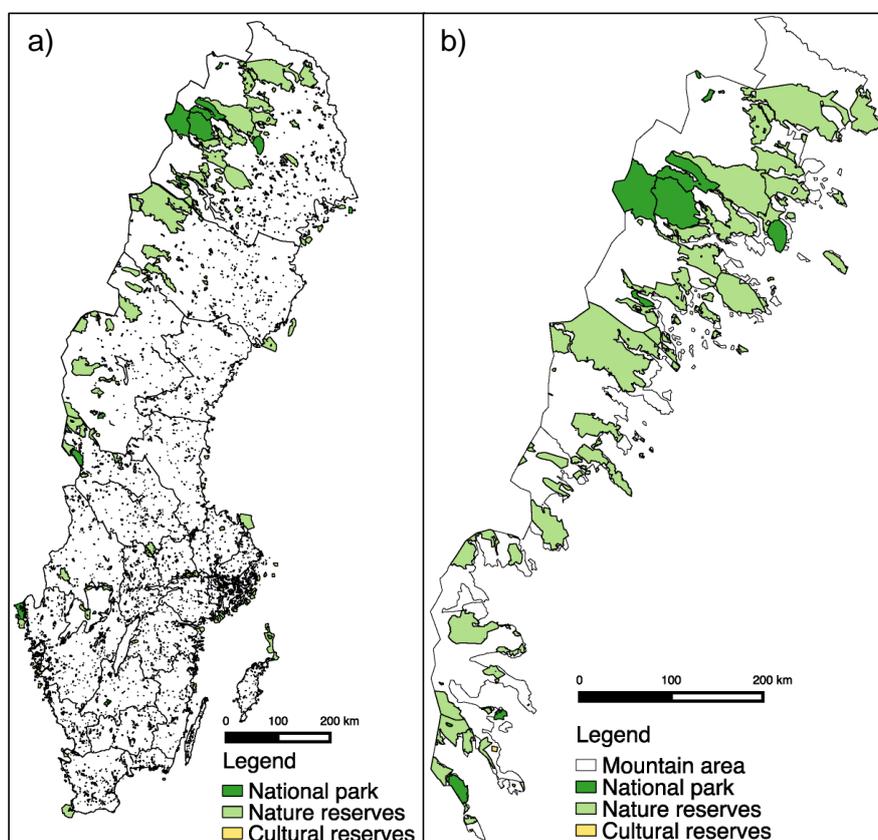
Despite a strong prevalence of perceptions that certain areas constitute a wilderness, the concept is often based on a misconception of the social-ecological processes that shape natural environments [13]. In Scandinavia, this has certainly been the case too. Emanuelson (1987) [14] concluded in 1987 that the Swedish mountain region has long been incorrectly described as a wilderness and that, as a region, it cannot be seen as “untouched” by humans. Instead, the human impact on the landscape, through various forms of traditional and indigenous land uses, for example reindeer husbandry, could be observed already from the 17th century onwards.

Nevertheless, wilderness perspectives on the Swedish mountains prevail. For example, Wall Reinius (2009) [15] exemplifies how this wilderness perspective has also been present in the Swedish context, where protected areas in the northern mountain region have been described, for example, as “Europe’s last great wilderness”. Further, Wall Reinius (2009) [15] highlights how even in the mixed natural and cultural World Heritage Site (WHS) of Laponia, which is co-managed with local Sámi communities, this wilderness description of an area that is effectively a Sámi cultural landscape still continues to be held, unreflectedly, by responsible managing agencies like the Swedish Environment Protection Agency (SEPA) and the Swedish National Heritage Board (SNHB) [15].

Cultural heritage conservation has a long tradition in Sweden. The managing agency SNHB was founded as early as 1630, and by 1666 the scope of the board had widened from documentation to the beginning of one of Europe’s first legislations to actively protect cultural heritage features in the landscape from exploitation and destruction. The legislative framework (previously the Ancient Monuments Act (1942:350), replaced by the Historic Environment Act 1988:950 and the Historic Environment Ordinance (1988:1188)) is strong and has protected, in principle and rather radically, all objects considered ancient, whether or not they have been identified or designated as such. By tradition, the preserved objects have typically been point features (e.g., a rune stone, a burial site etc.) and have only recently and rarely come to include larger areas or landscapes.

Nature conservation is, on the other hand, a much more recent pursuit—in many respects a reaction to the industrial transformation of traditional pre-industrial landscapes, and typically concerned with protecting ecosystems and landscapes, i.e., a wider area rather than point features (though early protection also had a component of point feature protection, e.g., of large erratic boulders or very old oak trees). In 1909 Sweden created the first national parks in Europe. The early national

park system had, area-wise, a clear focus on the mountainous areas of northern Sweden and was established on state-owned (then Crown-owned) land. This northern bias may be explained by a perceived need to protect what was seen as an unspoiled original pristine nature against industrial resource exploitation [16,17]. This “northern approach” was also financially expedient, as the land was state-owned and no economic compensation to landowners or users was thus required. Later legislation enabled other forms of area protection and, from the early 1960s onwards, the establishment of an extensive network of smaller nature reserves, often located on private land [17]. A weaker supporting legislation and the need to negotiate with, and economically compensate, private owners for the establishment of reserves has resulted in a more deliberative, activist and negotiating culture within nature conservation in comparison with the cultural heritage field, where deliberation and negotiations were not really needed and, as a default, protection was at hand. While the establishment of nature reserves addressed to some extent the issue of a northern bias in conservation, the larger contiguous parks and reserves are still, by and large, a northern feature of protected areas in Sweden, as apparent in Figure 1.



**Figure 1.** (a) National parks, Nature reserves and Cultural reserves in Sweden. The largest contiguous areas of protected nature are found in the northwestern mountain regions. Also clearly visible is that Nature reserves cover a much larger area compared to National parks, and the fact that Cultural reserves are barely identifiable at this scale. (b) Protected areas, within the mountain area (defined by the *Productive Forest Line*). Protected areas constitute a large proportion of the mountains region. In northern Sweden, Nature reserves cover a notably larger area than National Parks. There are three Cultural reserves located within the mountain area but are hardly visible.

From the 1970s onwards, as a consequence of increasingly mechanized and industrial-style forestry, there have been increasing public demands on forestry to include environmental concerns in its operations. The current Forestry Act, from 1992, equates the environmental and economic objectives [18]. Similar ambitions to integrate environmental aspects in all societal activities are

expressed in the broad National Environmental Objectives (NEO) unanimously adopted by the Swedish parliament in 1999. The NEO approach is supposed to allow a transition from reactive regulation-based environmental governance to a more proactive approach based on objectives [19]. The NEO approach is further based on the assumption that all stakeholders (government agencies, municipalities, private and public corporations, individual owners and the public) should contribute to the attainment of the 16 national objectives, and the objective fulfillment of the objectives is monitored through national and regional indicators [20].

In character, the sixteen national environmental objectives vary significantly. Some of them may be described as science-driven, while others are more value-driven [21]. Emmelin (2005) [22] also points out how value-driven objectives are more contested by the various actors that need to relate to these objectives as compared to science-driven objectives. The need for a discussion on how to operationalize and concretize the rather fuzzy objectives is, according to Emmelin (2005) [22], underpinned by a situation where actors may agree on the objectives on a rhetorical level while at the same time disagreeing on the operationalization of the objectives, the chosen policy measures or the legitimacy and the balance between other environmental objectives or other societal goals on a regional or local scale. One objective characterized as a vague value-driven objective is the Magnificent Mountains objective, focused on the mountainous landscape of northern Sweden.

The Magnificent Mountains objective is one of the few, as opposed to most of the other Environmental Objectives, that can be achieved, in principle, by decisions and actions taken within Sweden—the other NEOs are all to various degrees dependent on collective European, or global, action. Nonetheless, progress reports about the state of the Swedish mountain environment have consistently emphasized that the objective will not be achieved within the given timeframe. Either the conditions in the mountain area are deteriorating rather than improving and maybe even worsening, or there is not even enough knowledge to know whether the situation is deteriorating or not [23–26].

A group modeling-based systems analytic study by [27] showed, however, that practically all stakeholders of relevance to the Magnificent Mountain objective had doubts about the relevance and utility of designated sub-objectives to the overarching objective, as well as with regard to the relevance of the chosen official indicators. Furthermore, one of the main reasons for poor objective attainment was the effect of focusing too specifically on the environmental aspects of the sustainability trinity, to the detriment of the economic and social aspects. The study highlighted the importance of a more integrated approach in the NEO work, i.e., a call for a better coordination between concerned authorities as well as the need to involve local stakeholders in the planning and local resource management of the mountain environment. Finally, the study included a stakeholder defined transdisciplinary research agenda. One concrete outcome of the latter was a joint call on “Integrated nature and cultural heritage conservation” from the SNHB and the Swedish Environmental Protection Agency (SEPA).

Sayer et al. (2013) [28] and Reed et al. (2017) [29], for example, illustrate the importance of including multiple stakeholder perspectives in a landscape with competing land-use interests and where broader environmental concerns are balanced against other societal objectives in order to develop appropriate management strategies. In addition, to achieve a better integration between natural and cultural value power balances between managing governmental agencies is also a key issue, as such power balances determine who can define the landscape to be managed [30]. Dawson et al. (2017) [31] have demonstrated how systems analysis and causal loop diagrams may be efficient methods to include such multiple stakeholder perspectives in a landscape-based setting.

In a northern Swedish context, there have been arguments for increased community-based management or co-management, made by scholars as well as by stakeholders involved in land-use management in and around the mountain area (see for example [27,32,33]). Despite some examples of the adoption of such approaches (Laponia WHS, Vilhelmina Model forest), there is an evident disconnect and discontent at a local level with the possibilities for local actors to be involved in land-use management [34,35]. The Magnificent Mountains objective setting is a clear example of when the perspectives of multiple stakeholders are desirable, as it is comprised of a goal-oriented

proactive environmental policy, whose delivery is dependent on multiple stakeholders with their own agendas—acting within the boundaries of a defined region, in which environmental qualities should be preserved, but also weighed against other societal objectives. After almost 20 years since its adoption the environmental objective Magnificent Mountains is far from being achieved [36]. Despite an explicit will and a common idea from both of the responsible governmental agencies, SEPA and SNHB, about increasing the integration of nature and cultural heritage conservation management, this practice does not yet appear to be taking place.

The aim of this study is to identify and understand current challenges and barriers to an integrated nature and cultural heritage conservation management in protected areas, using the protected areas in the northern Swedish mountains as reference, and in particular the influence of different discourses on management policy and the possibility to identify potential leverage points for actors to overcome these challenges and barriers.

## 2. Background

The Swedish mountain area is a large region. A number of definitions of what constitutes the Swedish mountain regions have been used in various settings (see, e.g., Naturvårdsverket (2019) [37] for a summary of commonly applied definitions). One commonly occurring definition, also used in this study, is the administrative boundary for productive forests, called the *Productive Forest Line*. The area above this boundary is a vast region just above 100,000 km<sup>2</sup> and accounts for approximately a quarter of the country. It is also a sparsely populated region in general, and few people live within the protected areas. Despite a sparse population pressure, it is a region of “contested landscapes” (exemplified by, e.g., Horstkotte (2013) [38]). These contestations come from shifting views on how the land should be used—for example reindeer husbandry, nature protection, cultural heritage management, tourism and industrial exploitation [35]—which are not necessarily compatible. The fact that the northern Swedish mountain landscape is also strongly shaped by long and continuous traditional land-use, both through reindeer grazing by indigenous Sámi communities as well as mountain and summer farming is well established in the literature (e.g., in [14,39–42]). Reindeer husbandry as a traditional indigenous Sámi land-use is regulated by the Reindeer Husbandry Act (1971:437) and it can, during certain periods of the year, be practiced by reindeer herding communities within the large reindeer husbandry area—an area that covers approximately half the size of Sweden. The Swedish mountain region is also part of the “year-round grazing area”, which means that reindeer husbandry is allowed there during the whole year. In all protected areas in the mountain region, reindeer husbandry is thus allowed, with the exception of the southernmost national park of the mountain range—Fulufjället national park. Mountain farming, despite being significantly smaller in spatial extent than reindeer grazing, has created considerable biological values, of high interest for conservation. Both reindeer husbandry and mountain farming are thus cultural legacies in the landscape as well as prerequisites to maintaining conservation values.

In Sweden, generally speaking, nature conservation in national parks and nature reserves is the responsibility of the SEPA and the County Administrative Boards’ Environmental Units, sometimes through various sui generis co-management governance structures, e.g., Laponia WHS, involving local stakeholders. Similarly, cultural heritage preservation is the responsibility of the SNHB and the County Administrative Boards’ Cultural Heritage Units. As previously noted, the two types of conservation practices have different traditions and approaches, one with a focus on the preservation of remains largely of a point character, the other on the acquisition of land for conservation, management and sometimes restoration. A more integrated nature and cultural heritage conservation management through better or more efficient and locally connected collaboration has been an explicit governmental desire. Accordingly, the government has instructed SEPA [43] and SHB [44] to initiate this development, possibly due to the fact that integrated management in the region has been proven to be a challenge [35]. However, the challenge of integrating conservation management efforts based on natural and cultural

values is not unique to the northern mountain area. Wu et al. [30] show that this has been a challenge in landscape management in southern Sweden as well.

The majority of protected nature in Sweden is currently in the form of nature reserves, accounting for 9.3% of the land area [45]. National parks are the second most common form of protected nature, with 1.5% of the country protected [45]. Most of Sweden's protected nature is within the mountain area, with nature reserves accounting for a much larger area (31,181 km<sup>2</sup>) than national parks (6457 km<sup>2</sup>). As a comparison, the total area of cultural reserves in the mountains is only 0.1% (approx. 38 km<sup>2</sup>) of the area protected as nature reserves. This effectively means that if integrated environmental management is going to take place, in practice, in the protected areas of the mountain region, it is within the nature reserves this will have to develop.

### 3. Methods

In order to understand the dynamics behind natural and cultural environmental management in the mountains, and to be able to provide decision support for policymakers based on a systems understanding [46,47], this study was conducted using group modeling sessions [48–51] combined with follow-up interviews and modeling sessions with selected key stakeholders.

#### 3.1. Pre-Modeling Session Preparations

In a stakeholder-based analysis by Sverdrup et al. 2010 [35] of the Magnificent Mountain objective set for the Swedish mountains, significant efforts were made to identify all the key actors involved in the dynamic processes shaping the mountain region. This study draws on that rigorous stakeholder identification process.

The study was divided into four steps. First, stakeholders directly related to nature and culture heritage conservation were chosen, as already identified in Sverdrup et al. 2010 [35]. These included various public agencies on different levels: national agencies like SEPA, SNHB and the National Property Board, and on the regional level the county administrative boards of the four mountain counties, two municipalities from the southern and northern parts of the mountain area and representatives of museums and cultural foundations for landscape heritage conservation. Two NGOs were also chosen: the Swedish Reindeer Herding Association and the Swedish Hamlet Users Association.

Secondly, the 17 identified stakeholders (see Table 1) were invited to participate in a one-day group modeling session; thirdly, four of the key actors were interviewed for validation of the model; and fourthly, management plans for nature reserves were analyzed using Geographical Information Systems (GIS) as an additional validation step.

**Table 1.** Stakeholders that participated in the group-model building.

Stakeholder	Participant
Åjtte—Swedish mountain and Sámi museum	Head of museum
Association of Swedish Mountain Farmers and Hamlet users	Representative
County administrative board—Dalarna	Unit for Nature Protection
County administrative board—Västerbotten	Unit for Cultural heritage
County administrative board Jämtland	Head of unit for Nature Protection
County administrative board Norrbotten	Curator
Gaaltije—Centre for Southern Sámi culture	Head of operations
Laponia World Heritage Site	Representative
Malung-Sälen Municipality	Head of Spatial Planning
Nätverket Norden—Association for settlers in the mountain region	Representative
Särna-Idre och Transtrands sockenförening—Mountain farming association	Representative
Storuman municipality	Representative
Swedish Environmental Protection Agency	Representative
Swedish National Heritage Board	Curator
Swedish National Heritage Board	Representative
Swedish National Property Board	Cultural environments specialist
Swedish Reindeer Herding Associations (SSR)	Chairman
Swedish Society for Nature Conservation—Västerbotten	Representative

### 3.2. Group Modeling

The participants were introduced to systems thinking, the group modeling process and Causal Loop Diagram (CLD) notation before the modeling session began. Several of the participants were already familiar with the process owing to their participation in the Sverdrup et al. (2010) [35] study. At the beginning of the workshop the actors were asked to separately list which kind of natural and cultural environments needed more protection, as well as what they perceived as the biggest threats to these areas. The result was used as a basis for the modeling.

As the aim of the workshop was to understand the dynamics of drivers contributing or impeding integrated management, the following questions were addressed:

- What is the objective for integrated nature and cultural heritage conservation management?
- What modes of cooperation are available to meet this objective?
- To what extent is it possible for local actors to participate in these modes of cooperation?
- Is there an arena for local cooperation?

The results of the workshop generated a first draft of a CLD describing the dynamics behind natural and cultural environmental management in the mountains.

### 3.3. Follow-up Interviews for Validation and Model Revision

After the group modeling session, the resulting CLD presented a logic that was closely connected to the activities of four key actors. These actors were the SNHB, The units for Natural environments at the County Administrative Board of Västerbotten, The units for Cultural environments at the County Administrative Board of Västerbotten and The Swedish Hamlet Users Association. Follow-up interviews and individual modeling sessions were therefore conducted with each actor. The draft CLD generated during the workshop was used as a basis for the follow-up sessions, where the model was validated through a combination of the revision of the CLD and interview-style discussions on logics expressed in the CLD. These sessions were concluded with a general discussion on the stakeholders' experiences of integrating nature and cultural heritage conservation. In addition, a qualitative validation test of the final CLD was employed using a review of official management plans for protected nature.

### 3.4. Management Plan Analysis

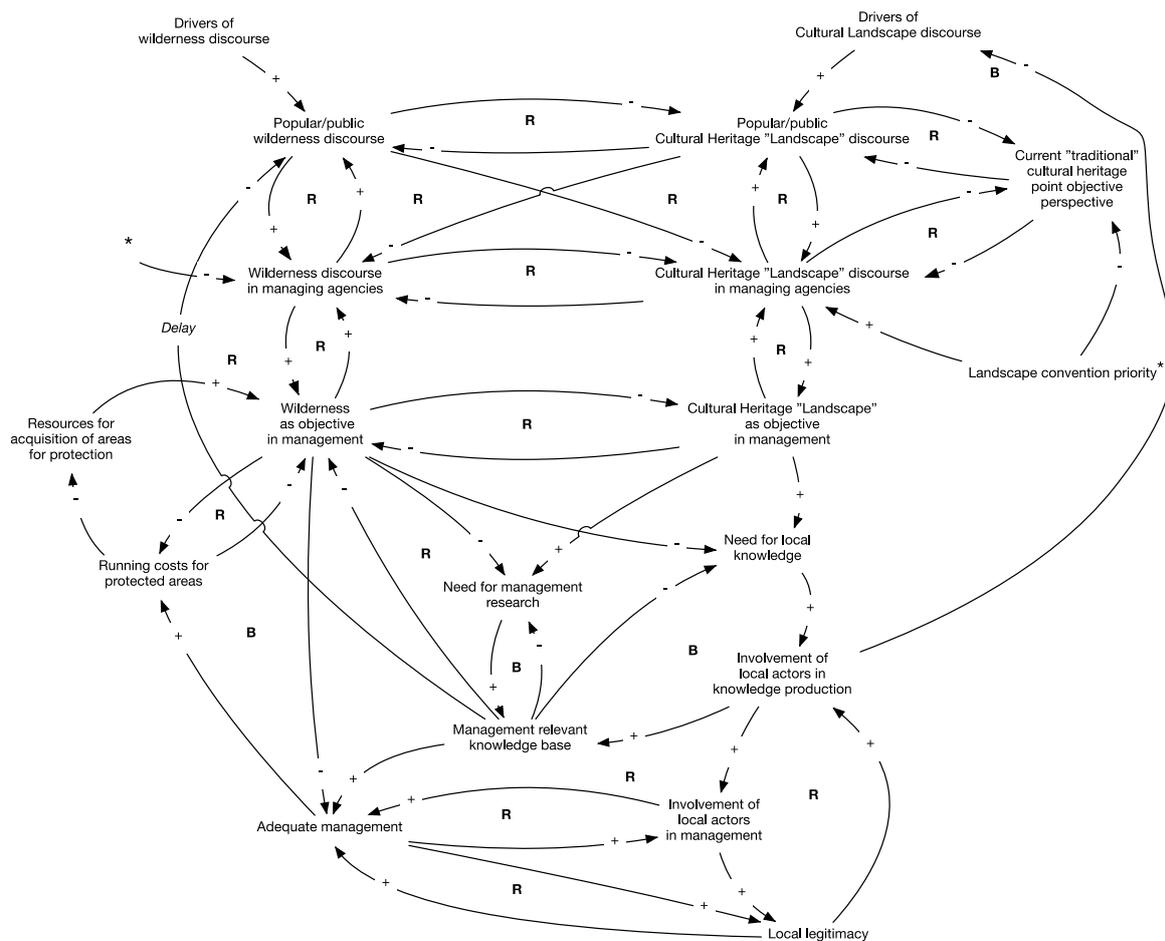
Based on a GIS analysis, all the nature reserves within the area defined as mountain area were selected, resulting in 104 protected areas. From the mandatory management plans of these nature reserves, the 25 which were also identified in the Hayfield and Meadow Survey [52] were chosen for a management analysis.

Management plans include information on the history of the nature reserve, a discussion of values worth preserving/managing as well as the objectives and the intended management to reach them. If cultural heritage is taken into consideration in the management of nature reserves in the mountain area, one would expect (1) that all management plans for reserves where nature and cultural heritage values were identified by the Hayfield and Meadow Survey should at least mention the existence of such values, discuss them or include them as objectives, and (2) that a significant number of reserves, irrespective of character, should mention nature and cultural heritage values associated with traditional reindeer husbandry and remaining physical features associated with reindeer herding and the Sámi culture.

## 4. Results

The group modeling identified the presence of two alternative views on nature. The dominant public discourse for the mountain areas views nature and human land-use as separate, indeed incompatible, and the mountain areas as exponents of pristine nature. This view on ecosystems

and landscapes was termed “the wilderness perspective” by the participants in the group modeling. The concept is hereafter referred to as the wilderness discourse (cf. Foucault 1969) [53], as the discourse concept reflects in many respects the powerful and pervasive influence of the wilderness perspective. These different, indeed competing discourses on the development of nature constitute the two major drivers in the conservation system affecting objectives, means and outcomes. The model (Figure 2) illustrates the dynamics of what may be described as a discourse system where the balance of power affects the perceived legitimacy and need for local participation—and thus, in the end, for the availability of an arena for local interaction and participation in the management of nature and cultural landscapes/heritage.



**Figure 2.** CLD synthesizing the stakeholders model over the management of nature and cultural heritage conservation. A + symbolizes a step in the same direction, while a – symbolizes a step in the opposite direction of the preceding driver. R indicates a reinforcing behaviour of a loop, and B a balancing behaviour of a loop. A bold line symbolizes a stronger influence in that connection, while a dashed line symbolizes a weaker influence.

#### 4.1. Analysis of Final CLD—The Nature Conservation Discourse System

When the wilderness discourse becomes dominant, it reinforces both the public arena, through conservation NGOs, and the managing agencies (SEPA and County administrations). It also influences the degree to which the wilderness perspective influences official management objectives for protected areas, nature reserves and national parks in the mountains.

Additionally, since nature is perceived as pristine and therefore best managed by being left alone—i.e., unused and unmanaged, thereby remaining in a state of pristinity, i.e., wilderness—there is, as a consequence, little need for any local knowledge about land-use history and practices, or for

research on previous and current land-use and resource management. Indeed, such information would pose a threat to the wilderness discourse. Furthermore, if human land-use and activities are by definition detrimental to the wilderness objective, there is clearly little need for developing local knowledge or involving local stakeholders and actors, as that would pose a threat to the objective. This, in turn, leads to less involvement of local actors in the management of protected areas and, as a consequence, to a reduction in legitimacy among local actors of the wilderness management approach. When local actors are less involved in knowledge production, it also means that less local knowledge is supplied to the knowledge base relevant for management, which further reinforces the wilderness objective, since relevant knowledge about local and historic land-use is not supplied.

The wilderness discourse within managing agencies is also affected by the influence of the opposing *Cultural heritage "Landscape" perspective discourse*. Conceptually, the two-discourse system represents a zero sum game. The dominance of the wilderness discourse in managing agencies has been at the expense of a *Cultural heritage "Landscape" discourse*. This is also reinforced by what is best described as a "traditional" point feature perspective in cultural heritage conservation, which refers to what stakeholders describe as a tendency among managing agencies for cultural heritage to focus on specific point features of cultural heritage value rather than on cultural landscapes as a whole, with or without these point features (expressed as *Cultural heritage "Landscape" discourse* in the CLD). Current cultural heritage practices can rather be described as isolated islands of cultural heritage features amid a wilderness ocean.

An illustration of the dominance of the wilderness discourse is the reoccurrence, in modeling sessions and interviews, of what is termed the "free development" paradigm for managing protected nature in the mountains, a management concept where nature is managed by being left without any management. Several stakeholders pointed out that this paradigm has had a significant impact on management objectives and practices. Another illustration of the dominance of the wilderness discourse is the fact that within the mountain area there are currently 104 nature reserves, covering approximately 31,000 km<sup>2</sup> of land, and only three cultural reserves, covering just 38 km<sup>2</sup>.

#### 4.2. Validation: Objectives vs. Outcomes

In order to validate, to some extent, the interpreted "strong influence" of the wilderness discourse and free development paradigm on the objectives and outcomes, a test was devised using official surveys and management plans for nature reserves in the mountain area (Table 1). Official "Hayfield and Meadow Surveys" (Ängs och hagmarksinventeringar), initiated by SEPA, have been performed at the county level in order to identify and map the extent of former and existing grazing and meadow areas with high nature conservation values. Very high biodiversity *and* cultural heritage values are associated with these grazing and hay meadow ecosystems, both within and outside the mountain areas. Such areas are the outcome of, and require, traditional management, i.e., they are the product of a clear cultural influence through previous and currently active land-use and require management in order to retain their character or to restore it.

Of 104 nature reserves within the mountain area, at least 25 have some overlap with areas identified in the Hayfield and Meadow Survey. A reasonable assumption is that the management plans for these 25 reserves ought to mention, in some way or other, cultural values related to grazing or hay production activities in the background descriptions or objectives for the protected area. However, only 7 of these 25 nature reserves mentions human influence in the background descriptions or the objective of protecting or recreating the cultural environments. On the other hand, 17 of these 25 nature reserves explicitly mention that part of the protection is aimed at preserving the area with intact/untouched/original nature, i.e., with wilderness as the stated objective. When it comes to the means for managing the 25 areas, only 8 mention that active grazing should be part of the management, as seen in Table 2.

**Table 2.** Validation of the dominance of the wilderness discourse based on a review of 104 management plans for nature reserves in the mountain region.

Management Plans Mentioning Reindeer Husbandry	Nature Reserves with Areas Included in Hayfield and Meadow Survey	Management Plans Mentioning Protecting, or Recreating the Cultural Environments as an Objective	Management Plans Mentioning that Active Grazing Should be Part of the Management
30	25	7	8

The 25 reserves should constitute a best-case scenario in that the objects had been officially identified, mapped and designated as valuable in a published survey of nature conservation values that required management, i.e., cultural influence. The fact that so few management plans even note managed/cultural values and that the majority defines wilderness as the only management objective, in spite of identified cultural values, constitutes, in our opinion, a robust confirmation that the wilderness discourse is the dominant discourse of the official nature conservation in the mountain area. Additionally, it is important to underline the fact that reindeer grazing is a land-use that takes place throughout practically the entire area of nature reserves. Active reindeer husbandry does not only produce a grazed landscape, but it also contributes to the cultural values of the mountain landscape. Reindeer husbandry is taking place in practically all the 104 nature reserves, and it is noteworthy that the practice was only mentioned in 33 of the 104 management plans. Also worth noting is that reindeer husbandry is mentioned in several instances as being allowed, or not considered as a hindrance to the conservation objectives and methods. In view of the fact that reindeer husbandry is the traditional land-use, the generator of the Sámi cultural landscape, the fact that reindeer grazing is only mentioned in 6 of 104 management plans is nothing short of remarkable. Whereas wilderness was explicitly mentioned as part of the objectives in 36 of the 104 plans, and the wording “untouched” (translation from Swedish, where “untouched” could also mean *unimpacted by human actions*) was mentioned in 71 management plans. This lends further support to our conclusions about the dominance of the wilderness discourse in operational conservation practices and about how it excludes human influences on the landscape when defining the objectives for environmental management.

## 5. Discussion

There is an often-stated desire for an increased integration of nature and cultural heritage conservation management in protected areas (see, e.g., Drew & Henne (2006) [54] and Linnell et al. (2015) [55]). The governmental decisions for increased integration between natural and cultural heritage in conservation [43,44] and the vision document of the SNHB [56] are clear examples of this, as was the research call funding this study. Nevertheless, what this desired integration should more specifically entail remains unclear both at a theoretical and practical level. It is not clearly expressed or communicated by the responsible governmental agencies. One interpretation could be that this reflects ambitions of administrative efficiency and savings more than it does the integration in question.

In practice, increasing integration has proven to be difficult, and not only for the mountain region. For example, when worldviews differ between agencies, ambitions of integration have been abandoned in favour of traditional opinions. As Wu et al. (2017) [30] show, this has been the challenge in landscape management in southern Sweden (where human influence is obvious) as well. This has forced SNHB into disputes and trade-off with SEPA regarding priorities of what to protect, revealing a lack of integration as well as the power imbalance between the agencies. Further, Wu et al. (2017) [30] argue, based on southern Swedish cases, that although there is a willingness among both SNHB and SEPA to achieve an integrated natural and cultural perspective in landscape management, they are also strongly expert-driven organizations where interactions and partnerships with public and local actors are treated half-heartedly. Wu et al. (2017) [30] demonstrate that neither SEPA nor SNHB, when forced into trade-offs, had been willing to compromise and develop an integrated approach, as they were

“quickly locked into their conventional positions due to their divergent interests and understandings of the landscape”.

The dominance of the wilderness discourse has a significant impact on the kinds of management objectives that are formulated. With regard to management, the means are in principle limited to a hands-off, “free development”, approach. In practice, the means and the objective become one.

Further, the prevalence of objectives influenced by a wilderness perspective on nature and protected areas precludes or reduces the possibilities of creating an arena open to the nature conservation and cultural heritage administrations, as well as to the participation of local actors. Consequently, when no arena for participation exists there are few possibilities to generate common objectives between managing agencies or to involve local actors in conservation efforts, local/indigenous knowledge production or co-management, which clearly is a prerequisite for initiating a more integrated environmental management [57–59] on a general level. As shown in Figure 2, the absence of an arena for participation impacts the local perception of how legitimate management practices and objectives are. This is problematic because, as pointed out in Sandström et al. (2008) [19], in order to sustainably achieve environmental objectives, the state is dependent on the involvement of local actors in the environmental management and operationalization of objectives. The strong influence of a wilderness perspective has been noted, in a Swedish context, by, e.g., Wall Reinius [15], even in the Laponia WHS, which is arguably the most integrated environmental management attempt there is in the Swedish mountain region. If the dimensions of historical use and the cultural values that traditional land-use in the mountains have produced are not emphasized, the praxis and management risk marginalizing the groups practicing traditional land-uses [15], like reindeer husbandry and mountain and summer farming. There is the obvious risk with this strong and prevalent wilderness discourse, in the protected areas, that artefacts of traditional land-use will in practice be excluded in areas that cannot under any compelling argument be considered as wilderness. Further, one important difference worth mentioning is that for the Laponia WHS site there is a co-management arrangement in place with local Sámi communities, which might help to counterbalance the risk of excluding the historical and cultural perspectives. The nature reserves in the mountain area, while representing the largest protected area, tend to go under the radar when compared to the national parks and the WHS site, in that they lack co-management arrangements. Here, the risk is larger that the wilderness perspective will remain unchallenged. It is clear that current conditions for participating in consultations or co-management with stakeholders involved with cultural features or landscapes in the mountain area are far from satisfactory (see, e.g., Reed (2008) [60] and Sverdrup et al. (2010) [35]).

It has long been evident that climate change modeling points to (in, e.g., SOU 2007:60 [61]) major habitat changes in decades to come in the mountain area—where alpine/sub alpine heaths, in particular, are likely to develop into tree or shrub dominated habitats. The region is currently experiencing rapid on-going climate change which is affecting land-use and ecosystem composition and distribution [62]. If open habitats are to be retained, land-use interventions may be needed, and it is worth noting in this context that reindeer grazing mitigates the effects of the warming climate in the Swedish mountains by, for example, reducing tree-line advancement [63] and maintaining biodiversity [64].

Finally, the wilderness discourse, as expressed in management objectives, is also an impediment to developing and funding management-relevant research that includes human and local agency in the landscape. As is evident in the model, the more prevalent the wilderness ideals are in the objectives, the less need for local knowledge. This creates a self-reinforcing situation where new knowledge challenging the dominant discourse is less likely to emerge.

## 6. Conclusions

The dynamics of nature and cultural heritage conservation management, as modeled by the stakeholders in the group modeling session and subsequent interviews (Figure 2), in combination with the literature, allows the following conclusions:

- Generally speaking, there are two main discourses on how to understand the mountain environment. One, clearly evidence-based, argues that the mountain region has been affected for centuries by human land-use, albeit with limited modernistic impacts. The other, with a more ideological character, claims that the mountains constitute a “wilderness” untouched by human activities, which should be left unmanaged, i.e., without human interference or use.
- The dominant “wilderness” discourse is both marginalizing the “cultural landscape” discourse and defining management objectives for the vast majority of the protected areas, i.e., Nature reserves and National Parks.
- With “wilderness” as the dominant objective, there is little or no legitimacy and scope for local knowledge, participation or co-management of nature and cultural heritage values in the protected mountain areas.
- The dominant discourse and attendant objectives are a clear hindrance to a more integrated nature and cultural heritage conservation, as it excludes, in practice, the latter and provides no shared arena for cooperation.

There is little expressed disagreement between managing agencies when it comes to a stated willingness to increase the integration of nature and cultural heritage conservation management. However, what this call for integration should entail with regard to the involved agencies is unclear. What is clear after the stakeholder-based group modeling and interviews is that any substantive and successful integration between nature and cultural heritage conservation is currently unlikely. The dominance of the wilderness discourse is an impediment to an integrated nature and cultural heritage conservation, as it precludes the development of a joint understanding of landscapes and their conservation values, objectives and management approaches. Furthermore, the dominant discourse is an impediment to the development of arenas for local stakeholders to engage with the conservation authorities.

Given the current state and dynamics of the conservation discourse system in the Swedish mountains, any form of deeper integration between nature and cultural heritage conservation is unlikely to develop until the dominance of the wilderness discourse is reduced.

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