

Indigenous Knowledges and the Sustainable Development Agenda

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Struggling with ‘clear zoning’: dilemmas of carnivore-pastoral coexistence in Nordland, northern Norway

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Abstract

This chapter describes the revision of the Carnivore Management Plan for the Nordland region in northern Norway. The national government expected this revision to harmonize conflicting interests, expressed in a ‘double objective’ of safeguarding sustainable carnivore populations and maintaining local pastoralist livelihoods. ‘Clear zoning’ has been established as a basic management instrument to achieve national ‘population goals’ for carnivores. In the Nordland Regional Carnivore Committee, which includes political parties’ and Sami Parliament representatives, a majority opted for a revision that challenged this zoning principle. The Committee’s revised plan, submitted in early 2017, was first returned by the Ministry of Climate and Environment to the regional level with instructions to comply with ‘clear zoning’. In summer 2018, it was finally overrun by the Ministry. We describe three successive acts in this revision process, analysed as a ‘discursive field’ where local actors, especially pastoralists’ representatives, seek to articulate relevant views on the nature of the problem and the rules defining what counts as evidence and valid knowledge in carnivore management.

Introduction

Managing wildlife–people coexistence is often deemed extremely challenging since the parties involved commonly hold different identities, worldviews and knowledges (Redpath et al., 2013; Sjölander-Lindqvist et al., 2015). When we focus on carnivore–pastoralist coexistence, we also see that different knowledges work with different assumptions and rules on evidence concerning large carnivores behaviour and movement patterns. Norway has changed its governance of large carnivores (wolverines, lynx, brown bear, wolf, golden eagle) considerably over the past decades, whereby international conventions on biodiversity protection have gained increasing influence (Hansson-Forman et al., 2018; Risvoll et al., 2016). While Norway is committed to these conventions, the country has also established explicit policy goals to protect the rights and livelihoods of local and indigenous people, such as sheep farmers and Sami reindeer herders in rural areas (Krange et al., 2016; Risvoll, 2015). This double objective is stated in the 2011 Carnivore Agreement (*Rovdyrforliket*). Based on a political compromise in the Norwegian parliament, it constitutes the main policy arrangement for ensuring sustainable carnivore populations concurrently with viable pastoral livelihoods in Norway (Fangel & Gundersen, 2012; Strand et al., 2016).

‘Clear zoning’ has been a basic management instrument in implementing the Carnivore Agreement. Zoning provides a form of land-use differentiation and has been widely used in conservation measures such as the creation of national parks and other protected areas (Linnell et al., 2005).¹ The objective of zoning in carnivore management is to reduce the spatial overlap between large carnivores and domestic livestock such as reindeer and sheep. Large carnivores, such as bear, lynx or wolverine, are given preference in certain defined areas, and grazing animals are prioritized in other areas. While there is no differentiation between different types of

domestic livestock in terms of zoning, the different carnivores have their own specific prioritized zone in each region, and carnivore zones may overlap. With *zoning* as a basic instrument, local authorities are expected to deliver on nationally defined population goals for carnivores.

The 2011 Carnivore Agreement further involved a decision on evaluating both the regional carnivore management and the regional carnivore population goals within five years. Here, we present a study of how the revision of the regional management plan for carnivores developed in the Nordland Region, northern Norway, during the period 2015–2018, focusing on the controversies associated with the centrally defined principle of ‘clear zoning’ as a management instrument. The context of our study is the larger social-ecological structure of the local husbandry systems of reindeer, and we examine how different knowledge systems meet and interact in the co-management around carnivore governance during this revision process.

The national government has expected the revised plan to harmonize conflicting interests, expressed in the ‘double objective’ of safeguarding sustainable carnivore populations, while at the same time maintaining local pastoralist livelihoods. In our analysis, we show how the double objective at the national level translates into real dilemmas at local levels, and how these are being played out in the revision process in Nordland. The management plan is expected to present an authoritative discourse drawing upon science-based biological knowledge and translate the centrally defined policy objectives into specific management measures at the regional and local levels. We show how locally situated knowledge – in our account represented primarily through Sámi reindeer herders’ statements – experiences real barriers to being counted as evidence in the management of large carnivores, and thus to be included in a management plan authorized at the national level.

‘Traditional knowledge’ is acknowledged in several national and international Conventions (e.g. the Norwegian Nature Diversity Act, the Convention on Biological Diversity) as important for conserving biodiversity and achieving sustainability. Various scholars point to the need for understanding indigenous and local knowledge systems as dynamic and relational, within holistic contexts involving networks, values and practices (e.g. Huntington et al., 2011; Nadasdy, 1999; Scott, 1998; Veland et al., 2014). Current debates on the role of indigenous knowledge in natural resource management, in a Norwegian context furthermore takes place on a backdrop of Sámi people over the centuries being subject to different forms of discrimination, and from the late 19th century onwards to forced assimilation policies. In the late 1970s, however, their situation became an issue of social mobilization at the national level,² and in 1989, a Sámi Parliament was established in Norway. In 1990, the Sámi were recognised as an indigenous people according to ILO Convention 169.³ Today, Sámi pastoralists have an established role through Sámi Parliament representatives in Regional decision-making on carnivore management in Nordland. In the process analysed here, the Sámi Parliament representatives were, together with the political-party representative voicing pastoral interests (sheep farming and reindeer husbandry), able to constitute a majority in the Regional Carnivore Committee (Nordland RCC). The resulting revision of the Carnivore Plan was in early 2017 submitted to the central authorities, but later the same year returned to the regional level with instructions to make an improved plan complying with the basic principle of ‘clear zoning’. A second revision resulted in few changes, and Nordland RCC resubmitted their revised management plan to the central authorities in spring 2018. The Ministry then decided to overrun the plan, withholding it at the central level to make the necessary amendments.

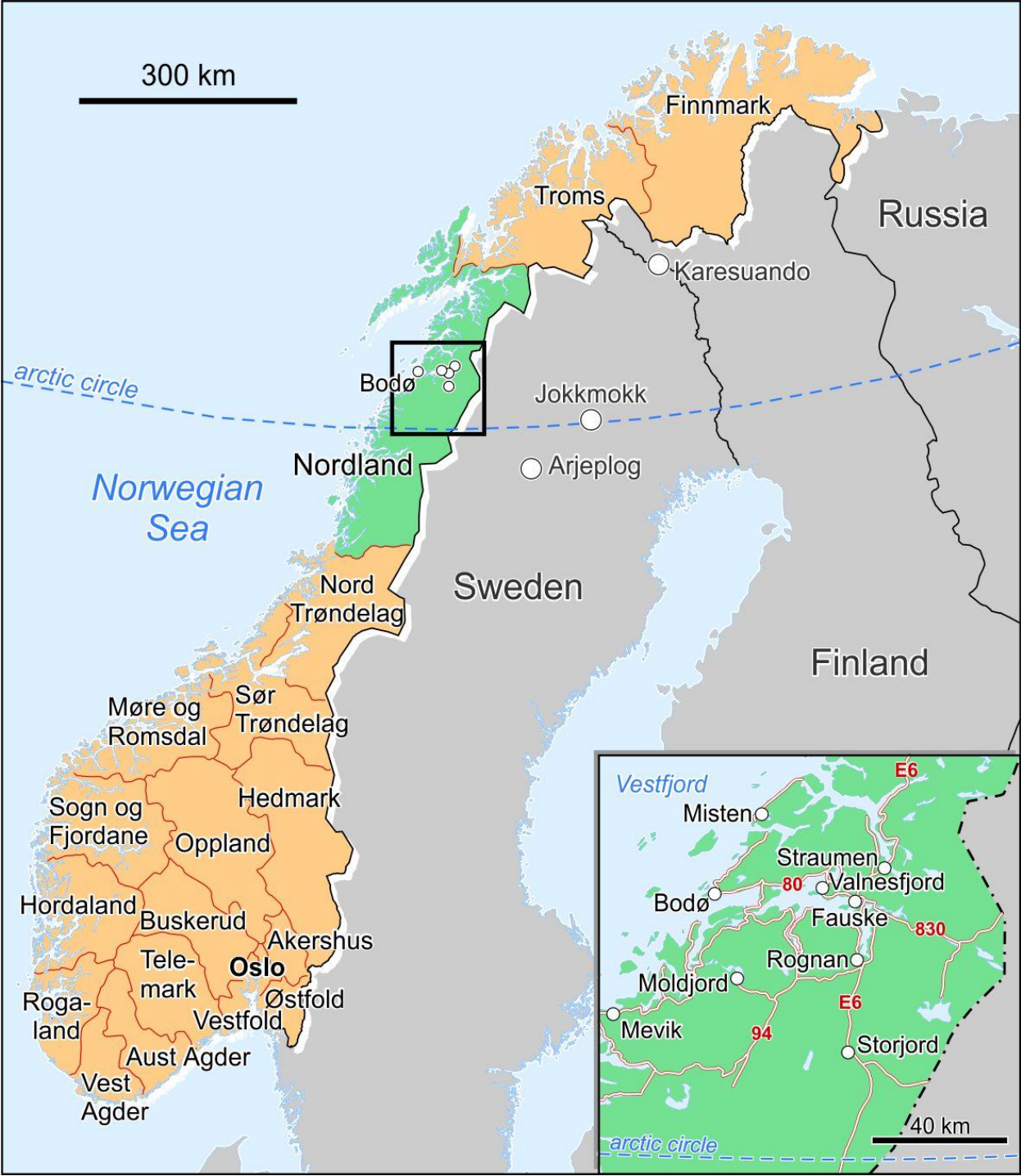


Figure 10.1 Map showing Nordland County in Norway and the Salten region zoomed in.

Source: Håvard Lundberg/ Analyse&Tal.

In northern Norway, reindeer husbandry practiced by Sámi people and sheep farming practiced by people with an ethnic identity commonly as Norwegians but also Sámi have traditionally been important in rural districts. Since the 1970s, the Norwegian government has been explicitly committed to protect rural livelihoods and maintain human settlements in marginal rural areas (Vatn, 1984). In 1986, when Norway ratified the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Norwegian governments also took on a clear commitment towards protecting biodiversity. As a party to the Bern Convention, the country accepts to employ the necessary conservation tools for wild species in need of ‘special protection’ (Díaz, 2010). This implies safeguarding sustainable carnivore populations on Norwegian territory – of bear, wolf, lynx and wolverine (Norwegian Environment Agency, 2014). In Europe, the implementation of national conservation policies supporting the natural expansion of these large carnivores has contributed to a notable success of wildlife conservation (Chapron et al., 2014; Linnell, 2015). At the same time, this development has led to real dilemmas at the local level, and over the last years, conflicts related to large carnivores in the Nordic countries have increased dramatically (Dressel et al., 2015). A substantial part of the conflict potential manifests itself in carnivore-pastoral conflicts (Risvoll, 2015; Rønningen & Flemsæter, 2016). On the one hand, these conflicts display general traits pertaining to the changing relationship between humans, animals, environment, and the modern state across regions and localities (Nustad, 2011). On the other hand, the dilemmas and conflicts of carnivore–pastoral coexistence are characterized by their site- and habitat-specific dimensions and their locally situated complexity (cf. Benjaminsen et al., 2015).

Methodology and analytic framework

What we present here is a case study of the process of revising the Carnivore Management Plan (CMP) for the Nordland Region in northern Norway, during the period 2015–2018. It is a case of decision-making on a highly controversial issue: carnivore–pastoral coexistence in herding districts, involving struggles to articulate indigenous knowledge and local experience-based evidence in ways that central government authorities can accept. As a case, it is set in a specific time and place (Ragin, 1992: 2) but also in a specific institutional context, at the intersection of regional governance and national carnivore management in Norway. The regional setting is basically constituted by the geographical area of Nordland County (Figure 10.1); while our data representing local husbandry practices and local knowledge mainly rely on material collected in the sub-region of Salten, which constitute the northern part of Nordland (see Figure 10.1). In our inquiry we do, however, draw upon a broad range of sources, including observations in meetings, public documents, reports and interviews, in addition to local and national newspaper clippings and internet sites. As observers, we were able to attend nine RCC meetings during 2016–2018. Interviews with relevant actors and agencies at the local, regional and national levels were conducted during autumn 2016, winter 2017 and winter 2018. Interviewees included representatives from the RCC, the Norwegian Nature Inspectorate (NNI), the County Governor, one municipality, farming and herding associations and one environmental organization. We were also observers at relevant meetings and seminars with pastoralists, pastoralists' organizations and local government's representatives.

The case was identified through what is often called 'purposeful selection' (Maxwell, 2013: 97). Already at an early stage in the process, we believed the revision of the regional CMP in Nordland could give important insights into decentralized decision-making on a controversial

issue, and the role of indigenous knowledge in this type of case. We have taken a process-oriented approach to the case, describing the ‘sequence of steps involved in the process under study’ (Becker, 1992: 207). However, it was only through following the process itself that our inquiry led to a clear vision of what our case is a ‘case of’ (Becker, 1992). In this process-oriented approach to studying the carnivore-management plan revision in Nordland, we have further been inspired by elements in Bartlett & Vavrus’ (2017) approach to case studies. We have chosen to analyse our case as a *discursive field* (cf. Kaarhus, 1999: 63). In this discursive field, we find partly diverging understandings of the nature of the problem to be addressed, with local actors struggling to articulate relevant knowledge in ways that comply with governance principles and objectives defined at the state level. These principles and objectives structure the – contested – ‘order of discourse’ in this field (Foucault, 1971). We see the discursive field of CMP revision in Nordland as located in a context of pastoralist practices, together with the changing agricultural policies shaping these practices, a context involving environmentalist concerns focusing on species conservation and existing legal regulations on carnivore–pastoral coexistence in Norway, but also expanding carnivore populations, especially in Norwegian-Swedish border regions. Discourse analysis provides an intake to examining relations between knowledge and politics in the revision of the Management Plan. Drawing on Foucault’s conception of *discourse* as a practice we impose on things (Foucault, 1971: 22), we are concerned with the production of the revised plan as an *authoritative discourse* (Dreyfus & Rabinow, 1983: 48). In the established Norwegian governance structure, it will in principle also be *materialized* in (new) ways of organizing space (Fairclough, 2013: 180). We further relate the authorized discourse of the official CMP revision to elements of unofficial – and in this context mostly subdued – discourses; in particular that of local pastoralists seeking to articulate their

knowledge and experience with carnivores in order to influence the authoritative management discourse.

In this approach to analysing discourse, we draw upon the ‘early’ Foucault (1971, 1972), as interpreted by Dreyfus and Rabinow (1983) and Kaarhus (1999), and the ‘argumentative turn’ in policy studies (cf. Fischer & Forester, 1993), incorporated into the later versions of Fairclough’s (2003, 2013) ‘critical discourse analysis’. As an analytic approach, it enables us to examine the relations between the ‘discursive field’ of the planning process and the material–biological elements of the social life and natural habitats of the indigenous population/Sami reindeer herders, showing how certain ‘rules of formation’ (Dreyfus & Rabinow 1983: 66) order the discourse to be taken seriously, and established as authoritative in this field.

Any discourse will be based on *assumptions* in the form of unquestioned ‘facts’ or notions taken for granted. At certain moments, however, such assumptions become subject to questioning, thus constituting spaces for contestation, argument and competing discourses (Bourdieu, 1977: 168).

In our analysis of the CMP revision, we show how ‘zoning’ as a dominant management instrument is challenged and become contested during the process of revising the management plan, while different versions of ‘nature’ and carnivore–pastoral coexistence are articulated seeking to shape the outcome of the revision. We further demonstrate how reference to science-based *evidence* becomes a crucial resource in representing reality and in justifying priorities and instruments. Thus, we see how evidence produced through specific standardized procedures constitutes ‘current best evidence’ on carnivores and is what counts as valid knowledge in the conflictive discursive field of carnivore management planning.

Background and contexts

Pastoralism and agricultural policies

Most of the pastures for reindeer and free-ranging sheep in Norway consist of harsh mountain ranges, which in northern Norway also stretch down to sea level. The pastures are mostly common lands, often called *utmark* (outfields). Access to the outfields has differed in different parts of Norway over time (see e.g. Berg, 2000). The conditions for Sámi pastoralist practices have historically been connected to the development of nation states in the northern regions, and various conventions and regulations have regulated herding for the past 250 years. Reindeer husbandry in Norway is not connected to land ownership; however, access to pastures has been institutionalized since 1751, when the Lapp Codicil was enacted to regulate cross-border migration between Norway and Sweden, while Norwegian Sámi reindeer herding further builds on the doctrine of ‘immemorial usage’ (Allard, 2015). Since the 18th century, reindeer herders have maintained official user rights to the herding districts. These rights are regulated through a license system referred to as ‘*siida* shares’ (*siida-andeler*). A reindeer owner in northern Norway must be Sámi, and husbandry practices are regulated through the Reindeer Husbandry Act (LOV-2014-03-28–9). Nordland County includes 42 *siida* shares dispersed across 12 reindeer herding districts with approximately 18,200 domesticated reindeer (Nordland County web site 21.12.2018).

Since the late 1940s, at the national level there have been periodic revisions of agricultural policies. These have been performed within the framework of a dominant ‘production discourse’, shaped by a continuous modernization and rationalization trend. Effective policy implementation has resulted in increased mechanization, which also made more extensive grazing possible (Jaren

& Løvstad, 2001). Since the 1970s, these policy trends primarily informed by Western science-based perspectives on meat production, have also affected reindeer pastoralism, resulting in an increasing market-orientation (Johnsen et al., 2017). The goal has been maximizing meat production through optimal herd structure and a more ‘rational’ and ‘efficient’ production, as established in the Reindeer Husbandry Act (1978) and the Reindeer Herding Agreement (1976) (cf. Benjaminsen et al., 2015; Johnsen et al., 2017).

The rationalization and mechanization of herding practices and the associated ‘production discourse’ is closely linked to the ideal of ‘[m]odern, industrial, scientific farming characterized by monocropping, mechanization, hybrids, the use of fertilizers and pesticides, and capital intensiveness’ described by James Scott (1998: 266). However, the local resource base and often harsh and marginal conditions characterizing the pastoralist practices of reindeer herding and sheep farming in northern Norway are often at odds with ‘high-modernist agriculture’ (Scott, 1998: 262). Still, the push towards simplification and standardization of herding landscapes and practices have been strong and persistent, and continues today.

We can also identify a more long-term ‘rationalization’ in the relationship between humans, animals and the state. According to Sandberg (1999), persistent policies from the early 1700s stated the need for ‘the eradication of all useless and harmful’ wildlife in order to increase and optimize domestic livestock production. As a consequence, there have been long periods with very few wild carnivores in Norway. The large carnivores that historically inhabited mountain regions and forests were almost eradicated by the end of the 19th and beginning of the 20th century. This has been the ecological context in which both reindeer herders and sheep farmers have sought to optimize their production.

Environmentalism and conservation

In a historical perspective, a first wave of modern environmentalism peaked in the early 1970s – including the first United Nations Conference on the Human Environment in Stockholm in 1972. This was the context of the making of the Bern Convention on species and habitat conservation in Europe, which entered into force in 1982. A second wave of environmentalism gained force in the 1980s, with the publication of the World Commission on Environment and Development's (WCED) report *Our Common Future* in 1987 (WCED, 1987). Promoting the concept of 'sustainable development', the WCED report presented the discursive basis for the Rio Conference on Environment and Development in 1992, where also the Convention on Biological Diversity was first opened for signature. This Convention covers the protection and sustainable use of ecosystems and genetic resources globally, in addition to individual-species protection. Norway ratified the Biodiversity Convention in 1993.

In the 1990s, the concept 'rewilding' appeared, connected to conservation biology more generally. Rewilding is associated with a concept of 'wilderness' as a natural environment not significantly modified by human activity. It may be used as a descriptive term with reference to the 'de-agrarianisation' of rural areas (e.g. Krauss & Olwig, 2018) but also refers to the objective of reducing biodiversity loss. Among the organized initiatives under the heading 'rewilding', there is often a focus on large carnivores, and on securing suitable habitats for them in the 'wilderness'.⁴ The focus on large predators is associated with the conception of these animals as having a particularly important function in maintaining the 'ecological balance' of natural habitats. The theoretical underpinnings of this view are, however, also questioned with regard to the ecology of Arctic landscapes (Benjaminsen et al., 2015). In the Norwegian context, the concept of rewilding is so far not part of public debate, but elements of rewilding narratives and

conceptions no doubt influence national efforts to protect large carnivores, while in official discourse, these efforts will be justified with reference to international obligations to comply with biodiversity commitments, and the Bern Convention in particular.

In order to reduce the carnivore–pastoral conflict level, the Norwegian government has delegated management authority to representative RCCs. These are formally appointed by the Ministry of Climate and Environment. In total, eight regional committees have been established; one of these, Region 7, covers Nordland County. The Nordland RCC consists of four political-party representatives and two members appointed by the Sami Parliament.⁵ An important task for the RCC is to develop and adopt a management plan for large carnivores in Region 7. The plan has to comply with overall ‘population goals’, which are set at the national level with reference to the Bern Convention and defined in terms of reproductive family groups (Parliament’s Document Nr. 8:163 S (2010–2011)); in Norwegian *ynglinger*. The population goals for large carnivores in Nordland are: one reproducing bear family group, ten reproducing lynx family groups and ten reproducing wolverine family groups.⁶ While *clear zoning* is the management instrument, a spatial separation of carnivores and grazing animals is conceived as an end, since it is ‘the only thing that works’ to achieve the population goals for large carnivores.⁷

Legal regulations of predator–pastoral coexistence

The Carnivore Agreement of 2011 was supported by all political parties in the Norwegian Parliament (*Stortinget*). It emphasizes biological and ecological knowledge as a major basis for carnivore governance towards achieving desired population goals, while it also aims to diminish the conflict level around carnivores. The Agreement clarifies regulations around population goals and hunting licenses for the different carnivore species. It states that local actors, particularly

from the pastoral sectors, should be involved in population registration and represented in local hunting teams, and it further emphasizes the importance of knowledge transfer *to* local people about carnivores' habitats and behaviour (Parliament's Document Nr. 8:163 S (2010–2011)). The Agreement provides the legal basis and the mandate for the work of the RCCs but has no specific provisions for how to integrate local knowledge in decision-making.

Background for the revision of the CMP

When the RCC in Nordland in 2011 ratified their first management plan under the Carnivore Agreement, it created zones that allowed farmers and herders to continue with grazing their animals in the areas they had traditionally used. This zoning plan was criticized by the government for being too fragmented, by allocating areas too small and narrow for carnivores to thrive (Risvoll et al., 2016).

At the national level, increasing losses of livestock to carnivores and increased levels of conflict due to dissatisfaction with carnivore governance in 2015 led the ministries of Climate and Environment and of Agriculture and Food to request the RCCs to revise their management plans. The Ministers pointed to the need for *clearer zoning*, stating that the management should be more 'robust' and opened up for an evaluation of the 'fragmented zoning' in Nordland.

The national monitoring program for large carnivores estimates carnivore population numbers by *counting reproductive family groups* of each species. This is done through DNA samples and through observations that align with a strict set of rules. Reindeer herders, however, are much more concerned with the *interaction between reindeer and carnivores in the landscape*, and hold that varying numbers of roaming individual carnivores affect their herds. Several herders and sheep farmers challenge the whole concept of 'clear zoning', since they see it as likely that

carnivores follow their food, and will eventually move into grazing land where livestock are present. At an RCC meeting in Nordland, the Norwegian Environment Agency (NEA) informed that they have not yet documented carnivores such as wolverines following grazing animals to new areas. This evidence is based on the NEA tracing tracks on snow and collecting faeces samples – seeking to identify reproductive family groups. A prerequisite for this tracing method is continuous snow cover. Hence, tracing the carnivores on bare ground during summer months is not done. The science-based documentation of losses of reindeer to carnivores has similar limitations. Reindeer carcasses are hard to find, as, for example, wolverines usually hide their prey. Often, there are few mortal remains of the dead reindeer, and hence it is difficult to document what caused its death. Hence, there is very limited documentation of losses through established science-based methods. Moreover, during summer months when snow cover is absent, or during winter and spring when the snow is hard with an ice crust, it is difficult for herders to produce documentation of losses to predators that receives official approval. Hence there is limited approved documentation on the predators' movements.

While sheep farmers and Sámi reindeer herders in Nordland are subject to different sets of rules and regulations from the national government, as pastoralists in the region, they feel that they depend on each other for carrying 'the burden' of carnivore pressure. Several reindeer herders point out that with no sheep in an area, the burden of losses to carnivores will be greater for their flocks. Hence, the patterns of interaction between the presence of pastoralism (e.g. prey for carnivores) and the presence of carnivores should be seen within a larger picture, which also takes local topographical features into account. At a carnivore seminar organized in Nordland in 2016, a scientist from the Scandinavian Bear project pointed out that the region (the land area between the sea and the Swedish border) is too narrow to differentiate between bear zones,

grazing animals and buffer zones. Everything outside the bear zone becomes a buffer zone for bears (Moen & Støen, 2016). Thus, these interactions, as well as the character of the landscape challenge the effectiveness of ‘clear zoning’ as a carnivore management instrument.

Sami reindeer herders have a legal status as indigenous people, with a culture that is upheld through reindeer husbandry, and are protected by international regulations, such as the ILO Convention. The culture and identity of being a herder, and the close connection they feel to the mountains and landscape that they have relied on for years and maybe generations, are all important aspects for understanding the complexity in pastoralists’ response to new regulations, which enter into conflict with their attachment to place and the occupation that they value. As we shall see below, in the revision of the CMP for Nordland, the special role of Sámi reindeer herding, though institutionalized in their RCC representation, did not imply that their broad experience-based knowledge on the issue would be taken into account at the central levels of government.

Revision of the CMP – First Act

In 2015, the Nordland RCC and the County Governor in Nordland established a working committee (*Arbeidsutvalg - WC*) to provide advice for the upcoming revision process. The RCC made a mandate for the committee, while the County Governor’s office served as secretariat, initially attempting to keep the discussions within this mandate. This led to much frustration amongst the members of the committee, and the secretariat opened up for discussion of issues beyond the framing of the original mandate. The WC itself included representatives from different relevant user groups and interest organizations and started out with a considerable discrepancy in views and commitments. For herders and farmers to agree on tough compromises

that disfavoured their livelihoods was extremely challenging. Zoning will necessarily differentiate but also favour certain local areas (the no-carnivore zones, from a livestock perspective). This made it extremely hard for the members in the WC to select certain areas as carnivore zones (e.g. bear zone), and thus ‘sacrifice’ some areas for the benefit of others.

The WC managed to collaborate in terms of discussion and dialogue, but achieving a concerted advice proved very difficult. It ended up with the different parties having irreconcilable views. The participation from the regional environmental organizations was furthermore marginal. They were invited from the start but few participated. Risvoll et al. (2016) show how the environmental organizations rather pursue their interests in carnivore issues at the national level. In Nordland, the end result was a WC document representing the views of pastoralist associations, and including some text from the local Hunting and Fishing association. The WC did not manage to establish a joint discourse representing the diverse interest groups. To provide a broader basis for the revision of the Management Plan, the County Governor then took the initiative to meet the different interest organizations in their own arenas, and these meetings were generally perceived as constructive in terms of discussing potential solutions.

In late autumn 2016, the County governor presented a suggestion for a revised plan at an RCC meeting. At the same meeting, the WC presented their own separate document. The two suggestions for a revised CMP were clearly diverging. After this meeting followed a regular round of public consultation, and a stunning number – almost 90 ‘hearing’ inputs – were received from various interest groups, including land owners, hunting associations, pastoral industries, and various regional and national interest organizations and municipalities (Saltenposten, 2016).

Elements of unofficial discourses on Sámi 'landscapes in use'

When voicing their concerns, reindeer herders refer to the challenges facing animal husbandry in general; the increased encroachments on pastures, less profit due to high costs and low production in the sector, increased losses from carnivores, increased frequency of icing-thawing events in winter, and how these problems may threaten values, such as cultural landscapes, knowledge, identity and food security. These assets are at the core of the tensions at play in the carnivore–pasture conflict, as pastoralists see their concerns and values not being properly balanced against the protection of carnivores. There is hence a local resistance against external interventions and regulations that promote conservation measures, since these are seen as placing further restrictions on the pastoralists' livelihoods and land use.

The reindeer herders interviewed in Nordland County strongly feel that the knowledge base of carnivore management in Norway is not reflecting the reality they experience on the ground, or considering their ways of viewing and valuing the landscape. All the nuances and complexity that exist locally regarding carnivore populations and carnivores' movements in a particular landscape, as well as the interactions between livestock and carnivores, are to some extent voiced by the Sámi Parliament representatives in the RCC meetings, and in hearing documents that have been part of the revision process. The public administration aims to increase local participation in documenting carnivores by for instance increasing the role of local Hunting and Fishing Associations, and inviting local people to collect faeces, and send them in for testing. Still, the compromises made through zoning leave the complex dynamics existing on the ground invisible. Topography and climatic conditions play a major role, not only for reindeer mobility but also in carnivore movements according to herders. Concerning the mapping of lynx, one herder said:

The Nature Inspectorate's tracking and estimates of lynx' movements do often not reflect the real picture in these mountains. They have traced a route for the lynx, and thus estimated the number of reproductive family groups here. But we see that lynx can travel a different track, since we observe this, and we know that they do not necessarily follow the track that has been argued for.⁸

The herder further noted that the Nature Inspectorate's own mobility in the terrain is dependent on weather and topographic challenges. Due to the steep terrain, such field trips usually follow certain paths when looking for carnivore tracks, which – according to the herder – reduce their ability to register the number of carnivores living in an area. Flying a helicopter to track wolverines requires good light and weather conditions, which are often absent in this region. While herders recognize that the people carrying out these tasks are seeking to do a good job, they feel there are not enough resources available for a satisfactory result.

A herder pointed to how difficulties in documenting the real number of reproductive family groups of lynx prevented them from being able to cull those that made damage in their herds:

Last winter we found thirteen carcasses taken by lynx over ten days. We asked for a culling permit but could not get it. We had a direct line to the directorate and reported two-three times in that period. It felt like they were holding back because each time we called, they wanted to await the situation and see if the lynx wandered out of the area.

The herder continued to say that:

It was perfect conditions for us to document losses that particular time, because we were in an area high up with our herd, where we had a good overview and there was little wind. But eventually the winds started blowing the tracks away and we were unable to document the

requested number of losses for a culling permit – at the same time as we knew we were losing animals.

The herders often point out that the carnivore numbers that exist in formal government documents are not matching the real picture on the ground. This is problematic, according to herders, as these numbers form the basis for zoning and management. During early winter 2017, another herder that just arrived back from the mountains said with a certain desperation:

The situation is getting so bad in these inland pastures now; we can hardly use them anymore. We are about to shift the herd to the coast. We have found carcasses almost every day lately, and we can see it is from lynx attacking the reindeer calves. On top of this, the ground is becoming too hard [for the reindeer to find food], as it is packed with ice underneath the snow cover. So we see no other way than getting the herd away from here. I feel very frustrated about these mountain pastures. They used to be excellent...these areas that once used to be our winter pastures.

The herders' strategies and actions are based on their experience and knowledge of pasture conditions, animal movement and the landscape. At governance level, this knowledge is not considered sufficiently valid, as management must be based on 'evidence', in the form of available science-based knowledge or officially authorized 'expert knowledge'. A government officer from the County governor noted that this is a question of the ability to test the empirical observations. The official noted:

The way the system works now, we have methods that can be validated through replication. They are strict and provide little opening for interpretation...The methods are based on carnivore science and carnivore behaviour...additionally, a supplement of voluntary registrations of lynx tracks exists, which is not equally reliable.

Among our interviewees with field experience, we also find some concern with the strict methodological rules governing tracking and the documentation of carcasses. The fieldworkers believe that continued use of these established methods and rules for the reproductive carnivore family group registration also depend on the requirements of making data comparable over time, making them more useful for scientific purposes. Furthermore, the data correspond to how the national and regional ‘population goals’ have been defined, that is, in terms of reproductive family groups (*ynglinger*). In this way, we also see a mutual confirmation between specific scientific models and one of the key ‘rules of formation’ (Foucault, 1972; Kaarhus, 1999: 374–376) in official policy discourse on carnivore conservation: ‘population goals’ should be defined and the success of conservation policies registered through ‘reproductive family groups’. Meanwhile, among herders, there is a general feeling of not being able to ‘sufficiently’ prove what they have experienced and/or found when it comes to the presence of carnivores, making their experience-based knowledge invalid in the context of their own livelihoods. Several herders experience that their inland pastures, which are subject to high carnivore pressure, are also critical for their production and the sustainability of their livelihoods. One representative pointed out during a RCC meeting:

We need to be able to alternate between inland and coastal pastures through the different seasons. This is our way of utilizing the different plants, herbs, lichens for fodder, and hence achieve a better meat quality. The best reindeer are those that can utilize the inland mountain pastures.

At this point, we would like to recontextualize the observations made by Sámi reindeer herders in Nordland, as presented above, with a vision of the same environment presented on the webpage of the Rewilding Europe project. Referring to ‘Lapland’ as a larger area targeted for

rewilding, it also covers the Nordland region where our Sámi informants are practicing reindeer herding:

Lapland – Sápmi – is a unique blend of untamed nature and cultural heritage. Here old-growth forests, mountains, glaciers, free-flowing rivers and extensive wetlands co-exist with the indigenous Sami community since millennia. There is no other place in continental Europe with such vast, uninhabited, road-less and original landscapes as Lapland. The composition of fauna and flora is still largely intact and the functioning of ecosystems unaltered... However, even under such pristine conditions, there are threats and needs to ensure that the uniqueness of the land remains and that some lost components are brought back.⁹

The ‘lost components’ referred to here are the primarily larger carnivores that – it is assumed – can be targeted for ‘wildlife watching’ as a basis for future economic development geared towards tourism, supported by ‘more positive attitudes towards controversial species’.¹⁰

Revision of the CMP – Second Act

After the public consultation round, the first RCC meeting in January 2017 attracted considerable interest from the local media, which was also due to the divergent views on future management that had come up during the ‘First Act’. The January meeting should agree on a revised CMP to be submitted to the NEA, which is a directorate under the Ministry of Climate and Environment. During this meeting, the ‘discursive field’ of official CMP revision was to a certain extent opened up for the local pastoralists’ views and perspectives on landscapes in use. The ‘alternative discourse’ presented did accept a limited presence of large carnivores but referred to their presence as a ‘burden’ on relatively small stocks of grazing animals. This alternative discourse reflected the locally perceived need for a better balance between the numbers of

predators and grazing animals. The principle of ‘clear zoning’ as a basic management instrument creating conditions for peaceful coexistence between livestock and predators through spatial separation was in part put aside, and ‘burden sharing’ – in what we can call a ‘cultural landscape’ – was suggested as an alternative. This proposal for a Revised Management Plan for Region 7 challenged the basic management instrument established in the authoritative discourse on carnivore management, that is, ‘clear zoning’.

In late January 2017, a draft management plan was sent from RCC Nordland to the NEA. Only after receiving the Agency’s response – and approval – would the RCC be able to formally adopt the plan. However, the NEA did not consider the plan as adequate, and the Nordland RCC soon received a response with clear recommendations for changes in the proposal.

When seeking to comply with these recommendations on the RCCs next meeting, in March 2017, one of the issues that was particularly difficult to decide upon was where to place the prioritized bear zone. Based on available knowledge on bear habitats, the County Governor suggested two areas prioritized for bears. Both are inland areas bordering Sweden, and one of the suggested zones, covers almost a whole reindeer herding district, including its calving land. The same reindeer herding district is also in a zone prioritized for wolverines and lynx.

The NEA further held that the wolverine zone was too small. When the RCC took up this issue for a new discussion, the committee was clearly divided as to how large the zone prioritized for wolverines should be. The representatives from the Sami Parliament and the party commonly voicing farmers’ interests voted for a smaller zone. The other politicians voted for a larger zone, seeking an alternative that they believed was more in line with the government’s policy on ‘clear zoning’ and was also perceived to provide a better match with the wolverines’ habitat. Those who voted for the smaller alternative found it difficult to expand the wolverine zone, since they

were concerned with the sheep farmers' and reindeer herders' future within this larger area. It was argued that for instance sheep farmers are not able to invest or develop their farms if they are located within a carnivore zone, since no bank will give them loans, the risk being too high. Finally, the meeting ended with a majority in the RCC deciding to stick to the original revision of the CMP, as submitted in late January. Bringing up the zoning principle itself for discussion, a Sámi Parliament representative had noted during the meeting:

To talk about zoning, where does it come from? Did someone just make it up? It is something that is impossible to relate to!

Where **did** it come from? Or, how can we explain the emergence of 'clear zoning' as the government's chosen measure to deal with the conflicts associated with carnivore–pastoral coexistence? Let us move on to the third and final act of this process in our quest for a better understanding of the role and functions of the zoning principle.

Revision of the CMP – Act 3

Before the RCC in Nordland held its next meeting, in May 2017, the Committee received the following response to its revised plan in a letter from the NEA:

The Carnivore Committee has revised the management plan for carnivore region 7 ... The Agency finds that the plan presented is on several points not in agreement with current regulations. The Agency's view is that this draft is unsuited to comply with the national population goals set for the Region... [and it] will most likely boost conflicts... The draft plan is therefore not suitable as an instrument for carnivore management in the Region.

The NEA's highly critical opinion is further explained in the letter. One reason is that 'the carnivores' biology' is not a primary concern in the RCC's plan:

In the present draft it appears that the primary consideration is the outfield pastures with sheep and Sámi reindeer herding.

The NEA refers to an earlier letter to RCC Region 7 from the Minister of Agriculture and Food and the Minister of Climate and Environment; a letter giving instructions on 'clearer zoning in the carnivore management'. The agency further finds it necessary to remind the Committee that:

The Carnivore Committee is a public carnivore agency, and must respect current policies and the provisions of the Carnivore Frame Agreement ...The plan should therefore take current regulations as a starting point.

The NEA recognizes that:

There are inherent challenges in using a geographical differentiation in Nordland. Both the long and narrow shape of the region, as well as the scale of both pastoralism and carnivore populations contribute to this.

Still, the NEA insists that:

The Carnivore Committee shall in the Management Plan emphasize a long-term geographical differentiation, where...grazing animals and permanent carnivore populations are separated ... The differentiation shall build on national population goals for each of the carnivore species in the region...

After receiving this letter, at the RCC meeting in May 2017, the leader expressed her concerns about the NEA's strong focus on differentiating zones and felt that the RCC had not been able to

get through with the message on the difficulties of zoning in Nordland – due to the complexity of topography, geography, multiple carnivore species and reindeer herding districts without coastal access.

One year later, in May 2018, the NEA was itself present at a meeting in Nordland RCC. The NEA representative called for action from the Nordland RCC to – finally – make the zones on the maps in such a way that the NEA could make use of them. RCC representatives on their part described the difficult situation for pastoral livelihoods and emphasized in particular the cultural and historical significance of Sámi reindeer herding in the region. One RCC member asked the NEA representative:

What will be the result if we do not make changes in the plan to comply with national government's proposal? Do we place ourselves on the sideline?

The response was that, eventually, the population goals decide. The discussion in the RCC meeting then turned to the difficulties in complying with the defined population goals for the region; while the NEA representative held that the defined population goals is a 'political issue' and outside the mandate of the state bureaucracy.

The outcome was that the RCC – with the leader's double voice – upheld their decision on keeping a smaller wolverine zone, while all agreed on leaving the question of a bear zone open until more knowledge was in place, particularly on the social impacts of a bear zone for local people in the region. Their revised plan was submitted in May 2018, and in July 2018, the Nordland RCC received a letter from the Ministry of Climate and Environment, stating that the Ministry did not find that the changes made by the RCC were adequate to comply with the signals given by the Ministry. The letter continues:

The Ministry is confident there exists enough knowledge to make the necessary changes regarding zoning for bears in the region...The Ministry sees it as critical to attain a management plan that secures predictability and that is in accordance with current regulations and policy.¹¹

The letter to the RCC concluded that the Ministry had, accordingly, decided to take over the management plan revision and would itself make the necessary amendments.

Conclusion: what about complexities across scales and multiple natures?

When the 2011 Carnivore Agreement's provision for an evaluation was carried out in the period 2015–2018, the evaluation focused on revising the regional management plans – with central instructions on following up 'clear zoning' through carnivore zones that sustain carnivore habitats, while the coexistence goal should also be upheld. The revision of the zoning plan in Nordland was thus obliged to relate to the key assumption that separating animals in 'clear zones' is the bestway to handle conflicts related to carnivore predators, and that it is primarily a question of drawing the right boundaries and get the zones right. Within this frame, the struggles related to contextual factors such as geography and topography in Nordland are largely overlooked. This is also the case with the experienced-based knowledge of local actors that ask for a more holistic outlook, where interactions between pastoral animals and carnivores are seen in conjunction with the landscape and their surroundings.

Sustainable Development Goal (SDG) 15, *Life on Land*, addresses the need to '*Protect, restore and promote sustainable use of terrestrial ecosystems ...and halt biodiversity loss*'¹² When the SDG is concretised into 'targets' and 'indicators' to guide governance and practical action, however, we see that a potentially holistic view of human–nature interactions on land gives way

to representations that objectify nature – as separate from humans – such as in a Red List Index. Ensuring that the SDGs will be implemented in ways that do not erode the ability of reindeer herders to continue maintaining ecological and cultural diversity in the outfields –there is a need for improving the knowledge base for land-use change, and a need for knowledge that more accurately represents herders knowledge of human–nature interactions, the role of reindeer presence in specific landscapes and land-use change across time and space. As long as the holistic outlook is lacking, progress towards a locally sustainable development is uncertain, in spite of ambitious SDGs.

We have here described the successive acts in a regional plan revision process, analysed as a ‘discursive field’ where local actors, such as Sámi reindeer herders, struggle to articulate relevant views on the nature of the problem to be addressed and the rules defining what counts as evidence and valid knowledge. We show how the regional carnivore governance regime during this revision process ends up leaving the local actors, such as reindeer herders, with limited space for addressing and questioning the underlying assumptions concerning the problem and its solutions. Thus, they are also unable to present their knowledge as legitimate and valid.

In Norway, the knowledge-based carnivore management has been based on an established set of methodological rules and specific indicators when registering both ‘reproductive family groups’ of carnivores and livestock carcasses killed by carnivores. These indicators are part of a science-based system that does not capture needs for more holistic management approaches, where nature’s complexity is not only represented through sets of indicators, and governance operates within frames where humans and nature are disconnected. At the same time, conceptions of indigenous pastoral lands as – ideally – untouched and part of wilderness can work to sustain a separation of nature into separate zones. In practice, we have shown how ‘clear zoning’

generates a struggle between concerns for *production landscapes* and *landscapes for carnivores*, played out as a *conflictive encounter* between national and local levels.

Pastoralists in Nordland are faced with the unpredictable behaviour of carnivores. Based on our analysis of the management plan revision process, one may ask whether coexistence really is the government's goal with regard to the carnivore dilemma? Or is the goal primarily reduced conflicts? We have shown how the national environmental administration insists that the revision discourse adheres strictly to established rules of formation – both regarding 'clear zoning' and 'population goals'. There is no opening for opposing discourses in this field, as shown in the rejection of the RCC's revised plan. We further see how central-level actors in the field resort to the use of a discursive *modality* expressing duty and obligation. They remind local actors of the power relations in the state hierarchy in their efforts to counteract the zoning principle being challenged – as it has been throughout this process of CMP revision.

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¹ Other management instruments are licence permits, quota hunting and extraordinary culling, but here we focus specifically on the zoning principles.

² This mobilisation was part of the Alta controversy; the contested construction of a hydroelectric power plant with a dam that would inundate a Sámi community and affect pastoralist migration routes in Finnmark, northern Norway.

³ Indigenous and Tribal Peoples Convention, ILO Convention No. 169 of 1989.

⁴ www.rewildingeurope.com/

⁵ Cf. ILO Convention (C169) §15, which states that: ‘The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources’.

⁶ National population goals for these strictly protected carnivores are: 15 reproducing bear families, 65 reproducing lynx families, 39 reproducing wolverine families; in addition to 3 reproducing wolf families, of which none is located to Region 7, Nordland.

⁷ www.fylkesmannen.no/Nordland/Miljo-og-klima/Rovvilt/

⁸ Paragraphs in Italics are authors’ own translation of statements in Norwegian by different informants.

⁹ www.rewildingeurope.com/areas/lapland/ [Accessed March 27, 2017]

¹⁰ It may be worth mentioning that several of the ‘controversial species, especially lynx and wolverine, are notoriously difficult to spot in the wild.

¹¹ *Authors’ translation of letter from the Ministry of Climate & Environment, dated: 02.07.2018.*

¹² <https://sustainabledevelopment.un.org/sdg15>