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Navigating Stakeholder Interests in the Management of Wild Reindeer on Hardangervidda

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1 Introduction

Wild reindeer *Rangifer tarandus* (Linnaeus, 1758) is especially important in Norwegian management of deer game *Cervidae* (Goldfuss, 1820). The species is popular for hunting, and the populations are being regulated by hunting. Wild reindeer have been an important part of European culture for thousands of years, and gradually of Norwegian culture as well. Wild reindeer (hereafter also referred to as reindeer) are extremely timid and afraid of people. Reindeer need large living areas, and shun human activity and interventions like power plants, cabins, and roads, which have increased rapidly in modern times. This has led to critical fragmentation of the wild reindeer's preferred habitats (Miljødirektoratet, 2021). This is the result of a policy that has been prioritizing human interests over nature and wildlife. Municipalities and other authorities are responsible for preventing damage to the reindeer's habitats. This occurs through the use of legislation like Plan- og bygningsloven (Plan and Building Act, hereafter referred to as PBA) (Miljødirektoratet, 2021). The municipality's role faces challenges regarding different interests in the use of reindeer habitat. On one side they should look after the interests of locals living near the wild reindeer areas, and on the other side, they should facilitate economic growth and tourism. The municipality's position in the habitat management of reindeer can therefore be called a dual role, as it's supposed to satisfy various stakeholders. Stakeholder interests are affecting how the municipality manage the habitat of wild reindeer. It's a puzzling matter, that the reindeer populations have been decreasing in parallel with increasing human activities and intervention in the mountains over the last decades (Gundersen et al., 2021, p. 33). A political ecology approach may contribute to understanding the underlying mechanisms of this decline, and create a divide between those who benefit from it and those who don't.

Approximately 10% of Norway's mainland is protected as national parks. These 10% makes up to 40 national parks around Norway's mainland (Klima- og miljødepartementet, 2021). The national parks preserve large areas of nature that have distinctive or representative ecosystems. The national parks can also be areas that aren't affected by major technical interventions. The protected areas ensure that the interactions in nature get little to less disturbed, and they play an important role in preventing plants and animals from becoming extinct. The goal of management of the national parks facilitates local value creation and good nature experiences for the visitors, without this coming at the expense of conservation values (Miljødirektoratet, 2021).

Hardangervidda is the Norwegian mainland's largest national park, it's Europe's largest mountain plateau, and it's the largest national park on Scandinavia's mainland. Hardangervidda ranges over three different counties and eight municipalities. Half of its area is still on private ground (Hardangervidda.com, 2023). Hardangervidda is an especially valued and important mountain area, not least due to it being the habitat of the largest wild reindeer populations in Europe (Miljødirektoratet, 2021). One of the intentions with the establishment of Hardangervidda National Park was therefore to preserve the landscape that Europe's largest wild reindeer population depends on (Hardangervidda.com, 2023).

In Norway, the management of wild reindeer is divided into two sectors. On one side, we have population management which focuses on maintaining a healthy and harvestable stock (Norsk villreinsenter, 2023). On the other side, we have habitat management which concerns the reindeer's habitat. A central task in habitat management is to secure large, coherent habitats and well-functioning biotopes (Norsk villreinsenter, 2023). Simply put, we see a tendency for the public sector to have the most stake in habitat management, while the private sector has the most stake in population management. The municipality has been granted delegated authority through PBA, to manage the habitat of wild reindeer in their region on behalf of public governmental organizations. Due to this, the municipality is in many ways responsible for maintaining functional, large, and coherent habitats for the reindeer, and is responsible for carefully assessing requests for expansions in the mountains, which may come at the expense of the best interests of the reindeer (Norsk villreinsenter, 2023). It cannot be completely discounted that the municipality often is positive to expansions and facilitating inside wild reindeer areas, as this is economically beneficial for the municipality and their residents, which again can avoid residents moving out of the villages (Eriksrød et al., 2011, p. 3). Decisions made by the municipality in cases like these can cause conflict between the two user groups, as they may have different interests and perceptions of how the wild reindeer areas should appear and be monitored.

A political ecology approach can be relevant in understanding conflicts regarding management and use of resources like reindeer and their habitat. Political ecology focuses on injustice amongst different user groups and environmental degradation, and how it's linked to decision-making in policy (Benjaminsen & Svarstad, 2021, p. VIII). The wild reindeer areas in Norway face different user groups, resulting from various actors' different values, knowledge, expectations, and priorities. A political ecology approach can shed light on these differences and look at how power structures affect decision-making in management of the

wild reindeer and their habitat. The municipality's role in this is interesting. More precisely, their dual role is understood in a way where they are supposed to fulfill both traditional rural user interests and local tourism interests. These two interest groups often have different perspectives on how the municipality should manage wild reindeer areas, as a result of the interest groups' different use of the mountains. The different user groups may experience such conflicts as unfair, as it's difficult for the municipality to meet the wants of both user groups. A political ecology approach can help understand both sides of the conflict while focusing on power structures between the municipality and the two interest groups (Benjaminsen & Svarstad, 2021, p. VIII).

There are several reasons why it is important to conserve the existence of wild reindeer. Firstly, the Norwegian government states that Norway has international responsibility for protecting the wild reindeer as it's categorized as a "national responsibility species" (Klima- og miljødepartementet, 2021). This means that over 25% of the European wild reindeer population lives in Norway. More precisely, nearly the whole European population of wild reindeer is located in Norway (Miljødirektoratet, 2021). It's known that Norwegian wild reindeer populations have faced a decline over the past decades (Gundersen et al., 2021, p. 33), and this happens in parallel with increasing human activity and intervention in the wild reindeer habitats. This is unfavorable as Norway have an international responsibility to secure the reindeer a future. Secondly, reindeer has traditionally high cultural and historical value to Norwegians, especially locals living in villages near the mountains. The reindeer has been in Norway since the last ice age, and after the reindeer came, humans settled here as well. Since human settlement in areas where there were reindeer, our history has been closely intertwined (Hjortevilt, 2023). Like hunting reindeer once was crucial for our ancestor's survival, the hunt is still important and highly valued, especially in local communities (WWF, 2023). Thirdly, their ecological value as being a keystone species is important. Since the reindeer undertake huge wanders between their seasonal pastures, it is a species that demands large coherent areas. Wild reindeer's role as a keystone species, means that it has a huge ecological impact on many other species in their environment. This means that by saving the reindeer habitats, we also preserve the habitats of other significant species that thrive in the mountains (WWF, 2023).

My positionality in this thesis is informed by my background in political ecology, as well as I grew up in a small village close to the Hardangervidda wild reindeer area, where

wild reindeer historically have been, and still are, valued as an important huntable and economical resource.

1.1 Problem statement

Since reindeer have a nomadic way of living, their biggest threat is habitat fragmentation and degradation. Human activities are the main reason behind this. Interventions in the mountains such as roads, cabins, heavy traffic of trekkers and tourists, and hydropower plants are affecting the behavior of the reindeer which can cause stress, which in the worst case can be crucial for reproduction and survival (WWF, 2023). Hardangervidda wild reindeer area attracts various stakeholders with different interests and wants. It can therefore be difficult to manage the habitat and the reindeer population in this area, as several considerations need to be taken into account by the managing authority. The municipality's role is central in this, as it's responsible for habitat management in its region (Norsk villreinsenter, 2023). The municipality's challenge is to meet both locals' interests and non-resident visitors' interests regarding Hardangervidda wild reindeer area. Due to the wild reindeer's cultural value, there is a special want from locals and landowners to secure this species a future on Hardangervidda. While the opposing actor, the non-resident visitors like tourists and cabin owners, have less connection to the reindeer as part of their culture (Selvaag et al., 2020, p. 3). The municipalities should represent local communities' interests and protect the way they use the mountains and its resources. This is easier said than done, as the municipality's decision-making in habitat management is being steered by various laws and is the administrative body on behalf of the state. As a result of this, I was motivated to investigate the municipality's dual role in habitat management of wild reindeer. On one hand, the municipality is obliged to represent the interests of local users, while on the other hand, it should facilitate tourism and non-resident visitors as a means of promoting economic growth for the residents in the municipality.

1.2 Research question

RQ₁) What are the interests of locals versus non-resident visitors in Hardangervidda wild reindeer area?

RQ₂) What are the implications of the municipality's dual role in Hardangervidda wild reindeer area?

This thesis intends to be a new interpretation of already published facts and research. As the intersection between the fields of political ecology and wildlife management is not much used in a case with wild reindeer on Hardangervidda, Norway – this thesis intends to tie these fields together and look at how the one can be useful for the other. I intend to use various sources to be the basis for the discussion of the research questions. I will use a combination of peer-reviewed articles, books, various organizational website articles, Norwegian laws, reports, and published interviews for my research.

The thesis starts by providing a concise background on the historical and ecological aspects of the wild reindeer of Hardangervidda. It then examines user interests among stakeholders and looks at current legislation in wild reindeer management. The organizational structure of the management system is analyzed, followed by a theoretical approach utilizing political ecology and its relation to wildlife management and actors. The subsequent part focuses on an empirical case, followed by an analysis and discussion that concerns the municipality's dual role in managing the Hardangervidda wild reindeer area, by employing a political ecology approach. The thesis concludes with a summary of key findings and insights drawn from the analysis and discussion.

2 Background

What we today call 'Norwegian wild reindeer', were crucial for our European ancestor's survival thousands of years ago, while huge parts of the northern land were covered in ice. The reindeer also became the nutritional basis for humans that colonized the ice-free areas in the north after the ice was gone. The wild reindeer is almost an unchanged resource from early European culture, that still lives in southern Norwegian mountains. For thousands of years, the reindeer were vital to human survival, settlement, and cultural development. Therefore, we have protected these mountain areas, to honor our southern European ancestors' traditions of hunting and catching reindeer. In other words, we can call wild reindeer "carriers of Norwegian culture" (Andersen & Hustad, 2004, pp. 13-16).

2.1 Wild reindeer ecology

Wild reindeer is a species in the deer family that lives in herds in the bare mountains. In Norway, wild reindeer are only to be found in the mountainous areas south of Trøndelag

(Norsk Villreinsenter, 2023). The reindeer has a nomadic way of living, which refers to the peculiar way they use their habitats. Reindeer are special due to their many specific biological adaptations that make them able to live in the harsh mountainous areas in Norway. For instance, reindeer's olfactory sense is well developed and extremely sensitive. It makes them able to smell dangers, such as predators and humans from many kilometers away (Hjortevilt, 2023).

Reindeer herds wander between summer and winter pastures. This is an adaptation to living in marginal and unstable mountains. Climate, vegetation, and geographical conditions determine where the reindeer can find food in the different seasons. The reindeer's diet changes therefore as the seasons change. The winter pastures are often areas with little snow and easy access to lichen, while spring and summer pastures are areas with early snowmelt and good access to lush pastures. Based on this, we understand why it is so important to maintain large and coherent mountain areas since it is necessary to ensure wild reindeer good living conditions today, and in the future (Hjortevilt, 2023).

Norwegian wild reindeer populations have faced a decline over several decades (Figure 1, bottom figure). As wild reindeer are one of the most central species in Norwegian deer management, it's done a lot of research on this species. Especially after the year 2000, researchers started to look more into how human activities affected reindeer populations. There were published several reports focusing on this theme, like "Villrein & Samfunn" (Andersen & Hustad, 2004) and "Villrein og forstyrrelser" (Heggenes et al., 2010). Reports like this, have over the years increasingly confirmed that human activities most often have negative impacts on the reindeer. This seems to be true, as the reindeer populations are decreasing in parallel with the fact that human activities and intervention in the mountains are happening more and more, and on a larger scale (Figure 1, bottom figure).

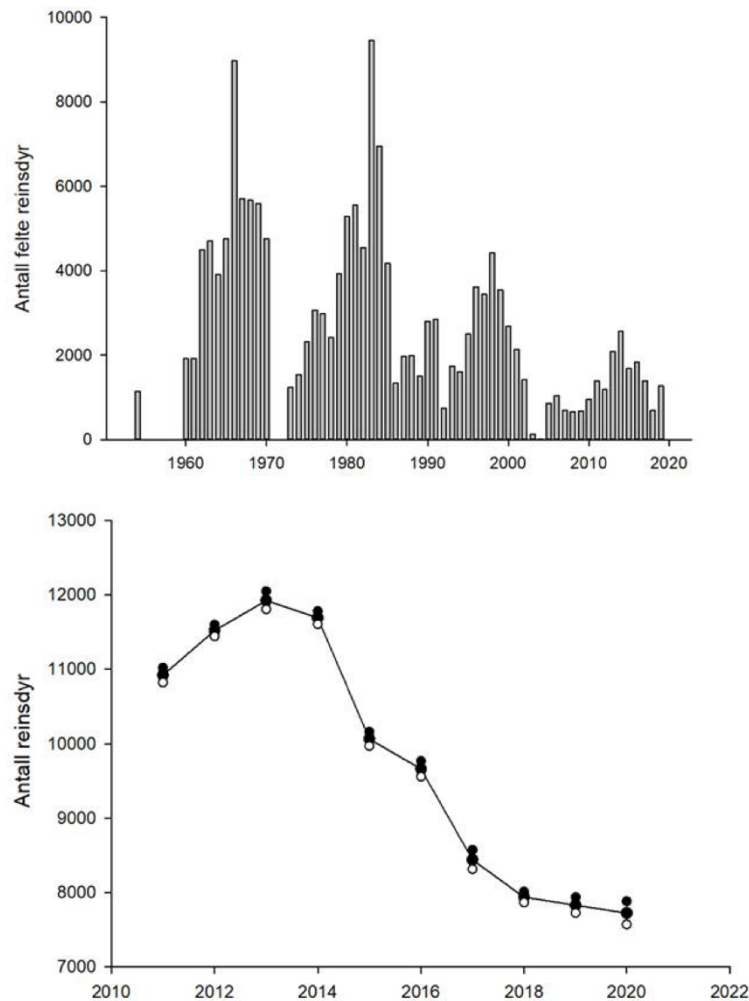


Figure 1: The top figure shows the outlet from hunting from 1955 to 2019. The bottom figure shows the estimated development of the population pre hunting from 2011 to and including 2019 (Gundersen et al., 2021, p. 33).

2.2 User interests among stakeholders in wild reindeer areas

Today, the reindeer hunter is no longer the only one with user interests in the mountains, and the reindeer is not only a resource due to harvestable reasons. Wild reindeer areas face wants of various resources exploitation, recreation, and tourism. Meeting actors' various, often competing and conflicting interests within a limited area is a global challenge. One needs to have a comprehensive understanding of culture and ecology to understand how the mountainous landscape should be managed. Decision-making needs to balance the various competing interests, values, and goals. If initiatives for commercial use of the mountains incorporate wild reindeer considerations as a premise, the reindeer can act as value creation and promote development which local communities depend on for economic growth (Andersen & Hustad, 2004, p. 6). Most actors want to secure the wild reindeer a future in

Norway, as it's important for the intrinsic value of the species, the experiential value, and as a harvestable resource (Andersen & Hustad, 2004, p. 2). Andersen & Hustad (2004, p. 6), stated back in 2004 that while future reindeer management will meet several well-functioning compromising solutions, it also needs to make harsh decisions choosing between the reindeer on one side, and human activities on the other side. This seemed to be crucial to maintain healthy reindeer populations in Norway.

Today, there are various actors with different interests regarding the wild reindeer areas. Both the habitat and the population can be looked at as resources. In other words, resources that are desired to be used for various purposes. Hereby, we can state that there is a (potential for) conflict of interest among stakeholders regarding reindeer and their habitat. According to the study of Haukeland et al. (2011, p. 14), we can divide the different interest groups into two main categories, which have conflicting interests. The first one is traditional rural user interests, and the second one is local tourism interests. The category of traditional rural user interests is closely linked to traditional user interests like summer mountain farming, outfield pasture, forestry, fishing, and hunting. Local farmers and landowners are central actors in this interest group. Other residents that use the mountains for similar traditional recreations or other long-established outdoor activities (e.g. not kiting) are also included in this category. The second category, which is local tourism interests, relates to tourism as a commercial use of the mountain areas where the reindeer live. There are often local entrepreneurs who want to seize these opportunities. For them to be successful, it requires a certain level of visitation in the national parks or the areas close by, which means that it's beneficial to expand tourism activities in the mountain area (Haukeland et al., 2011, p. 14). Further in my thesis, I will mainly refer to these two groups as locals and non-resident visitors. My approach to non-resident visitors is distinguished from how Haukeland et al. (2011, p. 14) defined the local tourism group. Instead of focusing on entrepreneurs with local tourism interests, I would rather approach non-resident visitors and tourists who are being facilitated for by the municipality.

Norwegian national parks have for the most part been established in more remote and rural areas, in municipalities where small villages are facing a decrease in traditional industries such as agriculture and forestry. As a result of changes in the labor market, it's quite common for such municipalities to face declining populations. As a solution to this, nature-based tourism connected to the national parks has over the years become an important

source of labor and income for local communities near these mountainous areas (Haukeland et al., 2011, p.14).

2.3 Important legislation for management of Norwegian outfield

A huge part of the Norwegian outfield is managed under Plan- og bygningsloven (Plan and Building Act, PBA). It's a Norwegian law regarding rights of building and constructing in nature. It's the municipality's most important tool regarding the use and safeguarding of land resources (Norsk villreinsenter, 2023). PBA plays a central part in the municipality's decision-making regarding approval of expansions of e.g. roads and cabins, which again leads to degradation and fragmentation of reindeer habitat.

Naturmangfoldloven (Nature Diversity Act) makes it possible to create large, protected areas like national parks. The advantage of this law is that it can secure larger natural areas against huge technical interventions. Many wild reindeer areas have such protected areas, and often it's the wild reindeer that's the reason for the creation of such protected areas (Norsk villreinsenter, 2023). This law makes it harder for the municipality to approve interventions in Hardangervidda National Park, but the border zones, on the other hand, are not that heavily protected by this law.

Allemannsretten is a peculiar Norwegian law that gives all people the right to travel freely and stay in the outfield of Norway. This law applies regardless of who the landowner is. The right is a free public good that is part of Norwegian cultural heritage. This law is the basis for Norwegian outdoor life, and it prerequisites that traveling, staying, and harvesting in the outfield take place in a considerate manner (Regjeringen.no, 2021). This law underlines the free use of nature by everyone, and has little restrictions on activities in the mountains, even though some activities are proven can be harmful to the reindeer.

2.4 Governance of wild reindeer in Norway

Today's management of wild reindeer in Norway occurs through an interaction between private and public sector. The management of wild reindeer is divided into two categories. The one concerns management of habitat or land, while the other concerns the management of the reindeer population (Norsk villreinsenter, 2023).

The superior bodies in Norwegian wildlife management are the Ministry of Climate and Environment and the Ministry of Agriculture and Food. These ministries delegate the practical and most of the theoretical planning of management to various organizations in the public and private sector. The Ministry of Climate and Environment is a political body that is, amongst others, responsible for making annual budgets and ensuring that the political decisions made in the Parliament and Government are put into practice. Further, the Ministry of Agriculture and Food is given responsibility for different tasks under Viltloven (Hunting and Trapping Game Act) and Fjelloven (Managing Crown Lands Act), regarding harvestable game resources. It has responsibility for Villreinnemndene which is public committees, as well as population management. Additionally, the Norwegian Environment Agency is the highest competent body in wild reindeer management, as it is responsible for preparing regulations, mapping the need for knowledge, as well as financing research and monitoring. The Norwegian Environment Agency is also the administrative appeal body for decisions made by the public committees Villreinnemndene, this can for instance be an appointment of felling quotas. Statens Naturoppsyn or “SNO” (Norwegian Nature Inspectorate), is an underlying instance of the Norwegian Environment Agency (Norsk villreinsenter, 2023). It’s the operative field body. Its most important tasks are to control, supervise, and give information and guidance, as well as registration, documentation, nature care, and facilitation (Miljødirektoratet, 2023). There exists a council called Villreinrådet, and it is a voluntary organization whose goal is to act as a link between the wild reindeer areas and protect the interests of the reindeer, by dealing with matters of common interest. In Villreinrådet, both Villreinutvalg (private board) and Villreinnemnder (public committee) can be members (Norsk villreinsenter, 2023).

Norwegian wild reindeer are managed in the following order from top to bottom in the public sector; Ministry of Climate and Environment, Ministry of Agriculture and Food, Norwegian Environment Agency, SNO, County Municipality, Villreinnemnd, and Municipality (Appendix 1). Furthermore, is the following order of the reindeer management from top to bottom in the private sector; Villreinutvalg, rights holders and hunting grounds, and Villreinrådet (Appendix 1).

2.5 Habitat management

The habitat management is crucial for securing wild reindeer a future in Norway. The species lives in an environment with many competing interests that need to be considered and taken care of. Habitat fragmentation is a common tendency in habitat management in several wild reindeer areas. Securing sufficiently large habitats and functional biotopes is the biggest challenge within wild reindeer management today. The most important habitats today are placed inside national parks or in other protected areas, according to Naturmangfoldloven (Nature Diversity Act). In habitat management, it's important to provide one's interests early in the planning process. This means that Villreinnemnder (public committees) and Villreinputvalg (private boards) should set the conditions clear early in the process. Villreinnemnda is a public committee where members are appointed by the Norwegian Environment Agency. The exercise of public authority is protected by this committee. Its tasks are to determine annual felling quotas, approve "vald" (hunting grounds), count areas, develop population plans, and also participate in habitat management in counties and municipalities to conserve and manage the wild reindeer habitats sustainably. This requires a close dialogue with the municipality and county municipality (Norsk villreinsenter, 2023).

The county municipality has responsibility for the regional plans for wild reindeer, and to follow up on these, while the municipality has the main responsibility for the habitat management, which occurs based on the PBA. The most important plans that have the greatest influence for managing the mountain areas, are plans made by the municipality or regional plans. Plans made by the municipality concerning the habitat are legally binding. A municipal plan gives guidelines for land use several years in advance, and trade-offs are being made between different interests between actors regarding land use. The planning process often encounters tough challenges such as interest in the construction of power plants, cabins, or roads. After 2009, regional plans could also be legally binding. Regional plans coordinate regional interests and regulate guidelines for land use which must safeguard national or regional considerations and interests, such as wild reindeer. Regional plans can for instance place a ban on the implementation of specified buildings or constructions within a defined geographical area. The regional planning authority can extend the ban by five years at a time, after consultation with the county governor and the affected municipalities. This shows why regional plans are extremely important in safeguarding the interests of wild reindeer and securing vital habitat. Regional plans are more important and challenging than municipality plans (Norsk villreinsenter, 2023).

2.6 Population management

Through population management, the administrative bodies attempt to reach specific goals regarding the stock's composition, growth, and production of a healthy harvestable surplus. In all wild reindeer areas in Norway, hunting is the primary cause of reindeer death. Hunting is necessary to maintain a healthy reindeer population as they have few natural predators present in their ecosystem. The day-to-day practical part of the population management is done by Villreinutvalget (private board). These are tasks like carrying out wild reindeer census and registrations, making proposals for quotas, population plans, and organizing the hunting season. Villreinutvalget is a private board consisting of rights-holders and locals, often landowner committees. Villreinutvalget has an especially important role in motivating and providing that good plans are being made within all the reindeer areas it's responsible for managing. It should also be established a good dialogue between Villreinnemnda (public committee) and Villreinutvalget (private board) in the phase of making plans for population management. The county governors should also be involved in this dialogue, to contribute so that national objectives are taken care of. The county governors, together with 'The Norwegian Wild Reindeer Centre' give advice and guidance in the making of these plans (Norsk villreinsenter, 2023).

To sum up the management system, we can say that the public sector generally manages the habitat, while the private sector manages the population, even though the various bodies and organizations cooperate across the two sectors (Norsk villreinsenter, 2023).

3 Theoretical approach

3.1 Political ecology

Political ecology is a research field that critically examines environmental and ecological issues, through a political and societal approach. It argues that nature and society are intertwined in a political economy that includes all individuals. Additionally, it states that interactions between individuals and the environment are controlled by different power dynamics (Robbins et al., 2014, p. 8).

Political ecology is shortly explained by Benjaminsen and Svarstad as an “(...) interdisciplinary field of critical studies of environmental issues” (Benjaminsen & Svarstad, 2021, p. VIII). Its critical perspective analyzes power in environmental governance, combined with a focus on injustice and environmental degradation. A critical approach in political ecology also focuses on knowledge production and the use of power within scientific fields, and how it relates to decision-making in policy (Benjaminsen & Svarstad, 2021, p. VIII). Political ecology combines ecology and natural sciences with social sciences. Social sciences are the scientific field that’s emphasized in political ecology. The political aspect of political ecology often questions power relations and especially the status of powerful actors. Benjaminsen and Svarstad (2021, p. 5) claim three different courses within political ecology that are frequently studied. The process that’s most relatable to this thesis’ case is when for instance a business or stakeholder invests in, manages, or makes decisions that negatively affect local livelihoods in a way that includes environmental damage and less accessibility to land.

What unites political ecologists is their curiosity in the following four themes; degradation and marginalization, environmental conflict, conservation and control, and environmental identity and social movement (Robbins, 2004, pp. 13-14). What distinguishes political ecologists is the way they emphasize different aspects of these themes, which naturally affect their main ideas and how they would define what political ecology is. There exist various definitions of political ecology, but there were two definitions that stuck out to me and that I found especially well-fitted for this thesis’ case and its relevance to political ecology.

The first one is Watts, who stated in the year 2000 that political ecology is “(...) to understand the complex relations between nature and society through a careful analysis of what one might call the forms of access and control over resources and their implications for environmental health and sustainable livelihoods” (Robbins, 2004, pp. 6-7).

The second one is Scott and Sullivan, that claimed in the year 2000 that political ecology is a field that has “(...) identified the political circumstances that forced people into activities which caused environmental degradation in the absence of alternative possibilities... involved the query and reframing of accepted environmental narratives, particularly those directed via international environment and development discourses” (Robbins, 2004, p. 7).

3.2 The political ecology of wildlife management and actors

Political ecology is from time to time approaching nature management, and especially conflicts regarding resource use. Management, and particularly co-management, has proven to be an efficient strategy for resolving conflicts of interest regarding resources. Co-management has led to cooperation in conservation and management between local communities and governmental organizations (Spaeder, 2005, p. 165). Political ecology relates to management as it wants to examine how land and resource degradation affects local and regional or national actors, as a result of unjust power relations between actors (Spaeder, 2005, p. 166). When political ecology approaches nature management, it often considers various variables. Firstly, it looks at the way local resources are being used and exploited. Secondly, it examines distinguishes in political-economic and ecology interests in natural resource use between locals living in villages, to regional, national, and maybe even to international scales. Thirdly, it explores the idea of natural resources being socially constructed by social actors with lots of power. Fourthly, it underlines the importance of understanding the interactions between resource-dependent communities and political- and economic-motivated actors (Spaeder, 2005, p. 166).

Nature and resource management tend to favor the voices of big agencies and governmental organizations over the local communities' voices. This is most likely a result that decision-making in management is based on governmental policy documents and records (Spaeder, 2005, p. 174). Spaeder (2005, p. 175) finds it problematic when large political stakeholders use terms like community, territory, rights, resources, indigenous, management, and traditional in discussions regarding land use without local communities being present and being able to be heard. This results in what political ecologists want to shed light on; marginalized groups facing political exclusion due to unequal power relations in management and decision-making (Robbins, 2004, p. 14).

4 Empirical case

There are 24 'wild reindeer areas' in Norway, and one of these includes Hardangervidda National Park (Norsk villreinsenter, 2023). Even though Hardangervidda National Park is strictly regulated regarding traffic and use, the wild reindeer area of Hardangervidda extends far beyond the national park itself. The national park covers a quite small part of Hardangervidda wild reindeer area (Figure 2). The fragmentation of the reindeer

habitat happens both inside and outside of the national park. It has therefore been important to establish ‘national wild reindeer areas’ to make sure the whole reindeer habitats are taken care of, and not only the areas that are strictly protected inside the national parks (Norsk villreinsenter, 2023). The areas outside of the national park are still part of the reindeer habitat and are what we refer to as border zones (Figure 2).



Figure 2: A map of Hardangervidda National Park and the habitat the wild reindeer make use of. The green line is the border of Hardangervidda National Park, while the black broken line marks the reindeer’s habitat. The red lines are marked trekking paths made by The Norwegian Trekking Association, DNT (Norsk villreinsenter, 2023).

Figure 2 represents the reindeer's wide use of Hardangervidda, and it is noticeable that their use ranges outwards of the National Park, in the border zones, and towards settlement and bigger barriers.

The reindeer have this wide use of Hardangervidda as they are a nomadic species. Their diet and needs change with different seasons. This forces them to wander long distances in search of good pastures and optimal living conditions, which in turn changes their habitats

(Figure 3). Due to this, it's critical if their preferred habitats are being occupied, disturbed, or fragmented due to human activities and interventions (Hjortevilt, 2023).

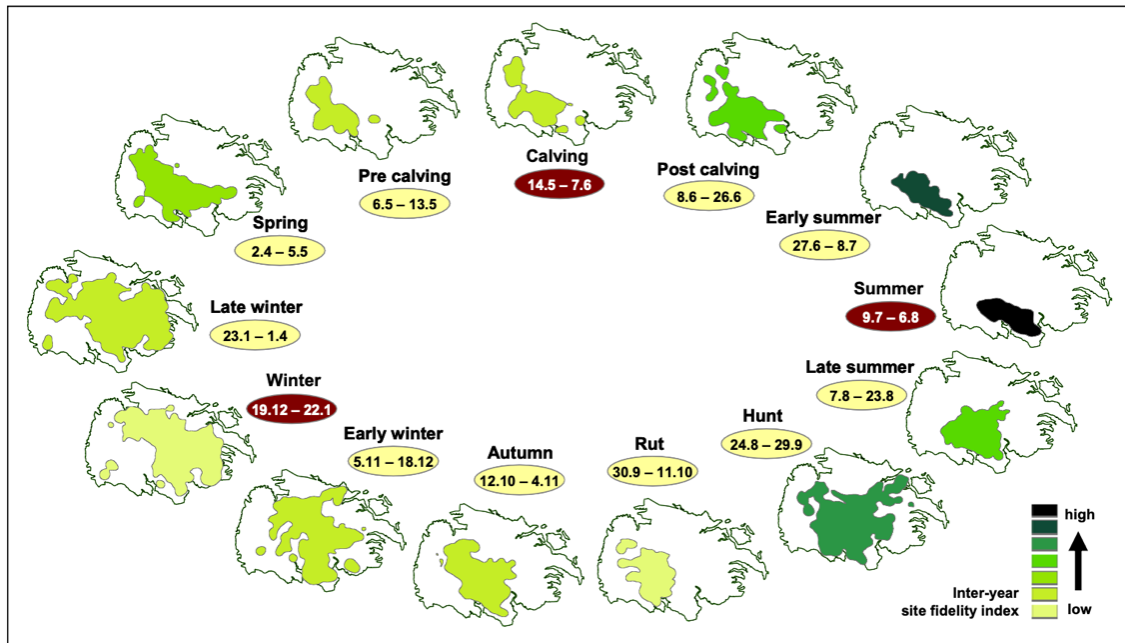


Figure 3: The reindeer's use of Hardangervidda during the different seasons, based on data from GPS-tagged reindeer. This analysis shows that Hardangervidda's reindeer migrate between pastures that satisfy different needs in different parts of their life cycle, at different times of the year (Jordhøy & Strand, 2009, p. 39).

It's the access to different vegetation and grazing that are key components for explaining this migration. This wide use of area underlines the conflict that arises when human activity takes place in any of these areas, even in the border zones (Figure 3). It's remarkable that amid the summer, the reindeer occupy an extremely small area, and the distribution between individuals and herds is absent (Figure 3). This is the peak season for tourism and visitors in certain municipalities. At this time of the year, the marked paths, roads, and cabins are most used. It can be natural to believe that the reindeer use this part of the mountains, as this is the area less crowded by humans mid-summer.

The reindeer's habitat on Hardangervidda is under big pressure due to expansion in permanent technical interventions like roads, railways, hydropower plants, cabin constructions, and tourism facilities (Figure 4).

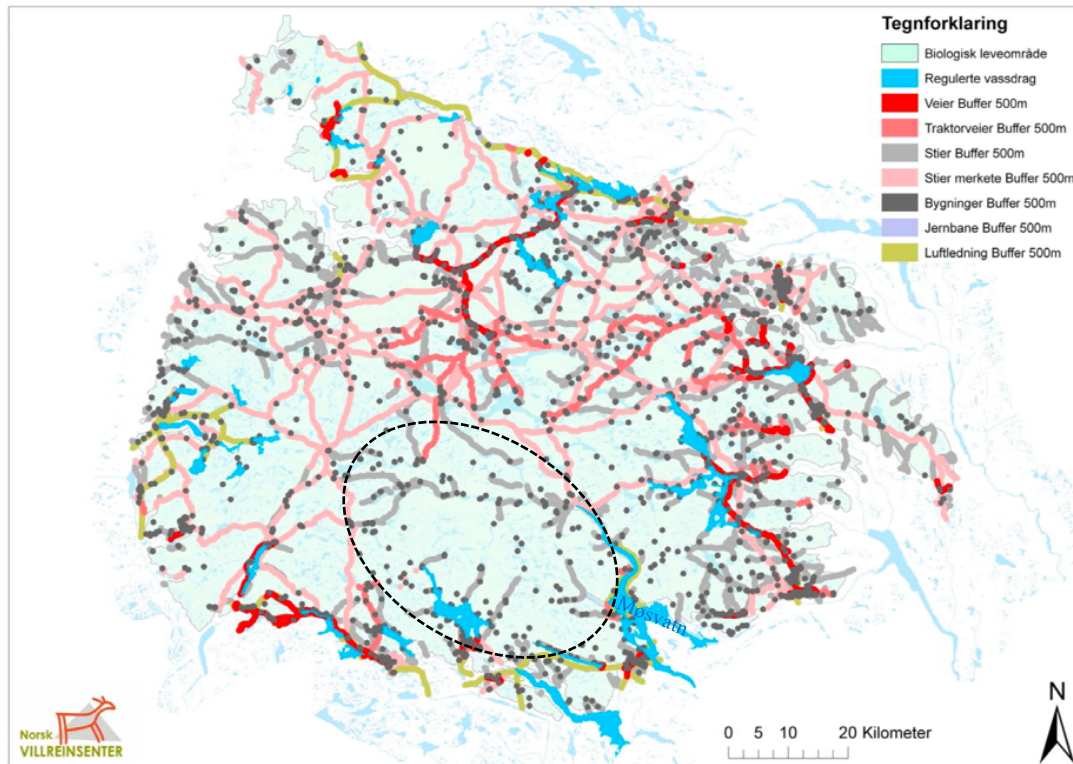


Figure 4: The map shows different interventions on Hardangervidda with a surrounding buffer zone of 500 meters (Heggenes et al., 2010, p. 34). I placed the black, broken circle on the figure to show the area with the least human intervention.

The interventions mentioned above cause a direct loss of habitat for the reindeer (Heggenes et al., 2010, p. 7). On the other hand, Heggenes et al. (2010, p. 7) state that the indirect loss of land is even more negative, as the reindeer avoid the human-constructed barriers and face fragmentation of what once was coherent and untouched habitats. There is a significant overall burden of the various interventions and disturbances that humans cause. Habitat loss and fragmentation is the biggest threat to biodiversity in Norway, and the wild reindeer are no exception to this (Heggenes et al., 2010, p. 7). The broken, black circle on the map shows that the area west of Møsvatn is the least affected by the mentioned human interventions (Figure 4). This underlines what I interpreted from Figure 3; that the reindeer occupy a very small area west of Møsvatn during summer, as this is the area with the least human impact and interventions, and as a result, it's probably less crowded there during peak season.

We can question why this fragmentation of nature occurs more and more rapidly, and why the reindeer habitats keep getting smaller. As mentioned in section 2.2, we have two main interest groups regarding Hardangervidda wild reindeer area. The first category is traditional rural user interests, and the second one is local tourism interests or non-resident visitors. The different groups may have different perceptions and ideas of how development in local communities should look, which can cause conflicts between the two groups. Haukeland et al. (2011, pp. 14-15) don't find it surprising that conflicts may arise between the two, as they both want to utilize the same resource, but to a different extent. Due to Haukeland et al. (2011, pp. 14-15) it can be understood that disagreement may arise as the two different user groups will have different views on how planning and operation of the habitat and the reindeer population on Hardangervidda should be managed to provide their interests most favorably.

There's a tendency for those with commercial interests on Hardangervidda, like The Norwegian Trekking Association (DNT), to be negative to restrictions on the use of the mountains (Den Norske Turistforening, n.d.). The Secretary-General of DNT argued that limiting opening hours for their tourist cabins, moving or removing their marked trekking paths, and closing down tourist cabins as initiatives for improving the living conditions of the wild reindeer, means a reduced offer for hikers and is bad news for both public health and Norwegian hiking culture (Den Norske Turistforening, n.d.). Additionally, those with high-speed recreational interests, like dog-sledding and kiting, are also quite negative to limitations on such activities. These communities feel that it should be possible to facilitate for both the reindeer and their recreational interests (Statsforvalteren i Oslo og Viken, 2023). On the other hand, many locals seem to value the existence of reindeer highly, and are therefore positive about implementing strict regulations, as they feel this is highly necessary to secure the reindeer a future (Statsforvalteren i Oslo og Viken, 2023). There are several local users of the mountains and local hunters that state that cabin construction in the border zones needs to be stopped, kiting and dog-sledding should be limited strictly, and DNT's cabins and marked paths should be moved or removed (Statsforvalteren i Oslo og Viken, 2023). These different perspectives relate to different values linked to the mountains, and further disagreements in what's desirable and proper use of the area of Hardangervidda (Haukeland et al., 2011, pp. 14-15).

According to Selvaag et al. (2020, p. 3), the majority of locals state that they have a close connection to Hardangervidda. This can be understood in combination with the fact that

the locals make use of the whole Hardangervidda wild reindeer area in everyday life. Visitors, on the other hand, only use those parts of the mountains that are facilitated with marked paths and roads (Selvaag et al., 2020, p. 3). It comes forth in Selvaag's et al. research (2020, p. 3) that locals face the negative effects of massive tourism and traffic on Hardangervidda at a much higher rate than non-resident visitors do. These effects are, amongst others; garbage floating around in parking lots, damage on paths, and specific crowded areas during peak season. It seems that locals are more critical to disturbances and stress on the landscape and the reindeer than non-resident visitors are. It can be interpreted that non-resident visitors expect Hardangervidda to be a popular and crowded national park, and they're therefore fine with the consequences that come with it (Fremstad, 2020). Locals, on the other hand, who live around Hardangervidda and who monitor it daily, have the perception that it's the non-resident visitors that are the main cause of the negative effects on nature and the reindeer (Selvaag et al., 2020, p. 3).

It comes forth in Selvaag's et al. research that locals often have the understanding that their traditional use of Hardangervidda faces more and more restrictions, while non-resident visitors like tourists, have fewer limitations (Fremstad, 2020). This can cause dissatisfaction among locals, and be the root of conflict. Here's where the municipality's role is central, and where its dual role comes forth. The two interest groups the municipality should represent and facilitate for are traditional rural user interests and non-resident visitor interests.

It can be conflicting if the municipality decides to implement initiatives to improve living conditions for the Hardangervidda reindeer population, if locals disagree with these initiatives (Fremstad, 2020). This can for instance be facilitating tourism in more remote areas closer to the reindeer's most used and most vulnerable habitats, or limiting the use of motor vehicles for all users. Plans made by the municipality have lots of influence in cases like this, as they are legally binding and function for several years in advance (Norsk villreinsenter, 2023). It's therefore important for the municipality to choose well-fitted areas for the different initiatives. This is to make sure that they respect the locals' interest in habitat management, and that they facilitate for non-resident visitors and tourism as it's benefitting for economic growth in the municipality (Fremstad, 2020).

Fremstad (2020) states that by preserving well-functioning habitats of high quality, heavy expansions should occur outside of Hardangervidda wild reindeer area. While more light expansions such as marked paths and DNT-cabins should be removed outside of the core of Hardangervidda wild reindeer area, and be placed in the border zones instead. By doing

this, it is possible to steer the visitors away from the core area, in a way where they disturb and stress the reindeer to a little extent. Even though visitors may be fine with moving their activities out to the border zones, locals seem to be more negative about moving the traffic and crowding to the border zones (Fremstad, 2020). According to Fremstad (2020), many locals feel that more facilitating in the border zones will lead to more visitors, which can result in even more facilitating. Further, locals are afraid this will result in an everlasting spiral of facilitating. Even though the municipality has both interest groups in mind when implementing initiatives like this, such facilitating can make locals feel repressed from those areas with the most traffic. Locals can in such situations feel like they're given lower priority compared to visitors from outside of the villages (Fremstad, 2020).

Selvaag et al. (2020, p. 3) distinguish the different uses of Hardangervidda between rights holders, visitors, cabin owners, and locals. Visitors and cabin owners use Hardangervidda for various recreation activities like hiking, skiing, summit reaching, fishing, and picking berries. Locals, on the other hand, use Hardangervidda in the most varied way. Harvesting is especially important for them, in addition to hiking and skiing. For many locals, commercial activities are also important economically speaking.

As it's more or less a common acceptance amongst people living around Hardangervidda, that use of motorized vehicles for useful purposes like transportation of goods and passengers and for maintenance purposes, locals may have strong opinions if the municipality initiates restrictions for less motorized traffic (Selvaag et al., 2020, p. 3). Both user groups have a positive mindset regarding moving and/or closing down marked paths. But those with local connection, like locals and cabin owners, is even more positive to such initiatives on the contrary to non-resident visitors (Selvaag et al., 2020, p. 3). Non-resident visitors are, on the other hand, especially positive to nearly all facilitation initiatives, while most locals are negative to virtually all of the facilitation measures (Selvaag et al., 2020, p. 3). This also puts the municipality in a dual role, where it's hard to satisfy both of the main user groups' interests. In cases like these, there's once again a tendency for locals to feel repressed and silenced by the voices of non-resident visitors. This is a case where we see the distinction in expectations between the two main interest groups when spending time in the mountains of Hardangevidda.

The future of Hardangervidda and the conservation of its wild reindeer population is a big concern in Norwegian wildlife management today. It's important to take care of Hardangervidda and secure a future for its wild reindeer population, as it's a value creator and

is commercially benefitting the surrounding villages. According to Selvaag et al. (2020, p. 3), there is a common understanding amongst both user groups that Hardangervidda will be important for business development in the future for the villages surrounding Hardangervidda. However, non-resident visitors seem to have more faith in business development that is based on more facilitating from the municipality's side, e.g. visiting centers and open summer mountain pastures (Selvaag et al., 2020, p. 3).

5 Analysis and discussion

This part of the thesis will provide an analysis and discussion of the empirical case (section 4) linked to the theories I focused on in political ecology (section 3). Firstly, I will look at the municipality's dual role combined with Scott and Sullivan's political ecology approach. Secondly, I will look at what legislation that steers the municipality's decision-making in habitat management, and link this to Watts' definition of political ecology. Thirdly, I will focus on power structures between locals and the municipality, and draw lines to Benjaminsen and Svarstad's and Spaeder's political ecology approach.

5.1 The municipality's dual role

We can see Scott and Sullivan's definition of political ecology (Robbins, 2004, p. 7) in combination with the municipality's role in reindeer management on Hardangervidda. Scott and Sullivan stated that there have to be certain political circumstances that force people into activities that cause environmental degradation in the absence of alternative possibilities (Section 3). The political circumstances that it's natural to draw into the understanding of the municipality's decision-making, are based on economy and commercial activities (Haukeland et al., 2011, p. 14). It can be interpreted from Haukeland et al. (2011, p. 14) that the community has two interest groups that they are looking out for. These are traditional rural user interests also referred to as locals, and local tourism interests also referred to as non-resident visitors. These two groups often have conflicting interests which put the municipality in a dual role. Some of the interests of these groups can be contributors to municipal decision-making that causes fragmentation of the reindeer habitat of Hardangervidda. Relating this to Scott and Sullivan's definition (Robbins, 2004, p. 7), it's the municipality's responsibility to secure public income, a sufficient quantity of jobs, and good income for their residents, which is the underlying economic basis that forces the municipality to make decisions that are

harmful to the reindeer habitat. It can be conflicting if the municipality's residents experience lots of unemployment and jobs of low income. Many small villages surrounding Hardangervidda have based their economy on commercial activities in the mountains (Haukeland et al., 2011, p. 14). Like constructing cabins, jobs on hydropower plants, constructing roads, and facilitating tourism. Additionally, commercial businesses focusing on traditional harvesting have been especially important for many people's economies in these small villages around the wild reindeer areas (Haukeland et al., 2011, p. 24-25).

The municipality's dual role comes forth as the two interest groups want to use the same resource, but in different ways. Hardangervidda wild reindeer area is a resource that wants to be utilized by both locals and visitors. The municipality has an interest in facilitating for visitors and tourism due to economic benefits. The activities this user group is interested in are mostly hiking on marked paths, skiing, hiking/skiing summits, fishing, and berry picking (Selvaag et al., 2020, p. 3). The municipality is facilitating such activities through more and more expansion that favors these interests. For instance, establishing visitor centers, permitting the construction of cabins, making it easier for tourists to enter the mountains through roads, and allowing the making and maintenance of ski and hiking trails (Selvaag et al., 2020, p. 3). Facilitating for and constructing these causes massive barriers in the landscape which fragment the wild reindeer habitat into smaller parts which is destructive to their seasonal migration pattern.

As we learned in section 2.5, the municipality has a significant role in the managing process of the wild reindeer habitat, as the plans they make give guidelines for land use that are legally binding for several years in advance (Norsk villreinsenter, 2023). The municipality's approval of constructions and activities is linked to specific laws, and I will come back to these later in the discussion. Further, the municipality's motives for facilitating such expansions and constructions come, most likely, from economic reasons. Seen in combination with Haukeland et al. (2011, p. 14), it can be interpreted that many villages surrounding Hardangervidda are economically dependent on visitors, and the peak seasons for tourism are especially important. The tourists constitute for a huge part of the total income in these municipalities. And many jobs circle around this sector. When the municipality is facilitating for and serving non-resident visitors and tourists, they are at the same time creating jobs for the locals. It has to be acknowledged that non-resident visitors and tourists are crucial for the economy in small towns around Hardangervidda. As these villages traditionally have faced declining populations, the municipalities have been prioritizing

creating jobs and opportunities for their residents. In the absence of other job opportunities, the municipalities have often created jobs linked to the tourist sector (Haukeland et al., 2011, p. 14).

Locals spend time on Hardangervidda in their everyday lives, and harvesting sticks out to be the most important activity they conduct in the mountains, together with hiking and skiing (Selvaag et al., 2020, p. 3). It's well known that many locals earn good money on commercial activities linked to rental of traditional harvesting. So even though many locals might seem negative about how the municipality is frequently facilitating visitors in the wild reindeer area, locals are doing some facilitation for visitors as well. It can be understood that locals might prefer commercial activities in a more small-scale way based on tradition. What I mean by this, is rental of fishing or hunting rights on the landowner's private grounds. It can be interpreted that landowners look at these commercial activities as being a part of both population- and habitat management of Hardangervidda wild reindeer area. This might be one possible reason why locals are positive to such commercial businesses (Selvaag et al., 2020, p. 3), as rental of fishing or hunting grounds doesn't lead to further fragmentation of the reindeer habitat or disturb the reindeer. So how can the municipality promote and support the locals' desire for small-scale facilitating for non-resident visitors? Interpreted from Scott and Sullivan's understanding of political ecology (Robbins, 2004, p. 7), the economic-political circumstances are the underlying cause of the municipality's degradation of reindeer habitat, and the dual role of the municipality comes forth once again. The municipality takes various considerations into account when monitoring locals' interests. It can get conflicting if the municipality proposes to restrict the use of for instance motor vehicles, which locals use for many purposes in the mountains. Even though many locals are negative about crowded areas in peak season and lots of traffic in the wild reindeer area, they are positive to a reasonable use of motor vehicles (Selvaag et al., 2020, p. 3). Furthermore, many locals argue that the use of motor vehicles is a useful tool for maintaining commercial activities landowners have in the mountains, like maintenance work and transport of goods and passengers (Selvaag et al., 2020, p. 3).

5.2 Legislation that steers the municipality's decision-making in habitat management

In combination with Watts definition of political ecology (Robbins, 2004, pp. 6-7), we will now focus on the municipality's role in allowing expansions in the wild reindeer area of

Hardangervidda, and how this affects the reindeer habitat and the users. We will look at certain Norwegian laws to understand how they influence the municipality's decision-making.

5.2.1 Plan- og bygningsloven

As the municipality has the main responsibility for habitat management on Hardangervidda, it has a direct impact on the conservation of the wild reindeer habitat, and the reindeer population living there. Through PBA, the municipality controls and determines whether exemption applications on various expansions or interventions are being approved or not. This law is applicable for both user groups, and it often creates great barriers and causes fragmentation of the reindeer's habitat. Most of the constructions occurs in the border zones of Hardangervidda. Loss of border zone habitat increases in parallel with each exemption application approved by the municipality that applies to the border zones. Since the reindeer wander between different pastures on Hardangervidda, they are dependent on having large coherent areas where they can migrate freely between seasons. Each pasture needs therefore to be free from disturbances and interference at the applicable time they need to use it. When the municipality is making decisions on exemption applications, the advantages of the exemption shall be greater than the disadvantages it causes. Before approval of an exemption, the municipality is legally bound to, amongst others, emphasize the exemption's consequences on the environment (Plan- og bygningsloven, 2008, § 19-2). Considering everything that's known about reindeer ecology and their behavior, it can be interpreted that many municipalities lack knowledge on this field, since approval of dispensation applications is not rarely being issued.

5.2.2 Naturmangfoldloven

The Norwegian law named Naturmangfoldloven concerns the diversity in nature, and by this, Hardangervidda wild reindeer area is established to secure it against huge technical interventions to make sure the reindeer populations have a future in this area (Norsk villreinsenter, 2023). This law states that the reindeer's most important habitats are placed inside this protected area. Through this perspective, and the fact that Norway has international responsibility for protecting the wild reindeer, it can't be defended that the municipality approves a quantity of construction inside Hardangervidda wild reindeer area. Naturmangfoldloven does probably not support that such constructions cause more

advantages for society than disadvantages for the reindeer. It should also be understood that the municipality's role in this decision-making is hard, as it's difficult to approve one dispensation application but not the next one. This can be especially hard in small towns where everyone knows everyone, and this can often be the reality in villages surrounding Hardangervidda.

5.2.3 Allemannsretten

Considering Allemannsretten, the law states that everyone has the right to travel and stay freely in the outfield of Norway, regardless of who the landowner is (Regjeringen.no, 2021). The municipality's role as a managing body can cause conflicts for the different user groups. Even though locals were negative to almost all of the facilitation on behalf of the municipality, the visitors were positive to nearly all facilitating initiatives (Selvaag et al., 2020, p. 3). This is most likely related to the different uses of the mountains between the two interest groups. If the municipality facilitates less for e.g. trekking and skiing, this will most likely affect the non-resident visitors the most. I believe this, since visitors are less known in the mountains, and they are therefore more dependent on facilitating initiatives like signs and marked paths, than locals. If the municipality decides to e.g. close down a marked path that disturbs the reindeer, it can for many visitors be perceived as a limitation of Allemannsretten and what it stands for. Even worse, if the municipality forbids certain activities that can cause lots of stress for the reindeer, some visitors may look at this restriction as a limitation of their free use of nature.

5.3 Power structures between local communities and the municipality

Political ecology questions power structures, and especially the status of powerful actors (Benjaminsen & Svarstad, 2021, p. 5). The municipality has a powerful role in the habitat management of wild reindeer on Hardangervidda. We can state this due to their powerful stake in the decision-making of exemption applications (Plan- og bygningsloven, 2008, § 19-2). Whether these applications are granted or rejected, determines the extent to which the reindeer's habitat is fragmented or not. Regardless of what local users might think of the possible interventions in the landscape, the municipality has the power to determine whether expansions will occur or not. When the municipality approves expansions inside the wild reindeer area, it's not only affecting the reindeer. It impacts local users in a way that leads to

degradation, or even total destruction of the original nature they traditionally used in everyday life (Benjaminsen & Svarstad, 2021, p. 5).

Additionally, Selvaag's et al. research (2020, p. 3) promoted locals' perception that it's the non-resident visitors that cause this degradation of the wild reindeer area. Further, locals feel they are the ones facing the negative consequences of tourism, like garbage and crowded areas for visitors during peak season. Taking this into account, it's no wonder why locals want more stake in habitat management than they have today. As local hunters have experienced that hikers have disturbed their traditional hunting, they might feel that their traditional rural user interests like hunting have been deprioritized by the municipality, in favor of non-resident visitors (Fremstad, 2020).

The municipality's idea of facilitating tourism in the border zones, to avoid disturbing the reindeer in more isolated habitats, locals found negative. Locals fear the municipality's eternal spiral of facilitating tourism in the border zones, as this will lead to even more crowded areas in the border zones, which in turn will make locals feel repressed from these areas. Again, locals feel that they should have more to say in the matter of habitat management regarding Hardangervidda wild reindeer area (Fremstad, 2020).

The understanding of locals feeling deprioritized and not heard in the matter of habitat management in Hardangervidda wild reindeer area, is relatable to how Spaeder (2005, p. 166) defined political ecology. The municipality has economic motives for wanting to facilitate for non-resident visitors. It cannot be fully faulted, as the municipality does this to secure enough jobs and good income for their residents. Understandably, the municipality facilitates economic growth and development in the villages surrounding Hardangervidda, even though it often comes at the expense of the reindeer. Like Spaeder (2005, p. 166), we see the way the municipality favors big actors like the tourism sector, as these promote economic growth. Even though the municipality does this to facilitate economic growth, it should be remembered that the local communities surrounding Hardangervidda are resource-dependent on the wild reindeer both as an economical, cultural, and traditional value creator.

In conclusion, the municipality must consider the interests of both visitors and locals when facilitating tourism on Hardangervidda wild reindeer area. It's important that also locals are heard in the matter. Spaeder (2005, p. 174) support the idea that powerful actors, like the municipality, shouldn't make decisions in habitat management without letting locals be present and be heard in the matter, as they are the ones actually getting affected by the

decision-making (Fremstad, 2020). It can be interpreted that locals feel some sort of unequal power relations between the municipality and themselves. Lastly, it shouldn't be forgotten that the municipality sometimes might propose initiatives that favor the reindeer and the locals, it may feel unfair and restrictive to non-resident visitors. Unfair power relations go both ways.

6 Conclusion

We have analyzed different user interests on Hardangervidda wild reindeer area, and we have distinguished between non-resident visitors and locals. What came forth in Selvaag's et al. research (2020) was that non-resident visitors prefer the most facilitated areas of the mountains, while locals have a wide use of the mountains regardless of facilitations. This can be understood as the two user groups have different values, expectations, and use of the mountains. This also seems to be the reason why locals generally are negative to most facilities inside Hardangervidda wild reindeer area, while visitors are positive to such implementations. While traditional harvesting, like hunting, is the most important use of Hardangervidda for locals, non-resident visitors are more fond of activities like hiking and skiing on marked paths.

The management system that governs Norwegian wild reindeer is solid. In other words, the problem of declining reindeer populations and constant fragmentation of their habitat can therefore to a small extent be blamed on the system. On the other hand, the municipality has been delegated authority in habitat management, and its decision-making through PBA often favors economic growth, at the expense of the reindeer and local interests. The municipality's dual role is clear; the municipality wants to facilitate economic growth in small villages, while at the same time, they should promote local interests.

The municipalities undoubtedly have great influence in the habitat management of wild reindeer on Hardangervidda. Both ecological and economic considerations must be taken into account before big decisions are made. The municipality has the stakes to prevent a further decline in Hardangervidda's reindeer population, they simply have to take a stand on what they prioritize to preserve; wild reindeer or human desires.

7 Bibliography

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8 Appendix

Appendix 1:

The Norwegian management system for wild reindeer. I've added English titles on the different boxes.

