Balancing nature conservation and windpower development: the contested work that maps do in protecting Europe’s last wild reindeer

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ABSTRACT

In conservation planning, maps do important work in producing territories of stronger and weaker protection, and spatially fixing special handling of development. Because of this, mapping and maps are contested, yet there have been few studies of their roles in planning conflicts. The performance of maps in planning processes affecting a wild reindeer habitat in Setesdal, Norway is analysed, asking what is the productive work of maps in planning, how is this work contested, and what are the consequences for the status of the plan itself. The case study centres on a proposal for wind power development, in an area designated in regional planning as a wild reindeer area of national significance. The analysis combines empirical material from interviews, planning documents and observation. The findings show the work that maps do in producing a new conservation territory, changing the basis of planning, yet failing to resolve deep-seated conflicts of interest.

KEYWORDS

Mapping; regional planning; wild reindeer; wind power licencing; wind power development; conflict; conservation management; Norway

Introduction

It is, of course, an illusion: there is nothing natural about a map. It is a cultural artefact, a cumulation of choices made among choices every one of which reveals a value: not the world, but a slice of a piece of the world; not nature but a slant on it; not innocent, but loaded with intentions and purposes; not directly, but through a glass; not straight, but mediated by words and other signs; not, in a word, as it is, but in … code. (Wood, 1993, p. 108)

Conflicts over alternative planning outcomes are influenced by deeper differences and often longstanding disagreements over interests, values and culture. Attempts to mediate these differences in planning processes are often hampered by lack of trust, and by complex and asymmetrical power relations. Seeking to handle such longstanding tensions through consensus-oriented planning often fails to deliver legitimate and effective outcomes. In conservation planning, maps do important work in, among other things, visualising and establishing zones, boundaries and territories of stronger and weaker protection, and spatially fixing special handling of development and management. Because of this, mapping and maps may become moments and sites of conflict, yet there have been few studies of their roles in planning conflicts. Specifically, there has been little attention on the power struggles that play out in routine practices of map-making in planning, and when the resulting maps are mobilised in handling development proposals.
In Norway, conflicts between nature conservation and further onshore wind power development have intensified (Indeberg et al., 2019), reflected in highly polarised public debate, lawsuits, civil disobedience and even sabotage of equipment in specific development sites. To reduce the conflict level, the Ministry of Petroleum and Energy (MoPE) commissioned the Norwegian Water Resources and Energy Directorate (NVE) to develop a national strategy for further onshore wind power development. The strategy was put forward in 2019 (Norwegian Water and Renewable Energy Directorate (NVE), 2019a), updating the knowledge base on the consequences of onshore wind power development for environment and society, and proposing a map of the most suitable development areas.

The strategy, locating 13 development areas on a map (Figure 1), was strongly and loudly opposed by a range of actors. After a broad consultation process with 240 inputs from local and regional authorities and non-governmental organisations, the government decided not to proceed with the strategy. In the wake of this, the government proposed stricter treatment of wind power licences in June 2020, emphasising the need for local and regional anchoring and support in the

Figure 1. Areas designated for further wind power development in Norway in NVE’s proposed national strategy. Source: NVE 2019a.
licensing process (Meld.St.28, 2019–2020). Furthermore, it was stated that environmental con-
sequences and neighbours’ perceptions should be given more consideration. The White Paper was
sent to the Norwegian Parliament, and its committee for Energy and Environment conducted what
became an intense public consultation process. The outcome, in an explicit move by the govern-
tment to reduce conflict, was the handing over of final decision-making authority over wind power
development to local planning authorities, achieved by moving this formal power from the Energy
Act to the Planning and Building Act. This signals a fundamentally different planning approach for
wind power development, particularly in relation to nature conservation.

In the light of this polarised Norwegian struggle between nature conservation and renewable
energy development, this paper offers an analysis of the contested performative work of maps in
planning processes affecting a wild reindeer habitat in Setesdal, Norway. The case study centres on
a proposal for wind energy development, in an area designated in regional planning as a wild
reindeer area of national significance. The handling of this development proposal takes place in
a context of longstanding conflicts due to historical conservation processes, which surfaced in power
struggles and conflicts over mapping in regional planning (Hongso, 2017). Viewing maps and
mapping as moments and sites of conflict, and building on Hongso’s work, our analysis combines
diverse empirical material to examine the conflicts that were manifested in the process of mapping,
and the consequences for the balance between conservation and development in subsequent
planning decision-making. The questions driving the analysis are: what is the productive work
of maps in planning, how is this work contested, and what are the consequences for the status of the
plan itself?

In the next section, we present the theoretical perspectives we draw on, before describing the
methods and the empirical material. Then the case area is presented in more depth, before analysing
the findings through two moments of struggle over maps and mapping. Finally, we discuss the
findings in light of the theoretical perspectives, and reflect on the prospects for the next phase of
locally led wind power planning.

Theoretical perspectives: the productive power of maps

In his seminal paper, Harley (1989, p. 1) challenged the prevailing cartographic view that ‘mappers
engage in an unquestionably ‘scientific’ or ‘objective’ form of knowledge creation’. Instead, he
argued that maps are laden with power. More recently, Kitchin and Dodge (2007) criticised the
underlying ontology in Harley’s approach; that there is a reality that could be established, if the
distortions of power were removed. Instead, they argue for a processual approach, where ‘maps
are never fully formed and their work is never complete. Maps are of-the-moment, beckoned into being
through practices; they are always mapping. From this perspective maps are fleeting, contingent,
relational and context-dependent, emerging through transductive processes to solve relational
problems’ (Kitchin & Dodge, 2007, p. 343). This kind of processual approach has inspired critical
engagement with the ideological content of maps, and with counter-mapping that seeks to provide
alternative representations. This has included exploration of participatory mapping approaches,
seeking to involve multiple voices.

Whilst this approach may be theoretically satisfying, it raises problems for understanding maps
which do have the purpose of attempting to be definitive in their representation of current states,
and of intended futures. Maps that are produced in planning processes, and become embedded in
plans, have the effect of fixing a certain representation of reality, which asserts the legitimacy of the
plan, attributing authority and perhaps regulatory power over development in line with such visions.
How can this kind of authoritative function of maps be critically analysed, if the possibility of the
truth of the map is not under scrutiny, and instead the map is seen as a fleeting, momentary, and
contingent production?

Here Pickles’s perspective is helpful. He argues that a map is not ‘a representation of the world but
an inscription that does (or sometimes does not) work in the world’ (Pickles, 2004, p. 67). This
approach encourages attention to the kind of work that maps do. Work, not in the sense of representing territory, but of producing it (Pickles, 2004, p. 146). It follows, then that critical attention needs to be placed on this productive work that maps do. Pickles’s view that ‘Maps and mapping precede the territory they “represent”’ (Pickles, 2004, p. 5), then, provides a useful critical perspective on the role of maps used in plan-making. It suggests scrutiny of how maps, in planning, play a part in the narration of future planned territories.

Maps, then, may become significant when planners are involved in persuasive storytelling (Throgmorton, 2003), where they ‘are clearly useful tools for persuading policy makers to notice certain things, politicians to understand in a particular way, and citizens to reconceptualise their relationships with the space around them’ (Jensen & Richardson, 2003, p. 31). But planning is often contested, and deep value differences create latent and open conflicts, which need to be handled in planning processes. Consensual theories of planning propose to move beyond conflict by creating plus-sum consensus through communicative planning (Innes, 1995). Critics have argued that this approach may lead to power-blindness (Flyvbjerg & Richardson, 2001), and argue in different ways for approaches that embrace power, conflict and strife as unavoidable and productive qualities of planning (Gualini, 2015; Pløger, 2004). From such perspectives, analysing the productive work of maps may yield new insights into planning conflicts, where the production of territory is at stake.

**Methods**

This paper draws on a combination of qualitative methods—interviews, documentary analysis and meeting observations—to analyse how maps were developed, used and mobilised in the licencing process for wind power development at Hovatn in Bygland municipality. We draw primarily on documents from the decision-making process, beginning with the company’s formal notification application to the NVE in August 2008, and ending with the MoPE’s final rejection of the project in January 2018. The ten-year process generated extensive written material, including planning documents, environmental impact assessment, technical reports, maps, letters, hearing statements, meeting minutes and news articles. In total, we analysed 139 documents, with the main documents being the company’s applications from 2011 and 2014, including an environmental assessment covering a broad range of issues and maps, the development permit granted by the NVE in 2016, and finally the MoPE rejection letter in 2018. Studying written statements from governmental agencies, NGOs and private actors throughout the process (in total 71 from 2014, 2015 and 2016) shed light on how different actors used and interpreted the maps during the process, on how diverging positions were expressed at different stages, and on how the company and NVE responded to them. The performance of maps in the licencing process is related to the regional planning process for the wild reindeer area in the Setesdal region from 2016, and therefore, our material also includes documents from this process.

In the analysis, we combined the rich documentary material with semi-structured interviews conducted in the period between 2012 and 2014. Altogether 14 interviews were carried out with actors at local, regional and national levels: one representative from the wind power company, five landowners both supporting and opposing the development project, five administrative and political representatives from Bygland municipality and Aust-Agder County, one representative from the County Governor’s environmental department, and two representatives from the Ministry of Environment. The interviews explored the different actors’ perceptions of the regional planning process in Setesdal, the wind power project in Hovatn, and different assessments of the consequences for wild reindeer. Although the licencing process was not settled at that time, the material offers an understanding of the actors’ positions and interpretations of the maps. The analysis focused on how the different actors reacted to and used maps in the process to justify and argue for their
positions. Further, we analysed the maps to examine if and how they present and portray conflicting issues expressed by the actors.

**Context: a history of unresolved planning conflict**

This case study examines the decision-making process for wind power development in Bygland municipality, in a mountain area of South of Norway (Setesdal) designated in regional planning as a wild reindeer area of national significance. The main actors in the regional planning process were the five counties responsible for the Heiplan, and the 18 involved municipalities. In addition, the County Governor of Aust-Agder (CGAA), the Regional Wild Reindeer Board of Setesdal (RWRB), the Norwegian Institute for Nature Research and the Norwegian Wild Reindeer Centre played different roles in mapping and negotiating zones. In the wind power development process, the main actors were the company HybridTech applying for the licence for two development sites at Hovatn, the landowners of the development area, Bygland municipality, the CGAA, the Norwegian Environment Agency, and finally the NVE with the authority to grant permission to operate the wind power plant.

As noted by others, a confictual process resulted in the establishment of the Setesdal-Vesthei Ryfylkeheiiane Landscape Protected Area in 2000 (FOR-2000-04-28-409, 2000; Fallet & Hovik, 2013), and recent research suggests that nature conservation planning in Setesdal may be suppressing these deep-seated conflicts (Lundberg et al., 2019; Vasstrom, 2016). The conservation purpose, in line with Norway's international responsibilities under the Bern convention, was both to preserve coherent, distinct and untouched mountains, and to preserve the habitat of the southernmost wild reindeer herd in Europe. In Setesdal, the eastern part of the mountain was kept outside the landscape protected area, even though the wild reindeer used these areas as habitat. Past conflicts centred on who should have decision-making authority over the landscape protected area, and on the vulnerability of the wild reindeer to human interference. The conflicts reached the national political agenda and were debated in the Norwegian Parliament (Hongstøl et al., 2016). As a result, a trial period with decentralised authority of four large, protected areas was initiated during the 2000s, resulting in a comprehensive national reform in 2010, devolving authority from the state environmental bureaucracy to conservation boards composed of local and regional politicians. Still, the longstanding conservation conflicts in Setesdal did not disappear or dissolve over time. When in 2007 the MoE initiated regional planning processes for wild reindeer areas of national importance outside already protected areas, the Setesdal municipalities strongly opposed and repeatedly expressed their position throughout the process (Bygland Municipality, 2010). The Heiplan process included 18 municipalities across five counties, reflecting the vast mountain landscape the wild reindeers use. The three municipalities in Setesdal ventured into the Heiplan process seeking to minimise the planning area, while at the same time restricting areas defined as Wild Reindeer Areas. An underlying fear was that the regional plan would expand the formal boundaries of already established protected areas.

**Analysis: the role of maps in triggering and concealing conservation conflicts**

In this section, we examine the conflicts that arose in two key moments of mapping in the case of wind power development in Bygland municipality in the Setesdal region: the first in the representation of conservation zones in the plan, and the second in the subsequent implementation of the plan. These moments of struggle over the power of maps occurred in the intertwined processes of regional wild reindeer planning and the wind power licensing process. First, then, we examine the conflict that arose from the planning map (Figure 2) in the regional plan. This analysis focuses on how different actors contested this map at critical stages in the plan-making process. We then turn to
the subsequent handling of a proposed major development, to examine how these contested maps were treated in subsequent decision-making. We find that, far from providing a stable frame for decision-making, the struggles over the status of these maps during plan-making remained unresolved and resurfaced in new contestation over the authority of the regional plan, when it was put to the test.
Moment 1. Representation: struggle over zoning categories, borders and guidelines

As previously noted, it was the Ministry of Environment that commissioned regional plans for mountain landscapes in southern Norway of importance for wild reindeer. The regional planning processes had a twofold aim; to protect important wild reindeer habitat for the future and at the same time to cater for local development in the surrounding municipalities. To realise this aim, the Ministry underlined that the regional planning processes ‘… should result in the mapping of clear borders for the National Wild Reindeer Areas (NWRA), where new development should be avoided. In this way, the National Wild Reindeer Areas will appear as a separate theme or zone on the planning map’ (Ministry of Environment, 2007, p. 6). Further, the NWRA should draw on updated scientific knowledge about the wild reindeer’s land use, however, the Ministry underlined that drawing the final borders of NWRAs also had to be balanced with societal interests, and that the result would be a long-term border against further development in the planning area.

Thirteen thematic maps were made during the Heiplan process, covering the themes; biological wild reindeer habitat for the entire planning area, biological wild reindeer habitat for each municipality (18 in total), cultivated land, forest areas, tracks, landscape regions, hydropower dams, protected watercourse, protected nature areas, buildings, wind resources, non-invasive nature areas (INON) and finally, potential for small hydropower development. On all these maps, the border of the planning area was drawn with a thick purple line. Attributes related to local development concerns, aside from wind resources and potential for small hydropower development, were not presented in the thematic maps.

As Hongdso (2017) shows, the biological wild reindeer habitat map commissioned by the NEA at the beginning of the planning process, showing historical, present and potential wild reindeer habitat in the region, escalated the conflicts in the region. By local actors, the map was interpreted as a political proposition from the environmental bureaucracy. Neither the NEA nor the County Governor did foresee the confusion the habitat map’s unclear purpose created and subsequently the opposition that was created at the local level. At the same time, municipalities opposing the need for a regional plan, like Bygland, exploited the unclear purpose of the habitat map strategically to draw the legitimacy of both the knowledge basis and the planning process into doubt. Except for the wind resource map and the landscape classification map, the nine thematic maps were all overlays on the biological wild reindeer habitat base map. In this way, all the different themes were related to the biological wild reindeer habitat map for the planning area. Attributes related to local development concerns, aside from wind resources and potential for small hydropower development, were not presented in the thematic maps.

Drawing on the thematic maps, the County Council, County Governor and the municipalities engaged in direct negotiations, seeking agreement about borders and zoning categories. In these discussions, Bygland municipality sought to minimise the planning area, and more specifically, tried to limit the plan to two zoning categories: ‘National Wild Reindeer Area’ and ‘Local Development Zone’ (LDZ) in the municipality. Avoiding the third category, ‘Wild Reindeer Area’ (WRA), the municipality argued for more predictable land-use management, since the distinction between NWRA and LDZ was clearer, giving wild reindeer interests presence in NWRA, and local development in LDZ. The result was that Bygland municipality was the only one of 18 municipalities that only had two zoning categories on the map of the regional plan. Avoiding the buffer zone (WRA), one might anticipate that subsequent land-use management in Bygland would be predictable, directing development to the LDZ, but as we shall see, subsequent planning did not progress so smoothly.

On the final planning map (Figure 2), the planning area was defined in three different zones—NWRA, WRA and LDZ—creating three territories with corresponding guidelines. Within NWRA, the
guideline stated that new or expansion of existing power plants and power lines should be avoided, but exceptions could be made for development projects ‘... that do not have a significant negative impact on wild reindeer. These assessments are assumed to be clarified through impact assessments in accordance with relevant legislation’ (County et al., 2012, p. 16). The final map and guidelines were, however, not legally binding since the counties chose not to use regional planning provisions. Thus, the zones have to be implemented in future municipal land-use plans to become legally binding.

**Moment 2. Implementation: struggles over plan status**

The first initiative to develop a wind power plant in the mountains of Bygland had been formally submitted by the company HybridTech in August 2011 (see timeline in Figure 3). In interviews, landowners in Bygland and a company representative emphasised that conversations had been going on prior to this, and that the landowners actively promoted the area as favourable for wind power development, emphasising available infrastructure (roads and power line capacity) and wind resources. Moreover, landowners expressed that their willingness to develop this landscape into a wind power plant was partly motivated by the regional wild reindeer plan, which they had opposed from the very beginning. They saw the planning process as an attempt from the national level to undermine their landowner rights, and further, as a strategy to widening the existing nature protection areas in the region. The landowners underlined that they also wanted to protect the wild reindeer for the future but challenged the premise for designating their land as NWRA, and completely rejected WRA designation. This position needs to be seen as a reaction to the County Governor’s use of wild reindeer as an argument in the buffer zones in Setesdal.

In line with the Norwegian licencing regulations, the NVE sent the company’s notification, with a suggested Environmental Impact Assessment programme, for public consultation between November 2011 and February 2012. The NVE received 24 statements from governmental agencies, Bygland municipality, NGOs, landowners and other stakeholders. Most of these statements either argued for or against going further with the development plans at Hovatn, reflecting longstanding conflict between nature conservation and local development. In common among those opposing the plans, were references to the regional plan, where part of the development area was within the zone NWRA. Both the Norwegian Environmental Agency (NEA) and the RWRB in Setesdal included maps in their statements, showing the proposed development area in relation to the zones in the Heiplan. The RWRB also included extracts of historical and present habitat maps, arguing that the wild reindeers’ use of the Hovatn area was essentially the same today as it was 15 years ago, and that it was even classified as a calving area today (Figure 4).

The County Governor’s statement opened by noting that the development project was in line with the regional strategy to produce more renewable energy. Referring to the Heiplan process, however, they underlined that the calving area north of Hovatn had been vital for the County

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Figure 3. The application process for Hovatn wind power plant, 2011–2018.
Governor to protect when deciding where to draw the border between the different zoning categories, and emphasised that the regional plan should be respected:

In the work with the Heiplan, it was clear early on that the municipalities in Aust-Agder wanted clear boundaries between areas where one has to take significant consideration for wild reindeer in land-use and areas where the relationship to wild reindeer has been clarified to a greater extent. The County Governor has worked closely with the affected municipalities, and has negotiated solutions with the municipalities where more marginal areas for wild reindeer have been negotiated away in exchange for securing more important areas. For the County Governor, winter grazing and calving areas have been especially important to secure (County Governor of Aust-Agder, 2012, p. 2).

In contrast, statements by Bygland municipality and the County Council reflect that initially neither took a clear position about the development project. The municipality only pointed at themes the EIA should include, underlining the ‘… importance of assessing the visual effects of the turbines on the landscape, how the plant influences nature values, particularly the reindeer, and the economic and societal effects for the municipality from the project’ (Bygland Municipality, 2012, p. 12). The Heiplan was referred to in an appendix and interestingly, minutes from the decision-making process show that a minority of the municipal councillors argued that the reindeer should be referred to as ‘wild reindeer’. The County Council’s statement emphasised their expectation of an environmental assessment of the project, noting that the area was within the NWRA in the Heiplanen, and that the local community’s attitude to a possible wind power plant should be given great weight.

In interviews, local politicians and planners in Bygland stated that they anticipated opposition to the development project, as expressed by the mayor:

I envision strong objections from the NEA and other wild reindeer interests, but I also envision that they will get a license. There are cabins in the area, and yes, the NWRA boarder goes there, but … I think the energy authorities will win given a political pressure from local and regional level backing the proposal, but I am not sure (interview with municipal mayor).

And further, they realised that the proposed development project would be in violation with the Heiplan, and that it would have been practical if the NWRA border had been moved a little:

[The development project] is in conflict with the Heiplan and NWRA. It would have been nice if the border had been moved a few kilometers into the mountain. When developers agree with landowners, in an area strongly affected by development with power magazine and high voltage area, I think as such: if it is not possible with wind power development there, where else? We already use these landscapes, I hope such a wind farm is realised, and I do not understand that it would be critical for the wild reindeer (interview with municipal mayor).
In June 2012, the NVE confirmed the EIA, allowing HybridTech to go ahead with the proposal, and in October 2014 the company sent the formal application for the wind power plant to the NVE. The application included the EIA which described the consequences for natural values and present use of the area. The proposed wind power plant consisted of two development sites, and in the EIA both areas were described as peripheral, with a marginal role as wild reindeer pasture, and thus ascribed a medium to low value for wild reindeer. However, the EIA underlined that the consequences of the northern development area could potentially be negative, since it could not be ruled out that the area has been used for calving.

The application consisted of 40 maps and illustrations, including overview maps locating the development site in the region and the specific development area, as well as new roads and transportation routes. The consequences on landscapes, cultural environments, recreation, vegetation and important nature types, wild reindeer, other animals, wilderness (non-invasive nature areas), protected areas, sound/noise and shadow effects were visualised on maps. The application also included a map illustrating where the proposed project was located on the map from the regional wild reindeer plan. The map was followed by a caption emphasising that the development site ‘will be on the border between “National Wild Reindeer Area” and “Local Development Zone”’ (HybridTech, 2016, p. 74). However, this is difficult to read from the map, due to its low resolution. A map with a higher resolution, applying the regional plan’s zoning categories directly on the development sites, could have given a more accurate illustration of this relation. On the other hand, this could be seen as a strategy to downplay the regional plan’s importance, and distance the development project from the zones in the regional plan.

The 40 statements the NVE received during the final public hearing, between November 2014 and January 2015, reflect different assessments of the area’s value as wild reindeer habitat, the vulnerability of the wild reindeer to development and human interference, and the significance of the NWRA zoning. Statements fell one side or the other of the divide between nature conservation and local development. The need for renewable and climate-friendly energy was also recognised by different actors, but with different assessments of the acceptability of the consequences for natural values and particularly for wild reindeer. The majority of the statements referred to the Heiplan, but it was the opponents that drew their arguments directly from the plan, the planning process and the zoning of NWRA, as already shown. The Norwegian Environmental Agency, County Governor and the RWRB all argued that the effects on the wild reindeer and their use of the area would be negative, and used maps to emphasise the value of the area for calving. Similarly, environmental NGOs, a local action group and a minority of the landowners in the area opposed the plans. They disagreed that the EIA gave an accurate picture of consequences for wild reindeer, challenged the limited influence area, and finally, emphasised that the cumulative environmental effects and the precautionary principle implied that the project should be rejected. Bygland municipality and Aust-Agder County Council were positive to the project, arguing that it would contribute positively to local economic development and job creation. Further, they regarded the consequences on the wild reindeer as marginal, emphasising the habitat as peripheral, and that it would be possible to find mitigating measures to minimise negative effects. The relationship to the regional plan was also highlighted by the municipality, and the County Council underlined that the guidelines in the plan opened for making exceptions to develop energy project and power lines in a NWRA if this did not have a significant negative impact on the wild reindeer. Finally, a majority of the landowners in the area also welcomed the project, and a group of youths that had moved away from Bygland argued that the project would make it possible to settle in the municipality.

Throughout the process, the company was given the opportunity to reply to the statements. Interestingly, HybridTech countered the objections by marking the development area on the Heiplanen planning map and arguing that the wind power plan would only cover 9.1 km$^2$ of the total planning area of 11,400 km$^2$, less than 0.08% of the total. Further, they argued that the two development areas were close to the LDZ, and they challenged that the NWRA around Hovatn Aust
had been considered as one of the more central parts during the planning process (HybridTech, 2016). Finally, they emphasised that the regional plan’s role was to guide and not dictate future development.

In June 2016, the NVE awarded the company a licence to implement the Hovatn wind power project. In response to the objections, the NVE underlined that they had referred to the regional plan in their assessments, and noted that although the project was inside the NWRA, the plan’s guidelines opened for new energy developments. Further, the NVE underlined that the Heiplan was only a guiding plan, without legally binding maps and regulations. Finally, the NVE gave particular weight to the fact that the regional planning authority responsible for the regional plan, the County Council, was positive to the project, and even argued that with mitigating measures the consequences would be acceptable for the wild reindeer. This decision was appealed to the Ministry of Petroleum and Energy, and in response to this formal objection and the complaints, the NVE argued that none of them provided a basis for changing their decision. The Ministry used almost two years to settle the appeal, and conducted several meetings with the actors. On 19 January 2018 they overturned the NVE’s decision to give the company a development permit. In contrast to the NVE, the Ministry argued that it should be given particular weight that the project was inside the NWRA, and further, that trade-offs had been made regarding land use in the region through the Heiplan process. The Ministry also underlined that the proposed wind power project represented one of the largest challenges to holistic and long-term management of the wild reindeer habitats, and noted that although the area was peripheral habitat today, the goal to increase the wild reindeer population could result in these areas becoming important in the future. While the environmental NGOs celebrated the Ministry’s final decision, the mayor of Bygland municipality commented to the regional newspaper Fædrelandsvennen:

If we had known this when the Heiplan was developed, we would have drawn the border a little further into the mountain. The wind turbines are at the very edge of the wild reindeer area. In this case, the national government has totally overturned local democracy. (Rønningen Uleberg, 2018).

Compared with the statements of the County Governor above, this quote reflects opposite perceptions of the basis for drawing the borders of the NWRA in the Heiplanen, and further, that the local community once more felt that their views were disregarded at the national level.

Discussion

This case centred on several moments in a prolonged and continuing struggle over the balance between nature conservation and development needs in planning, where maps became lightning rods for conflict. Inspired by Pickles’s (2004) argument that maps do (or do not do) work in the world, our analysis reveals the pivotal work of maps in establishing authority for nature conservation planning, and balancing the interests of development, but also how this attempted work was contested over many years, in plan-making and subsequent development decision-making.

Returning to our first research question, about the productive work that maps do in planning, we argue that the regional wild reindeer plan produced three distinct territories, with the aim of establishing a hierarchy of planning control. The three zones NWRA, NWA and LDZ produced new mountain landscapes in Setesdal, with corresponding guidelines, seeking to restrict future land-use development in the most important landscapes for wild reindeer. Prior to this, the mountain landscape was divided into two distinct territories: either landscape protected area or not. The municipalities had the authority to designate land use outside the landscape protected area, while a conservation board managed the landscape protected area in accordance with the conservation regulations passed by the government. The distinction between these territories was clear, with the maps demarcating two distinct zones of formal decision-making authority. Turning to our second research question, we find that this demarcation was contested, and a persistent conflict evolved around how far away from the landscape protected area wild reindeer concerns could stop or halt.
local development. And in relation to the third research question, finally, this was consequential for the status of the regional plan. Despite seeking to create predictability in this conflictual situation in the buffer zones outside the protected area, by establishing three zones and related planning guidelines, the licencing process shows that the authoritative status of the plan was challenged. Taken together, the case clearly demonstrates how struggles over maps, and over the work they do in planning, are fundamental in challenging, and upholding, the status of plans. Finally, in our case, the mapped partial overlap between the NWRA and one of the development sites for the wind power plan that was used as argument by the MoPE to revoke the licence initially given to the company by the NVE. As such, defining and mapping a territory as a NWRA in the regional plan did significant work in the world. Opposing the regional wild reindeer plan in the first place, the landowners actively sought alternative development paths through the production of Hovatn Aust as a territory suitable for wind power development. In contrast, the same area was argued to be of national importance and thus the wind power development was seen as a violation of national environmental goals. As we have shown, it was the actors opposing the wind power development that drew their arguments from the regional wild reindeer plan and the zones in the planning map. The findings illustrate that these actors saw the final planning map with its three zones as a result of negotiations, arguing that the NWRA borders should be respected. In contrast, the advocates of wind power development emphasised the regional plan as a starting point for further negotiations between wild reindeer interests and local development. It was against this historical background, with disputed conservation processes and mistrust towards the environmental bureaucracy, that the landowners challenged the authority of the regional plan, and further, drew the conditions for defining part of the development area as a NWRA.

As a test of the relatively fresh designation of wild reindeer conservation areas in Norway, our findings suggest a qualified planning success story. The regional plan worked as intended; namely to demarcate areas for conservation of wild reindeer, and to mark the borders between areas where wild reindeer conservation and community development should have precedence. However, this was only after a contested seven-year process (2011–2018), and an appeal process, ending at the MoPE’s table. The plan owner, the Aust-Agder County Council, was even positive to the development plans, while concurrently approving the regional wild reindeer plan. As a test case for the future development of wind power in Norway’s mountain areas, the findings suggest that the work that these maps did in producing a new conservation territory, changed the rules of the planning game in Setesdal’s mountains yet failed to resolve deep-seated conflicts of interest. The work done by the maps can be understood as successful gambits in struggles to strengthen conservation powers. Seen in this way, the work they do is aligned, rather than consensual, mirroring and reinforcing the prevailing balance of power rather than seeking consensus or recognising difference. As long as planning does not manage to address the deeper conflicts, this planning battle seems set to continue, played out in the making of maps, and in sharp challenges to the authority of the plans that contain them.

Opposition to further wind power development in Norway has intensified throughout the licencing process in Bygland. While the intention of the proposed national strategy for onshore wind power development (Norwegian Water and Renewable Energy Directorate (NVE), 2019a) was to reduce the conflict level through a better scientific knowledge base, the opposite happened. The conclusions drawn from the scientific knowledge were presented on a map, defining 13 areas as favourable wind power landscapes (Figure 1). This map produced territories where the NVE portrayed conflicts between future wind power development and other interests, including outdoor recreation, nature values, wild reindeer and Sami husbandry interests, as acceptable. As with the habitat map of the Setesdal region, the map was interpreted as a political proposition in the narration of future planned wind power territories. The fact that the 13 areas covered all the Norwegian counties led to the mobilisation of actors across local, regional and national level, and forged new constellations between environmental, rural and Sami organisations. This opposition was so overwhelming that it became politically impossible for the government to go ahead with
the strategy. Rather, the government suggested making the licencing process stricter, emphasising
the need for local and regional anchoring and greater consideration for environmental conse-
quences and neighbours’ concerns. Responding to this, the NVE tried to remove the contested
map from the discussion, arguing that the ‘most important thing about the national strategy is
that we now have a significantly better knowledge base about wind power’ (Norwegian Water and
Renewable Energy Directorate (NVE), 2019b). At best it is naive to think it is possible to withdraw
a map, and further, that the public opposition against future wind power development would
disappear with the map.

In closing, we reflect on the implications of our study for the forthcoming shift in Norway to local
authority control over wind power decision-making, and the move of legal powers into the planning
system. Localisation has been framed by the government as an intention to reduce conflict.
However, it is well understood that seeking a balance between diverse interests in planning, in
Norway and elsewhere, means that local development processes are inherently conflictual (Dale
et al., 2018). Still, local development is a touchstone in many small, rural municipalities, and
strengthening local control may weaken protection of conservation areas and natural values. Local
authorities currently support the majority of wind power projects under construction in Norway, and
look set to benefit financially from the changes to tax revenues in the new system. Moreover, in
disputes where regional actors object to local decisions, the Ministry of Local Government and
Modernisation often supports local authorities. A possible scenario is that local authorities will tend
to favour upland wind power development, regions may have less opportunities to formally object,
and the ministry will support local decision-making in principle. In our case, such an approach would
probably have resulted in ministry support for licencing, a swifter process, and a restricted voice for
conservation. More broadly, this may indicate a development trend characterised by a weakening of
holistic approaches to nature conservation, and, specifically, further piecemeal development and
fragmentation of the wild reindeer habitat. We see no reason to believe that longstanding conflicts
between conservation and local development will be resolved by this move, but the rebalancing of
power may allow for smoother planning processes that suppress them.

Mapping borders and producing zones of constraint over development is a central policy tool in
nature conservation. Designating protected areas produces territories and borders, represented by
maps. However, it also affects people’s use, livelihoods, identity and sense of place. In this light, it
is not surprising that local and national interests mobilise to oppose perceived strengthening of
nature conservation policies, and loss of local sovereignty. Maps are inescapably at the core of this.
The coming era of planning for wind energy in Norway may be reconfigured around new struggles
over and between maps: the critical moments of struggle may centre on map-making within local
societal and physical planning. The capacity of these local planning processes to manage conflict
will be critical. Our findings suggest that further scrutiny of the contested work of maps will be
needed to assess how effectively new planning approaches handle conservation-development
conflicts.

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miss her.

Abbreviations

EIA: Environmental Impact Assessment
LDZ: Local Development Zone
MoPE: Ministry of Petroleum and Energy
NVE: Norwegian Water and Renewable Energy Directorate
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