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"First came the reservoirs, then came the community": Governing Divergent Natures in Alby, Sweden

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for the degree of Master of Science and entitled: *"First came the reservoirs, then came the community"*: Governing Divergent Natures in Alby, Sweden

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Incorporating divergent understandings of nature can contribute to an environmental governance that is better able to accommodate the needs of multiple stakeholders. Such appears to be the case in Alby, Sweden where two defunct hydroelectrical dams may be removed. Removal is proposed as a part of a legal review of hydropower that is currently underway in Sweden which seeks to overhaul the sector's environmental standards. Examining how this review manifests itself in Alby through a discourse analysis demonstrates discrepancies between the ways in which hydropower governance and the local community understands nature. Hydropower governance approaches nature scientifically, while the local community apprehends nature through everyday experience. It is argued that the confluence of these understandings with ideas on private property polarizes these groups. These positions, it is argued, are expressive of antagonistic social relations. In its current form, hydropower governance contributes to this dynamic. However, the national legal review of hydropower offers a potential avenue through which to navigate these conflictual relations. Doing so could contribute to a more vibrant, plural governance around hydropower in Sweden, and offer lessons for environmental governance in general.

Keywords: understandings of nature; waterscape; hydropower governance; stakeholder conflict; agonistic democracy; antagonism; discourse; community identity.

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Table of Contents

List of Tables

List of Figures

List of Abbreviations

CAB: County Administrative Board

EU: European Union

FV: Future Visioning

NAP: The National Plan for Modern Environmental Conditions

PRO: National Association of Retirees

SSNC: The Swedish Society for Nature Conservation

WFD: Water Framework Directive

"First came the reservoirs, then came the community": Governing Divergent Natures in Alby, Sweden

CHAPTER 1: INTRODUCTION

> *"I woke up from a nap, and looked out the window, and there was no water! The lake was gone. It was like a dream. There had been a big storm, and the floodgates malfunctioned. I shouted to my dad, there is no water! And he told me, like, I must still be sleeping, then he came and looked himself. The smell was so strong, and you could see old things sticking up from the mud where there used to be water, some people went down to examine—I don't remember if I did—and collected some fish"* (Linda, resident in Alby)

In 1992, during a heavy storm, the Ringdal's Dam in Alby burst. The floodgates in this lower dam opened, draining a reservoir of approximately 300 000 cubic meters of water over the course of a few hours. What remained, amidst the muddy, newly exposed riverbed, was a trickle of a shallow stream of water from the still-functioning upper dam, the Alby Dam. This new environment of mud, reeds, and old junk was accompanied by a pungent smell of bog. Fish and crawfish twitched on the shores of this nascent terrestrial world.

This event looms large in the memory of residents in the small community of Alby, Sweden. Almost from one moment to the next, the reservoir that had existed in the area for almost a century disappeared. The environment that was left behind is remembered as something strange and unnatural. It is a memory that re-surfaces now against the current proposal to remove these two dams and renaturalize this impounded stretch of river. The traumatic upheaval that this of the local environment that this proposal conjures for local residents begs the question: what is natural?

Such questions will become increasingly common as governments and communities deliberate on how to meet commitments to restore 'natural' environments (). As environmental degradation and the effects of the climate crisis worsen inexorably (Steffen, Crutzen, and McNeill 2017), trade-offs will be made and decisions taken on what nature to preserve or restore and what to abandon. Balancing the health of the biosphere with the demands of a

growing human population therefore has emerged as a key governance challenge (Jones et al. 2022) and is one which almost always involves conflict (see e.g. Costa-Campi, del Rio, and Trujillo-Baute 2017). Interrogating the multiple uses and understandings of nature is therefore productive to inform an environmental management that is able to respond to these multiple needs and navigate these trade-offs effectively.

The present work seeks to contribute to that project. It does so through an examination of the emergent conflict that surrounds the 2020 Swedish government decision to undertake a legal review of the environmental standards applied in the country's hydropower sector, referred to as the National Plan for Modern Environmental Conditions (NAP) (Miljödepartementet 2020). This sector has failed to meet the water quality standards set in the European Union's (EU) Water Framework Directive (WFD) and Sweden's National Environmental Objectives (Miljödepartementet 2020). The purpose of the review is an attempt to fulfil these obligations (Miljödepartementet 2020). Over the coming 20 years therefore, the sector will undergo a comprehensive review and remedial measures taken to reconcile Swedish hydropower with the aforementioned requirements on the water environment.

However, the review of the environmental standards that the hydro sector applies has proven contentious. Although the history of hydropower has been marked by conflict since its introduction at the turn of the 20th century (see e.g. Jakobsson 1996; Össbo and Lantto 2011; Lindström and Ruud 2017), NAP exemplifies the types of trade-offs with which environmental governance is increasingly tasked. The review seeks to balance ecological benefits, human uses of these environments and the national provision of electricity. Perhaps inevitably, therefore, hydropower companies, government agencies and the public disagree may disagree on the weight attributed to each of these spheres. Exactly what balance is struck will matter because the remedial measures that derive thereof entail what might be extensive physical alterations to river systems. Remedial measures may increase the water in some river channels and cause others to dry up, (re)create stream water environments in areas of still water reservoirs, and initiate attendant changes in surrounding riverine habitats. Proposed changes bring people into conflict with one another.

Such appears to be the case in Alby, the area under consideration here. This small, industrial community of about 400 people lies on the banks of the river Ljungan in a heavily wooded, hilly area around 200 kilometers from the Baltic coast. Here, the proposal to remove the dams with which the introduction opened to replace an impounded reservoir with a stream-water environment has proven divisive. On one side stand the owners of the dams, the Norwegian energy company Statkraft, who wish to remove them. Since the hydropower stations that accompanied these dams were demolished in conjunction with the construction of the more productive hydroelectrical plant Järnvägsforsen in 1976 which is located nearby (Statkraft n.d.), the company sees the demolition of the dams in Alby as an opportunity to renaturalize an area of modified river. On the other side are Alby's residents and municipal and regional government who wish to preserve the dams. Government representatives see demolition as undesirable for the consequences they perceive this entailing for Alby. Residents, meanwhile, make the case that the waterscape is natural and connect this to the survival of their community. How nature is defined and where its boundaries are drawn stand as central to the conflict there.

An examination of how this conflict manifests itself in Alby therefore elucidates some of the multiple and diverging meanings people attribute to the term "nature". Specifically, the thesis grapples with the following questions:

1. How are ideas of nature understood through the waterscapes in Alby?
2. Does private property figure into these understandings, and if so, how?
3. Will the legal review of Swedish hydropower better accommodate divergent stakeholder understandings of nature?

A combination of interviews, walking interviews and public workshops provide insight into these questions. The information gathered through these are analyzed as expressions of discourse. As a final, normative development to the topic, the thesis employs the political scientist Chantal Mouffe's (1999; 2013) theory of agonistic democracy to consider ways in which the legal review may contribute to a more plural environmental governance. This thesis therefore contributes a new case to the environmental governance literature.

The thesis proceeds as follows. Chapter 2 presents a literature review of scholarship on hydropower. It opens with the historical development of hydropower in Sweden (2.1) and Alby

(2.2). Subchapter 2.3 elaborates what the process of legal review of hydropower, the National Plan for Modern Environmental Conditions, entails. Chapter 3 presents the theoretical framework that this thesis applies to the case of Alby. As this thesis approaches the topic through an analysis of discourse, subchapter 3.1 elaborates what this means. Subchapter 3.2 then presents the idea of waterscape discourse and presents the two employed here. Subchapter 3.3 considers private property discourse, to finally elaborate Mouffe's (1999; 2013) theory of agonistic democracy. Chapter 4 consists of materials and methods. Chapter 5 presents the substantive analysis and consists of the following three subchapters. Subchapter 5.1 examines how local residents understand nature through their waterscape. Subchapter 5.2 considers this from the perspective of officials involved in the NAP process. Subchapter 5.3 examines how NAP may contribute to an environmental governance which is better able to mobilize divergent understandings of nature productively and does so through applying Mouffe's (1999; 2013) agonistic theory. Chapter 6 finally, concludes the thesis.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews relevant literature to situate the current work. Following a review on the history of hydropower in Sweden generally and in the rural community Alby specifically, the chapter traces the evolving nature of Swedish hydropower governance and discusses its most recent development in the NAP.

2.1: History of hydropower in Sweden

It is at the turn of the 20th century that the history of Swedish hydropower begins in earnest. Although hydropower in the form of wooden water mills were used already during the Medieval period (SwAM 2019), the introduction of the water turbine marked the historical juncture that enabled the large-scale electrification of Sweden to occur (Ronnerstam 2018). The water turbine looks similar to its predecessor the wooden water wheel but is made of steel and this enables it to withstand greater forces and spin faster. A modern turbine is sited in rivers, generally downstream from regulation dams to enable a controlled release of water to spin the turbine. This turbine is connected to an electric generator that transforms the kinetic energy from the turbine into electricity. This form of hydropower remains dominant in Sweden today, marking hydropower stations as some of the oldest infrastructure in the country (Widmark 2002).

Today Swedish hydropower constitutes about 40% of overall electricity supply (International Energy Agency n.d.). Its initial uptake, however, was slow. At the turn of the 20th century, Sweden was an organic energy system (Lindmark and Olsson Spjut 2017), meaning that Sweden was not electrified and energy was instead derived from burning biomass such as firewood and charcoal. Incipient industries, moreover, were largely powered through imports of English coal (Kaijser 1994). This was set to change when, in 1882, Ryd's Cotton Mill (swe: "Ryds Bomullsspinneri") installed the first hydroelectricity plant along the Viskan river in the western state of Västra Götaland, where Gothenburg is the capital city (Vattenfall n.d.). The years following this construction saw a slow uptake of this technology (SwAM 2019) and any development was focused in southern Sweden (Tekniska Museet 2021). Two events would occur to accelerate this process.

These were the creation of the state water board Vattenfall in 1909 and the passing of the Water Act in 1918. Vattenfall (translating to 'waterfall' in English)—whose current form may be familiar to the reader as a large contemporaneous energy company in northern Europe—was created by parliament with the mandate to oversee the expansion of hydroelectricity in the country (Össbo and Lantto 2011). This meant that Vattenfall would work closely with the private companies that built hydropower plants, as well as develop state-owned hydropower (Össbo and Lantto 2011). At the time, this undertaking was framed as a project of national importance to reduce Swedish dependency on English coal imports (Össbo and Lantto 2011, 325). Since that time, the hydropower industry has remained close to the Swedish state and this framing of the need for hydroelectricity persisted (Vedung and Brandel 2001; Lindström and Ruud 2017). In 1992, Vattenfall would be re-formed to become the limited company under state ownership that it remains to this day. The development of hydropower has, in short, been promoted by the Swedish state and been tied to its institutions and objectives from early on.

The Water Act (*SFS 1918:523 Vattenlag* 1918), meanwhile, is a now defunct legal text whose purpose was to promote hydropower development. It included, for example, provisions on water rights, constructions in water, and various activities conducted on the water such as log-driving. On the whole, it was an exploitation-oriented law (Vedung and Brandel 2001). Össbo and Lantto (2011, 338), however, note that its wording might also have enabled public, rather than private, forms of hydropower ownership to be instated. Although it was replaced by the Environment Act in 1998 (*Miljöbalk (1998:808)* 1998), Vedung and Brandel (2001) show how the institutional system it set up has created a system that tended Swedish hydropower towards expansion and exploitation.

Perhaps this overriding expansionist imperative is explicable as hydropower filled an important role in the process of Swedish modernization and industrialization. This is noted by many scholars (e.g. Jakobsson 1996; Vedung and Brandel 2001; Össbo and Lantto 2011; Ekerlid 2012; Ronnerstam 2018; Lindström and Ruud 2017). The amount of readily available flowing water combined with the country's mineral deposits, arable and forested land allowed a relatively rapid transition to an industrial, minerals-based economy (Lindmark and Olsson Spjut 2017). Bernes and Lundgren (2014), meanwhile, attribute the emergence of a globally

successful forestry industry to hydropower. Harnessing the country's waterways, in short, played a key role in Swedish economic and social development.

Developing hydropower at this scale therefore engendered the landscape of modern Sweden. Ekerlid (2012), for example, expounds on how lakes were created where previously there had been none, and how rivers which once had flowed unrestrainedly now ran in an organized and orderly fashion. New towns were also established that extended the power of the Swedish state northwards (Jakobsson 1996). For example Porjus, Suorva (Össbo and Lantto 2011) and Messaure (Häger and Tunegård 2008) were founded as hydropower company towns. Importantly, towns such as these often displaced the Indigenous Saami whose land these new settlements colonized, justified in part as "taming the wilderness" of the north (Jakobsson 1996). Impoundment also meant displacing communities, a history that remains under-researched in Sweden. In the state of Medelpad, in which the present case Alby is found, constructions along the River Ljungan also submerged archeological remains from the Iron Age (Länsstyrelsen Västernorrland and Länsstyrelsen Jämtlands län 2022). Taken together, these hydropower developments, Ekerlid (2012) argues, created the social relations, identity, society and landscape in Sweden that is recognizeable as 'Sweden' today (see also Jakobsson 1996; Ronnerstam 2018). Hydropower's foundational role in the creation of modern Sweden should provide a provisional indication as to why the legal hydropower review activates so many parts of Swedish society today.

It is worth spending some more time unpacking conflicts around hydropower given the current disagreement in Alby. As the reader might imagine, the far-reaching changes that constructing hydropower stations in Swedish rivers entailed, has generated resistance over time. Lindström and Ruud (2017, 4) identify two seminal conflicts in Sweden: that surrounding an attempt by the state-company Vattenfall to construct hydropower inside the national park Stora Sjöfallet in Lappland in the early 1900s, and the battle for Vindelälven outside the city of Umeå in the 1920s. Both entailed disagreements with local communities in the north, which the preceding authors argue, characterize Swedish hydropower up until recently. Developing hydropower in the north has also particularly involved conflict with the Indigenous Saami whose self-determination has been continually violated through these developments (Össbo and Lantto 2011; Össbo 2014; 2023a). In fact, circa 80% of all Swedish hydroelectricity is generated by

stations located within the Saami homeland Sápmi. Resistance from Swedish settler society in the north emerged mainly in the 1950s, as by then Norrland's inland had been settled and further hydropower developments no longer considered politically tenable (Össbo 2014). This is not to say that hydropower was uncontested in the south—for example Jakobsson (1996) examines how farmers legally opposed damming of the Skagen in the state of Västra Götaland in the 1910s. Nevertheless, it has been particularly in Norrland, the Swedish north, where these conflicts have been concentrated and this is also the region where Alby is located.

Hydropower, marked by conflicts such as these, continued to be expanded across Sweden up until the 1960s. Rivers in the south were built out with mainly small-scale hydropower due to their typically shallower grade and width of channel. Southern rivers were also the first targets for electricity generation as these were more densely populated (Lindblom and Holmgren 2016). By the end of the Second World War, this meant that southern rivers had virtually all been mobilized for hydropower while this saw the period of peak construction in the north (Löwgren 2021, 103). Mobilizing the large rivers in the north during the post-war years, the preceding author notes, propelled Sweden onto the European market where it could capitalize on the poor state of industries in the rest of war-damaged Europe. Damming northern rivers continued into the 1970s when increasing environmental concern to preserve any remaining unexploited rivers put a halt to hydropower construction on the few remaining intact freely flowing northern rivers (Lindström and Ruud 2017; Tekniska Museet 2021). By this point, Swedish rivers had been mobilized for hydroelectricity at a large scale.

In the present day, as mentioned at the start of this part, hydropower now provides about 40 percent of Sweden's electricity supply (International Energy Agency n.d.). The rest of the electricity mix consists of nuclear (~35%), wind (~16%), bioenergy (~8%), oil (~2%) and others (International Energy Agency n.d.) This number translates into hydropower plants and dams being a common sight in Sweden. In the south, the majority of these constructions are classified as 'small hydropower' which means they produce less than 1,5 MW per year, and the stations often are not dammed (Lindblom and Holmgren 2016). The hydropower plants found in the north, meanwhile, are typified by medium to largescale hydropower which means that their installed effect is more than 10 MW or 100 MW. To give a sense of the ubiquity of hydropower in the Swedish landscape, along Dalälven, for example, a famously powerful river

of 542 kilometers to the northwest of Stockholm, there are 84 hydropower dams and powerplants. On the river Ljungan along whose banks Alby lies, there are in total 34 dams and powerplants which together provide 0,5% of Sweden's total electricity (Länsstyrelsen Västernorrland and Länsstyrelsen Jämtlands län 2022). This subchapter should illustrate the important role that hydropower has played in the creation and maintenance of modern Sweden. It is a role that has involved state and private interests, has been characterized by conflict with local community, and has entailed the transformation of the Swedish landscape on a grand scale.

2.2: A history of hydropower in Alby

The preceding history of hydropower finds parallels in Alby. Prior to impoundment, this stretch of the river Ljungan was used for log-floating[1] (swe: "flottning"), and its banks used for mountain pasture[2] (swe: "fäbodvall") (Nilsson 1998). All this was set to change in 1897 when a professor of mathematics from Uppsala University, Gösta Mittag-Leffler, and his brother Artur Mittag-Leffler, decided to build a hydropower plant and establish a chemical plant in that area (Nilsson 1998). A year later, Alby hydropower station was in operation, providing electricity to the new calcium chloride factory (Gustafsson 1980). The local historian Runo Nilsson (1998, 131) documents how these constructions were received highly skeptically. Rapid increases in calcium chloride production and the newly built calcium cyanide factory required more electricity after only a few years of operation, leading to the construction of Ringdalen's hydropower station. In operation since 1906 (Nilsson 1998), Ringdalen impounded the river downstream from Alby power station, creating the reservoir with the approximate dimensions of 1,3 kilometers in length, 150- 200 meters wide, and a range of approximately 2-4 meters deep. The calcium chloride factory, now operating under the name Nouryon, the dams, and the reservoir remain there up to today.

[1] Log-floating is the practice of transporting timber downstream by floating planks and logs in the water which persisted in certain reaches of Ljungan until the 1950s.
[2] Mountain pasture is the traditional practice of bringing livestock to graze in a different area during certain periods of the year. In Sweden, these might be cows, reindeer and sheep. Light infrastructure such as houses and cooking areas accompanied the practice.

Around these industries a small community grew up. Alby became home to a school, supermarket, church, café, dancehall, and a host of civil society associations such as the National Association of Retirees (swe: "Pensionärernas riksorganisation", abbreviated PRO), the Christian Women's Association (swe: "Myrorna") and the international sobriety organization, the Independent Order of Good Templars (IOGT). That such a community emerged, the local historian Runo Nilsson (1998) attributes *tout court* to the presence of river rapids in this area that could be mobilized for hydropower. Speaking of Alby therefore means speaking of hydropower.

Alby has been a highly political community. Alby was home to an active array of labor unions in the period 1900-1924. So many that, as Gustafsson (1980, 4, translated by author) documents, strike action would lead to deadlocks because "while one union would accept the conditions proposed by the leadership, the other was on strike". Tensions would also arise between Alby and the central city of Ånge that lies ten kilometers away. Fights, founded in class identity, would flare up between the postal workers from Ånge with the industrial workers of Alby (Gustafsson 1980., 6). It is possible that aspects of this legacy express themselves today in the identity of the residents there today who distinguish themselves from residents in Ånge.

Another result of the establishment of hydropower was the emergence of crayfish-fishing. According to the local historian John Gustafsson (1980), crayfishing in Alby began at the end of the 1800s in parallel with the construction of hydropower there. As one of two alternative, but similar, stories, the local real estate developer and industrial magnate, Dr Albert Pettersson, had bought river crayfish (*Astacus astacus*) from southern Sweden for a dinner party. A cage of these crayfish, due to some mistake, were lost in the river Ljungan (see also Odelström, Johansson, and Ackefors 1999). Whatever their source, a population of these animals would live in the river system for a century. In Alby, crayfishing was initially banned by the industrial owners, leading to conflict with the community and especially those who had fishing rights attached to their private property (Gustafsson 1980, 11). Rights would then be granted by lot (Gustafsson 1980). Traditions would emerge around the annual autumn fishing for this so-called "Gold", and the fecundity of this population was such that these waters were known internationally, attracting visitors from across Europe (Gustafsson 1980).

In 1999, however, these populations were decimated. Although questions some remain as to the exact cause, their virtual extinction in the river Ljungan is attributed to a fungal disease known as crayfish plague (*Aphanomyces astaci*) (Länsstyrelsen Västernorrland and Länsstyrelsen Jämtlands län 2022). This plague is spread through spores carried by the invasive signal crayfish (*Pacifastacus leniusculus*) or by infected water which may cause river crayfish populations to die within weeks (Zimmerman 2012). Even though the last crayfishing season occurred more than 20 years ago, its legacy is still alive in Alby today.

Alby- and Ringdalen hydropower stations were in use until 1976 (Statkraft n.d.). Three years prior to this, construction had begun on Järnvägsforsens hydropower station, located about four kilometers to the east of Alby. Järnvägsforsen has a fall height of 87 meters and installed effect of 100 MW, making it a largescale hydropower station. This power is generated from water diverted in subterranean tunnels from the lake Holmsjön, located about 5 kilometers upstream the station. After passing through the underground turbines, the water continues another 6 kilometers downstream to an outlet in the artificially impounded lake Ångesjön. The two older stations in Alby, whose turbines were also powered by water from an outlet into Ljungan from Holmsjön, were rendered superfluous by Järnvägsforsen. Alby- and Ringdalen hydropower stations were therefore demolished a few years later, and only their dams left standing.

These dams were suggested for removal, a process initiated around the year 2010 by Statkraft. This meant undertaking an initial consultation stage. From this consultation, the company produced a consultation report with the title “Information for the Consultation on the demolition of the dams in Alby and Ringdalen in Ljungan River, Ånge Municipality” (Eriksson et al. 2011). In this report, the environmental impacts of the dams and their lack of withstanding a 1 in 100-year flood are cited as important reasons for removal. This proposal prompted much controversy, as identified in comparative study on the media coverage of controversies surrounding proposed dam removals by Jørgensen and Renöfält (2013). Local residents organized themselves to keep the dams and were supported by the municipal head. These authors identify the reasons local residents wished to preserve the dams in comments they made in newspaper media. Firstly, for the recreational value that the existence of the reservoir offers them. Secondly, residents considered the desire of Statkraft to remove the dam to be one of profit. Statkraft decided to not pursue demolition at that time.

Now the proposal has reemerged, this time originating as a proposed measure to contribute to the mandatory NAP process. The present thesis therefore examines a the previously unstudied permutation of this proposal in Alby. Moreover, it does so from a new angle through its application of discourse analysis to interviews with parties to the current conflict.

2.3: The National Plan for Modern Environmental Conditions

Addressing some of these impacts is what is currently being attempted in Sweden through the National Plan for Modern Environmental Standards. The NAP was a decision taken in 2020 by the social democratic coalition government under the premiership of Stefan Löfven. Its purpose is to review the country's environmental standards and hydropower licenses to bring them into compliance with the European Union Water Framework Directive (WFD) as well as national nature targets (Miljödepartementet 2020). This subchapter outlines the environmental standards these two documents mandate, as well as the practical steps the NAP process entails.

Prior to that, a quick note on the NAP. In 2022, the new conservative coalition government under the conservative Ulf Kristersson took office following an agreement known as the Tidö Agreement (swe: Tidöavtalet) (Tidöpartierna 2022). This highly controversial agreement (see Dagens Nyheter n.d.) between the Moderate Party, the extreme right wing populist Sweden Democrats, the Liberals and Christian Democrats created the current cabinet and stipulated, among other things, that the NAP be put on pause. This was done, according to the government, to provide time to establish the consequences the review will have for the production of electricity in the context of electricity crisis beginning in 2023 (Tidöpartierna 2022). What this means is that any reviews for individual powerplants that had not been submitted prior to the pause have been postponed for one year. Those applications that have not been submitted are due for submission by February, 2024 (HaV 2022). Coming to this topic currently is therefore opportune to potentially contribute some insights to the NAP process.

As stated above, the NAP is undertaken to align Sweden to the WFD and its own National Environmental Objectives. The WFD is a legal document which entered into force in 2000 and

commits all the European Union's member states to the achievement of good qualitative and quantitative status in all Union waters by 2015. Inland surface- and groundwater are encompassed by the WFD, as well as marine waters up to one nautical mile from the shore. In inland surface waters such as the river system Ljungan that is under consideration in this thesis, fulfilling the WFD means achieving the qualitative water measure "good ecological status" or "high ecological status". This means achieving good scores in terms of river biology, hydromorphology and physicochemistry (EEA 2021). Although Sweden transposed the WFD into its Environmental Code in 2004, Sweden has yet to fulfil these obligations (Miljödepartementet 2020). NAP therefore explicitly seeks to align Sweden with these goals.

The Swedish National Environmental Objectives also inform NAP. There are 16 environmental quality objectives with their own milestones, and one overarching generational goal (Sveriges miljömål n.d.). Relevant to NAP is the objective: "Flourishing Lakes and Streams". It is articulated as follows:

> "Lakes and watercourses must be ecologically sustainable, and their variety of habitats must be preserved. Natural productive capacity, biological diversity, cultural heritage assets and the ecological and water-conserving function of the landscape must be preserved, at the same time as recreational assets are safeguarded." (Naturvårdsverket n.d.)

This objective, as seen above, includes a variety of ecological and human dimensions. It solicits the safeguarding of ecological sustainability through habitat and biodiversity preservation, and the protection of human cultural- and recreational assets. This brief outline of the WFD and Swedish National Objectives should provide a provisional indication of the ambitious task undertaken in the NAP.

Perhaps this is reflected in the 20-year long process that the NAP entails. Between 2023 and 2044 (contingent on any further actions by the sitting government), all hydropower constructions will have passed through the following four stages of the review. The first stage is a collaboration phase (swe: "samverkan"). This consists of a collaboration between the hydropower owners with relevant agencies at the municipal, regional and national level,

overseen by the County Administrative Board[3] (CAB) in that region. Its purpose is to facilitate agreement between stakeholders prior to submitting the case to the court to ensure a speedier process. This is a new step. Following collaboration, the submission of the hydropower construction for review by the owner to the relevant environmental court makes up the second stage. The third stage consists of one of the five environmental courts then considers the case and weighs the relevant interests. Their decision is legally binding. The fourth and final stage is the implementation of the measures decided by the court.

Research on the NAP process to date remains new given its recency. Following a systematic search, the vast majority of studies are quantitative status reports on individual river systems produced by CABs (see Länsstyrelsen Västernorrland and Länsstyrelsen Jämtlands län 2022 for the relevant document for Alby). Qualitative studies that have been completed on NAP however at this point are few. Köhler and Ruud (2019) in the report "How are environmental measures realized in European hydropower? A case study of Austria, Switzerland and Sweden" address the NAP prior to it becoming law in 2020. This report identifies that NAP is likely to instigate new forms of hydropower governance due to the involvement of diverse stakeholders in new forms of collaboration. Goytia (2021), mentions the difficulties currently faced by the NAP with the integration of catchment-based flood management in her wider study on legally integrating this in energy, forestry and agricultural policy at large. She identifies the lack of consideration of the potential role that hydropower dams can play as flood mitigation. It should be mentioned that a range of quantitative and qualitative studies have been commissioned by the Swedish Environment Agency (Naturvårdsverket n.d.) which include studies on balancing conflicts of interest and developments in environmental governance. The present thesis therefore contributes a case study to a, at present, nascent qualitative scholarship that has yet to emerge on NAP.

[3] A County Administrative Board (swe: "Länsstyrelse") is a regional government agency that is tasked with overseeing the implementation of national environmental laws. There are 21 CABs in Sweden. Alby is located in the region of CAB Västernorrland (swe: "Länsstyrelsen Västernorrland").

CHAPTER 3: THEORETICAL FRAMEWORK

The thesis now presents its theoretical framework. This chapter consists of an explanation of discourse (3.1), waterscape discourses (3.2), private property discourse (3.3) and Chantal Mouffe's (1999; 2013) theory of agonistic democracy (3.4). These analytical tools were chosen to capture the dimensions to the conflict in Alby where divergent understandings of nature and the influence of private property coalesce. The inclusion of agonistic democracy frames the possible ways the NAP process may contribute to environmental governance in Sweden.

3.1: Discourse

Prior to unpacking the specific discourses applied here, discourse itself must be defined. While in common parlance the term might refer to a simple exchange of ideas between people, in the social sciences, it refers to something more complex. Per the foundational work of the French sociologist Michel Foucault (1972) discourse denotes a social system that produces certain knowledge and meaning (see also Miller 1990). A group of ideas are held as true, important, and self-evident, while others are considered false, unimportant, and even ridiculous. Put differently, discourse is a certain way of generating knowledge of the world.

It is helpful to explain this by example. Economic growth is an idea that many would take as an axiomatic truth, or as one to which there is no alternative. Nothing about economic development as an idea *per se* elevates it to the status it holds today. Rather, it is a historically contingent belief that grounds itself in a long historical timeframe. A degrowth economic model, or a subsistence economic model, or something else entirely, might have held the status that economic development does at this current time. However, such is not the case in the current world: the paradigm of economic growth that has dominated across the 20th century is retained in contemporary ideas on sustainable development (Sénit 2020). Such a phenomenon is explicable because, as per Foucault (1972), discourse is upheld by powerful interests and through their material effect. Powerful interests might include actors such as the state, the media, industrial interests—in short, all those who hold a position of influence due to their institutional role or monied status (Foucault 1972). It is actors such as these who promote, in this example, economic development through their policy, opinions and actions. Discourses also last because of the material effect that they have in the world. The idea of economic growth

is manifested materially in every facet of society. Urban centers grow steadily outward to house new businesses and roads extend further and further into forests to mobilize more resources for profit. As such, certain discourses attain a position of dominance and are reified across time.

This conception of discourse has methodological implications for the topic at hand. It means that this thesis treats the objects of analysis here as material-semiotic (Jessop 2004). What this means is that the material world and our human understandings of it co-constitute one other. Encountering the material object of a hydroelectric regulation dam, therefore, means encountering certain ideas of the world, and vice versa. To summarize this abbreviated treatment of discourse: discourses are historically contingent, are upheld by power, and have material effects.

3.2: Waterscape discourses

Having established the meaning of discourse as applied in this thesis, what follows is a consideration of a specific family of them. These are organized under the label 'waterscape discourses' and here consist of: 1. Waterscape as scientific object and 2. Waterscape as national identity. These categories encompass the literature and relevant dimensions to the case study at hand. Prior to unpacking these, however, it is first necessary to define the concept and clarify its use in this thesis.

In its simplest and most essential sense, a waterscape is defined as an area of land where water is a dominant feature. The label therefore subsumes inland landscapes dominated by rivers, lakes, waterfalls, and swamps, as well as coastal regions characterized by estuaries, islands and ocean. This thesis deals with a regulated riverine waterscape: a stretch of river Ljungan in Alby. It is important to note that "waterscape" is an academic term, and not employed by the people that participated in the data collection for this thesis.

The term "waterscape" was chosen as it connects this thesis with a specific body of academic literature. This scholarship originates in the work of the critical geographer Eric Swyngedouw in his seminal article "Modernity and Hybridity: Nature, Regeneracionismo, and the

Production of the Spanish Waterscape, 1890–1930" (Swyngedouw 1999). In this article, Swyngedouw considers shows how discourse produce the Spanish waterscape. Therefore, a waterscape in more conceptual terms can be defined as "the geographical temporary outcomes of [coproduction] processes" (Bouleau 2014, 249), where coproduction refers to how social and ecological processes, or how human and non-human spheres, interact with each other to produce the world. This lens lends itself here to the investigation of how nature is understood in Alby.

It is also worth briefly distinguishing and connecting waterscapes to the concept landscape. Engaging with the newer waterscape concept entails a direct engagement with the landscape concept which has a long pedigree in the geographical discipline (Flaminio, Rouillé-Kielo, and Le Visage 2022, 34). The most important commonality between the two terms in the context of this thesis is that neither is reducible to the nature-culture divide (Meinig 1979, 2; Karpouzoglou and Vij 2017). This divide refers to a western idea that emerged during the Enlightenment (Harvey 1992, 349), which posits that society and nature are somehow separate. It is difficult, if not impossible (Meinig 1972), to place landscapes and waterscapes on either side of this divide. The terms might recall pastoral villages and surrounding woodlands, concrete city skylines, or, or for that matter, canals dotted with barges. In other words, a landscape or waterscape can include both human and non-humans and as such is not clearly separable and locatable as either one or the other.

3.2.1: Waterscape as scientific object

One way to understand a waterscape is scientifically. This means applying a western scientific lens to understand watery landscapes, often to inform the environmental management decisions that logically derive from this knowledge. The centrality of this discourse to knowing the world is difficult to overstate in general (Harvey 1992; Forsyth 2002), and is the dominant way in which waterscapes are governed today (Bouleau 2014). Lindström and Ruud (2017) identify this as the overarching way in which specifically the governance surrounding hydropower in Sweden is undertaken. What this entails is perceiving the world through scientific instruments such as flow gauges, inventories of species, and LIDAR technology. Based on the results of these types of measurements benchmarked against certain baselines, certain management practices are determined as appropriate and subsequently implemented. For example, this

might include introducing fish spawn to replace depleted stocks of fish or removing concrete embankments to re-meander a stretch of river. This discourse, in other words, operates in highly material ways as environmental management is scientifically based (Forsyth 2002), and relies upon a certain ontological understanding of the world.

It is an ontology that posits that there is a world 'out-there' that is external to humans, and which can be sensed and known through the application of the scientific method (see Forsyth 2002). This is a distinctly western scientific approach (see e.g. Johnson and Murton 2007 for a discussion on Indigenous science as an alternative) that is captured in the phrase *the nature-culture divide.* Humans are thought to be on one side of this divide, and non-humans (animals, plants, the moon, the sun) on the other. In other words, "[t]he place where we [humans] are, is the place where nature is not" (Cronon 1996, 17). This ontological division has been entrenched in the west since the Enlightenment (Johnson and Murton 2007, Harvey 1992), and informs mainstream environmental management ethics as nature to be managed by humans. While this ontological stance remains at the base of scientific discourse, two developments should be mentioned.

The first is the role of local communities in scientific environmental management. Involving local communities in the management of their surroundings is currently a practice in vogue, although Envall (2023) argues that at least in Sweden, this is paid more political lipservice than actually practiced. Involving local communities follows the presumption that local people possess knowledge that may not otherwise be available to environmental managers. Environmental management can thus access new data which can inform more tailored management approaches (Hatton MacDonald et al. 2013). Moreover, participation and knowledge-sharing by local communities in environmental management is thought to be able to generate solutions that are considered more legitimate because they involve the affected local community in decision-making (Ioris 2012). Within a scientific discourse, the type of knowledge sought from local communities might include reports of local sightings of certain species, stories of habitat change over time, and information on how the local community utilizes their surroundings. This approach is particularly valuable in cases where there is a lack of data (see Nilsson and Tivell 2011 for a good example). Local knowledge both inputs more fine-grained scientific data and can contribute to more legitimized environmental management.

The second development in scientific discourse is the idea of habitat connectivity. This is the idea that natural systems should be connected to enable the movement of species and materials between landscape patches (Taylor et al. 1993) which is important for things such as habitat availability and biodiversity (Mitchell, Bennett, and Gonzalez 2013). According to Green and Sandbrook (2021), connectivity holds a dominant discursive position in environmental management today. Physical barriers in river systems such as dams, or fragmentation through water diversion should be removed in order to restore the connectivity of the river to enable for example fish migration and allow other natural processes to restore themselves. This is because the effects of fragmentation on waterscapes caused by barriers such as dams have some of the largest impacts on these systems (Botelho et al. 2017; Khir Alla and Liu 2021). Connectivity as a goal for environmental management extends past waterscape management to inform environmental management in general (see Bluwstein 2021). For example, the European Union's Natura 2000 Program pursues connected habitats (Sumares and Fidélis 2011). Such is also the case in NAP: restoring connectivity to ecosystems a key element to the Swedish legal review (Miljödepartementet 2020). Assessing this discursive dimension in the case of Alby therefore provides some insight into the force of this discursive construct in the environmental management of waterscapes today.

3.2.2: Waterscape as national identity

Discourses around waterscapes can also be expressions of national identity. Swyngedouw (1999) argues that these are highly intertwined. Lakes among pine forests might conjure an image of Sweden, swamplands evoke Florida, and canals the Netherlands. Even though these might appear natural, or as taken-for-granted manifestations of a particular country (Swyngedouw 1999; see also Olwig 2002), these are expressions of the organized activities of a nation-state. The role hydropower plays in articulating Swedish identity, and northern Swedish identity specifically is considered here.

Hydropower has held a unique discursive position in Sweden. From its early days in the 1890s, hydropower has been linked to a narrative of Swedish independence, modernization and growth (Jakobsson 1996; Ronnerstam 2018; Össbo and Lantto 2011) which is situated within a growth discourse that has shaped Swedish politics since the 20th century (Friman 2002). Particularly

the founding of the Swedish state water board in 1909 and the Water Act (*SFS 1918:523 Vattenlag* 1918) was explicitly linked to the development and securing of a modern, strong Sweden (Össbo and Lantto 2011). In fact, the importance of hydropower to Swedish industrial development overall cannot be overstated. Environmental historians Bernes and Lundgren (2014, 134), for example, state that hydropower enabled the development of Swedish forestry and steel-manufacturing to one of the world's most successful. Similarly, Lindmark and Olsson Spjut (2017) show how harnessing the amount of readily available flowing water together with the country's mineral deposits, arable and forested land, enabled a relatively rapid transition to a modern economy based on minerals. In short, hydroelectricity powered the development of a modern Sweden and positioned the country on the world stage. Hydropower—the type of waterscape considered here—is linked to how Sweden defines itself as a modern nation.

A pertinent discourse that connects Swedish national identity with waterscapes is the Swedish customary law on the Right to Roam. This law grants people usufruct rights to access natural areas for recreation irrespective of who owns the land or water, and the ability to pick berries, mushrooms, and other plants (see e.g. Sandell 2009 for overview). Specifically through the Right to Roam, Gudrun Dahl (1998) argues that Swedish identity is enacted in an everyday way. The recreational activities that this right enables, construct Swedish identity as being close to nature, and shape an expectation to be able to freely access land and water. This discourse is relevant in Alby as dam removal might alter the ways in which residents can access their surroundings.

A discourse also surrounds waterscapes of the Swedish north. This is one that positions northern Sweden as exploited by southern Sweden, which has long been ubiquitous in politics (Berger 1995; Nilsson and Lundgren 2015) and popular culture (Eriksson 2010). Nilsson and Lundgren (2015) show how understandings of the north expressed in national politics conceive of the north as a region that, on the one hand, is threatened by depopulation and underdevelopment, while on the other, is resource-rich and ripe for development. Northerners, moreover, are caught between portrayals of being slightly 'backwards' to being portrayed as entrepreneurial (Nilsson and Lundgren 2015). From the side of the north, the south meanwhile is conceived of as exploitative (Berger 1995). Today, this dynamic expresses itself in the shift to green energy where the north—and specifically Indigenous lands—is targeted for wind

farms with the idea of this being 'for the greater good' (Össbo 2023b). This discourse is important in Alby as it belongs to the Swedish North.

As a whole, then, discourses on waterscape as national identity shape people's understandings in highly personal to institutional ways. Detecting these, and especially their link with private property, then, provides some insight into the legacy and strength of these discourses, as well as their current expressions and future visions for Sweden.

3.3: Private property discourse

Private property discourses add important dimensions to the waterscape discourses just considered. For one, as the dominant form of ownership today (Page 2014, 2), private property has a role in shaping waterscapes and the environment in general (Arnold 2002). A consideration of this discourse is moreover necessary in the context of the Swedish hydropower review as hydropower stations are owned as private property (whether belonging to an individual, company or public institution). The ownership of the two dams in Alby, alongside the ownership of other real estate in the area is therefore considered, and special attention is paid to how this ownership interacts with the waterscape discourses just outlined. This subchapter therefore outlines the dominant private property discourse in the west. Note that this is *real* private property, which refers to physical or material objects such as land or a building, in contrast to *immaterial* things such as intellectual property.

The dominant western conception of private property conceives of private property as a bundle of rights. This is noted by scholars such as Grey (1980) and Larsson (2014). What this metaphor is meant to capture is that private property consists of certain rights that can be combined or bundled in different ways (Grey 1980). Typical rights that private property bestow upon their owner include the right to exclude, to enjoyment, to disposition, and to control (Arnold, 2002, 285). The right to exclude is perhaps the key right that private property grants: it means that I, the owner, have the exclusive right to my object of ownership. The right to enjoyment refers to the ability to derive benefits from the object of ownership. If I own a forest, this means I should be able to enjoy spending time there, or equally, receive the monetary benefits from felling. These rights are negatively bestowed in Sweden, which means that rights are granted and

exercised where they are "not circumscribed by law and other regulations, which correlates with the structure of ownership institutions in most other European legal systems" (Granath Hansson, Ekbäck, and Paulsson 2021, 2). Sweden has a long history of impinging on this right related to natural resources (von Baumgarten 1985), which is particularly relevant to note given the topic under consideration here.

Key to emphasize is that ownership does not necessarily mean possessing the sum total of all possible rights of private ownership. This ability to disaggregate ownership therefore casts private property in more abstract and social or functional terms (Grey 1980). Scholars such as Singer (2000) in fact go so far as to argue that private ownership is *only* about social relations. What this means is that the material object, the physical thing that can be touched, does not matter, but only the relations between different people. To offer an illustrative example in a Swedish context. A person is able to own the drop height or hydraulic head of a river (the difference between the maximum and minimum elevation in a river course that corresponds to its energy-generating potential) but not necessarily the right to extract that water. This means that a person can own a specific aspect (the hydraulic head) while simultaneously not owning another (extraction rights). The dominance of this abstract conception of property today has implications.

These are usefully documented by Arnold (2002). He argues that this right-based discourse serves to alienate people from the material thing of ownership and should therefore be reformed. Private property as a bundle of rights, he argues, contributes to a diminished sense of responsibility towards the material thing itself. Someone who owns specific rights to an object, such as the right to exploit, will make use of that right. If this means felling the trees on that plot of land, this derives logically from the right itself. This exploitative potential in private ownership is identified in a Swedish context by Ekbäck (2009). Disaggregating rights increases the apparent exchangeability of private property, which may be at odds with how people perceive their objects of ownership.

3.4: Agonistic democracy

The final subchapter of the theoretical framework considers the political scientist Chantal Mouffe's theory of agonistic democracy (Mouffe 1999; 2013). This is a descriptive theory of democracy. What it purports to describe is how a healthy, plural democracy should work.

To understand Mouffe's theory, it is first essential to distinguish her use of the terms "the political" and "politics". By "the political" Mouffe (1999, 754), refers to 'the dimension of antagonism that is inherent in all human society, antagonism that can take many different forms and can emerge in diverse social relations'. Put differently, humans all have different worldviews, ways of being in the world, beliefs and identities which can and will clash when we encounter other people. "Politics" meanwhile is "the ensemble of practices, discourses and institutions that seek to establish a certain order and to organize human coexistence in conditions that are always potentially conflictual because they are affected by the dimension of 'the political'" (Mouffe 1999, 754). Politics therefore occurs in forums the reader might recognize as the political institutions of the state. The essential quality about politics is therefore that it is an attempt to resolve conflicts that ultimately are unresolvable. Rather than tiptoe away from this fact, Mouffe argues that politics should recognize this quality of unresolvable conflict that is essential to democracy and seek to mobilize it for good.

To do so, Mouffe argues, means providing forums through which to navigate these disagreements. These forums are successful when, according to Mouffe (1999, 755) a transformation of antagonistic conflict into agonistic disagreement occurs. An antagonistic conflict is a "conflict between enemies", meaning that people view each other as enemies and therefore all possibility for productive dialogue is erased. Agonistic disagreement, meanwhile, is "disagreement between adversaries", or "a legitimate enemy, an enemy with whom we have in common a shared adhesion to the ethico-political principles of democracy" (Mouffe, 1999, 755). Antagonistic conflict is dangerous because it threatens democracy whereas agonist relations are "in fact [democracy's] very condition of existence" (756). In other words, healthy politics can encompass widely disparate worldviews and help develop respect for these worldviews as well as for the institution of democracy itself.

This theory has been applied in the environmental management literature. Work completed by Fougère and Bond (2018) argues for the essential need for this theory to counteract the technocratization of environmental governance. The dominance of the kinds of scientific discourses considered earlier relegate environmental questions to the apolitical field of scientific experts. Fougère and Bond (2018) see agonistic politics, therefore, as holding potential to open space to repoliticize the field. Specifically, acknowledging antagonism and providing space for it can interrupt established environmental management discourses. This sets the stage for new ones to emerge or establish themselves which may better be able to encompass divergent worldviews. Machin (2019) argues for the urgent need for this undertaking to the development of an environmental state that is sufficiently democratic and therefore sustainable. They also see the state as holding a unique position to be able to instigate the changes necessary to provide these forums. Adapting it to the current case, this theory is therefore applied here to ask the question as to whether NAP can engender the kinds of forums these scholars envision, ones in which clashing worldviews on waterscapes and hydropower can accommodate one another. This will be a topic for the final analytical chapter.

CHAPTER 4: MATERIALS AND METHODS

Three qualitative methods were used in this case study of local stakeholders. These were semi-structured interviews, walking interviews, and public workshops. Each method complemented the other by eliciting specific or unique information (see e.g. Evans and Jones 2011), allowing the case study to be understood in multiple dimensions. A graphic representation of this is included in Figure 1 below. Piecing together these methods to understand the Alby case study as a coherent whole is in line with the essence of qualitative research as characterized by Denzin and Lincoln (2005). The following chapter describes case-study research and the case study site, followed by the semi-structured interviews, walking interviews and public workshops. It then elaborates the process of coding and critical discourse analysis. Finally, the limitations to this research are discussed as well as the positionality of the researcher through this research.

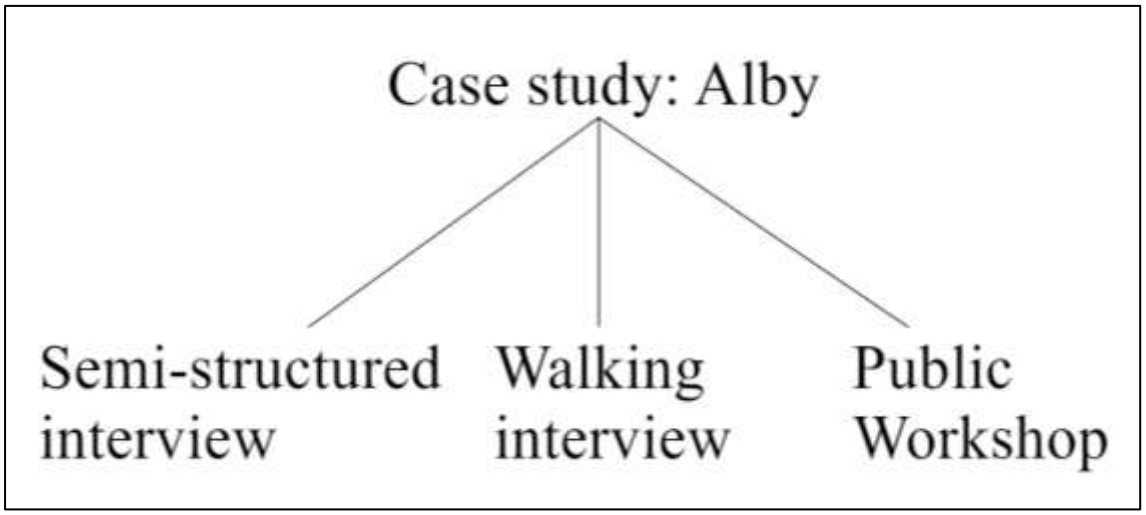

Figure 1: methods combined for Alby case study.

The people agreeing to participate in interviews for this study Participants fell into three categories: 1. Local residents in Alby, 2. Officials in the legal hydropower review process (local, regional and other government agencies), and 3. The public in Ånge municipality. Participants were, in other words, selected purposively. Although purposive selection generates its own methodological issues that tend to be unproblematized (Reybold, Lammert, and Stribling 2013), the selection procedure ensured relevant, information-rich data was generated (Tongco 2007). The first two categories of participants are relevant to the case at hand as they are directly involved in the NAP process in Alby. The category of the public was included to get a sense of the general context in the municipality at large, and eschew some of the pre-

determined conclusions that Reybold, Lammert, and Stribling (2013) attribute to purposive sampling.

4.1: Case study research

Case study research is a common method across academia. It can be used, according to Cousin (2005, 421) "to explore and depict a setting with a view to advancing understanding of it". It does not prescribe specific methods which renders it appropriate for a range of research approaches. Here, the case consists of Alby and the NAP process there, and applies the three qualitative methods listed above.

Approaching the NAP in Alby through a case-study, moreover, is suited to the thesis's theoretical framework. Fougère and Bond (2018), analyzing agonistic and antagonistic moments in a mining dispute in New Zealand, call for research to investigate the possibilities for agonistic politics in environmental governance at the scale of the local. Practically, these authors identify that this scale allows these moments to be detected, in addition to the contemporary rhetorical focus on scale of the local for participatory environmental governance. Engaging with this new scale is therefore normatively important in an attempt to identify hegemonic processes and possible moments of agonistic politics. Put differently, the in-depth exploration case study research enables, allows actual and possible agonistic moments to be identified. This is done in Chapter x of this thesis.

4.2: Description of case study site

Figure 2 displays Alby, a small, inland community in the municipality of Ånge in the state of Medelpad. It is made up of two areas: Ringdalen, a collection of residential houses and church which lies in a valley to the north of the river, and Alby proper, a collection of residential houses, industries, a kindergarten, a meeting hall for PRO and a collection of foreclosed commercial buildings up the road from the valley. As displayed in Figure 2, Alby lies about ten kilometers to the west of the municipality's capital city Ånge on the northern shore on a stretch of the river Ljungan that is fed by an outlet in the lake Holmsjön which lies about ten kilometers to the southwest of Alby. It is surrounded by a mix of deciduous and coniferous forests.

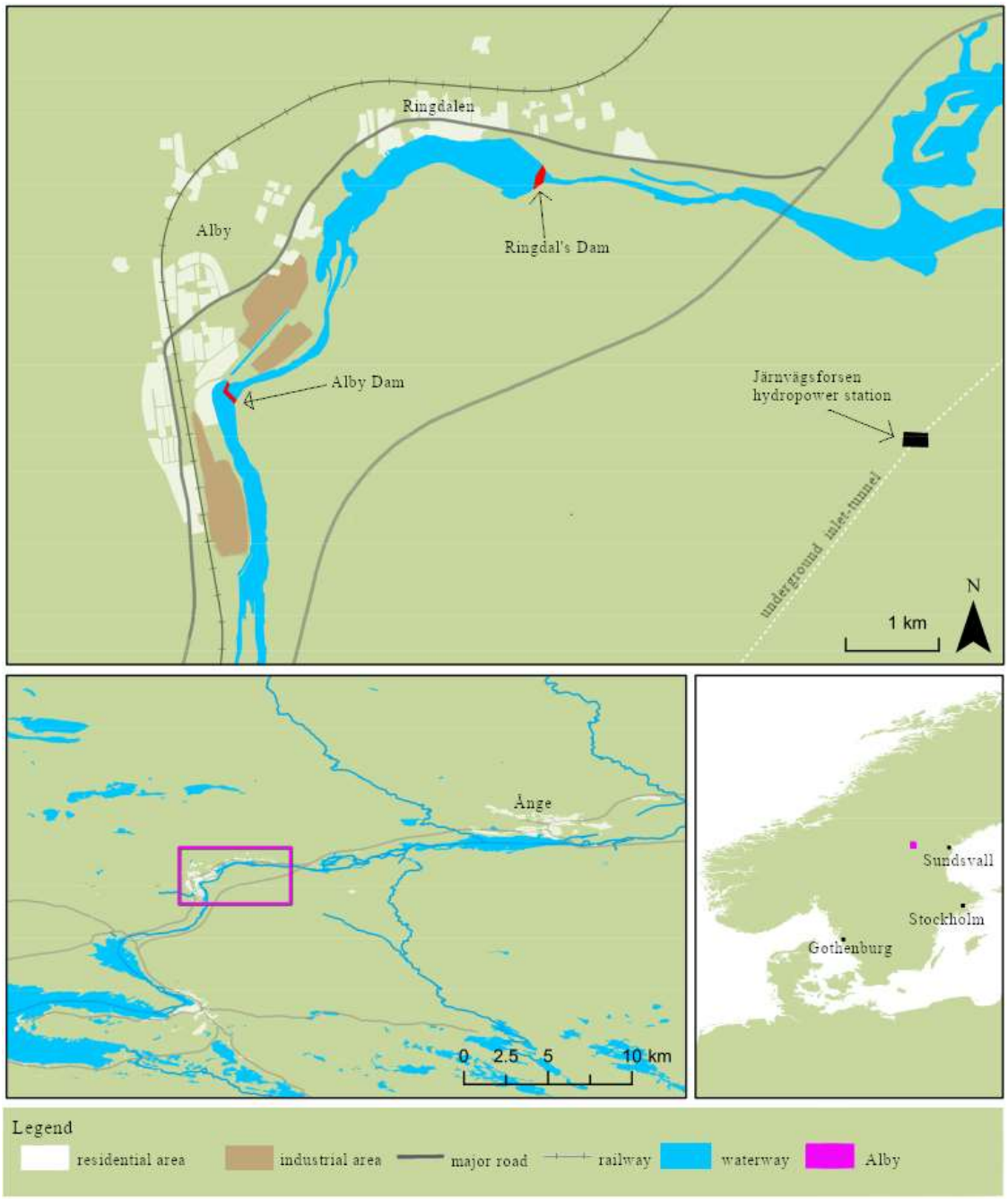

Figure 2: map of Alby. Created by author. Sources: Basemap: Natural Earth; Residential, industrial, roads, railways, waterway: OpenStreetMap; Dams, Järnvägsforsen, inlet-tunnel, big cities: digitized by author.

The following statistics are taken from SVT (2022). Alby's population in 2022 was 426, with a high proportion of elderly people. 19% hold some form of higher education, 12% have a foreign background (defined as born outside of Sweden or born in Sweden to parents who are born outside of Sweden), and the 76% are employed. The median income in the area is 23 687 SEK/month, which corresponds to a middle income in Sweden. Primary employers in Alby are the chemical industry Nouryon with a staff of around 100 and the electrical cabinet

manufacturer Elkapsling with a staff of 29. The eastern bank of Alby, displayed in Figure 2, has also been slated for the development of a new, sustainable industrial park. Central to this plan is the development of a hydrogen plant by the company RES (see RES n.d.).

There are two dams located in the community which impound the reservoir, also displayed in Figure 2. Alby Dam lies upstream of the Ringdal's Dam and regulates this upstream, flowing stretch of river. It has a regulatory capacity of 322 cubic meters per second at the set height regulation mode (Eriksson et al. 2011). The preceding authors document that it is classed as a Class 2 dam according to RIDAS (a classification system for dam safety), which means that damages from dam failure would exceed four million SEK. Ringdalsdammen, downstream Albydammen, impounds a still water reservoir of the approximate dimensions 1,2 kilometers by 150-200 meters. Its regulatory capacity is 548 cubic meters per second at set water levels. It is a Class 3 dam according to RIDAS which means that the cost of damages arising from dam failure subceeds 4 million SEK. Neither dam can handle a 1-in-100-year flood (Eriksson et al. 2011).

Järnvägsforsen, an active hydropower plant since 1976, also lies in the area. The plant, as displayed in Figure 2, sits about four kilometers to the east of Alby and diverts water from lake Holmsjön through an approximately eleven-kilometer-long subterranean tunnel. It also diverts some water from the streams Råsjöån and Göransbäcken. Its installed effect is 100 MW and its average annual production is 420 GWh (Statkraft n.d.).

4.3: Semi-structured interviews

The first elicitation method applied here was the semi-structured interview. This is an interview method that consists of a set of open-ended questions to allow the interviewee to expand on what they consider important in their answers (Kvale 1996). It ensures that the interview produces relevant materials for the researcher through the questions set by the researcher, while simultaneously providing space for the interviewee to shape the interview. Applied here, it was used to generate insight into 1. How participants view hydropower in general and in Alby specifically, 2. How participants understand their local surroundings, and 3. How participants

view the NAP. Given that the participants represented different categories, the interview schedule was adapted to each, retaining these themes and the vast majority of questions.

A saturation point (Silverman 2006) was achieved for inhabitants in Alby. This means that participants began to express similar views. Achieving saturation strengthens research because it increases the reliability of conclusions drawn from this data (Silverman 2006). Given the emphasis this research places on specifically local community understandings, this is a benefit to this work.

The interviews were conducted between the 17th of May and the 20th of June 2023. The majority were conducted on site in Ånge municipality, with some conducted by telephone or online. Table 1 below presents the list of participants, including a given pseudonym to protect their confidentiality, their participant category and more specific description thereof, as well as the location/mode of the interview (on site/by telephone/online).

Table 1: participants in semi-structured interview

Pseudonym	**Participant category**	**Specific details**	**Location of interview**
Lennart	1		On-site
Sandra	1		On-site
Bert	1		On-site
Ove	1		On-site
Gabriel	1		On-site
Madeleine	1		On-site
Viktor	1		On-site
Janina	1		On-site
Mikael	1		On-site
Linda	1		By telephone
Sylvester	1		By telephone
Bengt	2	Head of municipal government	On-site
Axel	2	Representative from Statkraft	Online
Nils	2	Representative from hydropower company	Online
Ulf	2	Representative from SwAM	Online
Frank	3	Head of a local fishing association	On-site
Teodor	3	Head of a local fishing association	On-site

4.4: Walking interviews

The second method applied was the walking interview. It is used to gain an understanding of the meaning that the landscape around Alby holds for stakeholders in the conflict. As a method, the walking interview has come into vogue in geography and the social sciences more generally (Evans and Jones 2011). It is thought to generate more meaningful and intimate insight into the meaning of landscape and the self, through grounding the interview closely to the place it is conducted and providing insight into the everyday meaning of landscape (Solnit 2001; Ingold and Vergunst 2008). However, as it is a less conventional research method, it was found to be harder to 'pitch' to participants. To fully realize this method, therefore, the researcher suggests, requires a longer engagement with a community to build personal connections to sell people on this method. Nevertheless, the four walking interviews completed here provided valuable information on the importance of specific places in Alby and the municipality that would otherwise have been overlooked.

Practically, the walking interview involved conducting an interview as the researcher and participant/s walked around some location. These locations were chosen by the participants and either accessed fully by foot, or disparate locations accessed by car to then walk around. Allowing the participants to choose the location and route tends to empower the participant to share their surroundings on their terms (Evans and Jones 2011; see also Kitson, Bucknum, and Meenar 2023). As the researcher moved through the landscape with the participants, the location itself and its features acted as interview prompts. As such, the interviews themselves were unstructured in a conventional sense (i.e. by pre-set questions). However, participants were aware that the researcher was interested in their personal connections to and experiences of Alby. This kind of thematic knowledge for walking interviews has been found to be effective (Evans and Jones 2011). The information produced elicited important insight into the everyday connections people have to Alby.

The participants and locations of the walking interviews are indicated in Table 2 below. It includes pseudonym, participant category and a more detailed description thereof, the location/s of the interview, and whether the interview was fully on foot or included car travel. Note that three interviewees participated in both semi-structured and walking interviews on separate occasions.

Table 2: participants in walking-interview

Pseudonym	Participant category	Detail	Location	Transport means	With sitting interview?
Lennart	1		Alby	By foot	No
Sandra	1		Alby	By foot	No
Janina	1		Alby	Car+foot	Yes
Mikael	1		Alby	Car+foot	Yes
Griffin	2	CAB	Borgsjöbyn	Car+foot	No
Krister	2	CAB	Borgsjöbyn	Car+foot	No
Teodor	3	Head of fishing association	Borgsjöbyn	Car+foot	Yes
Frank	3	Head of fishing association	Borgsjö	Car+foot	Yes

4.5: Public workshops

The third method applied here was the public workshop. Specifically, this thesis adapted the Future Visioning (FV) method proposed by Weisbord (1993) and Weisbord and Janoff (2000). This method involves gathering a group of stakeholders in a three-step process of collaboration around a specific issue. Stakeholders first create a timeline of important dates related to that issue, mind map the factors shaping the issue, and finally brainstorm and agree on a future they consider desirable.

This thesis adapted the FV method. The preceding authors suggest inviting specific stakeholder groups and running events with around 30 people. As the researcher did not have the resources to organize such an event, workshops were instead held as open call for the public. Furthermore, the workshops were organized by the researcher in collaboration with the region of Västernorrland's chapter of The Swedish Society for Nature Conservation (SSNC, swe: Naturskyddsföreningen). Collaboration meant coordinating the content of the workshops to ensure the workshops generated value for both researcher and SSNC. The focus desired by the SSNC was on understanding people's connections to the river, which to some degree defocused the issue-based framing Future Visioning entails. Nevertheless, the overall ethos of FV was retained, generating insight into important history, present issues, and future visions.

Workshops were run on two occasions in the "Folkets Hus", a community space in Ånge municipality's central city, Ånge. SSNC Västernorrland helped promote the event through their social media channels and plan the content of the workshops to ensure the workshops generated value for both researcher and SSNC. The regional development organization LEADER Mittlandplus and the local nature education center Naturum agreed to promote the event. In addition the researcher put up posters in the city and handed out flyers at Ånge city culture festival. The researcher took notes during the workshops.

The first workshop gathered four people and the second gathered nine people. Given the low numbers at this first workshop, FV was applied instead as questions to the room, asking participants to share important dates and stakeholders related to hydropower and how they would like their landscape to look in the future. The second workshop gathered only people from Alby, enabling the workshop to be issue focused. However, it included participants who had already been interviewed, meaning some of the information FV is meant to elicit already had been generated from them. These participants were additionally already highly active in mobilizing to keep the dams, which meant that the researcher made the judgement to use the opportunity to allow community planning to occur. This spontaneous research choice is encompassed by general qualitative research practice (Reybold, Lammert, and Stribling 2013, 700).

4.6: Critical Discourse Analysis

The analytical stage of this research consists of Critical Discourse Analysis as described by Fairclough (2013). In simple terms this means identifying an issue (or "social wrong"), and critically analyzing it with the normative aim to contribute to the improvement of said issue. It is text that is critically analyzed, here 'understood in an inclusive sense: they are not only written texts but also e.g. conversations and interviews, as well as 'multi-modal' texts (mixing language and visual images) of television and the internet' (Fairclough 2013, 12). The texts analyzed here is data gathered through the interviews, walking interviews, and public workshops.

These data were transcribed and prepared for analysis through coding. Data gathered through in-person or telephone interviews were manually transcribed by the researcher. Online interviews were recorded and automatically transcribed in Microsoft Teams. These texts were coded using a deductive coding process (Skjott Linneberg and Korsgaard 2019) structured around waterscape and private property discourses as well as agonistics as outlined in the theoretical framework presented in Chapter 3. The coded transcripts were then considered through Fairclough's (2013) method of Critical Discourse Analysis, i.e. the texts were used to detect the issue facing Alby and identify possible ways to contribute to its improvement. The results of coding were organized and considered in the substantive analysis this thesis presents. All quotations from the participants included in this thesis were translated from the original Swedish by the researcher.

4.7: Limitations

While all research is inherently incomplete (Law 2007, 600), there are some specific shortcomings to this research. These have to do with the range of participants, and the information generated from the public workshops.

As stated above, the research purposively sampled specific participants. These were local residents, officials in the NAP process, and the general public in the municipality. Although this range of participants is appropriate for the research undertaken here, the coverage of each group was uneven. Local residents and their opinions were well-canvassed and captured, while officials and the public were less so. Given the focus on the perspective of local residents, this outcome, while by no means ideal, nevertheless fits within the methodological and theoretical approach this thesis takes. However, capturing more perspectives from these latter groups would provide more reliable insights into their perspectives.

With this in mind, in the category of officials, it would have been beneficial to speak to more people filling certain roles in the NAP process. This would not have constituted a much larger sample as this specific NAP process does not gather many more people than those included here in the day to day. Further representatives from hydropower, the CAB, the municipality, and SwAM were contacted but either did not respond or declined to be interviewed. Other

relevant groups were contacted without success, including representatives from the environmental court (swe: Mark- och Miljödomstolen), the local industry Nouryon, and the industrial group Res-Group developing the new industrial site in Alby. Representatives from the Saami parliament and nearby herding communities were also contacted but these without response. Finally, in the category of the public, several civil society organizations were contacted for their perspective on the NAP. These were the river protection group Älvräddarna, the national organization of fishers Sportfiskarna, the water think-tank Stockholm International Water Institute, the regional development organization LEADER Mittland Plus, as well as several local fishing associations in the area. While some did not respond, many did and expressed interest in the research. However, ultimately, they did not agree to be interviewed. In any further research, these groups would be beneficial to speak to for a more comprehensive view on the NAP in general, and specifically in Alby.

The other shortcoming faced here was the public workshop. As stated above, the two workshops gathered many fewer people than desired. This is attributable to the place and time of the workshops. Running the workshops in Ånge was a mistake as hydropower in the municipality at large appeared uncontentious in contrast to Alby where it is considered an active issue. After completing the fieldwork, the researcher is now aware of a community space in Alby proper in which any subsequent workshops or events should be held with the community. Moreover, the first workshop was run the evening before the annual town festival, meaning that people were busy with preparations for that. On the whole therefore, it cannot be said that FV was successfully applied in this thesis. Nevertheless, the workshops generated some insights and relationships that proved useful to the research, and perhaps most importantly, established connections and lessons for future work with the issue.

4.8: Research positionality

The mistakes experienced in organizing the community workshops are mainly attributable to the researcher's outsider status, which offers a good segue to a consideration of the researcher's positionality. Positionality means becoming 'self-conscious about the specificity of [one's] own positions' in terms of identity factors such as race, gender, class, and 'the limitations of [one's] own communications' (Radcliffe 1994, 30). In practice, this commends a self-reflexive research process. (Rose 1997) argues that this process is far from simple as positionality

intercedes in complex and unpredictable ways throughout the research process. The implication for this research is a methodological humility; rather than seeking to find answers, the research presented here hopes to open some space for reinterpretation.

With those stipulations in mind, some remarks can be made on the researcher's positionality. The researcher, as mentioned above, entered the research encounter as an outsider. Perhaps more accurately, she conducted the research as an insider-outsider (O'Donnell 2020). Generalizing hat O'Donnell's discussion, what this term captures is research encounters where the researcher shares certain knowledge or experience with the community being researched, while their status as researcher simultaneously distinguishes them from those being researched. In this research, the researcher's insider status is attributed to sharing experiences of permanently living in the country. Shared experiences and knowledge, especially ones related to political developments, facilitated research encounters as participants could share their thoughts on these to an informed audience.

Nevertheless, the researcher was aware of her background as someone from southern Sweden conducting research in the north. As treated in Chapter 2.2.2, there is some degree of tension between southern and northern Sweden that relates to the north feeling exploited by the south. The researcher, moreover, unsuccessfully contacted representatives from Saami villages in the area and the Saami parliament to elicit their opinions on the legal review. Although not directly pertinent to Alby, it would be important to include these voices as Alby is located in the disenfranchised Indigenous land Sápmi. Conducting research in the north made the researcher highly aware to not contribute to this narrative of exploitation by exiting the community as soon as the data gathering stage is complete, but to retain contact with the community through sharing research insights and facilitating community organizing on the ground.

CHAPTER 5: ANALYSIS

What follows is the substantive analysis. Subchapter 5.1. considers how Alby's residents understand nature through their waterscape. It organizes these dimensions under the following thematic headings: loss, abandonment, resistance, recreation and naturalization. These understandings are different from those expressed by officials as considered in subchapter 5.2. This subchapter identifies a more uniform understanding of nature as scientific environmental management and is organized under the headings "nature" and "connectivity". The final analytical subchapter 5.3. argues for how these divergent understandings of nature can be productively incorporated to NAP to encourage the development of a more plural process.

5.1: "*The ground is shifting beneath our feet*": residents on the waterscape

This chapter considers how residents in Alby understand their waterscape. Drawing on interview material, it specifically addresses the first and second research questions: RQ1. *How are ideas of nature understood through the waterscapes in Alby?* and RQ2. *Does private property figure into these understandings, and if so, how?* As an ingress to the discussion of these questions, each subchapter opens with a "vignette", excerpts taken from interviews with residents as well as an accompanying photo. The aforementioned themes of loss, abandonment, resistance, recreation and naturalization captures an angle of the multi-dimensional meaning of nature in Alby.

The chapter employs the waterscape and private property discourses presented in Chapter 3 as analytical tools with which to detect the negotiations on the meaning of nature. As a reminder, the waterscape discourses examined here are: *waterscape as scientific object* and *waterscape as national identity.* Waterscape as scientific discourse, in general terms, is concerned with defining a nature that is external to humans and selecting the environmental management responses that logically derive thereof. Those imbricated with national discourse, meanwhile, are concerned with how the waterscape is used to understand or define certain identities. If and how ideas on private property influence these understandings in Alby are identified.

5.1.1: Loss

Figure 3: an old crayfishing hut. Photo taken by author.

> "*… three times a year crayfishing happened and then there were windbreaks like this that everyone built for their shift on both sides of the river. People would make fire and grill sausages and play the accordion and sing. Being on the river by boat you'd see as if almost at a given signal, all these fires lit in quick succession. It was almost a bit magical going up with the fires burning on both sides. And the next day the work would be at half-speed. But now it is over."* (Lennart)

It is important to open with the theme of loss. A sense of loss permeates Alby and provides a central narrative through which to understand the area. It is manifested in shuttered storefronts, empty plots of land, and stories such as the one shared by Lennart in the preceding quotation. Alby has, like many rural communities, been experiencing depopulation and disinvestment over the last three decades (Hedlund and Lundholm 2015). Between 2015 to 2020, Alby's population declined by 15%, or about 40 people in a community of less than 500 (Newsec and ÅFA 2022). Those who remain grow increasingly old (SVT 2022). Residential buildings have been demolished, something

Lennart and Sandra point out as the group drives past, gesturing to the empty plots of land where "*the apartment block used to stand", "where the first villas used to be",* and *"where a beautiful house used to stand".*

A sense of loss is mirrored in the waterscape connected to the history of crayfishing. In the opening quotation, Lennart describes this tradition. He recounts how, during these festivals, people would take their positions in the huts such as that pictured in Figure 3 above. Crayfishing cages would be submerged, bonfires lit, and instruments begin to be strummed. As the sun set, a party began which would mean the next working day "*would be at half-speed".* Bert, another resident, describes this annual event with the evocative Swedish term "*folkfest"* which translates into "people party" in English. To remind the reader, an accidental release of river crayfish by the hydropower and industrial magnate Dr Albert Petterson in Alby likely led to the establishment of the, endemic to southern Sweden, river crayfish in the river Ljungan (Gustafsson 1980; Odelström, Johansson, and Ackefors 1999). Following some years of contention wherein the local community was forbidden to fish for what became known as "the Gold", the tradition just described was established. However, in 1999, the crawfish plague decimated the river Ljungan populations (Länsstyrelsen Västernorrland and Länsstyrelsen Jämtlands län 2022). This put an end to this annual tradition. While the loss of crayfishing was due to the outbreak of a disease which Alby's residents were powerless to prevent, the demolition of the dams can be.

Although the crayfish themselves have vanished, it is a history that remains alive in Alby today. With an obvious sense of pride, Ove describes "*a newspaper clipping of me sitting nine years old with my aunt by our house who had been away for a few years and me dropping* [a crayfish] *into the water* [the reservoir]. *Nine years, nine years old. And y*es, *yes yes, people came all the way from Germany to fish".* Janina describes how "*you could really scoop* [the crayfish] *up"*. The culture around crawfishing in this area is one which people took a lot of pride in, Mikael, for example, confirming it as Alby's "*time of greatness".* It connected Alby to the world ("*people would come all the way from Germany*") and provided the community with a sense of richness ("*you could scoop them up*"). The import of this history should be understood in the context of the disinvestment that Alby has been experiencing. Memories of the crayfishing connect to ideas a time of plenty in Alby. This experience of the loss of crayfish appears to be

expressive of feelings of solastalgia (Albrecht et al. 2007). The term describes the feelings of homesickness and loss that are provoked by changes to people's home environments. Losing crayfish appear to provoke these feelings. Moreover, the disappearance of crayfish and attendant traditions arguably stands as a central community memory (Olsson, Folke, and Berkes 2004) which is attested to by the fact that every resident interviewed, even if never having participated themselves, mention the tradition and bemoan its loss. Community memories, such as this experience of loss, Olsson, Folke, and Berkes (2004) argue, shape the ways in which local communities respond to further change. The proposal to remove the dams appear to connect to the loss of this tradition and connect dam removal with an expectation of a further loss of local nature.

In fact, the presence of the Alby Dam plays a role in the hopes residents have of the crayfish to reestablish themselves in the river. This is manifest in the fishing huts that still line the corresponding banks of the current river above the Alby Dam and the rights that ownership of this grant people. One such hut is depicted in the picture with which this part opened (Figure 3). Sandra, while walking down a road through an overgrown forest above the Alby Dam, points out the plot of land where her family's hut used to stand: "*maybe one day the crayfish will return"*, she reflects. What remains, among the dense undergrowth, are some decaying boards covered in moss and a piece of sheet metal from the old roof of the hut. Maintaining the current waterscape means retaining the fishing rights that she currently possesses. Lowering the water level would decrease the area of these fishing rights as the channel would narrow. For now, though, these fishing waters remain the containers onto which people project their feelings of loss and hope for the future. They therefore appear as a manifestation of Caitlin DeSilvey's (2012) anticipatory history. This term captures how past, present and future collide in our experiences of a place. In Alby, the ecological loss of crayfish, the potential for their return, and the perceived possibility of this not being possible if the dams were to be removed come together.

These hopes appear grounded in fact. In recent years, residents have, while fishing, accidentally caught crayfish again which suggests to the residents that the current waterscape may be supporting their resurgence. Lennart, two or three years ago, accidentally caught a crayfish in

the waters above the Alby dam. He was able to release the crawfish, unharmed, back into the water. This crayfish is pictured in Figure 4 below. According to Gabriel, "*the neighbor who lives straight across here, they actually found a crayfish higher up*", something also echoed by Viktor. Similarly, Sylvester documents that "*people have found crayfish in the area again*". Given the protected status of the noble crayfish in Sweden (HaV 2016), these reappearances of crayfish suggest to some residents that it may be possible to retain their dams if they demonstrate to those in charge of the legal review process that crayfish are reappearing in the area.

Figure 4: noble crayfish caught above the Alby Dam. Photo taken by Jan Filipsson, used with permission.

5.1.2: Abandonment

Figure 5: Torsviken swimming area in Alby. Photo taken by author.

> *"Then the bathing area is no longer open as a bathing area called Torsviken, below the church hill. I've gone to swimming school there, my children have gone to swimming school there, it was in, yes, the time when the water was clean enough, I know that it has been, uhh… They took samples there for, well, what could it have been, around ten years ago or something like that, and it showed too high values of something that was not good. Eh... That it was like unsuitable bathing water so the municipality couldn't have it as an official bathing place, that they had taken water samples and it was sewage or something like that."* (Madeleine)

Residents feel abandoned by the institutions of the state in general. This is mirrored in their waterscape where they perceive that because they are rural, their nature is undervalued. Linda describes: "*it's been sad to see the school disappear— all the children gone from Alby*". Bert observes that: "*flower boxes are in Ånge, none here. Functioning school and healthcare are the most important, and we don't have that either."* The school, excluding the daycare, in Alby was closed in 2019 following a contested decision (Engström 2023). Linda remembers that *"we did not want it to close,*

and some tried to stop it." Ultimately, the school was closed, and pupils moved into Ånge. Given the aging population in the area (SVT 2022), residents view the centralization of the school to Ånge as particularly harmful for Alby. The lack of a school decreases the attractiveness for young families to move to the area. This is something Viktor, a father of two, comments on how all his son's friends live inside Ånge. Mikael, moreover, reflecting on the industrial site being established in the area, describes that without a school, "*Alby won't be re-enlivened. Or then just Ånge becomes bigger, where there already is day care and school, that's where the families with children will go."*

Similarly, the supermarket and the gas station have closed. Janina says that "*it's sad, the development of shops and convenience stores disappearing. Gas station, you miss that. It's a downward spiral, but that's how it is in all small villages*". She connects the "*downward spiral*" in Alby to the disinvestment that small or rural communities have been experiencing over the past three decades in Sweden (Hedlund and Lundholm 2015). This indicates something important: one gets a sense of the powerlessness the residents feel against these wider macro trends. They see the availability of services as essential to do so.

Residents identify that specifically the municipality has a responsibility to ensure that Alby remains a viable place to live. Ove says:

> *"It depends on how many people live in the locality, how much it is worth doing stuff there, that's how it is. But I still think it is wrong that there are communities that have a place name, then the municipality should undoubtedly take care of it, no question about it*."

Ove identifies that population matters for government provisioning of services. However, he sees the municipality has a responsibility to maintain the survival of places "*that have a place name*". Gabriel is of a similar mind:

> "*The municipality also has a great responsibility for the entire municipality. There are still quite a lot of people living in Alby depending on how widely you count, so then you can think that they can go in and pay maintenance to preserve our nature and such. There are many other things they put money to that they could write off."*

Gabriel also associates how the municipality chooses to purport itself towards Alby as connected to the number of people living there. A resident that feels particularly let down by his municipality is Viktor. He sees that outside Ånge, "[t]*he municipality does not want there to be anything more. They have dismantled most things, they want everyone to live inside Ånge of course, and not on the outskirts."* Although perhaps not completely true, the sentiment he expresses is telling. Viktor feels overlooked, forgotten, and left behind. "*It's probably all the villages west of Ånge really. They do not exist for them, those in Ånge"* (Viktor). Although it should be noted that multiple residents (Lennart, Sylvester, Bert) mention that they are happy with the work the current municipal head is doing, one gets an overall sense of hopelessness with how governance purports itself towards Alby and communities similar to theirs.

This sense of being forgotten is important in how residents understand their nature. Given the lack of services in Alby, residents see that the only pull factor of the community to be their current waterscape. Gabriel is:

> "*very worried about the risk of the lake disappearing. There are probably a lot of people here who would move, I think. It would destroy an incredible amount I think, it could probably even kill the whole of Alby. Partly... Partly like how the new environment would be—I am thinking of smells and everything possible eh... I think it will be unsustainable to live here then. Eh… The value of like the house and stuff would disappear, it would be much harder to see how this is a paradise and want to move and live here I think."*

Gabriel sees that the reservoir, or "*lake"* as he refers to it, makes the area an attractive place to live. The vision of the future environment Gabriel perceives links back to occurrence in 1992 when the reservoir drained due to a storm with which this thesis opened. Linda described that event "*The smell was so strong, and you could see old things sticking up from the mud where there used to be water, some people went down to examine—I don't remember if I did—and collected some fish".* Those same smells, that same thin trickle of water, are recalled as what the future would hold for Alby in Gabriel's mind. The suggested dam removal, therefore, suggests an environmental governance that fails to take into account the survival of Alby itself.

Preserving the current waterscape is, moreover, directly connected to the housing prices in the area. Residents make a direct link with what they identify as nature with the value of their private property. For Madeleine, although she does not have a beach-front property, *"the sparkle of the water weighs up for that, you see it from here, so I can pretend I have a beachfront property".* Lennart says "*it would probably be like a small trickle out there. And then another problem is that we would be stuck here because who would want to buy our house? There is industry on one side, and it is this beautiful stretch of river that makes this an attractive spot*". Both these speakers allude to the visual quality of their current waterscape. They identify the "*sparkle of the water*" and "*the beautiful stretch of river*". This aesthetic judgement these comments suggest connect to discourses of nature as something to preserve which links with a long tradition in traditional conservation practice (Hambler 2004). Janina states: "*I think that the house prices would sink a good amount if the water and that disappears from here, the nature. There won't be an interest in moving here, unfortunately. Then Alby will die off*". As Sylvester states: "*first came the reservoirs, then came the community".* Residents identify their current waterscape as providing Alby with a nature that is desirable and connect this directly with the value of their homes. This throws modern discourse on private property which tends to portray private property in purely social terms into question (Arnold 2002). Residents perceive that their homes and the survival of Alby are intimately connected to their material surroundings.

The lack of maintenance of the local swimming area Torsviken, therefore, becomes an important space onto which residents project feelings of being forgotten. This swimming area is displayed in Figure 5 and is located by the main road in Alby, beneath the church. As displayed, it consists of a grassy bank next to a forest and includes a picnic table and changing booths. It was maintained by the municipality until 2017 when persistently high levels of effluent in the water from an unknown source made the municipal planning council made the decision to close down the beach to safeguard public health (Engström 2017). Although Sylvester notes that "*the municipality has been working to locate the source of the effluent and clean it up*", many of the interviewed view this as an example of the municipality overlooking the value of Alby.

Residents desire Torsviken to be opened again. It is a component of the Alby waterscape which residents value highly. The love for the spot is visible, perhaps

unsubtly, in Figure 5. The heart cut-out nailed to the birch tree reads “Lek Skratt Glädje” which translates to “Play Laughter Joy” in English. Janina observes that it is “*sad that the municipality does not do anything about the bathing area, I think, when we have such lovely water. They are investing in Ånge. Why don't they help in small villages? It's a shame*.” Janina suggests a parochial view on the part of the municipality which fails to see the value that the surrounding villages can offer. She considers the area to possess “*lovely water*” which could add value to the area at large. Linda, similarly, is of the belief that the municipality has let the beach “*run out into the sand, nobody really deals with it*”. Moreover, as one community workshop participant tells the room “*I’ve been swimming there for 30 years and I’ve yet to grow scales!”.* This is important as Torsviken becomes a space onto which residents project feelings of being forgotten by their municipality and a more amorphous idea of the “state”. Although one cannot fault the municipality for closing the swimming spot to safeguard public health, Torsviken becomes yet another manifestation of disinvestment. Not only has Alby been abandoned, so has their nature.

5.1.3: Resistance

Figure 6: Ringdal Dam with bathing area. Photo taken by author.

> "*There is like a beach there and everyone swims*." (Mikael)
>
> "*We are not actually allowed to be there, but we are there*." (Janina)
>
> "*It is not something super dangerous, but that is the way it is*.' (Mikael)
>
> "*You go over the Ringdal Dam and it is there we swim*." (Janina)

Up to this point, residents in Alby may appear resigned to their fate, but such is not case: the community organizes itself in certain acts of resistance. The waterscape is an important vehicle through which resistance is performed to protect a recreational understanding of nature. This is through the maintenance of an unofficial bathing area.

This unofficial beach is located next to the Ringdal Dam. Although the grassy outcropping of the beach is not visible in Figure 6 above, it lies to the left of the depicted sign. The sign reads: "Weak Ice" with the lower addendum specifying: "Warning! Due to high waterflows and rapid

variations in water levels, there are associated dangers with spending time on ice and in waterways close to the power station's floodgates and inlets. Fishing forbidden" (translated by author). The accompanying graphics ban swimming, fishing and boating. Nevertheless, the community swims in the little bay right next to the dam.

The swimming area is maintained by the local chapter of PRO. While walking past this beach, Bert, a member of PRO, describes the work that this entails: "*we clear some trees and keep the grass cut. Many people come here to swim. It's our beach"*. This maintenance is obvious. The grass is short and well-kept, the bank clear from vegetation, and there is a little sitting area. Ove, with the group, says "*even people from Ånge come to use it"*. Against the centralization and depopulation and disinvestment as a result of the centralization processes (Hedlund and Lundholm 2015), this beach can be thought of as a resistance against these trends. It attracts people from the municipality's central town Ånge and is maintained by the residents rather than the municipality. These actions can be said to fulfil discourses on northern identity as entrepreneurial (Nilsson and Lundgren 2015). More importantly, though, the beach appears as a location onto which to project resistance towards an environmental governance which approaches nature a certain way. Residents in Alby, through their waterscape, enact the recreational value with which they imbue their waterscape.

As Torsviken no longer is a viable swimming spot, residents have created their own. Moreover, the Ringdal Dam, as the private property of the hydropower Statkraft, is a useful object towards which the community is able to enact this resistance. The presence of the dam forbids people to swim here, yet they do. Given the legacy of the conflict surrounding the dams in Alby (Jørgensen and Renöfält 2013), the beach appears as a way to resist the behaviors that private property seeks to impose in this space.

5.1.4: Recreation

Figure 7: view of the rapids below the Alby Dam from exercise loop. Photo taken by author.

> "*Then it's very nice to go for a walk, one has always done that too. There is a circular loop of about five kilometers, you go over the dam, Ringdal's Dam, go over to the other side, and cross again over at the Alby Dam. So, it has also been popular and very nice, it is very beautiful on the south side of Ljungan, nice forest, nature, bluebells, mushrooms, nice by the streams, behind what should we say Elkapsling. It's been very close to, that, close to nature, so, as I said, this little lake then as we call it, it's not big but it's kind of just right, it's given, ah, certain quality of life, so to speak. So, of course, it means a lot both, both, to see it, to experience it visually, and to be able to go boating, or canoeing. And it's exciting, if you paddle up, there's a bit more flowing water, so it's also a bit of fun that way."* (Madeleine)

The recreational value the maintenance of an unofficial beach represents is reflected in a wider recreational understanding of their waterscape. Recreational activities such as these are identified by Dahl (1998) as an important everyday enactment of Swedish identity as being close to nature. Such also appears to be the case in Alby. As captured in the quotation above, Madeleine likes to take walks and canoe. Other popular activities that residents describe include fishing, swimming and generally spending time outdoors. For example, Viktor describes how he "*grew up on the water"* and Sylvester describes the joy of "*swimming in the*

lake at our doorstep". Recreational reasons for wishing to retain the dams corroborates findings by Jørgensen and Renöfält (2013). At the time of proposed dam removal in 2010, residents cited recreation as a reason to keep the dams.

Other residents who were born and/or raised in Alby share memories from their childhood. Janina describes how she as a child would '*bike across the concrete berm in the river to float downstream on blow up mattresses*.' Lennart, meanwhile, reminisces over the '*rubber-ducky race*' that the local football club used to run annually. Residents would pay to have their name written on a rubber duck, all the ducks then be floated downstream, with the winner being whoever's duck reached the Alby dam first. Even the industries have expressed themselves here. The chemical plant has an outlet for cooling water above the Alby dam. One of these industries is displayed in Figure 7 above. Viktor says that: "*where they release the cooling water, that's where you used to swim when you were little. The water is very warm there. It is like small jacuzzi in the middle. You're not allowed to swim there, but you did anyway*". Walking, swimming, fishing, racing ducks—these are all examples of the type of recreational activities for which residents currently utilize or used to utilize their waterscape.

The current waterscape enables a myriad of recreational activities. As Madeleine states in the opening vignette, the waterscape enables both fishing on the lake as well as paddling on the rapids below the Alby Dam. The existence of the lake enabled her to take her children fishing for, what she evocatively calls, "*crocodile pikes".* Ove similarly describes the value of the lake as it "*is easy to take the grandkids out on the lake to fish, it's safe and easy, and they get to catch pike and perch"*. This is confirmed by Janina who shares that "*when the kids come to visit, they want to go fish and swim and all the things*". In the context of ageing population and depopulation that Alby is experiencing, being able to offer these types of activities is highly valued by residents as it is a way to entice family to visit and spend time with them in a way that they always have. What might appear as simply swimming or fishing therefore takes on additional importance for the community to connect with their family through the recreational activities that the current waterscape can offer.

Gearey (2022) identifies these kinds of recreational activities in waterscapes as important forms of place-making. Place-making refers to how a certain space is imbued with meaning such as identity, feelings of home and community. These types of activities literally mark the landscape (Gearey 2022) Paths are kept open by residents from repeated use, the unofficial beach discussed in the previous part similarly maintained, and Lennart shares that he "*still finds rubber-ducks every now and then*". In Sweden, Dahl (1998) argues that these forms of recreation allow Swedes to enact a component of Swedish identity. The activities associated with the Right to Roam, the customary law which grants citizens usufruct rights to the landscape, allow people to enact care for the natural world. In Alby, Jørgensen and Renöfält (2013, 23) include a quote from a resident who explicitly states that retaining the dams are a question of customary law. The waterscape in Alby therefore appears as a place which people expect to be able to access a certain type of nature.

This is reflected in the inferences residents make when discussing these recreational activities. As Madeleine's states in the opening quotation: "[i]*t's been very close to, that, close to nature".* Similarly, Gabriel describes his upbringing as "*marked by nature*" which for him entailed "*building some cardboard car or fort in the woods, one is closer to nature*". Other residents, such as Viktor, the waterscape is an easy way to spend time with his family as "*I grew up on the lake as a child, and the boy* [his son] *is the same."* Although none of the residents contrast their experiences of being close to nature with a specific group, some informed suggestions can be made. Presumably this relative framing of being closer to nature is in comparison to urban dwellers, or perhaps also to the more urbanized southern Sweden? This is in line with findings of national discursive framings of northerners being closer to nature (Nilsson and Lundgren 2015). The waterscape in Alby becomes valued as nature for recreation.

5.1.5: Naturalization

Figure 8: the river Ljungan above the Alby Dam. Photo taken by author.

> "*the conditions here are something that nature has adapted to, and down here grow trees that depend on the water. If you remove the water, you can only imagine what will happen here and on the other side* [of the river] *the same. Of course, it would be very tragic, but it would happen very slowly, this disappearance that you would see.*" (Lennart)

The discussion up to this point has skirted around the question of what is natural without addressing it directly. What can be said is this: residents in Alby consider their waterscape to be natural. This quality of naturalness is in the main attributed to how long the dams have been present in the area. Gabriel states: "[t]*he dams have existed for so long that they have become natural, if you understand what I mean".* Lennart similarly reflects: "*they come and say we need to change this and this, but it has been here so long, nature has adapted to these conditions".* Both speakers in these statements appear to understand that the construction of the dams at the turn of the 20th century constituted a major intervention: the river Ljungan was different prior to damming. However, given their century-long existence, they consider the present waterscape to be natural. Both speak of a process of becoming natural in their expressions "*become natural*" and "*been here so long, nature has adapted*".

The content of this naturalness is attributed to the experienced presence of rich flora and fauna in and around the river and reservoir. Residents share stories of their sightings of osprey and sparrowhawk, roebucks and bears, blue anemones and blueberries. The different types of water, moreover, add to this diversity. Bert explains: "*below the* [the Ringdal dam] *I have heard you can catch trout and grayling, and in the lake there's pike and perch".* Residents perceive that the presence of the dams provides distinct habitats for these different species of fish. As mentioned in the preceding subchapter, the presence of these fish is also valued for the recreational opportunities they offer people. This suggests an understanding of nature that is cousin with those expressed in scientific discourse. What is natural is identified by what residents identify as evidence of biodiversity in the presence and number of different animals and plants in the area.

The question is whether this biodiversity is worth preserving. Perhaps the presence of these new habitats may be considered not evidence of a good ecosystem, but a malfunctional one. Grayling is considered a key species for the nature preservation scheme, which none of the other three fish are. Preservation of the biodiversity the local community identifies may t not be seen as justifiable by environmental practitioners. However, the fact that these plants and animals are identified as valuable biodiversity by the community reopens the definitional aspect of biodiversity. It exemplifies the discursive nature of biodiversity captured in Sarkar's (2005, 8) definition: "biodiversity [is] whatever we think is valuable about a biological system". The local community considers what they perceive as a biodiverse waterscape to be valuable and natural. This should demonstrate to environmental governance practitioners the danger of relying upon a certain definition of nature. How local communities understand and value their nature may be different and justifying environmental governance measures as "restoring" nature may therefore not be considered legitimate by the local community.

The disappearance of what residents perceive of as a biodiverse area therefore would be experienced as a loss. In the quotation that opened this part, Lennart points to the bank of the river displayed in Figure 8 and describes the: "*trees that depend on the water. If you remove*

the water, you can only imagine what will happen here and on the other side [of the river] *the same. Of course, it would be very tragic, but it would happen very slowly".* NAP therefore suggests initiating a new form of Anthroposcenic landscapes (Matless 2018). This term denotes the loss of landscapes that is resulting from human induced climate change and environmental degradation. People are used to these landscapes and therefore tend to experience these as a loss of identity. The attempt to renaturalize the river systems in NAP would arguably be experienced in the same way by the community of Alby as it would entail the loss of a waterscape to which the community is has grown accustomed.

Residents are used to the current waterscape. Viktor explains that hydropower has "*been around since I grew up, so you're used to it. I don't know, I don't think it's been anything new since I grew up anyway. I'm just used to them being there. For me, it's part of the landscape*". The local landscape includes hydropower for Viktor, and he attributes this phenomenon to the fact that no new hydropower has been constructed since he can remember. The dimension of habit Viktor expresses in his statement "*I'm used to them being there"*, also foregrounds the experiential, personal element in attributing the label natural. It is perhaps telling that a waterscape molded by hydropower is able to deliver these experiences of naturalness. This supports work by Zimmer (2021) and Ekerlid (2012) that considers how the landscapes produced by waterpower have been naturalized as an element of national identity in Sweden. In fact, Gabriel does not notice the dam at all. This is echoed by Lennart, Sylvester, and Linda. This suggests the strength to which a certain discourse on nature enables people to look past the existence of hydropower constructions.

This is suggested by residents' desire to preserve surroundings that they consider beautiful. Madeleine explicitly states that she values *"experiencing* [the water] *visually"*. She describes "*this little lake then as we call it, it's not big but it's kind of just right".* In these statements, Madeleine indicates that the artifice of the waterscape: "*lake as we call it*". Alby's residents construe the reservoir as a lake, which, again, suggests the strength of certain ideas of nature. It is more desirable to conceive of one's surroundings using terms that describe nature rather than those technical terms that are associated with hydropower. It also provides some confirmation of Ekerlid's (2012) argument that hydropower landscapes have been naturalized

in Sweden. Here, it is expressed by using a vocabulary that is associated with the ecological sphere.

Similarly, Bert wishes to preserve the natural beauty he perceives around him. Now in his 60s, Bert moved back to the area about 20 years ago after living in the Swedish capital Stockholm and "*thought he arrived in a paradise"*. He describes the calm that the forest and the lake grant him: "*you can sit and look out over this sparkling lake and see all sorts of animals*". Pointing to a tree as the group walks past, Bert gives an example "*just the other day there was a sparrowhawk in that tree right there, that's not something you see in the city*". For him, he contrasts the experiences one has as a resident in the rural Alby with that one can access in the city. Framing his surroundings in this way indicates a discourse on northern Sweden that essentializes the nature there (Nilsson and Lundgren 2015). The desire to preserve this waterscape for its aesthetic value connects to a western conservation ethic where this aesthetic dimension is central (Hambler 2004). Statements made by residents thus indicate a potential mismatch between scientific discourses on waterscapes and nature that are attempting to unseat these aesthetic dimensions.

Perhaps the preservation of a waterscape for the sake of beauty appears unjustified when balanced with the ecological benefits that might be realized through dam removal. To some degree, this is beside the point: it is rather the perceived loss that residents attribute to dam removal that are relevant. In this context, it is important to mention the stories of Sandra and Lennart. For them, the sensory experience of the water takes an existential cast. Without divulging too many details of these highly personal stories, both Sandra and Lennart moved to Alby following very difficult health episodes. As the group stands in their riverside yard, Sandra shares that: "*waking up every day to the sound and view of this water, it is the reason I am here today*". The sensory experiences that water offers are known to be positive for people's psychological well-being (Völker and Kistemann 2011). The ability to step outside their front door and basically step into the water, Sandra ponders, "*I don't know what I would do without it".* Lennart is the same: he cannot conceive of a "*life without this flowing water, look they would want to change it, it would probably be like a small trickle out there*". For Lennart and

Sandra, the fear of losing their current waterscape is manifested as fears for their own well-being. This exemplifies the most extreme personal stake perceived by residents.

In sum therefore, Alby's residents express multiple understandings of nature through their waterscape. They are at once expressive of scientific and nationalist identity discourses. Residents mobilize scientific discourses on nature to apprehend their current waterscape as biodiverse. The length of time that the dams have been present and sightings of various animals, as well as the distinct environments for fish that the two dams support make residents conclude that this must be natural. The waterscape is also expressive of nationalist identity that has naturalized the waterscapes created by hydropower as demonstrated by Ekerlid (2012) and as a place for recreation as made possible through the Right to Roam.

Most importantly, though, is how the waterscape becomes entangled with wider fears that Alby's residents have for the future of Alby. Alby has been experiencing depopulation, a population that grows increasingly old, and disinvestment. Against these trends, residents perceive what they have to offer to attract people to the community is their nature. This is nature expressed as a beautiful lake and river, as recreational opportunities, and as experienced biodiversity. Without these, residents fear that Alby will not survive and that they will be stranded with houses that have lost their economic value. Retaining the dams becomes an existential question for the residents. This connects private property intimately with the material surroundings in Alby, in contrast to modern discourse on private property as about social relations (Arnold 2002). Sandra's comment captures the point at which Alby finds itself now: "*the ground is shifting beneath our feet"*. Alby finds itself at a point of transition, caught between the possibilities of dam removal, deurbanization and industrial development.

5.2: "*Connectivity is the big word":* Official voices on the waterscape

Those formally involved in the NAP process express a more uniform view on nature. These are generally expressive of scientific discourses on waterscapes. This chapter unpacks the perspectives expressed by representatives from hydropower and government agencies. In so doing, it addresses the research question: RQ1: *How are ideas of nature understood through the waterscapes in Alby?* and RQ2: *Does private property figure into these understandings, and if so, how?* from the perspective of this group. Specifically, it examines how these stakeholders define nature, and unpacks how officials consider the pursuit of river system connectivity in the NAP.

Again, therefore, it applies the theoretical framework elaborated in Chapter 3. It sets out to detect the waterscape discourses: *waterscape as scientific object,* and *waterscape as national identity*, and if and how private property intercedes in these understandings.

5.2.1: Nature

Officials express scientific views of the waterscape in Alby and the issues they perceive there. Nature is defined as recreating lost environments. Axel, in charge of the legal review process for Statkraft, states that "*when we build hydropower, we impound stretches of flowing water and replace that with something that looks like a lake".* Nils, another representative from the hydropower industry, states: "*in approximate numbers maybe 50-60 percent of our waters have been highly modified, they are physically modified in one or another way, so we of course cannot return to what we once had […] but we have to try to recreate parts of this"*. What Nils is referring when he mentions waters being highly modified is the classification system that Swedish water governance applies. This system of classification is established in the Water Management Regulation (*Vattenförvaltningsförordning (2004:660)* 2004), building on the WFD. Ulf, a representative for SwAM, similarly states: "*naturally flowing water has become a product in short supply in Sweden and in Europe, and we can ask why? And can we rectify this?*" Krister from CAB Västernorrland also reflects over "*how hydropower has made our stream environments disappear*". The starting point for these stakeholders is therefore that there once was a natural system that was altered by hydropower, and to which our efforts should be aimed at reinstating. This is expressive of wider shifts in the governance around hydropower

in Sweden (Lindström and Ruud 2017; Köhler and Ruud 2019). Governance has shifted towards the restoration of river systems balanced against the provision of energy.

Officials, however, disagree on how to best accomplish these improvements. This is expressed in the disagreements in the application of HARO and the Environmental Quality Norms. HARO is a measure of how large an impact that remedial environmental measures may have on the level of energy production. In the river Ljungan, the limit for the amount of electricity production that may be lost is set at 0,5% (Länsstyrelsen Västernorrland and Länsstyrelsen Jämtlands län 2022). Environmental Quality Norms, meanwhile, are set in the fourth chapter of the Water Management Regulation (*Vattenförvaltningsförordning (2004:660)* 2004). These are requirements on water quality as set in the WFD and relate to biological, hydromorphological and physicochemical statuses. Krister is of the opinion that HARO enables a weak commitment to the restoration of the Swedish waterways. In his view, HARO was created as a measure for quick communication by politicians around environmental governance. Because it does not include a list of measures or sub indicators, Krister believes that achieving the measure can disguise a lack of meaningful environmental action: "*it is in those waters that are the most heavily modified that we do the least"*. In the context of a hydropower governance legacy which favors exploitation (Vedung and Brandel 2001), he sees the danger of HARO as being coopted by this legacy. The need to retain electricity production while restoring nature suggests a development of nationalist discourses on waterscapes as both the place to retain nature as well as to mobilize it for the good of Sweden.

Axel from Statkraft does not share this view but sees other issues with the measure. He says: "*if we get bigger production losses than the HARO measure, then we get a significant negative effect on the electricity system and that is supposed to be considered when setting these norms*." In other words, HARO is supposed to guide the setting of these more specific norms. In setting these norms, he contends "*SwAM has not done this work when they set these norms, they haven't' considered the impacts on the electricity system, because they… They propose measures that go further than the HARO measure*." From the perspective of hydropower companies, therefore, the measures that these norms recommend overemphasize environmental aspects at the cost of electricity production. Although it should be emphasized that these two differing positions are made by individual representatives and may therefore not be reflective

of the whole organization, they appear typical of each organization's general environmental stances. CABs tend to favor far-reaching conservation measures (Anshelm and Haikola 2018; Österlin, Schlyter, and Stjernquist 2020), while hydropower companies have an evolving legacy that favors electricity production (Lindström and Ruud 2017). Herein a provisional indication of the disagreements that will be the topic of the next subchapter.

These speakers also discuss the effect of the types of remedial measures proposed in Alby. Nils states: "*the river Ljungan will become pretty beautiful* [..] *and hopefully you get positive feedback afterwards*". He describes this river as once being "*a fantastic body of water with both a lot of grayling, salmon and freshwater pearl mussels."* Axel states: "*it's not like we are paving over anything and then making it a dead environment, instead it will be a living environment, and for some maybe even more living than today*." These statements appear expressive of the vision expressed in the National Objective "Flourishing Lakes and Streams" (Naturvårdsverket n.d.). Officials apprehend these measures as recreating lost biodiversity and consider this beautiful.

Herein officials do not view the waterscape in Alby as natural. When asked directly about how he views the argument that the waterscape in Alby has become natural, Axel's reply is this:

> "*So yes, yes, it is certainly the case that nature somehow adapts to the conditions that apply and here the relationship has been yes, if we should call it stable, but still… Yes, for 100 years or so, nature has arranged itself according to existing conditions, but a shortcoming of Ljungan as a system is the lack of stream water environments. That's what's missing there. There is a lot of what we call flat water, i.e. lakes and reservoirs and it is hydropower that has brought about changes to the environment… so while I understand that view, I do not share it.*"

Similarly, Nils expresses the opinion that while he can grasp their perspective, he sees the need to start recreating stream environments "*and then I think it is best that we start by these old dams that we hardly use for regulation anymore and try to recreate these stream environments and get back some biodiversity.*"

In fact, it appears that these representatives view the intervention of private property as linked with activities that exacerbate the environmental impacts of impoundment. Griffin and Krister from CAB Västernorrland describe the issue with the owners of summer houses along impounded rivers. When the water level is perceived as too low by this group, sometimes people raise the level of the reservoir by putting boards across the top of the dam to retain more water in the reservoir. Krister says that "*people use these areas like their backyards*." To him, therefore, understanding nature as for recreation can be directly harmful on the type of nature that he wishes to preserve. Nils from hydropower reports similar phenomena where homeowners attempt to stop environmental measures in rivers for fear of not being able to access their summer house by boat or *"how it will go with* [their] *dock and worries like that".* This suggests a link between private property and perceived environmentally harmful behavior, which might serve to delegitimize local community understandings of nature.

5.2.2: Connectivity

It is worth spending some time examining the neologism in scientific views on nature: connectivity. This is the idea that natural systems should be connected to allow species and materials to move in within them (Taylor et al. 1993) The importance that officials attribute to the restoration of connectivity in river systems testifies to the dominance of this discourse, corroborating findings by Green and Sandbrook (2021). To Ulf, connectivity means "*taking a step back to consider the whole picture … because we can see like the importance for the environment that is precisely the ability to move in the watercourse"*. Krister also reflects that restoring connectivity allows fish to migrate up and down the course of the river which "*pays dividends for the species and stability of the river system*". Axel says: "*connectivity is the main requirement and the main measurement to achieve it dam removal, so that is a starting point, but there is also a long list of other measures*". Axel's statement echoes the recommendations set in the scientific literature on dam removal (Baxter 1977; Hart et al. 2002). Nils similarly states: "*no, but it must be connectivity to reach the ecological status*". It is apparent in interview that these officials consider it crucial to restore connectivity in the Swedish rivers.

Connectivity is here connected to fish. Axel states: "*now the focus is on fish living in flowing water today when we are going to, I mean, undertake environmental measures for*

hydropower". Ulf, similarly, states: "*it is good that we take remedial measures to restore connectivity and sometimes that means removing a dam and sometimes that means fish bypasses or some other measure to help fish pass between areas".* Griffin echoes the importance of allowing fish to move in river systems, demonstrating the ease in which this can be accomplished through simple adaptations to existing dam structures. While examining a small dam inside a protected area, Raven shows how an old fish ladder with too shallow a jumping off spot can be adapted for fish. Linking connectivity to fish, specifically, is considered a crucial reason to restore river system connectivity in the NAP (Miljödepartementet 2020).

Although officials consider connectivity a positive goal, how it is currently pursued in the NAP is problematized by Nils. His comment is worth quoting at length:

> *"There should be connectivity and free migration passages in rivers, but how can we not think strategically? Instead we do not see where we retain biodiversity and channel our efforts there instead of as an act of principle, build fishways high up in the systems where there might only be swimming perch and pike and pike and roach, shouldn't we put our efforts where we still have salmon and eel and grayling still. But we aren't allowed to think that way from a water governance perspective. Instead connectivity is the big word and that means constructing bypasses past the big stations where fish don't really have anything to swim to.*"

Nils's statement should be attributed weight due to his long experience working in the field of water governance, both in the private sector and in CAB. As he expresses, although connectivity in and of itself is a positive pursuit, doing so meaningfully requires strategic thinking. He considers the concept's current application to be one of disorganized willy-nilly opening of waterways, which he attributes to the primacy, or *"big word*" that connectivity today represents in water governance. His reflections problematize this discourse as perhaps so dominant (Green and Sandbrook 2021) to steamroll more effective applications of it.

Bengt, the head of municipal government, also worries about the primacy of connectivity. His worry ground itself in concern for communities. He states that:

> *"An environmental report would of course show that if you remove dams, opportunities are created for increased connectivity. Uhm… In a purely*

> *biodiversity perspective this is a good solution. Remove the dams and the fish can migrate. And if you don't consider the other parts and consider a bypass as an option, because you see other values in the reservoir, then there is a risk that people say that this is the best for the conductivity of fish and that is good, the big ones say. But is it a good idea? And that risk is always there. Because it is a conflict of goals."*

Bengt considers connectivity to be a good thing, however, sees it as problematic pursued to the exclusion of humans. Connectivity, in his mind, belongs to the world of environmental science as reflected in his phrase "*an environmental report"*. His statement also reflects that he attributes a certain parochialism present in environmental science.

This subchapter identified that officials in the NAP review tend to understand nature in a scientific way. They see the waterscapes that have been produced through the construction of hydropower as unnatural and in need of remedy. This corroborates research by Lindström and Ruud (2017) who identify the primacy of a scientific approach to hydropower governance in Sweden. Nevertheless, officials suggest some issues with the pursuit of specifically connectivity in NAP. What the views of these officials demonstrate is a divergence between these and the understandings of nature that residents in Alby express.

5.3: *"Learning how to drive"*: the National Legal Review and Ways Forward?

This final analytical part considers the legal hydropower review process, NAP, itself. It considers the final research question (RQ3): *what improvements can be made to the NAP process to better accommodate divergent stakeholder understandings of nature?*

This question is considered through the application of agonistic democratic theory (Mouffe 1999; 2013). To remind the reader, antagonistic conflict is "conflict between enemies" and agonistic disagreement is "conflict between adversaries" or "a legitimate enemy, an enemy with whom we have in common a shared adhesion to the ethico-political principles of democracy" (Mouffe 1999, 755). Antagonistic conflict is dangerous because it threatens democracy whereas agonist relations are "in fact [democracy's] very condition of existence" (756). Focus here is therefore placed on the possibility to contribute to environmental governance that is better able to mobilize different understandings of nature productively.

5.3.1: The seeds of an agonistic forum?

In the context of shifts in Swedish hydropower governance that seek to balance societal and environmental needs (Lindström and Ruud 2017), NAP may contribute to a furthering of this process. This is through the new modes of collaboration that NAP entails. Reflecting on his experience as head of the review process for Statkraft, Axel states: "*it has been very teaching, the process. How, how should we do this effectively? And we see some challenges in the convening process, especially with, like, the CAB as they have never been convenor before.*" What Axel is referring to in this statement is the first step in the NAP process. This is the "collaboration phase", an innovation in Swedish hydropower governance that NAP introduced. It, as outlined in Subchapter brings together government agencies, hydropower companies and those identified as stakeholders for collaboration overseen by the various regional CABs. Its purpose is to facilitate agreement between the collaborating parties prior to the court review. Ulf, the representative from SwAM considers this new phase significant as:

> *"*[questions around hydropower] *is an area where we traditionally already are in conflict with one another from the start. Already historically from the early 1900s we have debated these questions in court with help from lawyers and there is a lot of money tangled into all of this, and that has made it conflictual and now you are supposed to meet outside of court?"*

His statement refers to the legacy in Swedish hydropower of resolving conflict in court (Össbo and Lantto 2011; Össbo 2014). Ulf considers how this process of resolution has contributed to positioning stakeholders at odds with one another. It is possible that the new collaborative phase introduced by NAP may disrupt this tendency.

Officials believe that the collaborative phase may instigate these changes. Nils, from the perspective of hydropower, states that:

> "*Many days we have time to talk to each other over coffee and things like that where we said it a bit for fun, if we had stayed for 2 or 3 more days, we might have had to untie many of these knots of conflict completely, which are now sort of tied quite tightly in for example the Ljungan River. Both CAB Västernorrland and Jämtland were there so we kind of had a lot of informal talks about how we should go about NAP. How should we think?"*

Nils's experience indicates that this stage of collaboration is providing some opportunities for productive conversations between stakeholders. He believes that with more extended collaboration, many of the "*knots of conflict*" can be overcome. His statement also identifies the river Ljungan as a particularly conflictual river basin. Axel, commenting on the experience of NAP for Statkraft in Ljungan to date identifies difficulties stemming from the new role that CAB fills. He states: *"Otherwise, if it's a normal environmental assessment, it's us as operators who hold a consultation and we're the ones who call the meetings. We are the ones who issue documents and the county administrative board must respond to it. Now the roles have been reversed and we are needing to learn new ways of working as a result".* Axel identifies the new role that CABs fil in NAP as an inversion of the way hydropower governance has operated up until now. This realignment is significant in Sweden where the institutional landscape around hydropower has been tilted in favor of private interests (Vedung and Brandel 2001). Axel identifies how this inversion requires shifts in the way they work as a company. This new phase of collaboration therefore appears to be initiating some changes and may hold the potential for more.

However, certain issues have faced the process up to this point in time. Krister, speaking to the experience of CAB Västernorrland, although considering NAP productive to date, mentions how the roles that the various stakeholders have filled in hydropower governance can stand in

the way of collaboration. He reflects on how he perceives the reputation that the role that CABs fill in the implementation of Swedish environmental law as sometimes used by hydropower companies to blame CAB for any remedial environmental measures taken. This perception exemplifies some of the highly conflictual nature of hydropower governance in Sweden (Vedung and Brandel 2001; Össbo and Lantto 2011; Lindström and Ruud 2017). Interestingly, here then, is the potential for the legal review process to disrupt this dynamic. The review requires stakeholders to not litigate, but collaborate, and work together under the facilitating role of CAB. The potential for environmental governance specifically to disrupt established interests might therefore hold potential. It remains an open question as to how NAP will alter these conflictual dynamics between hydropower and CAB.

5.3.2: Public participation as key to its further development

To instigate the creation of such a forum for antagonistic conflict to be enacted, local communities should be included in this collaborative phase. The case of Alby attests to how their lack of inclusion may be contributing to a dynamic which increases an antagonistic positioning between local residents and the NAP process.

Many residents in Alby remain unsure of what NAP entails. This is apparent during the public workshop: some participants were unaware that the future of their dams is in question, while others are unsure of the details of the NAP process. The public workshop therefore becomes an evening of information sharing and discussion between residents about the fears they have for Alby's future if the dams were removed. The unanimous desire expressed during this evening attests to the common position they hold as in opposition to the hydropower company Statkraft. The legacy of attempted dam removal, moreover, is brought up. One resident says: "*I thought they already tried to remove the dams?"*. When informed that this is a new proposal, he says: "*oh, so they are at it again."* By "*they"*, he is referring to Statkraft, and his negative attitude is apparent. Alby's residents are currently in an explicitly antagonistic position towards Statkraft, and it would be beneficial to involve them in the NAP to productively mobilize them.

Moreover, in the context of a lack of involvement, private property contributes to the antagonistic positioning between these groups. The NAP process is viewed as a useful cover under which Statkraft can pursue their private interests. Viktor, after initially not being aware

that the future of their dams being in question, reflects that: "*Statkraft will probably do what they want anyway. I don't know, it doesn't matter, in this country, if you say no, they do what they want, the opposite"*. Although this statement is presumably more indicative of his general feeling of being left behind by government agencies, it also indicates the presumption that private ownership grants hydropower companies unilateral decision-making power. This is indicated also by Linda who says: "*at the end of the day, they are a company so they have to make a decision that is best for them"*. People believe that Statkraft will make money off removing the dams. Gabriel says: "*as I have understood it, it's an operational cost, and they are not interested in that.*" Mikael says: "*at the end of the day it's just a money question, it just depends on if they play on it being for nature or for economy"*. At this point it is important to note that dam removal will entail a production loss from Järnvägsforsen and therefore actually mean losing some money. But Statkraft owns the dams, people believe, they can do what they wish and ignore the needs of the local community, polarizing people further.

Private property serves to polarize these groups in a further way. Dam removal might mean a fence is installed around the stream to allow the newly exposed riverbed to stabilize. Some residents are aware of this fact and mention it in interview or during the public workshop. The idea of a fence is abhorrent to Lennart who says that: "*can you imagine what it would look like to have a fence all around the river?*" Gabriel also worries: *"I've heard they would put up a fence, then we couldn't fish, or access the river, and it would be so ugly".* The possibility of a fence would mean that residents could not access their waterscape in the way in which they expect to be able to. Dahl (1998) shows how this expectation derives from a Right to Roam as expressive of a Swedish nationalist discourse. Private property in the shape of a fence therefore appears to denigrate an important way in which residents understand nature.

Moreover, the lack of involving the residents in Alby appears illegitimate to them in a further way. This is traced to their rights as homeowners in the area. It is worth including Gabriel's full statement:

> "*As a homeowner, I should have the right to say. It is the environment here that makes you want to live here and why so many have chosen to live here all their lives, 50 or 60 years. That then a company should just come and change it considering partly how much money is in there, because if they remove those (dams) the value of the house will disappear a great deal. It will therefore*

> *significantly affect our lives. So that, well, I still feel that, we who live here, who have nevertheless chosen to invest a lot of time and money and emotions to still settle in such a place precisely thanks to the fact that, as it were, the water should have a say. I think so. That if it's like the majority of people here who don't want certain changes to happen, well, then they shouldn't be able to implement them either."*

Gabriel owns property along the water which means that his interests will be weighed in court as his property may be affected by the decision of the court. However, Gabriel believes that his participation should be more comprehensive than this and traces this to how the value of his property would be affected by dam removal. Moreover, he sees that the "*time and money and emotions"* that he has invested into his property as granting him a fundamental say in the process. This contradicts the dominant western discourse on private property as immaterial (Page 2014). He sees the connections to the place as time, money and emotion to grant Alby's residents the right to veto proposed environmental management: "*if it's like the majority of people here who don't want certain changes to happen, well, then they shouldn't be able to implement them either."*. Similarly, Janina says that: "*of course we should have more of a say, we have settled here, and we know the issues."* She believes that she has knowledge that would otherwise be lost in NAP. As widely recognized in the scholarship, popular participation can generate environmental management solutions that are more legitimate, appropriate and effective (Hatton MacDonald et al. 2013). This should indicate the urgent need to involve at local communities in NAP.

Officials express different view on the involvement of local residents. While all see an informational need to be filled to keep local communities up to date with NAP, they do not necessarily see their more comprehensive inclusion in NAP as productive. Axel sees that "*the public is not a natural collaboration partner in a process like this*". Rather information should be shared to prevent "*gossip or misinformation, and that creates problems further down the line. Then we haven't gained benefits".* Nils however sees that "*if you mean people in the form of the general public, it is probably very important to bring them into the dialogue on* [NAP] *quite early on. Because now we are sitting as a collaboration between the county board and who implemented at least the technical works and then we have had consultations and then you consult the municipalities*." Nils sees that including the general public from early on to increase the appropriateness and acceptance of any remedial measures taken. This is supported by

research which finds that involving the public in hydropower governance increases the acceptance of implemented measures (Díaz, Adler, and Patt 2017). As it currently stands, the form of NAP appears to fall short of the possibilities to create a forum for agonistic conflict. The public is not included from the start, and the case of Alby attests to some of the dangers this might entail for a more plural and thus legitimate governance. NAP therefore falls short of the potential to incorporate and mobilize divergent understandings of nature for good.

CHAPTER 6: CONCLUSION

This thesis has addressed the multiple, divergent and at times, clashing meanings of nature that surround Swedish waterscapes today. Against developments in Swedish hydropower governance that better seek to balance the needs of multiple stakeholders (Lindström and Ruud 2017), apprehending how these stakeholder's understand nature holds promise to further develop this field of governance. This is because these understandings underwrite what people expect of their waterscape.

The case study of Alby elucidated some of these expectations. Officials in the NAP process approach river systems in a scientific way and therefore consider the stretch of river in Alby to be unnatural. To them, this impounded waterscape is expressive of a lack of stream water environments in the river Ljungan at large. Although they differ in whether their opinions on whether dams in Alby should be removed to recreate a stream environment here specifically, their comments give testament to the scientific discourse with which Swedish hydropower governance approaches questions such as these.

Residents in Alby, meanwhile, consider their stretch of river to be natural. They attribute this to the length of time the dams have impounded this stretch of river and perceive that the flora and fauna in the area have adapted to these conditions. Scientific discourse also influences residents' understandings of nature, however, based in more everyday experiences of their surroundings. To them, sightings of various animals, as well as the distinct environments for fish that the two dams support make residents conclude that this must be natural. More than that, however, it appears that residents, whether subconsciously or not, perceive that the future of their dams hinge on how nature is defined. Arguing that their current waterscape is natural, in other words, is also an attempt to retain their dams.

It is through everyday experiences of their waterscape that residents define nature. For them, the ability to walk, swim and visually enjoy their surroundings captures what nature means to them. These activities help residents define themselves as a community, both as Swedish and as Alby. Their so-called lake and stretch of flowing water, moreover, contains memories of lost nature in the form of crayfish and as well as hopes for the return of this animal. The desire to

retain this stretch of river as is, ultimately, appears as the last frontier for a community that has been experiencing the effects of disinvestment, depopulation and an ageing population. Although residents are hopeful about the possibilities that the new development of a hydrogen factory in the area offers them, they connect the benefits that this new development might bring in terms of new residents to the provision of services in Alby as well as the beautiful nature they perceive in their current waterscape.

Whether or not the NAP process entails a removal of the dams, the value that the current waterscape holds for Alby's residents should demonstrate the need for a hydropower governance that is sensitive to these meanings. The NAP may offer one such way forward. The new phase of collaboration seems to be disrupting some of the established antagonistic positions between, at this point, hydropower companies and the CAB. It is suggested that to capitalize fully on this development, the public should be included in this stage. This could allow understandings of nature that may be irreconcilable to have the space to be expressed and be navigated.

Once the NAP process has been underway for more time, future research could examine whether this process is contributing to shifts in hydropower governance in Sweden. Doing so through a comparative study of various collaborations in Sweden would enable general lessons to be drawn out. It would also be productive to examine how Indigenous understandings of nature are met in the NAP. Many Indigenous understandings of nature tend to be relational. This means that they dissolve the boundaries between the human and ecological sphere (Johnson and Murton 2007). How to navigate especially these relational understandings could hold potential to significantly contribute to the development of a more plural environmental governance system.

What is nature, finally? This is a question to which there is no single answer. Its bounds of meaning are never fixed, ever shifting and irreconcilable. However, interrogating this question lies at the base of how to inform human actions that might contribute to the flourishing of humans and non-humans alike, whether that be in the spheres of environmental governance or in everyday life.

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