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Boreal forest temporalities: Temporal politics in Finland and Sweden

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Boreal forest temporalities

Temporal politics in Finland and Sweden

KATJA GARSON

DEPARTMENT OF POLITICAL SCIENCE | LUND UNIVERSITY



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DOCTORAL DISSERTATION

Doctoral dissertation for the degree of Doctor of Philosophy (PhD) at the Faculty of Social Sciences at Lund University to be publicly defended on 9th of October 2026 at 10.15 in the Eden Auditorium, Department of Political Science, Allhelgona Kyrkogata 14, 221 00 Lund

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Abstract: Time is often taken for granted. However, the ways in which it is perceived and expressed are never neutral or pre-given - they are the result of particular experiences, knowledges and desires. In the context of competing values and expectations for the boreal forest in the face of climate change and resource pressures, this thesis investigates how understandings, experiences and framings of time - temporalities - shape and bring meaning to everyday human and nonhuman (or more-than-human) engagements with the forest in Finland and Sweden. In particular, the thesis looks at how forest legacies and imaginaries are acknowledged, upheld, challenged and remade. The concept of boreal forest temporalities is developed and explored via multi-sited, multimodal ethnography across three cases: museums and the curation of forest exhibits, conservation forests and nature protection practices, and 'the mushroom forest' and mushroom foraging activities.

Advancing perspectives in critical time studies, critical forest studies and more-than-human research, this work reveals the processes and practices through which some forest temporalities are privileged whilst others are sidelined. Through the analytical lens of temporalities, the thesis shows how groups and individuals contend with certain memories, rhythms, intergenerational knowledges and other ways of dealing with and understanding time in the forest. This research focusses on temporal politics in local, lived contexts whilst remaining attentive to connections across scales. As such, the thesis presents personal, multi-scalar and multispecies stories and relationships which are often left out of policy and public debates. Paying attention to temporal politics also raises a broader question for socio-environmental governance: not only whose values and perspectives count, but also whose temporalities are allowed to matter.

Key words: temporalities, temporal politics, time, boreal, forest, more-than-human, legacies, imaginaries

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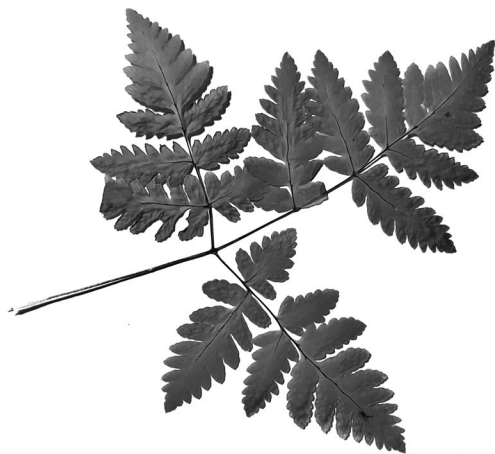
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MADE IN SWEDEN 



for my family and friends

Acknowledgements

There are always connections yet to be made, juxtapositions yet to flower into interaction (or not, for not all potential connections have to be established), relations which may or may not be accomplished. (from *For Space* by Doreen Massey, 2005, p. 11).

...each footstep isn't just a means to an end but a unique event in itself. This leaf has jagged edges. This rock looks loose. From this place the snow is less visible, even though closer. These are things you should notice anyway. To live only for some future goal is shallow. It's the sides of the mountain which sustain life, not the top. Here's where things grow... But of course, without the top you can't have any sides. It's the top that defines the sides. So on we go . . . we have a long way . . . no hurry . . . just one step after the next. (from *Zen and the Art of Motorcycle Maintenance* by Robert M. Pirsig, 2014 edition, p.191).

Dear reader,

I don't know about you, but the acknowledgements are the part of every thesis which I eagerly turn to first. This is also the part of the thesis which I have been most consistently looking forward to writing. It is the only part of the work which has not been pored over by reviewers and critical readers before it makes it into the world. It is an opportunity to *just write*.

So, please get comfortable and bear with me through this lengthy section, or alternatively move ahead to whatever you really came here to read!

Nearing the completion of the thesis has prompted me to think a lot about how I got here, and the people (and other beings and things) that I have been lucky to have around me. I hope that I can soon pass on these sentiments in person or by phone or card or flying squirrel, but regardless of how I do it it's high time I send out thanks to those who have brought brightness, comfort and inspiration to this 'thesis journey'! The acknowledgement section is a crucial grounding for what comes next in the rest of this document; for explaining where my work comes from and for acknowledging sources of knowledge and perspectives which are not mentioned in the official bibliography. My name may be the only one on the front of this thesis, but it has truly been a collective effort. This is an opportunity to acknowledge and thank the people, places and things which have inspired, challenged, questioned, fed, housed, met, left and loved me, and which as a result

have brought me to where I am today - with a completed thesis and much more besides.

I'm therefore going to depart a little from the usual scope of acknowledgement, and will tell a bit of the story about how I came to this project and what came before it, too.

One day in January 2020 I was sitting in the kitchen of my small fifth-floor flat in Brussels scrolling through posts on Twitter, when one caught my eye. Stephen Woroniecki - in case you ever read this -, if I hadn't seen your tweet, I may never have ended up here. Stephen, a former Lund PhD student, had written about an opportunity for a PhD where the student would be involved in a project at Lund called 'Forest Visions'. I had already been thinking about applying to PhD programmes for a while, having really enjoyed the thesis and fieldwork components of my Bachelors and Masters degrees, and feeling drawn towards in-depth research. That said, I hadn't yet made any kind of plan or drafted any proposals. When this position came to my attention, and since I was working in forest policy, I decided it would be a good prompt for practising my research proposal -writing skills. After that I would regroup and consider 'applying properly', I thought. Well, those subsequent applications never happened and my life took off down a slightly unexpected path.

Moving to Sweden was not easy - it may not have been a move around the world, but I left behind my existence in Brussels sooner than I intended, even if I was indeed thinking about moving at some point. 2020 was also the year when Covid upended everything. Amidst the uncertainty of moving, navigating a new system, not to mention arriving into a discipline which (in name, at least) I previously had no experience with, the initial experience was, to be honest, unsettling and at times rather difficult. Yet several people stood out as truly supportive from the early stages, and many more have joined since. Let me begin with those who have been with me at the Department of Political Science in Lund from the word 'go'.

Firstly, I thank my supervisors: Johannes Strippel, Annika Bergman Rosamond, and Alexandra Nikoleris. You have been with me the whole way and have always had my best interests at heart. I cannot overemphasise my gratitude! Johannes, thank you for your care, humour, organisation and practical approach. I have truly appreciated your ability to figure out what it is that I'm trying to get across at times when I have been tangled up in too many words. You have often expressed

things better than I could have done, including all the way to the final drafts of this book. This project and my peace of mind have benefitted enormously from your imagination and creativity coupled with a drive to just get things done. The extensive whiteboard drawings which you have used during our meetings as well as your insightful comments on my work exemplify this. I don't know how you manage when I know how busy you are! Thank you, you are an inspiration. Annika, thank you for the warm and friendly conversation and comments, and for calling in from Edinburgh. Your insights into feminist perspectives and reading recommendations have been particularly helpful in encouraging me to question my assumptions. Thanks for continuing to be part of the process even after your move from Sweden. I must also mention that I have very much enjoyed meeting your cats online. Miaow. Alexandra, thank you so much for your thorough, honest and thoughtful comments and questions, for the chats during the Nordic Environmental Social Science conference, and for sharing a little of your passion for crafting and nature. I have benefitted very much from your curious, meticulous queries and your obvious passion for talking about futures and how to engage with participants. Together, the three of you have helped me to navigate political science, to become a better researcher, and to finally be *more or less* ok with sending writing which feels 'not quite there yet'! I can only humbly apologise for the various late-night sendings, and assume that we are all glad that this item is now off the to-do list!

At the department in Lund I have had the privilege of meeting and getting to know many interesting people. I extend my thanks to the department as a whole, and especially to the PhD community. You have all in your own way helped me to learn, progress and survive! I must single out a few individuals. Firstly, my cohort: Matt Mignot, Karl Holmberg, Esther Calvo, Nicolas Rodriguez Hedenbratt, Evan Drake and Patrick Nitzschner. The cake you bought me for my first birthday in Sweden was a spark of joy in what was a literally and metaphorically gloomy time. Thank you for that, and for the many moments of fun and conversation which we have had since. Matt, I must especially thank you for being a great friend and steadfast supporter beyond simply being a cohort member. Likewise, Karl, thanks for all the energy and conversations as office mate and friend - I know I can always rely on you to ask me difficult but important questions about research and life!

I extend a special vine tendril, bunch of grapes or perhaps an oar (?) to Marie Stissing Jensen. Ever since we sat next to each other at that dinner I have been grateful to cross paths with you. Your friendship means so much to me and I hope we can have many more walks, lunches, laughs and share travel notes over a glass of wine of interesting origin, possibly by the water. Skål!

Particular acknowledgement also goes to Lisette van Beek - we met towards the end of my PhD journey and quickly bonded over shared curiosities in environmental topics and the outdoors. Being able to sit in your office has allowed me many hours of focussed work time that I would otherwise have lacked and which have enabled me to complete the final edits probably 50% quicker - thank you for this, but thank you so much more for the lovely walks and conversations and for still checking in with me when you have been occupied with your own challenges. Please keep me updated on the trees!

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Every member of the PhD and postdoc community has impacted on my thinking, taught me something, or ensured moments of cheer throughout my time in Lund – thank you, all. I wish to thank for their particular friendship and practical and emotional support Caroline Karlsson, Anne Lene Stein, Christie Nicoson, Georgia de Leeuw, Linn Brolin, Malte Breiding, Hanna Ekström, Margaux Dandrifosse, Julia Qian Mao, Lars Vetle Handeland, Simon Stattin, Joel Abdelmoez, Bibi Imre-Millei, Yi hyun Kang, Jana Canavan, Ekatherina Zhukova, Simon Davidsson (thank you for watering the plants), Alexander Ryan (thank you for the lunch-time and coffee chats), and Flori So and Orly Siow (Orly, I obviously know you have not been a postdoc at the department, but I want to thank you and Flori together for whisking me away when I needed a break, and for always being so understanding).

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Teaching occupied a significant part of my time mid-project. It was a steep learning curve which I would not have been able to deal with if it hadn't been for the guidance I received. Thank you, Daniel Alfons, for making sure that everyone is allocated the correct hours and that teaching teams can work effectively together. Thank you (again) to Linn, Nicolas, Karl, Nils, Fari and Thomas for all being fabulous co-teachers on departmental courses. Thanks also to Kristoffer Ekberg and Oscar Krüger over in human ecology for giving me the opportunity to teach on your courses and to fully expand on my interests in more-than-human relations there! My first degree, via an inspiring BA course at Durham University, was in human geography, and I have continued to read texts within the broad umbrella of human geography ever since. I am a human geographer at heart, so this really felt like coming home. Of course, I am thankful to have had such enthusiastic students in courses such as Power, Politics and the Environment, Political Science Methodology and in Human Ecology. I have learnt a lot from you and because of you about what it means to be a teacher and what it means to learn in different ways.

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foraging, and your birdwatching photographs never fail to brighten my day. Thanks also to Kayleigh Kavanagh (I remember fondly our meet-up in Prague and hope it is not too long before we can meet again); Anna Isaieva (I think of you often as you navigate working on a PhD whilst living in a warzone); Slavica Čepić (hope you and the little star are well); Aleksis Kelloniemi (kiitos keskustelusta metsistä, historiasta ja sienistä); Anatolijs Venovcevs (always producing the most breathtaking Svalbard snapshots); Cheryl Sjöstrom, Sanna Barrineau, Heini Emilia Saarinen, Eerika Koskinen Koivisto, Alison Pouliot, Catalina Quiroga and Sanna Stålhammar (for a fun course on critical plant studies).

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In 2015 I arrived in Oxford for my MSc, and began one of my most intense and enjoyable years. Not only was this an intellectually-stimulating time, but even more importantly it was there that I met some of my closest friends, now scattered around the world, who have contributed to my thinking and wellbeing during this PhD. I'll begin with the most distant! Foley Pfalzgraf, I have long admired your tenacity, amazing research skills and above all else what a wonderful friend you are. Thank you for keeping in touch from Honolulu and Chicago, it means the world. Heather Semotiuk, you are so dear to me and I am so grateful that we have been able to maintain our friendship despite the huge distance between us. I do hope to make it out to the Yukon some day. Carys Pinches, you are also rather

far away and also in a location which I'd love to visit. Thank you for being in touch and for allowing me glimpses into your beautiful everyday family life. Timo Maas, I know I can always rely on you for pithy jokes and for (usually) providing sensible solutions and responses! Heather Bond, I can't imagine my life without you and our catch-ups always make my day; I'm glad you are on this side of the ocean for now. Sonja Wiencke (and Tony, I appreciate you very much, too!) - you are one of the most courageous and innovative people I know. I'm so inspired by everything that you've achieved and am excited to see you embarking on your own research journey or indeed whatever steps you take next. Diane Borden, thanks for being a wonderful friend even though we rarely get to meet up – all the very best for your next steps beyond the PhD. Amber Todoroff, thanks for being curious about my research and for sharing so much of your everyday life with me. Nanna Rask, simply tack för allt! It's been lovely to see you during my years in Sweden. Thank you also for the help with Swish! Max Austin, Josie and cats – miaow, and I deeply appreciate all the laughs and little adventures we have shared together. Kim Fuellenbach (and Mimi and Phil), thank you for your messages about magnolias and many other things, I appreciate all of it and all of you. Adam Bridgen and Mirjam von Bechtolsheim – you have brought an extra dash of light, and tomatoes, to the final stages of this project! Neven Blaskovic Kraljevic, I know you are sort of in the 'we connected in Sweden' category, but I will thank you here anyway for sharing beautiful Port Meadow wanders and for taking my mind off work with garden updates. Finally, thanks in addition to the wider 'Linacre group' for many nice reunions in different locations.

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to seeing where this keeps going. In particular, thank you, Tegan, for all your support and friendship.

During these past years in Sweden I have been lucky to be able to spend time on two favourite creative pursuits - ceramics and sewing/quilt-making. I can't overstate how important these have become during my time in Lund. Thanks to the Folkuniversitetet in Malmö I've finally been able to try ceramics and to fall in love with it after many years of dreaming. Thanks to the other potters whom I look forward to seeing every week, especially Susanna, Annika and Minako, to Moa for answering my questions, and special thanks to Cecilia, who encouraged me in the beginning. Sewing has been a much more long-term fixture, but it was only in 2020 that I made a first quilt for a friend. After a long pause during which I was confused about the PhD, three-and-a-half more quilts have arrived in the past year and I do not think it's a coincidence that these have appeared alongside a strong push to finish the thesis. I'm grateful to the local Erikshjälpen second-hand shop for their excellent selection of affordable fabrics. Thank you to my equally second-hand sewing machine for keeping going and also for the times when you did not want to keep going and informed me, via tangled threads and angry jamming, that it was time to stop. These activities have taken my mind off work and have made me into a better thinker and problem-solver in and outside of work.

Since 2020 I have found comfort in many places - the footpaths, rocky shoreline and often-rainy streets of north Lancashire; the leafy streets of Lund; Copenhagen; the Finnish lakeside (kiitoksia erityisesti Honkosen perheelle - Pasille, Tarjalle, Keijolle ja Reijolle); and the homes of friends and family. My home life in Sweden has been positively enriched by some special people. To Nita Lorimer and family - I am so grateful not only for the home which you have allowed me to keep during these years, but also for all the meals, houseplants, Chinese snacks, conversation, company and overall generosity. A supposed six months turned into nearly six years! Likewise, Elaine Bosak, I have really enjoyed our bus-stop and bus chats and connecting over gardening. I hope Maple continues to thrive.

Jane og John (og Rico, Chip og Mio) - tak for at have taget imod mig i dit hjem, for de lækre måltider og det gode selskab.

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have supported me in so many ways. This short list is inadequate, but thank you anyway for the food, the relaxed weekends, for watering my plants, the holidays and the debates. Thank you for an appropriate level of understanding and not-understanding and for not asking me about my work except when I wanted to be asked. Thank you for being there.

To my family and close family friends in the UK and Finland, including those no longer here – I am extremely grateful for all your love, and for the inspiration which you have offered through your different views of the world. Pete, Eliska, Bill, Anthony, Liz, Elina, Richard, Heikki, Iso, Ämmi, Granny, Grandad. Also to Hilary and Alan (and dogs - woof), and Hanni (kiitos jatkuvasta tuestasi, ja onnea omaan projektiisi!) You have all contributed greatly to my happiness and development; words cannot truly express the extent of this.

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As other researchers will likely recognise, there are always more interviews to conduct, themes to narrow down, and pervasive loose ends. There have been a lot of rough patches during this PhD, but also many moments of development, learning and affirmation despite all the challenges and things 'still to do'. Importantly, as my supervisors and others have wisely assured me, it is enough and it will do. To my fellow PhD candidates: we know that the path to completion is rarely simple or straight. I hope that this finished thesis can inspire you in your endeavours, as well as reminding you that there is much more to life as a PhD candidate than the PhD itself. Here's to many future conversations and adventures, both academic and far from 'the academe'.

What I have achieved by completing this thesis with the support of so many others is something of which I am truly proud and for which I feel deep gratitude. To be able to hold this book in my hands gives me hope for what I can achieve in the

future. It also reiterates the crucial importance of having a wonderful community of supporters near and far - supporters without whom I could not have learned to be half as persevering. The book is as much yours as it is mine.

As I move forward I carry many new lessons, friends, and a sense of resilience which will strengthen me at the best, and worst, of times. Thank you.

Now that I've *finally* tied this whole thing up I'm going to look for mushrooms.

Katja Garson

Written in Lund, Copenhagen, the UK and Central Finland,
circa. early 2024 to August 2026.

Abbreviations and acronyms

FMP	Suomen valokuvataiteen museo (Finnish Museum of Photography)
Luomus	Luonnontieteellinen museo (Finnish Natural History Museum)
Lusto	Metsämuseo Lusto (Finnish Forest Museum Lusto)
LPS	Luonnonperintösäätiö (Finnish Natural Heritage Foundation)
SFA	Skogsstyrelsen (Swedish Forest Agency)
SLL	Suomen Luonnonsuojeluliitto (Finnish Association for Nature Conservation)
SMF	Sveriges Mykologiska Förening Svampvänner (Swedish Mycological Society)
SMS	Suomen Metsähistorian Seura (Finnish Forest History Society)
SS	Suomen Sieniseura (Finnish Mycological Society)
SSM	Strålsäkerhetsmyndigheten (Swedish Radiation Safety Authority)
STUK	Säteilyturvakeskus (Finnish Radiation and Nuclear Safety Authority)
Swedish EPA	Naturvårdsverket (Swedish Environmental Protection Agency)

Please note that with the exception of ‘Luomus’ and ‘Lusto’, these abbreviations and acronyms are mainly used within citations and the bibliography. Acronyms are avoided as much as possible within the main text, and organisations’ English names are instead used for clarity. Further details on the organisations and agencies listed above, along with others not listed here, may be found in the Appendix.

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Prelude

What's your story? It's all in the telling. Stories are compasses and architecture, we navigate by them, we build our sanctuaries and our prisons out of them, and to be without a story is to be lost in the vastness of a world that spreads in all directions like arctic tundra or sea ice... (Rebecca Solnit, *The Faraway Nearby*)

Forests and woodlands have, for me, always been temporal places - places of rhythms, becomings, changes and shifts - even if it is only in the past few years that I have begun to describe them in this way.

I remember, in my mid- to late-teens, stopping with my parents and grandfather to visit my grandfather's patch of forest in Kolho, Mänttä-Vilppula, about 250km north of Helsinki, Finland. After hours of sitting in the car, it was a relief to wander across the gritty road and into the forest. My mother said to me, perhaps on that visit or at another time entirely, that this forest had not received as much attention as it deserved. My grandfather had a career in the paper industry. He had grown up in the area and family connections and history still tied us to the region. Those connections manifested in a grounded way as this 18-hectare (or just under one square kilometre) forest stand and a summer cottage some distance to the north. However, my grandfather now lived in southern Finland, was becoming less mobile, and rarely visited this forest. The wood store which kept our sauna stove burning in the summer, meanwhile, was constantly in need of new wood which had to be dried out for a year before it could be burned. I assume that this is why we stopped at the forest. Who did the felling and chopping, and when, I do not recall, but we drove away with a trailer full of logs and branches.

In 2016, my family sold that same forest to the Luonnonperintösäätiö or Finnish Natural Heritage Foundation. This organisation takes patches of forest and protects them, in the words of its webpages, 'permanently'. The forest is now named 'Kaukametsä' or 'Distant Forest' and is described by the Finnish Natural Heritage Foundation, with a positive emphasis, as 'forgotten' (LPS, 2026, n.p.) My grandfather initially owned the forest as a source of timber, but perhaps also as an investment for the future. Either way, the forest became gradually more distant; literally, as people moved away, and in the mind, as other priorities took over. Trees and plants continued to grow, and as the Finnish Natural Heritage Foundation website notes, animals such as bears have been recorded in the relatively undisturbed forest. Kaukametsä is still framed as 'forgotten' today, but

its natural heritage value as a forest forgotten by humans who might otherwise log it is celebrated by the Foundation and is being carried into the future. In other boreal forest locations forests are planted and valued for their biomass and its construction, packaging and energy uses, as well as for the jobs provided by timber harvesting and processing. Boreal forests are also accessed and understood by many different people, from commercial berry pickers, to private forest owners, to hunters and recreational foragers.

The deciduous woodlands of Northern England where I grew up are just as familiar to me as the pine- and birch-dominated Finnish forests which I have visited on summer holidays. British forests, too, are entangled in networks of contrasting and competing values and desires tied to different understandings of time. From the promise of long-term carbon sequestration and storage in response to climate urgency, to the oak tree as an enduring symbol of British history and rural living, these wooded landscapes influence and are influenced by how we think about time and change. Swirl-surfaced horse chestnuts rolled around in my bedroom drawers; picking up and trying to grow acorns, horse chestnuts and hazelnuts, with varied success, still bears a living legacy at my parents' previous and current home.

During my undergraduate degree at Durham I took a course titled 'Geographies of Everyday Life'. It turned out to really be what it says on the label – a study of the ways in which people and nonhumans approach and influence the environment around them from day to day. No unusual events, no extraordinary occurrences, just the everyday. One of the assignments was to take photographs of 'everyday life', whatever we thought that could mean based on the set readings. My photographs were of discarded receipts, a window with a faded curtain, and the brassy top of an upright empty beer can speckled with drops of rain. These are all items and scenes which would usually draw little attention to themselves. I did not know if I was doing it 'right', but the exercise was productive. The course – and the degree as a whole – taught me the importance and power of the stories that we tell about places, and about how places tell stories. Something as seemingly simple as a discarded drinks can might tell us something about the local neighbourhood, including about what happens on that path at different times of day.

My experiences have prompted me to wonder about the tools, practices and ways of existing in the world which are involved in accessing and acting out different

forest temporalities. I have observed that no matter where forests grow, their presence seeps across borders and boundaries. Even distant forests can, in a sense, be all around you. Memories, forgotten elements, desires for the future, nonhuman rhythms and movements, collected and transported items, the ways in which histories are told; all of these feed into rendering the forest both temporally and spatially multi-sited and constantly changing.

But with multiplicity and variation comes friction and tension: not all of the different temporalities of the forest can be in harmony with one another. As Kimmerer (2018, p. 144) puts it, “I surround myself with real forest products, yet rail against the clear-cuts my desires create”. In today’s context of socio-environmental challenges and the desire to live better lives, to what extent can we justify the extractive and industrial temporalities and practices associated with many forest products and some climate mitigation programmes? How can we balance the need for materials and resources with various ways of managing the forest and other landscapes? What alternative temporalities, imaginaries and legacies could we turn to?

This thesis is the result of grappling with the ways in which boreal forest temporalities are perceived, practiced, expressed, enacted and contested by numerous actors going about their everyday personal and professional lives, and why understanding this matters for just, sustainable forest realities and futures.



Chapter 1. Introduction

The sun has risen to its highest and sends light streaming through the large windows of the modern wooden building. It is August 2023 and I'm sitting in the cafeteria of Lusto, the Finnish Forest Museum, in Punkaharju, South Eastern Finland. Recorded birdsong is playing over the speakers. There is a gentle buzz and tinkle of voices and cutlery, including my own and those of my interlocutors. Leila and Riikka¹ are both curators at the museum. We are talking generally about Finnish forests and the purpose of the museum, where the main exhibition is undergoing renovation. We get onto the topic of the forestry machinery displayed in the museum, and of changes in the forest during the 20th Century. "It's just one story," Leila tells me, "And the story of that period of time in our opinion really strongly requires re-interpretation, new perspectives... lots of things are currently obscured by it." During the conversation we go on to talk about the different stories which the museum aims to communicate about the history of the boreal forest. As I wander around the partially-complete exhibition on my own afterwards, the assembled texts, objects and materials give me pause for thought, and I reflect on the decisions which might have gone into the placement of each item and into the removal of those which are on their way out.

The next day, Saturday, I decide to spend some of my free time walking around the local area. Since it is August, good weather, and peak mushroom season, I have brought along my mushroom basket and set off to see what I can find. The area is known for its natural beauty, and I take a moment to pause and sit on a bench which is positioned on a wooden bridge with a view of the lake. After a few minutes an elderly man wearing a cap and a checked shirt and using a walking

¹ All participants and interlocutors have been provided with pseudonyms in order to ensure their comfort in having their words and opinions included in this work. It may be possible to identify a small number of individuals due to details about their roles, however no participants expressed concern when asked about their participation, and have been informed that direct quotes may be used within my written work under the condition of pseudonymisation. I discuss this and other ethical factors in Chapter 3.

stick comes towards me. He may be old but he is not slow. He motions at my basket. “What have you picked?” he asks. I reveal to him that I’ve not really started yet. “Do you mind if I sit here for a bit, too?” he asks. After a couple of minutes of sitting in companionable silence, faces turned to the sun, we chat a little and agree that we both need to walk in the same direction. Along the way, the man tells me that his name is Matti and that he has lived in the area all of his life. “My wife used to pick mushrooms,” he says, “and I remember her talking about the special forest patches which she would go to”. Our walk culminates in the chance discovery of two patches of yellow chanterelle mushrooms which we harvest together, Matti indicating each one with his stick as I crouch down to pick among the dried-up bilberry shrubs.



Figure 1: View of the bridge where I met Matti, with bench alcove further along and to the left (August 2023)

Listening back later to my recording of the whole conversation with Leila and Riikka, I am struck by the number of times they use the words ‘story’, ‘alternative stories’, ‘time’ and ‘history’. The discussion was oriented around questions about

the role of the museum in communicating forest issues and navigating national and local forest politics, but during the analysis of my materials the temporal storytelling themes could not be ignored. My encounter with Matti, meanwhile, was strongly tinged with feelings of nostalgia which would not have been fully captured even if I had asked to record our conversation², but which linger in my mind and in the impressions written that evening in my research notebook. I wish that I had thought to ask him about his feelings about mushroom foraging and how the practice does or does not affect his view of the forest, but it is clear that his wife saw mushrooms as an important part of her life and perhaps also her connection to the forest.

In both of these forest settings and encounters, one planned and curated and the other unplanned and spontaneous, the multiple ways in which time is experienced and framed come to have strong personal, affective and embodied effects.

Motivations for alternative understandings of boreal forest temporalities

Few concepts are as central to everyday life – and as difficult to fully grasp – as time. I think of time as that which always ‘progresses’ and which may be measured using certain regular markers or “mediations of time” (Lazar, 2019, p. 27). For instance, time can be measured by a clock, the fall of sand through an hourglass, or celestial movements (Bastian, 2012). In this work, because of my interest in concrete everyday experiences and because of the trickiness of truly accessing time itself, I instead use the words temporality and temporalities. Although these words

² While I made use of sound recording for many of the encounters and interviews included in this thesis, I did not initially consider my meeting with ‘Matti’ to be part of my research, and only noted it in my research notebook as an item of curiosity and because I had enjoyed our conversation. The organic nature of the encounter also meant that asking to record could have interfered with the easy rapport between us. This one-on-one meeting where somebody’s words are quoted (though the meaning is accurate, the exact words are not since the quotes are based on memory) is the only instance within this thesis where permission to use the conversation as material in my research was not asked. This is because I did not initially consider the chance meeting to be part of my research, and did not collect any contact details which would have allowed me to follow up later. I believe it is important to be transparent about such instances and to reflect on the methodological implications of chance encounters which might alter the direction of a project, as this one did.

are less often used in society at large, they best describe what this thesis focusses on.

Temporalities, which I describe in much greater depth in Chapter 2, are the everyday physical, visual, embodied, imagined and narratively-expressed³ manifestations and experiences of time, whatever exactly time may be. In short, they are how we are able to perceive the passing of time, and how non-human beings, too, express and reveal the effects of time. Temporalities may be described via linguistic framings of moments, timespans and rhythms (such as ‘history’, ‘the past’, ‘fast’, ‘slow’, ‘irregular’) and they can also be physical and material (for example, the effects of weathering on metal or wood, embodied rhythms, or the rate at which sand falls through an hourglass). Temporalities inform many of our decisions and shape our perceptions of the world. Yet they are often taken for granted. Much of the scholarly as well as popular discussion glosses over them in favour of a focus on space and spatiality. Grand, public and ‘visible’ expressions of temporal dynamics also receive more airtime than quieter, more private, messier and more nuanced temporalities.

When I was working as a forest campaigner in Brussels, temporalities came up constantly, and usually in the ‘visible’ ways which I mention. The temporal is at the core of national- and international-level forest debates because how forests are managed and used has implications for meeting time-sensitive goals and navigating carbon sequestration, resource extraction and land rights within the wider contexts of climate action, land governance and economic growth. Temporalities in the realm of forest governance are usually articulated through policy discussions, public campaign materials and media debates. Emerging in these ways, temporalities are often framed in terms of how long a forest should be left standing, how long it takes before trees are ‘mature’ or have reached their maximum carbon storage capabilities, and the interplay between logging cycles and the demand for biomass. Thoughts about time (and its expression as temporalities) is tied to materials and processes, especially tree growth, decay, forestry industry practices and market dynamics. Talk about time specifically consider it as linear and marching forwards at a uniform pace; policy outcomes and imaginaries of forest growth are shaped by this linear perception. This also

³ That is, told through stories and the stringing-together of events. Narratives and narrative analysis are discussed in Chapter 3.

exemplifies the ways in which the temporal has been instrumentalised in approaches to forest management in the Nordic context.

In 2025, the Swedish government announced a proposal to offer payments to forest owners who keep trees standing for at least five years longer than the minimum age at which the forest could be cut (SOU, 2025). The move was prompted by Sweden's responsibilities for carbon removal and storage under the European Union (EU) Land Use, Land Use Change and Forestry (LULUCF) regulation: where there are trees, there is the potential to store carbon. A heavily-forested country like Sweden could contribute to the EU's goal for the removal of 310 million metric tons of CO₂ equivalent by 2030 (EU, 2023). Some actors, such as Green Party members and sustainability advocates, welcomed the proposal (George, 2025). Others noted that even though keeping forests standing is a certain way to store carbon, the eventual logging of the forest and the decay, burning or disposal of biomass products would regardless lead to increased emissions which remaining forests would struggle to compensate for. They criticised the Swedish government for attempting to use temporary forest protection measures to distract attention from the potential for nature conservation work and away from environmentally-damaging activities such as mining and ongoing clearcutting (Andersson, 2026). These views echo concerns that biodiversity protection and carbon sequestration goals are being side-lined in favour of economic interests, and that some apparent solutions (such as cycles of tree planting and harvesting) are not solutions at all. As de Leeuw (2024, p. 5) states, "we are now even looking to extraction in attempts to resolve the very symptoms produced through extractive desires".

In response to the Swedish government's proposal, forestry industry stakeholders such as the Swedish Forest Industries Federation pointed out the risk to thousands of jobs and argued that delayed logging would cause an increase in the price of wood, which would in turn lead to the closure of small saw-mills and pressure on businesses. Indeed, there are few countries where forests are so strongly associated with the development of a flourishing national economy, national identity and sense of achieving modernity and social security as in Sweden and Finland. In Finland, about 82,000 people were employed in the forest sector as a whole in 2023, with roughly 38,000 of these employed in the production of timber, panelling, paper and packaging (EY, 2023). In the same year in Sweden, nearly 80,000 people were directly or indirectly employed in the forest sector, 29,000 of

whom held forestry⁴ jobs and an additional 50,000 of whom were employed in the manufacture of wood and paper products (Swedish Forest Agency, 2025). While supporting the forest economy, many people also argue that forest protection is of value for climate, biodiversity and cultural reasons, and that a forested country should contain protected forest as well as areas to be harvested.

The main players and key issues here at first glance seem to be clear-cut. ‘Industrial forestry’ on the one hand, and ‘close-to-nature forestry’ (or otherwise, ‘nature/biodiversity protection’ or ‘forest restoration’) on the other are frequently placed in opposition to one another by those campaigning against clearcutting, ‘tree farming’, forest bioenergy, and what is framed as an extractive forestry mindset. At the other end of the spectrum, those arguing for the benefits of ‘industrial forestry’ might lay out differently the definitions and values behind this kind of forestry, and argue that industrial approaches to forest management can cater to climate and/or biodiversity needs as much as they also meet economic and growth-centred ones. These are some of the main arguments and positions which contribute to the public conversation about forests in the Nordics as well as internationally. What I describe here is, however, a highly simplified account of a complex conversation in which varied identities and changing contexts mean that different actors make more nuanced points and may at times draw on the same information in order to make different arguments.

These debates about how to manage the boreal forest in light of climate change and resource demands are not the focus of my project. That said, my work nevertheless moves close to these issues, and they appear in each of my empirical chapters. In terms of my personal positionality, which is discussed in depth in Chapter 3, I am critical of the scale at which and the ways in which forests in Sweden and Finland are farmed and clear-cut for pulp, bioenergy and timber. Forest economies are important for thousands of livelihoods in Sweden and Finland, however I am positioned against narratives and practices that treat the forest as a bottomless resource. It is, I argue, possible to manage and live sustainably with forests which are also economically productive. However, forestry practices such as selective thinning and growing high-quality timber have in many instances been overtaken by a more intensive industrial model. That said, as de Leeuw (2024, p. 78) writes, “the extractive order is difficult to escape”, and

⁴ Here, and based on the same source, forestry jobs include logging, forest thinning, and processing of logs.

the outputs of the industrial forestry regime exist all around me and support me (and most of us) in my everyday life. I have also enjoyed walking and mushroom foraging in forests managed for timber and biomass, their trees destined to be made into wood pellets, pulp, paper and packaging. In these forests as well as in protected areas and private spaces, multiple boreal forest temporalities make themselves known and complicate the picture.

My experiences in forest policy advocacy have meant that I have become aware of how temporalities are used as a tool at the high policy level, as well as the observation that the temporal realm is a terrain for contestation, creativity and politics. This observation feeds into the motivation for this thesis. Furthermore, it is often necessary to distil nuanced and complex lived realities (such as the experiences of forest owners or of members of civil society organisations around Europe) into simplified narratives and arguments for the sake of communicating to the public and to policy makers. However, even if it is unavoidable, I argue that a lot is missed out in the construction of these narratives. As outlined in the Prelude and in Chapter 3, my connection to the forest has also been shaped by experiences beyond and outside the professional sphere. I am motivated by my experiences and by the stories told to me of the ways in which the forest seeps into everyday⁵ life through personal practices, materials, the ‘stuff’ of the world, and through individual and institutional identities. Not all examples of environmental change and contestation match with the apocalyptic narratives sometimes grasped at by news outlets, or even make it into general conversation. Many unfold largely quietly, from day to day. They are not always understood as political or contentious because they are seen to lie within the boundaries of accepted ways of acting. Perceived as benign or ‘everyday’, they continue either without being acknowledged, or at least without analysis and critique. These are the examples which interest me.

In this thesis I explore how boreal forest temporalities are experienced and shaped in everyday and personal actions. I wonder about the experiences and framings of temporality which emerge behind, between and in spite of the framings outlined above. While not a central focus of the thesis, I am motivated by the question of what counts as a ‘valid’ or ‘legitimate’ ‘forest temporality’ and who gets to decide this. I wonder, too, about the nonhuman and multispecies actors which may be

5 The concept of the everyday is covered in Chapter 2.

involved and implicated, and whose inclusion can take us beyond an understanding of [forest] temporalities and [forest] politics as purely human realms. This thesis is therefore also strongly motivated by my concern that for too long ‘nature’ has been seen as separate from ‘the human’. I argue that temporalities tied to ideas about ‘progress’, extraction and the control of nature play a strong role in upholding the human-nature separation, and that a focus on space and spatiality alone is not enough for finding solutions. Instead, I am curious what a more-than-human⁶ and multispecies take on temporalities can offer within the context of intertwined climate, environmental, social and political challenges.

In a cross- and interdisciplinary field which I term ‘critical time studies’ and which I discuss in greater detail later on, researchers argue that time and temporality should not be taken for granted or overlooked. Here, temporalities are understood, for instance, as tools which are mobilised within struggles to achieve certain aims or to make certain realities possible. Temporalities are recognised as born out of power relations, desires and the connections between actors rather than being a neutral background. In addition, scholars such as Kim TallBear, Sarah Whatmore, Karen Barad, Eben Kirksey and Rosi Braidotti working within the realm of more-than-human studies and new materialism have for several years now been advocating for the inclusion of nonhuman actors, including inanimate things, in conceptions of agency⁷, contestation and politics. In this thesis I argue that attention to temporalities can increase our understanding of the different identities and positions promoted and valued by different actors, of the varied stories and experiences which feed into the shaping of different landscapes including forests, and also of connections between different spatial scales which, ironically, may not be immediately obvious when focussing on space and place alone.

The anecdote from my fieldwork provided at the beginning of this chapter shows how temporal elements such as accounts of history and memories can be tied to or prompted by physical objects such as the items selected for the display in the museum or mushrooms which have just appeared in the forest. The anecdote also

⁶ This concept describes entanglements between multiple species and materials, rejecting the centrality and total separation of the human from other actors. The concept of the more-than-human is covered in detail below, as well as in Chapter 2.

⁷ Agency as I interpret it is the ability to enact or cause change, even if that ability is not always acted upon. Please see Chapter 2 for detailed elaboration on agency and other concepts.

provides an example of how storytelling, for instance, is consciously seen as a tool to re-tell and re-shape the temporalities associated with the forest and possibly to open up new temporal framings.

Attention to how multiple temporalities play out and are used can draw attention away from dominant temporal framings and the actors behind them and can, I suggest, constitute a rebalancing of narratives so that those who are heard less often may also speak out. Local-level practices might challenge and go against the grain of dominant understandings of boreal forest temporalities and boreal forest legacies. Paying attention to boreal forest temporalities in this thesis therefore has an emancipatory motivation, especially in relation to the forest desires, dreams and fears of 'lay' people and communities as well as for the stories of nonhuman and more-than-human beings which do not speak with human voices or express entirely human temporalities. That said, I do not claim to represent my interlocutors' and participants' stories in their entirety; one piece of work can only ever create representations based on the available materials⁸. I also point out that dominant and powerful understandings and temporal framings do not simply disappear and that they should not be excluded from research because they seem less 'attractive' or are inconvenient. Rather, an awareness of the hegemonic structures and practices which most visibly shape and change the forest and forest narratives is important for understanding the temporal terrain within which different actors operate. This sheds light on the conditions in which boreal forest temporalities come into being. I am therefore interested to explore the ways in which local-level and everyday practices intersect with those other and arguably more dominant understandings and practical contexts. These include the forestry industry and its multiple and multi-faceted manifestations, the positioning of the forest within conversations about national progress and identity, and the media debates about forests.

These motivations for alternative understandings of boreal forest temporalities have led me to collect materials at multiple sites in Finland, Sweden and online. I later describe my approach to data collection as a multimodal patchwork ethnography. This is largely grounded in looking at situated, place-specific knowledges and practices across a range of material types, and makes use of primary as well as secondary materials. Building on work from the critical time

⁸ In Chapter 3, on methodology, I discuss this point further and in addition discuss the challenges and considerations involved in representing nonhuman and more-than-human participants.

studies literature, more-than-human and new materialist scholarship, critical forest studies and studies of connection to landscape and place as a whole, I emphasise the importance of telling multiple and sometimes divergent stories of the boreal forest; stories which are always temporally-framed and -informed, and which often depart from the accounts publicised in the media and forest governance literature.

Research questions, aims and scope

This thesis investigates the ways in which different temporalities are expressed and shaped, and how they in turn shape, challenge and bring meaning to multispecies engagements in the context of the boreal forest in Finland and Sweden. In order to move beyond the view of forest debates and issues as polarised and two-sided, and to investigate the everyday and lived dynamics which play out within and in the margins of those debates, this thesis takes an interest in the everyday, the personal, the emotional, the affective and the embodied. By looking at everyday lived experiences, my work reveals dynamics which are not often or easily communicated in media reporting and studies which look only at high-level governance and policy-making. The overall aim is to explore how different boreal forest temporalities shape everyday and multispecies practices and narratives. In short, this thesis advances understandings of boreal forest temporalities and how these are experienced, accessed, shaped and contested within and beyond dominant narratives and governance structures.

The overarching research question which guides this thesis is:

How do temporalities shape, challenge, and bring meaning to everyday human and more-than-human engagements with the boreal forest?

Three dimensions of this question are explored throughout the thesis:

- 1) How are different boreal forest temporalities privileged or neglected?
- 2) How are different forest imaginaries upheld via temporal framings?

3) How are forest legacies acknowledged, challenged, and re-made in these settings?

Four main framings or objectives, which combine theoretical, epistemological, and practical elements, inform my approach to answering these questions. The first is that I connect temporalities and politics, arguing that temporal framings are inherently political. I explore how temporal practices support, justify, or challenge specific forms of forest management and value-making. I look at how these are invested in particular outcomes and ways of seeing the forest. By focusing in on the power relations and agencies inherent to temporal practices, I work with the concept of temporal politics. In Chapter 2 I provide a detailed description of this concept. In short, temporal politics refers to the ways in which particular understandings and framings of time and temporality are produced, privileged, and contested, and through which meanings, practices, and outcomes in contexts such as the forest are shaped. In this thesis, temporal politics allows me to investigate the privileging and neglect of certain boreal forest temporalities, the shaping of forest imaginaries through temporal framings, and the acknowledgement, challenging, and re-making of forest legacies as political acts. The main research question guiding this thesis is itself a political question, as it asks how time and temporality shape subjective, partial and sometimes conflicting engagements with the forest.

Second, I develop a more-than-human understanding of temporalities. Drawing on new materialist and more-than-human scholarship which I expand upon below, I aim to challenge dominant anthropocentric, dualistic and exclusionary ontologies and epistemologies wherein actors and knowledges which are other than human are sidelined, and in which agency and politics are located solely within the human. I approach my research through a more-than-human ontology in which humans are not at the centre of all things, and in which the interactions and relations between multispecies beings and materials are crucial. I demonstrate that the more-than-human is active rather than passive, and can enrich our understanding of the construction and doing of temporalities. Empirically, therefore, my research pays attention to trees, fungi, other beings and materials such as metal and stone, and considers how they participate in boreal forest temporalities; these things and beings all have their own kinds of times and ways of expressing time. Although I assume from the beginning that boreal forest temporalities are not only the domain of humans, I remain curious about the ways

in which nonhuman and more-than-human actors are involved. How do nonhuman beings make themselves known within or as part of temporal practices? What characterises more-than-human temporalities, or, to put it another way, the description of temporalities as more-than-human? How do nonhumans participate in the privileging and neglecting of temporalities, in imaginaries of the forest, and in the construction of legacies? I aim to explore such questions throughout the thesis whilst revealing the added value of working with a more-than-human ontology.

Third, in this thesis I examine temporal politics at small and granular spatial scales. Whilst most studies of the intersection of power and politics with time and temporality focus on international or governmental arenas, this thesis focuses on temporal politics in local, lived contexts while remaining attentive to connections across scales. Differing via my focus on lived everyday, local-level and small-scale materialities from many other studies of temporalities and politics within political science and international relations, my entry points into 'the field' (a term which I discuss in the methodology chapter) include neighbourhoods, buildings, homes, bodies, materials and the forest itself. Through these relatively small scales I am able to explore how power and contestation in the form of different understandings of time and forest temporalities unfold in arenas which are not frequently considered to be spaces of contestation or politics. I am interested in how the legacies, forest imaginaries and privileging of different temporalities emerges at the embodied, local and personal level. I also explore how in addition these spatial scales may be connected with other spatial scales through the focus on temporalities rather than a focus on spatiality alone. To put this another way, I may take the small spatial scale as my entry point, but I argue that working with temporalities makes it possible to reach across spatial scales through narrative analysis and more-than-human methods, which are discussed later. The utility of being able to do so is connected to my motivation to keep in mind dominant, hegemonic or otherwise influential framings. Within this logic, understanding how temporal politics plays out at small scales necessitates understanding how those scales are not isolated or separate, but connected to others, too.

Finally, I explore how temporalities can be non-linear and how multiple temporalities intersect and are accessed in the present via narrative and material practices. They are expressed and experienced through both material and immaterial elements – temporalities emerge through interactions with material

things such as a pinecone, but also through storytelling. Therefore, when attending to the main and sub- research questions, I do not assume that I should deal only with one kind of temporality in one go. Instead, I am open to the possibility that multiple temporalities operate and are shaped at once, and that in any setting it may be possible to identify intersecting temporalities which overlap with or even encapsulate one another, even if occasionally the intersection is uncomfortable. As such, multiple temporal framings might be privileged whilst others are neglected within the same setting or site, multiple temporalities may feed into different imaginaries of the forest, and the creation of forest legacies may involve the fading out of some temporal framings and the emergence or re-emergence of others. 'Future' and 'past' are therefore not pre-given things which can be located in a concrete and essential way in the world, but rather are social constructions which are constantly done and undone.

As a whole, these approaches have guided how I go about carrying out the research and answering the research questions. They also contribute to my description of boreal forest temporalities as political and contested – they are place-specific manifestations of temporal politics; as more-than-human – they include the agencies, affects and involvement of multiple creatures, materials and beings; as rooted in the local-level and embodied, and multi-scalar – they are experienced and expressed through materials and bodies but may also be detected as having effects across multiple spatial scales; and as intersecting or multi-temporal – they are not limited to singular, linear temporal categories but encompass and connect many different temporal framings and modes. I further elaborate on temporal politics, boreal forest temporalities and related concepts in Chapter 2.

In terms of focus and scope, in this thesis I do not describe past forest-related events or possible forest futures in great detail. This is not a history book, a chronology or a forecast. This thesis is not concerned with a search for 'truth' or 'the facts' about the past, nor with comparing the plausibility, possibility or practicality of different plans for the future. The aim is not to make judgements. Rather, what I describe and explore is the ways in which different temporal framings – of history, the past, present moments, experiences, rhythms, durations, the future – are experienced and used by actors engaging with the boreal forest. I am also interested in how temporal framings appear and are shaped in the first place. In short, I explore the processes, practices and mechanisms through which

different boreal forest temporalities are experienced, expressed, understood, valued and utilised.

The boreal forest in both Finland and Sweden and spaces and places with connections to that forest constitute my broad field of study. I more specifically engage with forest museum spaces, conservation spaces and places, and the 'mushroom forest' and fungal foraging communities in order to explore how actors moving within and through these settings deal with and shape temporalities. Although where applicable I make sure to specify the origin of the materials to which I refer, material from both Finland and Sweden appears throughout and I do not engage in a systematic comparison. Instead, I locate and follow temporalities in the wider context of the boreal forest which, after all, literally crosses the border in a few locations and which, according to ecologists and anyone who has spent time in the forest in both Sweden and Finland, bears marked similarities on both sides of the border. This is not to say that national framings do not matter here; quite the contrary. I acknowledge for example the impact of state governance and funding upon some of the institutions and organisations which appear in this thesis, and, as will become clear, themes of national identity, memory and belonging play into how some boreal forest temporalities are expressed and experienced. As a whole, I work across different sites and locations, making note of the peculiarities and characteristics of each site, and considering how these inform my findings. These methodological choices and their implications are further explained in Chapter 3.

The concept of time itself remains under-theorised in this thesis. This may seem a significant omission, but the choice is intentional. I argue that the true definition of time and the question of what time really is lies in the realm of physics and is beyond the scope of this work. During interviews I used the word 'time' because it is familiar to everybody and because this word allowed me to discuss themes of relevance with my interlocutors. However, in the pages of this thesis I write much more about temporalities than I do about time. Wherever I use the word time in this thesis it should be understood that I do so in reflection of its common and normalised use in everyday life, and primarily whenever it was used by a participant or by another researcher.

Positioning the research

This thesis is primarily positioned within critical literatures on time and temporalities. This is a wide and quickly-evolving area of scholarship which spans social science disciplines and which investigates how time and temporality are interpreted and used in certain ways. Critical time studies scholars see temporalities as socially-constructed, unstable, power-laden and productive rather than static and taken for granted. Within critical time studies I occupy a niche of interest engaged in the relations between time and temporality and place and space, and even more specifically within the critical study of how different actors navigate contexts of environmental change, land management and resource extraction via and in spite of certain temporal framings.

Research on the more-than-human and materiality is also crucial for this project. The concept of the more-than-human moves beyond dualisms such as 'human/nonhuman' to consider actors and beings which include combinations of materials, species and processes, whilst 'new materialist' scholars focus on matter and use the concept of materiality to assert that matter is not inert or fixed, but unstable and changeable. Interest in materiality is deeply embedded within the debates and discussions on the nonhuman and more-than-human. Work in this area echoes my motivation to include both living and nonliving beings as well as those which cannot easily be labelled as either living or non-living as agential and as having effects through scales of place, space and time. See, for instance, Whatmore (2006) or Braun and Whatmore (2010).

Empirically, the thesis is located in a body of work on forests, and specifically studies of social, political and environmental dynamics in relation to the boreal forest. A new area called 'critical forest studies' which brings together creative methodologies, multispecies and more-than-human approaches and critical reconceptualisations of the forest and of themes associated with the forest is of particular relevance.

Through the three areas of research mentioned above, this thesis speaks not only to discussions about time and temporality but also to those about connection to landscape and questions of belonging and identity within place. I find throughout my work that place-bound elements are strongly shaped by time and temporality. Bringing together time and temporality with space and spatiality acts as a tool for

thinking differently about how and why people and other beings navigate their connection to places such as the forest.

As a whole, discussions on critical time studies, the more-than-human and new materialisms and studies of the boreal forest are highly interdisciplinary. They span anthropology, political science, human geography, history, archaeology and sociology to name a few, and I recognise the rich diversity encapsulated within them. Below I provide further detail on critical time studies, the more-than-human and new materialisms, and boreal forest literatures. I begin with critical time studies, after which in the latter two areas of work I hone in on discussions of time and temporality. What follows is a highly condensed account of a few expansive areas of literature and relevant temporally-focussed entry points which I have identified across them. In the next chapter, Chapter 3, I discuss these literatures further as they apply to the development and clarification of my theory and concepts.

Critical time studies

Time and temporality have been studied and written into the fabric of societies for longer than can be confidently estimated, and I agree with Hutchings (2018, p. 255) that “the enormity of the literature [on time and temporality is] daunting”. Following the emergence of interest in time and temporality within anthropology in the 1980s (Fabian, 2014; Harkin, 1988; Munn, 1992) and within geography and Science and Technology Studies during the early 2000s, recent years have seen increasing numbers of academic conferences and conference sessions, workshops and journal Special Issues oriented around the temporal across several disciplines (especially in anthropology, international relations and human geography). This trend is at least partly due to increased concern about the patterns and impacts of environmental change and resource use, and an awareness of the ways in which thinking differently about time and temporality could offer solutions to environmental and societal challenges. A few examples of recent convenings include a session titled ‘International Relations in the Anthropocene’ at the 2025 European International Studies Association annual conference; a session on geographies of waste which includes the theme ‘rhythms and temporalities of waste’ at the Institute of Australian Geographers Conference 2025; a 2025 conference titled ‘Time and Justice: Temporal Interrogations into Socio-Ecological Justice’ at the University of Hamburg Humanities Centre for

Advanced Studies; and a special issue (2024, Volume 23, No. 4) of *Social Movement Studies* titled 'Imagined Futures in Social Movements: Collective Action, Prefiguration, and Temporalities' (see the editors' introduction by (Yates et al., 2024).

Above all, I am inspired by scholars with critical orientations within the study of time and temporality. This means, for example, questions about who or what has the ability to measure or attempt to control time and in what ways, about the relations between time and socio-political struggles, about how time and temporality may be used as political tools, and about how time has come to be defined in the ways that it has and what alternatives there might be. I adopt the term 'critical time studies' in order to bring together a range of literatures which are united in considering the character and socio-political construction of time and temporality. Scholars seem to rarely identify themselves as critical time scholars, first and foremost situating themselves in the discipline or disciplines within which they work, from philosophy to geography to international relations to anthropology. My reading has, however, revealed an ongoing and critical conversation about time and temporality taking place across disciplinary boundaries. In line with this literature, I distinguish between 'time' on the one hand as an abstract concept, and 'temporalities' on the other hand as how time appears in everyday life: how it is lived and experienced, how it is expressed through material objects and processes, and how it is described through storytelling and narratives.

Times and temporalities can be understood as political tools used in the pursuit of goals. Drawing on perspectives from critical time studies allows a nuanced and critical understanding of the politics inherent in understandings and framings of time and temporality. As the communications scholar Sharma (2022) puts it,

More important than finding a home for the study of time is the need to keep time studies political. Temporality is the ultimate political relation and a lens upon which to grasp the social experience of inequity... Temporality is always-already intersectional. It is always-already uneven. (Sharma, 2022, p. 44)

Researchers working in this area state that time and temporality may be used as tools of control and domination, as well as of liberation, resistance and survival. Several researchers have looked at how time is 'homogenized' and some places, spaces and situations framed as 'timeless' or 'historyless' - temporally blank

canvases which those doing the framing can ‘fill’ (Hammer, 2017; Rifkin, 2017). This power-play does not always take place in overt ways, and can be integrated into daily practices which are not commonly questioned. Beyond the expression and perception of temporality in everyday life, temporality can also be enlisted by artists and researchers in creative experiments and provocations as a way of encouraging people to see and experience the world differently (Olsson & Rahal, 2024).

Because my thesis is motivated by an interest and concern about environmental change, my engagement with existing critical time studies literature likewise enters into discussion with work which considers the intersections of temporality and environmental issues. This is of course an expansive area of study, and includes research on topics from the tensions between ‘clock time’ and the patterns of climate change (Bastian, 2012) (also see Michelle Bastian’s work in general); to the temporalities used by climate and environmental activists (see Fritz-Henry (2020) on ‘slow violence’, and Müller (2026) on ‘emergency time’ and ‘decolonial time’). Notably, a special issue of *Geoforum* titled ‘Time, Temporality and Environmental Change’ (Edensor et al., 2020) considers how time as a social construct is being challenged and re-thought in the face of ecological crises. This re-thinking includes using acceptance of the realities of climate change and upheaval as a vehicle for hope rather than despair, and insistence on reacting to today’s situations rather than putting energy into future imaginaries (Edensor et al., 2020).

Critical time studies scholarship is concerned with the forms, ‘shapes’ and characteristics of time. Dominant Western conceptions often frame as ordered, linear and connected to space and material things in dependable and predictable ways (Bastian, 2009). Temporalities are often narrated by dividing time periods into past, present and future, as well as measures of linear clock time such as minutes, days, months and so on. The clock, whether analog or digital, is one of the prime modes by which humans in ‘modern’ society measure time. Typically, clock-time is thought of as “24 equal hours, divided into two sets of 12” (Bastian, 2017, p. 373). This is the temporal formulation around which countless people and institutions orient their daily lives and activities. In addition to clocks, time may also be measured, for instance, with the help of calendars, which provide a look into the future in a way that clocks cannot. Greenhouse (1988) also adds the descriptors ‘shapeless’, and ‘cyclical’ to the list of Western conceptions of time.

Although thinking of time as cyclical or even shapeless is a departure from thinking of it as a uniform straight line which connects this moment to the next, Greenhouse makes the point that this is nevertheless still geometric thinking which does not include alternative shapes (curves, spirals, refracting circles and so on) or complex rhythms.

Studying time and temporality critically helps to reveal how environmental issues are entangled with issues of identity, race and the attempted domination of groups perceived as ‘minorities’. Indigenous, feminist and critical heritage scholars, as well as researchers in the geographies of time and temporality have shown how dominant conceptions of time are often linear, patriarchal and anthropocentric (Gergan et al., 2024) and how these conceptions feed into the control of land and resources, acts of marginalisation and colonial tendencies. A linear and regimented approach to time can “underpin the violence wrought on alternative epistemological and ontological standpoints” (Merriman, 2012, p. 24). Bear (2016, p. 490) notes that within capitalist systems, time is reduced to “a medium for the short-term generation of capital and the evaluation of worth”. As Kincaid (2000, p. 10) writes in *A Small Place*, her account of a British colonial past and its present-day traces in Antigua, “there was nothing noble-minded men could not do when they discovered they could slap time on their wrists just like that”. By wearing a wristwatch which enabled him to measure time and follow progress, the colonising wearer presented himself as knowledgeable, logical and in control (Kincaid, 2000). Furthermore, environmental historian William Cronon (1996) charts how in 18th Century North America, the fantasy of a ‘newly-discovered’ land rested upon the erasure of Indigenous histories. This “flight from history” (p.15) exemplifies the wilful forgetting which was and to a great extent still is used to build modern progress. Critics remind us that ‘new’ stories of environmental crisis obscure these longer histories of displacement, ecological breakdown, and discrimination endured by Indigenous peoples (Whyte, 2018). Similarly, ‘new’ discussions about living alongside and learning from nature also often marginalise the experiences and knowledges of Indigenous cultures and local people. In Antigua, North America and other contexts of colonisation and the control of ‘nature’, indeed including Sweden and Finland, non-Western, Indigenous, and more-than-human perspectives have been sidelined via the privileging of certain ways of measuring or tracking time, and by the way in which temporalities are framed in the stories which are told. Temporalities and temporal narratives are

never innocent: they remember and forget selectively, shaping whose worlds endure.

Post-humanist perspectives: the more-than-human and ‘renewed’ materialisms

At the heart of my work is a concern about human-nature relations and the fact that Western, colonising and modern societies have often been characterised by an enduring separation from what we call ‘nature’ (Plumwood, 1993). Today’s realities of resource extraction, eradication or protection of certain species, and the privileging of select kinds of ‘nature’ are all premised on similar long-standing assumptions about power, value, who gets to hold certain knowledge, and the control of other lives and places. These desires and constructions are multi-scalar, and impact on things and lives from the scale of the global and macro through to the molecular and the atomic. Indeed, as anthropologist Anna Tsing writes, “grasping the atom was the culmination of human dreams of controlling nature” (Tsing, 2015, p. 3).

It is important to note at this point that, as I have found during this research, people can be engaged in activities which are critiqued and labelled by other people and groups as ‘extractive’ or ‘damaging’, whilst simultaneously themselves caring deeply about the natural world. In many cases, everyday practices and pastimes are not themselves motivated by personal ideals of extraction. However, they reflect a wider and sometimes unconsidered tendency within society and governance structures as a whole towards controlling nature and/or extracting value from the landscape at an industrial scale. Furthermore, many people, myself included, may also be engaged in activities and practices rooted in an ethics of care and curiosity about nonhuman beings, whilst continuing to consciously uphold or unwittingly support environmentally destructive and damaging practices in other areas of their lives. In short, structures of power and control over nonhumans manifests quite differently in different peoples’ lives, yet I argue that it is persistent within many societies.

In the past two decades, increasing numbers of scholars have challenged the culture-nature, human-nonhuman and other socially-constructed dualisms. These dualisms and the concepts within them are no longer assumed to automatically exist as they are, but instead are seen as socially constructed and

politically motivated (Pearson, 2015). Feminist, Indigenous and new materialist⁹ thinkers such as Val Plumwood, Kim TallBear, Robin Wall Kimmerer, Donna Haraway and Stacy Alaimo, among others, have drawn attention to the harms and inequalities caused by the use of dualistic constructions in everyday life and research practices. These scholars, who can be placed in the broad category of ‘post-humanist’ work, have shifted the conversation from considering not only the relationships between humans and nonhumans, but to also thinking about how humans and nonhumans might be understood and re-defined. Humans are now understood by many scholars working in this area as being mixed up with other species and materials, from the presence of microplastics in the human brain, to the material and chemical effects of human activities on soils, waters and biomass.

The concept of the more-than-human (and the related term ‘multinatural’ (Bingham & Hinchliffe, 2008) has emerged from these shifts. The more-than-human, a term coined by human geographer Sarah Whatmore (Whatmore, 2006) and now taken up by many researchers, theorists and artists, traces a world characterised by relations and multispecies entanglements that cross boundaries and disrupt dualisms so that it is no longer ‘Homo sapiens against the rest’. There is a burgeoning body of literature which considers how thinking of and with the more-than-human can alter our understanding of our political and ethical responsibilities. This is seen as particularly important in the context of multiple socio-environmental crises (Némethy, 2026).

As an area of study, the more-than-human is fluid and cross-disciplinary. The most explicit focus has to date mainly been located in anthropology and human geography. In anthropology, the work of Anna Tsing (2015, on following matsutake mushrooms and their relations) is notable, as is an interest in multispecies ethnography (Kirksey & Helmreich, 2010; Ogden et al., 2013). In human geography, the more-than-human manifests as an interest in how nonhumans might shape, disrupt and ‘speak’ through scales of place, space and time. Scholars in Science and Technology Studies (STS) and the philosophy of science also concern themselves with the nonhuman in the conduct of science and the makeup of life itself (Haraway, 2013; Latimer & Miele, 2013; Latour, 2009). More-than-human research has developed in step with an increase in relationally-

⁹ This area of work is outlined in this chapter.

informed work across the social sciences and humanities (Selg & Ventsel, 2020), and appears across further subdisciplines and subfields, including but not limited to multispecies studies, political ecology, the environmental humanities, the new materialisms (which are discussed below), critical Indigenous studies, landscape architecture and planning, animal geographies, vegetal geography, and ecofeminism (Bastian, 2017; Lorimer & Hodgetts, 2024; Price & Chao, 2023). However, there are also disciplines and sub-disciplines where this approach has not been socialised beyond a few exceptional papers or where the concept is regarded with suspicion. Examples include environmental history see O’Gorman and Gaynor (2020) for a summary of the challenges in this field), some branches of archaeology, and the pure sciences.

The ‘more-than-human’ is not without its troubles and challenges. Max Liboiron (2021) argues that both the terms ‘nonhuman’ and ‘more-than-human’ unwittingly re-centre the human. The term ‘more-than-human’ is less than perfect since it uses the human as a reference point and subject against which to position everything else. As such, I also use the word ‘multispecies’ within my thesis. However, the term ‘multispecies’ also has its challenges in that it assumes the primacy of ‘species’ and living things, whereas I believe that materials and non-sentient things, too, are important and impactful. I argue that the ‘more-than-human’ acts as a reminder of the ethical and moral responsibilities of human actors within an interconnected, beyond human world. We are forced to confront human responsibility. Our societies are vast and dynamic, and humans, to differing degrees, consume, extract and emit. These processes take place within and have profound impacts on a more-than-human world. Drawing on the normative commitments which motivate this thesis, the spotlight should be on humankind, since responsibility for a host of environmental damages lies largely with *Homo sapiens* - primarily with a wealthy, white, Western subset of the species (Whyte, 2018). As Karen Barad (Barad, 2000, p. 218) writes, “learning how to intra-act responsibly within and as part of the world means understanding that we are not the only active beings – though this is never justification for deflecting that responsibility onto other entities”. This cannot be obscured. I argue that paying attention to things beyond the human in relation to and with the human acts to magnify and address human responsibility in the context of a responsive and affected world which will continue to be such into the future. At the same time, human actors are heterogenous and highly varied in their capacities and the extent to which they should shoulder blame and responsibility for today’s

socio-ecological challenges; humans within the more-than-human world should not all be considered in the same way.

Another key critique of ‘mainstream’ more-than-human work is that academics, especially white or ‘global north’ academics such as myself who are working in western institutions have hailed work on the more-than-human and multispecies actors as a fresh perspective; as something quite new. In reality these ‘new’ ideas follow generations and centuries of thought and experience. I recognise the sincerity with which the majority of scholars have taken on these theorisations, and the important work which has been done to date. Concern about socio-environmental challenges and crises calls for a shake-up of the status quo within and outside the academe. However, relational and more-than-human perspectives are anything but new to Indigenous scholars, communities and lay-people who have been thinking and living in relational terms for thousands of years (Gould et al., 2023; Todd, 2016). As TallBear (TallBear, 2017) writes, Indigenous peoples “never forgot the interrelatedness of things”. Gould et al (2023) note that Indigenous epistemologies and ontologies involve situated, context-specific knowledge and frameworks which must not be extracted or appropriated for non-critical use elsewhere. That said, work on the more-than-human frequently proceeds without acknowledgement of the foundations of relational and more-than-human thought within Indigenous communities. Indigenous scholars are too rarely cited in work on the more-than-human, and at worst Indigenous places and groups may be framed as harmed, deficient or in need of ‘saving’ within studies claiming to be based on the very ontologies and understandings which shape Indigenous views of the world (Aldred et al., 2021). A similar critique of white, western and extractivist academic tendencies can also be applied to work in ‘new’ materialism.

The more-than-human and materiality can be understood as mutually reinforcing and as part of one another; the concepts and ideas which they spark are inherently intertwined. Materials are more-than-human and the more-than-human is very much about material processes and interactions. Still, materiality demands specific attention because it is through acknowledging the materiality of the world – the humus, the roots, the fingers, the walls, ‘stuff’ and things in all their multiplicity – that in this thesis I explore how temporalities are expressed and bring meaning to engagements with the forest.

Adam and Groves (2007, p.178) may be making an obvious point when they state that,

[...] matter is our physical world – the earth we live on, the soil that feeds us, the air we breathe, the water we depend on, the body we inhabit, the landscapes and cityscapes we dwell in, the other beings we co-evolved and co-exist with and the socio-cultural world of artefacts [...]

However, normative political and social theory for a long time privileged language and intangible values (Coole & Frost, 2010). Some disciplines and sub-disciplines such as heritage studies began with an interest in curated artefacts of the physical world and have since shifted (in its case via critical heritage studies) to a focus on meaning and emotion. Recent years have seen a resurgence in interest in the material world. The feminist science studies scholar Donna Haraway was already writing in 1988 about ‘situated knowledge’, which describes how all knowledges and experiences are subjective and depend on the exact places and actors involved. I understand her assertion that knowledge comes from somewhere and is rooted in place (and therefore the material world) as an important precursor to what is called ‘new materialism’ in dominant academic discourse.

Rosi Braidotti named the now well-established ‘new materialism’ in 1991 (Braidotti, 1991). As with all areas of study, there are variations within new materialism. However, as a whole this interdisciplinary area of study is vocal about re-centering matter, opening-up empirical approaches which deal with reality rather than representation, and bringing a critical evaluation of the agential role of materiality [back] into science and research practices (Coole & Frost, 2010). New materialism is applied to diverse areas of interest, from the tools, spaces and materials involved in knowledge production, to the study of embodied experiences, to consideration of the theoretical implications of applying materialist thought to different disciplines (Gamble et al., 2019). For the feminist new materialist scholar Karen Barad and likewise for myself, matter matters as something which transcends and disrupts scales of space and time as they tend to be conceived of in the West and in traditional scientific thought (Barad, 2017b). Matter is thought of as potent and carrying potential as well as having already-unfolding effects, therefore acting to connect multiple temporalities with multiple spaces and places. It is important to emphasise that Indigenous scholars and allies also critique the ‘new’ of new materialism and its lack of acknowledgement of

Indigenous standpoints. On this note, Coole and Frost (2010) suggest ‘renewed materialisms’ in order to acknowledge these academically-neglected but long-standing perspectives. I therefore take up this term in my work.

There is a rapidly growing body of empirical literature on materiality in itself and on how materiality is involved in the construction of temporalities. Approaches within human geography and anthropology, with inputs from feminist and postcolonial scholars, explore the materiality of everyday life and the places and spaces with which we interact. These studies have engaged with how people’s physical, material and even ‘mundane’ (Holmes, 2020) experiences contribute to socio-political phenomena and how the everyday itself can be thought of as a political realm (Courpasson, 2017). This area of research has also looked at how imaginaries and performances of temporalities are tied to multiple spaces and places, in which materiality plays a role. See, for example, Louise Amoore’s work (2013) on the politics of possibility in shaping borderlands and crossings; Anderson’s related work (Anderson, 2010) on the impacts in security spaces of the anticipation of threat; and Dyson and Jeffrey (2016) on women’s grasping of pre-figurative politics to perform female agency which is yet to exist in Uttarakhand, India. Attention to temporalities in combination with post-humanist perspectives has in addition in recent years led to an expanding body of work on the kinds of temporalities enacted by multiple species and materials. For example, Pampus and Everts (2025), writing within vegetal geography research, describe what they call the ‘planty temporalities’ enacted by the sea buckthorn plant as it takes over German post-extractive mining landscapes where “restoration regimes collide with the spatial and temporal logics of plant life” (Ibid., p. 4). This is but a tiny selection from a rich and diverse literature at the intersections of materiality and temporalities.

Boreal forest literatures and critical forest studies

Social science research on the boreal forest is extremely broad. In political science, forest studies are often oriented around the concept of governance. Here, forests are seen to be governed as ‘goods’ (Van Bommel et al., 2012) and are regulated and managed by, with and without the state (Ibid., 2). Forest governance literatures consider a range of issues from forest certification (Cashore et al., 2004), to bottom-up and participatory forest management (Niedziałkowski & Chmielewski, 2023) to the development and implementation of forest policy and

laws (Lier et al., 2022; Roengtam & Agustiyara, 2022). Studies of time and temporality within forest literatures are similarly broad. I therefore focus in on work which, like mine, starts with local-level experiences of forest temporalities. Rebecca Banham (2025) provides a notable piece on how Tasmanian forests help to form and maintain peoples' self-identity. In this text, Banham outlines how different kinds of time ('personal', 'external' and 'ontological') feature in self-narratives and how forests feed into these stories. This layered understanding of temporality aligns with my focus on how multiple temporalities are experienced and negotiated in forest contexts:

Personal time' relates to cycles and change as they pertain to the individual – experiences of forests that involve personal memories and negotiating life stages. 'External time' involves engaging with the cycles of the forest that connect different people's experiences (such as annual seasons), whereas 'ontological time' refers to temporal understandings that connect an individual to the far past and future – for example, respecting the 'wisdom' of old-growth trees. Forest encounters help individuals to understand their own lives and being, through these 'layers' of temporality. (Banham, 2025, p. 124)

Within the broader field of forest research, the emerging area of critical forest studies provides a particularly useful framework for exploring boreal forest temporalities. The first dedicated special issue was published in its entirety in the Australian Journal of Environmental Education in March 2026, i.e. at the time of the completion of this thesis. Critical forest studies brings together creative, critical and experimental research in collaboration with multispecies and more-than-human actors within forest contexts, in order to question and critique assumptions and dualisms and to open up alternative ways of knowing forests (Rousell et al., 2026). In their paper on 'forest sentience', for instance, Ryan and Joy (2026) advance innovative methods for approaching trees and advocate for "affective and creative responses to environmental change in Northern Finland" (Ibid., p.4). As the editors of the special issue put it, critical forest studies takes an interest in "contested political ecologies that emerge where different forest cosmologies, languages, histories, and ecologies meet" (Rousell et al., 2026, p. 1), and where "soil and sky, wet and dry, root and shoot, shadow and light, microbiota and mycelia become relational entry points" (Ibid.) This is not to say that such creative and exploratory work has not already been unfolding previously, however critical forest studies collects and provides a home for these approaches.

Contributions

Critical time studies, work on the more-than-human and new materialism, and critical forest literatures provide fertile ground for exploring how boreal forest temporalities are navigated. Building on the literature review above, I now point to specific areas of engagement and summarise the ways in which my work contributes and responds. The thesis contributes not only to these interdisciplinary literatures and their intersections, but also to political science, as well as to human geography, whose varied concerns with space and place reflect the interest of my work in re-thinking the ‘space and place’ of the boreal forest – an endeavour which is crucial to understanding boreal forest temporalities. The contributions outlined here speak to the concerns of the main research question on how temporalities shape, challenge, and bring meaning to everyday human and more-than-human engagements with the boreal forest, and also to the sub-questions on temporal privileging and neglecting, forest imaginaries, and legacies.

Focussing attention on temporal politics, developing temporal conceptualisations

I contribute to debates on politics and environmental governance within political science as well as within human geography by focussing attention on temporal politics and foregrounding the interplay between the privileging and neglecting of temporalities. I challenge the tendency within political science to treat temporalities as a neutral backdrop to political processes, rather than as constitutive elements of them. Meanwhile I complement work on temporalities in human geography and especially political geography by strengthening and applying conceptualisations of temporalities as political and contested, not only stating that they are but also how they are understood as political. Drawing on critical time studies, I conceptualise temporalities as a terrain of contestation through which particular outcomes, values, and ways of knowing the forest are advanced while others are marginalised. In doing so, I bring temporal politics into closer dialogue with studies of forest governance, demonstrating how struggles over the forest are also struggles over temporalities.

Still, as Gokmenoglu (2022, p. 644) notes, “there is an abundance of empirical studies that use time either as an object of inquiry or an explanatory dimension of

sociopolitical phenomena, but...these studies have yet to develop a conceptual or theoretical common ground". In this project, I attend to temporalities as objects of study to be followed and traced, and also keep societal assumptions and narratives about temporalities in mind throughout the thesis. Indeed, writing about temporal politics requires an understanding of how certain temporal framings cause things to play out in certain ways. Responding to the call for actionable and transferrable conceptualisations, I contribute to interdisciplinary temporal studies by providing and working with concepts inspired by a number of literatures (as outlined earlier in this chapter) and which may be applied across critical time studies and beyond. My development of the central concept of boreal forest temporalities within the wider realm of temporal politics allows the critical study of the temporal in a specific location and place, and I show clearly how I go about doing this. Although then I focus of course on the boreal forest, my conceptualisation can be edited and adapted to other empirical areas of research.

The conceptualisations used in this thesis work to challenge assumptions which persist even in critical literatures. As Sharma (2014, p. 111) states, for instance, "slowness is suspect", since 'slowness' is predicated on pre-set ideas about speed and what it does or does not mean to move 'towards' or 'away' from something. Therefore, common temporal descriptions such as 'past', 'present' and 'future' and reference to speeds, for instance 'fast' and 'slow' are sometimes used uncritically, reproducing certain power relations. Through the concept of boreal forest temporalities, I argue that challenging the idea of time as linear, singular and divided up into neat categories and instead thinking with temporalities and the sometimes-unpredictable behaviours of the more-than-human makes it possible to tell fresh stories both in the forest and elsewhere. I show that temporalities as everyday, as intersecting, as spatial connectors, as embodied, imagined and appearing through legacies can be seen as tools with which to think the world otherwise, opening up possibilities.

Strengthening more-than-human and new materialist perspectives within political science

As I have shown, there is an increasingly critical and curious engagement with the more-than-human and materiality across the social sciences, even if the same concepts are not always named. Attention to the more-than-human specifically within the discipline of political science has historically been scant largely due to

a focus on human institutions and processes as political arenas. There are now an increasing number of scholars working within political science and international relations on how we might think the world and politics differently by including nonhuman and more-than-human actors and ways of being. See, for instance, work by Boyer and colleagues (Boyer et al., 2015; Woodhall & Trindade, 2016), Canavan (2026), others in critical animal studies, and the work of feminist political scientists such as MacGregor (e.g. her 2011 book on ecological citizenship, (MacGregor, 2011)). Nevertheless, the focus is largely upon animals and more ‘charismatic’ living beings. Meanwhile, researchers within anthropology and human geography especially are writing about politics in relation to multispecies and more-than-human worlds, for example ‘vegetal politics’ (Head et al., 2014), and multispecies justice (Fitz-Henry, 2022).

This thesis brings a greater commitment to more-than-human and materialist perspectives and along with it an expansion of who and what is included in ‘the political’ into political science. I expand on this in Chapter 3. However, in short I understand the more-than-human as political: power-relations and power shifts are brought into being through the relations between myriad multispecies and material things. Indeed, Ogden et al. (2013, p. 16) “anticipate[d] a more critical engagement with how we approach “politics” in the years to come”, and Braun and Whatmore (2010, p. ix) writing from within human geography, called fifteen years ago for a more open-minded understanding of ‘politics’ in which “things of every imaginable kind... help constitute the common worlds that we share and the dense fabric of relations with others in and through which we live”. To date, Western thinking has contended that since nonhumans do not (always or ever) possess self-consciousness and the ability to plan ahead, they forgo the basic requirements to be political subjects (Burke & Fishel, 2020). I contend that even beings such as trees and rocks which are seen as ‘un-political’ within mainstream and anthropocentric political thinking are entangled in networks of more-than-human material politics. As Kirksey and Helmreich (2010, p. 545) write, more-than-human actors have “legibly biographical and political lives”.

This thesis engages with ongoing debates about the extent to which nonhuman beings can be thought of as agential, and in doing so contributes to wider discussions in political science and political theory on the meaning of ‘agency’ itself. Through an analysis of how temporalities are constructed and communicated, I show how beings not typically considered ‘charismatic’ are

nonetheless brought into view as politically significant. These include tiny soil-dwelling potworms (Chapter 4), trees (Chapter 5) and fungi (Chapter 6). Moving beyond their relegation to the status of passive background processes or controllable side-effects, I argue that environmental phenomena and material processes such as rusting (Chapter 4) and fire (Chapter 5) should be understood as legitimate political actors and collaborators. In this way, the thesis foregrounds the political agency of non-living as well as living beings. A more detailed discussion of agency follows in the next chapter.

Methodological contributions

Studying everyday temporalities and including more-than-human actors as political, agential and crucial in the constitution of those temporalities requires the development of appropriate methodological approaches. Those approaches need to be able to access non-linguistic elements such as embodiment and the senses as well as narratives and linguistic expressions across spatial and temporal scales. In this thesis I contribute to political science and to interdisciplinary literatures on temporalities with an innovative multimodal patchwork ethnography (elaborated on in Chapter 3). This approach compliments more commonly-used ethnographic methods such as interviews and participant observation with additional attention to materials, sounds and non-linguistic expressions of emotion and affective responses. These are often operationalised within the same contexts in which interviews and language-based methods are employed and act to draw out additional layers of meaning, whilst in some cases working to access actors and scales which are more difficult to comprehend or even approach via linguistic methods. My creative methodological contribution enables more-than-human actors to be approached and included as research collaborators and participants, and shows how temporal relations which extend across spatial and temporal scales can be traced through everyday embodied practices and expressions as well as through narratives.

Studying temporalities in the boreal forest setting

Despite the breadth of literature on temporal politics and the politics of time and temporality (which is explored in Chapter 3), there are few examples of work which explicitly look at the ways in which plural temporalities are

instrumentalised and experienced within the context of the boreal forest. Existing studies mainly focus on the content of debates about the forest - debates that invariably concern temporalities. Yet these works rarely ask how precisely different actors engage with temporalities and how they might use them in order to navigate those forest debates or to legitimise their actions. It is within this gap between the ubiquity of temporal language in forest debates and the absence of analysis of how temporality is enacted that this thesis intervenes.

My work contributes to 'critical forest studies' (outlined above) by providing an analytical lens with which to study forest temporalities and, by extension, forest spaces and places. Taking a critical approach to temporalities in the context of the boreal forest leads to going beyond simplified categorisations of the boreal forest itself as a space and a place. My work problematises the polarised or black-and-white framing of the boreal forest as a site of biomass production and resource extraction on the one hand, and of nature protection and conservation on the other. Instead, I contribute to boreal forest literatures and forest governance literatures more broadly by showing that these framings are not always in reality so neatly opposed, and that there are many more nuanced accounts which can be given of the politics of boreal forest places. Working with these more nuanced framings also contributes to the stated interest in critical forest studies in creative approaches which think outside of pre-existing conceptual boxes.

Wider contributions

Given the research sites and materials used in each of the empirical chapters, this thesis also speaks to conversations about how forests and other landscapes are represented through museums and curated exhibition spaces; to literatures about the instrumentalisation of temporalities in conservation practices, organisations and landscapes; and to the now-proliferating social science literature on non-timber forest products, fungi and mushroom foraging. With the exception of the inspirational work of Anna Tsing, critical questions about temporality and politics and the use of ethnographic methods remain limited within this last area of work. For reasons of scope and in order to remain focussed on the ambition of 'starting with' the forest, I have not engaged in-depth with the full range of these varied literatures. However, each empirical chapter can be read as a contribution and as a provocation for further research in these directions. The thesis therefore prompts practical and theoretical considerations for land and resource management,

conservation, public outreach and sustainability initiatives, both within the boreal forest and beyond.

Finally, even though this is a project about the boreal forest, it is above all else about temporalities and how to research them. My conceptual and methodological approaches can be put to use in many contexts and settings quite different from the boreal forest and from the sites which feature in Chapters 4, 5 and 6. Chapter 3 provides a detailed account of how I approached the design of this project, and is intended as a guide for researchers who wish to follow similar routes but perhaps in quite different contexts.

Structure and outline

This Introduction has covered my motivations for researching boreal forest temporalities, the research questions and scope of the thesis, and the key areas of literature to which I contribute.

The next chapter, Chapter 2, presents the theoretical lenses which I use and develop in order to guide my collection of materials, my analysis and discussion of those materials, and to answer the research questions. These conceptualisations build on elements from within the critical time studies, more-than-human, and renewed materialist literatures highlighted in the Introduction. I describe the key concepts of temporal politics and boreal forest temporalities as well as describing how temporalities as I conceive of them are more-than-human and embodied and unfold in the everyday, feeding into forest legacies and imaginaries.

Chapter 3 then shifts the focus to my methodology and the multi-sited ethnographic research undertaken. My methodology is informed by an abductive back-and-forth approach, by reflexivity and reflection on my positionality and those of the participants, and by a more-than-human approach to noticing and paying attention. I emphasise how the abductive approach which I have taken by constantly moving between segments of theory and empirics has made it inaccurate to speak of individual methods as separated from theoretical, conceptual, and practical of-the-moment considerations. Instead, 'methodology' captures the ways in which each technique or experiment has evolved with the situation at hand and in line with the demands and challenges of the theory. I

have also allowed my observations in the field to constantly inform and strengthen the theoretical framings presented in Chapter 2. Following a discussion of abductive and reflexive methodology and positionality, I move into questions of research design, covering the selection of sites and cases and the ways in which I gained access to people and locations. I then detail the types of materials and data collected, before finally moving into a summary of the narrative analysis and attention to embodied and material elements in the collected data.

Once the interconnected empirical, theoretical and methodological approaches have been laid out, it is time to engage with the sites and materials at the centre of this project. This then takes us to the three empirical chapters, or Chapters 4, 5 and 6. Each empirical chapter focusses on a different set of locations and contexts in which boreal forest temporalities are experienced and shaped: the forest museum, national parks and nature reserves, and the 'mushroom forest' and mushroom foraging communities. Each chapter is seen not only as the exploration of how boreal forest temporalities are done by actors oriented around different values and interests, but also as a contribution to literatures on the empirical topics at hand.

Chapter 4, the first empirical chapter, considers how boreal forest temporalities are experienced and play out via practices of curation in the context of the museum. I specifically focus here on the Finnish Forest Museum, with some additional contributions from other museum spaces. Traditionally, museums are thought of as spaces constructed, and their contents curated, in order to connect with and tell tales of the past. I show how this remains true, but that at the same time curation can be analysed in ways which allows multiple temporalities to be revealed. I conceptualise 'museum spaces' as the museum building and surroundings, but also online spaces and spaces far beyond the museum's four walls. In doing so, I begin to unravel a thread which runs throughout the thesis: the boreal forest exists where certain trees and plants wind their roots into the earth and where it is located on a map, but the places and spaces in which its temporalities are expressed by no means end at the edge of the forest.

Chapter 5, the second empirical chapter, studies the ways in which boreal forest temporalities emerge in forest conservation settings and through landscapes. The main sites which I consider are national parks and nature reserves, though the chapter also brings in insights from private forest owners and other people with interests in conservation and protection. The chapter explores how conservation

practices prompt the imagination of and taking of action towards different, sometimes conflicting, boreal forest futures. I show how the material qualities and behaviours of living beings and inanimate things are instrumentalised in order to tell stories at the scale of the landscape, and how conserved and protected forests are caught between desires for romantic historicity and preservation on the one hand, and progressive growth and relevance in the face of contemporary climatic and societal challenges on the other.

Chapter 6, the third empirical chapter, turns to fungi and the individuals and collectives involved in mushroom foraging. Through the bodies of fungi, of humans, and of other beings in the forest, the chapter is grounded in the lived experiences of mushroom foragers and the fungi themselves. But the present is not the only temporality to consider. When spending time with fungi and with foragers, it becomes clear that memories, histories, hopes and fears for the future and more-than-human rhythms all figure in fungal temporalities, too. This chapter takes a particular interest on the one hand in personal, familial and intergenerational experiences of boreal temporalities. On the other hand, the chapter demonstrates how beginning with embodiment and getting close to the forest floor reveals temporalities as blurring the boundaries between spatial and temporal scales. The chapter reaffirms the conceptual utility of my approach to boreal forest temporalities and temporal politics: developing understandings of temporalities as more-than-human, embodied and everyday within a multimodal ethnography allows connections to be made between the seemingly mundane and unassuming and grand scales of international geopolitics. As a whole the chapter shows how fungi co-create boreal forest temporalities along with other actors, and that boreal forest temporalities are at once rooted and spatio-temporally transcendent.

In Chapter 7, the conclusion, I summarise the findings of the thesis. Exploring the same research questions across all three empirical chapters has revealed many differences as well as some overarching similarities between the three cases in terms of how boreal forest temporalities are privileged and neglected, how forest imaginaries are upheld, and how forest legacies are acknowledged, challenged and remade. The final chapter is therefore an opportunity to thread together findings from the museum, national parks and protected forests, and the ‘mushroom forest’ and foraging communities. I outline the significance of the findings for critical time studies, more-than-human scholarship, boreal forest studies and

political science, as well as pointing to the contributions of my work for developing interdisciplinary methodological approaches for researching temporalities and/or forest settings. Finally, I suggest avenues for further research based on patterns identified across the thesis and areas which have remained outside the scope of this study.



Chapter 2. Theorising boreal forest temporalities

In this project, I ask how temporalities shape, challenge and bring meaning to everyday human and more-than-human engagements with the boreal forest. In addressing this main question, the thesis also asks how temporalities are privileged or neglected, how imaginaries of the forest are temporally constructed, and how forest legacies are acknowledged, challenged and re-made. Together, these concerns drive the overarching aim of the thesis: to explore how boreal forest temporalities shape every-day, local-level, and multispecies practices. To pursue this aim, I: (1) investigate how temporal framings are inherently political; (2) develop a more-than-human understanding of temporality; (3) examine temporal politics at small and granular scales; and (4) show how multiple times and temporalities intersect in the present.

These aims and objectives, elaborated upon in the previous chapter, rest upon the conceptual foundations of two broad areas of scholarship: critical time studies, and the more-than-human and (re)new(ed) materialist research. I also introduced these in the first chapter along with the empirical grounding of critical forest literatures. To summarise briefly, my research firstly follows more-than-human and [re]new[ed] materialist scholars (who may also identify in many instances as Indigenous, decolonial and/or feminist researchers) in suggesting that the more-than-human is and always has been a political actor. The more-than-human here refers to a diverse assemblage of things and beings which may sometimes be human, but which may also include many other species and which even go beyond the category of 'species' to emphasise blurs and overlaps between bodies, identities and materials. I argue that nonhuman living beings and all manner of materials and 'things', whether they have ever been alive in a biological sense or not, are agential and should be thought of as legitimate political actors. Within this

ontology, all species and materials “are entangled together in ways that co-fabricate worlds, spaces and encounters” (S. J. Bell et al., 2018, p. 1).

Secondly, my work is rooted within an interdisciplinary area of literature which can be called critical time studies. Scholars in this area treat time and temporality as political, plural, and contested rather than neutral or singular. Note that, as I expand upon later in this chapter, I do not work with ‘time’ as a concept, focussing instead on temporalities. However, when citing the words of my interlocutors and other researchers, I do occasionally use the word ‘time’ in order to echo what they have told me or written. In this thesis, then, I draw upon conversations in critical time studies in order to uphold the understanding of temporalities as constructed and shifting rather than pre-existing and fully-formed, and of the temporal as a whole as a terrain of contestation which is used to achieve certain outcomes in the world. Critical time studies is a broad umbrella of research which includes, for instance, critical heritage studies and critical futures studies as well as other strands of work which consider time and temporality in critical and creative ways. It is worth mentioning these two areas which were not covered in the Introduction because their engagement with heritage and futures influences my thinking on the key concepts of legacies and imaginaries, which I outline later on in this chapter. Bringing together the renewed materialist and more-than-human literatures with critical time studies allows me to build upon recent discussions about materiality and agency in critical time scholarship, and to conceptualise legacies and imaginaries as constructed through material practices and acts, as well as through linguistic narration.

Heritage can be seen as “the performance and negotiation of identity, values and a sense of place” (L. Smith & Waterton, 2020, p. 292) through which “the meaning of the past is continuously negotiated in the context of the needs of the present”, and where debates about the legitimacy of meanings take place (Gentry & Smith, 2019, p. 1149). Critical heritage studies critiques the idea of leaving heritage to ‘heritage experts’ in certain institutions (Gentry & Smith, 2019) and challenges the division between ‘natural heritage’ and ‘cultural heritage’ (Winter, 2013) Marmion et al. (2010, p. n.p.) advocate for thinking about heritage outside of “a predefined ‘heritage’ context” in order to focus on “how people perceive heritage in their own terms” and lived experiences; this approach mirrors my own curiosity about how legacies (which as we will see, are related to but differ subtly from heritage) might be constructed and navigated in everyday lived experiences.

Critical futures studies, meanwhile, investigates the imagination and enactment of possible futures (Inayatullah, 2013). Connecting with the normative and political interests of critical time studies, critical futures studies has “a reconstructive impulse” which acknowledges the need to challenge power structures rather than only analysing them (Godhe & Goode, 2018, p. 153). A feminist reading teaches that unequal power relations of domination and subordination (Plumwood, 1993) mean that not everyone is able to act upon the futures which they nevertheless can imagine. The critical futures studies literature often mentions the ‘colonisation of the future’, whereby powerful actors try to narrow the number of possible futures to centre around the futures which they imagine and which they have the ability to dictate (Godhe & Goode, 2018). As Vásquez-Fernández and Ahenakew pii tai poo taa state (2020, p. 68) “there is not just one desired future for all”. In line with this, when analysing my materials I do not assume that the future is ‘open’, but rather that futures are narrowed and even closed through the practices and storytelling of different actors. The role of materiality is important here: time scholar Barbara Adam argues that due to human interactions with materiality which plays out in its own uncontrollable way (for instance the materialities of fossil fuels and carbon), we have locked ourselves into a particular set of futures from which we cannot escape, although, importantly, we do not necessarily know how those futures look in their entirety (Adam, 2024).

The purpose of this chapter is to show how I build upon these literatures in order to develop the conceptual toolbox that informs my methodological approach and which supports the analysis and discussion in the empirical chapters. I use the theoretical foundations provided by critical time studies and more-than-human scholarship to develop my conceptualisation of temporal politics and boreal forest temporalities. Within the overarching theoretical lens provided by these concepts, I also describe how I conceive of boreal forest temporalities as connecting spaces and places, as intersecting with one another, as everyday, embodied and more-than-human, as connected to forest imaginaries, and as feeding into boreal forest legacies.

In the next part of this chapter I firstly clarify my understanding of agency, a crucial conceptualisation which underpin the theorisations which follow. I then introduce temporal politics, which clarifies the ways in which temporalities are political, and how following temporalities is therefore a way of following power

relations. The third and longest section outlines my conceptualisation of temporalities and specifically boreal forest temporalities. Within this section I discuss what it means to focus on temporalities which appear in boreal forest sites, then define and explain how I understand boreal forest temporalities as spatial connectors, as intersecting, as everyday, embodied and more-than-human, before explaining my conceptualisation of forest imaginaries and forest legacies.

Agency as relational, material and more-than-human

What is meant by agency, and what is it to be an agent? In recent years, agency has been much talked about in the social sciences, and the disciplines of human geography and anthropology in particular have adopted a number of definitions. Schatzki (2025, p. 1) states that “agency is the capacity to act, alternatively, the exercise of this capacity. It is both a power and an actuality.” I suggest that agency, at its most basic, is the ability to enact or cause change, even if that ability is not always acted upon. I think of agency as relational; actions and change do not occur in a vacuum and can only happen between two or more actors. The question of agency, including how it is defined and which entities can be agential, sometimes appears to be settled upon first glance at work which uses the term. However, there is a dense tangle of assumptions and disagreements at the heart of many discussions and the matter is far from resolved (Emirbayer & Mische, 1998; Kuus, 2019). Clarifying the meaning of agency in my work is essential because temporalities are enacted by many kinds of beings and materials in the boreal forest; how agency is defined shapes who and what can be recognised as agential and as participating in temporal politics.

A key debate considers the question of whether an actor must have consciousness and/or intentionality in order to be agential. The philosopher and anthropologist Bruno Latour (e.g. 2009) is often cited as the scholar who, in attempting to break down the barriers between humans and nature and putting the spotlight on nonhuman beings as important agents, rejects the connection between agency on the one hand and consciousness and intention on the other. He argues that if consciousness and intention were necessary components of agency, then nonhuman beings could not be agents because according to him they do not always have consciousness and never have intentionality. As a result, Latour

disassociates agency from both consciousness and intentionality. Yet Latour can be critiqued for ironically relying on a very human understanding of intentionality. This disregards the possibility that an unconscious, pre-reflexive form of intentionality can exist and shape the actions and ways of being of nonhumans. Recognising such forms of intention matters for my project because they help make sense of how trees, fungi, soils, and other forest beings enact temporal rhythms and change without conscious thought but nevertheless through forms of direction which could be seen as intention.

In my work I am inspired by those who recognise the agency of the more-than-human, many of whom do follow Latour in fully rejecting the agency-intentionality connection in order to include all manner of materials and animate and inanimate beings in who or what can be an agent. Renewed materialist scholar Jane Bennett (2020) emphasises the ‘liveliness’ and ‘vibrancy’ of all things, not only living or animate beings. Whilst aligning with the stance that nonhuman and more-than-human beings have their own rich life-worlds and that all things are agential, I nevertheless suggest that intentionality can apply to all things. This is as long as we do not assume that intentionality requires human-type consciousness. That said, intentionality does not have to be present for something to have agency. Agency, I therefore argue, varies between actors.

Rather than assuming intentionality to be based on human consciousness, I adopt Kim’s (2020) idea of bodily intentionality or material intentionality. This does not necessarily involve conscious thought and can be applied to any number of animate, inanimate, dead and living things. The reality of this theorisation is that it relies on the physical or material characteristics of each entity that it applies to, emphasising individual qualities and modes of existing in the world. I understand material intentionality with further help from the philosopher and geographer Schatzki (2025, p. 2) who clarifies that an intentional action occurs when there is an “aim to carry out a particular action’. Reading intentionality in this way allows me to suggest that, as scholars in plant and vegetal studies have argued, things such as plants can have intention even if they do not, as far as we know, consciously think. Plants certainly aim to grow, disperse seeds and spread their DNA. Material intentionality, I argue, allows us to talk about intentionality beyond human ways of expressing intentionality, and allows for diverse and different intentions and agencies to be recognised. This allows a rejection of

Latour's assumption that only humans are intentional and that in order to talk about agency we have to disassociate agency from intention.

For some critics, the frequent and uncritical use of the term 'agency' itself in a number of contexts acts to remove significance from the word, whilst for others, specifying the type of agency in question would be helpful. Archaeologist Lindström (2015, p. 228) argues that we need to differentiate between "the living and the lifeless, effects and acts, effectants and actants," calling for the use of other terms. Echoing critics of Latour, Schatzki (2025) criticises the way in which attributing one single and simplified understanding of agency in a broad way to all things can result in the loss of recognition of the many different kinds of agencies which actors display. It is important to "recognise differences and... grasp the multiplicity (or multi-hybridity) that underlies what happens in the world", he writes (Ibid., p.4). Science studies scholar Pickering (2025) adds that a focus on fixed agents is not helpful; instead, agents shift and emerge. These thinkers are united in their concern that agency as it is often understood and used can create a flat ontology which obscures individual qualities, struggles, perspectives and politics.

My approach responds to these concerns by treating agency as multiple and relational, while still attending to the distinctive ways in which different beings in the boreal forest generate change and shape temporal processes. For the purposes of this thesis, this debate is not only ontological but also political. How agency is recognised or denied shapes whose temporal framings, forest practices and imaginaries are influential, marginalised, or ignored. I apply agency to all things, but I do not claim to place humans and other entities on an even playing field. In order to be attentive to power relations and the different ways in which different actors play a role in boreal forest contexts it is important to highlight, not blur, the differences between them. Some agential beings may happen to be 'conscious' in the same way as humans, but others may not be. I argue that this does not make an actor any more or less agential, though it will affect how they participate in temporal dynamics and the extent to which their participation has a clear or strong impact.

Meanwhile, material intentionality is an inherent element of many agencies and allows us to see agency as emerging from the movements and aims of plants, for instance, which vary greatly. Material intentionality arises from a single actor's physical form or behaviours, and when I use the term agency it is with the

understanding that each actor (or agent) has their own material intentionality. However, and to summarise, the effects of this intentionality, which in some but not all cases is coupled with particular kinds of consciousness, can only be identified in the relations between actors. In other words, agency itself, whether it is the capacity to act or the enactment of that capacity, is the result of an actor existing in a particular time and place in a particular form in a very real and grounded way, and it is never possessed by one actor alone. I follow time scholar Bastian (2009) who draws on Val Plumwood's work to state that agency, including more-than-human agency, can be creative, can encompass elements of surprise, and comes from the relations between things, rather than being something possessed by only a few actors (Bastian, 2009; Plumwood, 1993). This understanding of agency underpins my analysis of how temporalities are enacted in the boreal forest.

Temporal politics

Invest in the millennium. Plant sequoias.
Say that your main crop is the forest
that you did not plant,
that you will not live to harvest.
Say that the leaves are harvested
when they have rotted into the mold.
Call that profit. Prophecy such returns.

(Wendell Berry, "Manifesto: The Mad Farmer Liberation Front", *The Country of Marriage*, (1973))

In the poem excerpt above, Wendell Berry invokes multiple human and nonhuman modes of measuring and thinking about time, from rotting leaves to imagining beyond human timescales in order to envision future profit in non-monetary terms. His poem echoes the question at the heart of my project: in this era of socio-environmental challenges, whose times and temporalities get to matter, and how are they made to matter?

We live in a period of human-induced climate change and disproportionate pressures on certain human and multispecies populations. Some stories get more

airtime than others. Accounts of environmental degradation – of habitat loss, pollution and extinctions – fill media channels. As I write this in early 2025, Los Angeles is burning, and each year sees more wildfires spread across the Arctic. Anthropogenic processes and the exploitation of natural resources will leave an imprint in the geological record of the Earth. As climate scientists remind us, several planetary ‘tipping points’ are at risk of being passed due to the emission of carbon and other gases into the atmosphere (Lenton et al., 2019). Meanwhile, strategies for coping with and responding to information about socio-environmental loss and crisis include not only activism and the drawing up of new laws and targets, but also disassociation and denialism. All of these instances are underscored by deep concerns and debates about what might disappear and be forgotten, what it is possible to imagine for the near and distant future, and what might remain as legacies, whether they are desired or not.

In this thesis, the conceptualisation of temporal politics is the result of bringing the political out of a purely spatial arena and into one which is [also] temporal. I define temporal politics as the ways in which temporalities are instrumentalised and contested across shifting power relations and towards certain aims. Temporal politics concerns struggles over remembering and forgetting, acknowledging and ignoring, and over whose temporalities are privileged and how.

The idea of temporal politics builds on the understanding, drawn from critical time studies, that times and temporalities are not neutral or automatically given. Rather, they are contested and political: they are instrumentalised, expressed, and interpreted in varied—and sometimes contradictory—ways by different actors and stakeholders (Bourdieu, 1990; Sharma, 2014). Temporal framings arise through struggles over meaning, authority, and legitimacy, and they become visible through the material and narrative practices that different actors mobilise. The act of valuing certain temporal framings – in the process discarding some elements whilst preserving or developing others – is a political act which should not be taken for granted. Exactly who and what is included in records and stories of the past and future is highly subjective and based on wants and needs at multiple scales. Considering these factors via the study of temporal politics...

...is not to catapult into a new novel temporal order. Rather, it is to continue to name the chronometers of social control, reckon with how these chronometers work so well together, and figure out how they can be both struggled against and joyfully averted. (Sharma, 2022, p. 47)

Temporal politics does not have to be about governance and governments, though it can be. Politics here concerns the negotiation of power relations between different actors, and as previously discussed, these need not always be human actors. Power, like agency, is not possessed or held but exists in relation and emerges from the behaviours and qualities of physical, material things in relation to one another. Temporalities within a temporal politics understanding can be seen as opening up, shutting down, allowing and disallowing certain actions, outcomes, perspectives and ways of being. As Arts and Visseren-Hamakers (2012, p. 251) put it, then, “power is to be conceived differently than in mainstream political analysis: not as something embodied in a state, a president or a king, who give orders to docile citizens, but as disciplinary practices that are shaped both by (hegemonic) regulatory logics and (in principle) free subjects.” Power and politics in relation to the temporal are practiced through narratives and the telling of stories (discussed in Chapter 3), through imaginaries (discussed below) and through embodied actions (also discussed below). They are everyday and lived. In some cases this power is instrumentalised as a way of fitting into existing and dominant temporal orders, whilst in others this power may be used to quietly contest and challenge what Sharma (2014, p. 142) calls “the boundaries of normalized time”, towards creating alternative realities and futures.

From singular time to multiple boreal forest temporalities

In this thesis I move away from using the word ‘time’. Although time appears constantly in everyday language, I argue that at its core it refers to a phenomenon which is best explained within the discipline of physics. Time, in its most essential sense, is abstract and intangible. Furthermore, time is often assumed to be something pre-existing, neutral and given, and if we are to indeed argue that time exists in the realm of physics, then these understandings may be correct. Time, however, can become accessible through changes in material things, embodied and physical senses and practices, and the world around us.

Temporalities are the experiences and expressions of time and change. They are the way[s], rates, patterns and rhythms by which time is experienced, sensed and expressed, often through material and physical things and phenomena as well as

through storytelling. They are not necessarily a measure of time (though certain temporalities, such as the movement of a clock mechanism or the arc of the sun translated into a shadow cast by a sundial, may be harnessed to measure time). Rather, temporalities are descriptive in that they reveal the ways in which things react to, communicate and express time: they change, albeit at different rates and via varied processes. Temporalities therefore include rates, frequencies and rhythms of happenings, developments and emergences. Like the mechanisms of a clock and the sundial, sand in an hourglass also has its own temporalities: these include the rate at which it falls through the hourglass, as well as geologic processes which contributed to the creation of each grain of sand. All temporalities are relational. By this I mean that temporalities are not pre-existing or pre-given phenomena, and they cannot be possessed by a single actor. Rather, temporalities are enacted, practiced and expressed through the relations between things and beings.

According to Sarah Sharma (2022, p. 44), the temporal is “a specific experience of time that is structured in specific political and economic contexts”. In other words, and as I argue, temporalities must always be tied to a specific location and/or context. I uphold this focus on the specificity of the context at hand and on the ways in which temporalities are ‘structured’. Although temporalities appear and have effects everywhere, the temporalities which I work with in this project are specific to the research locations and sites which I access, as well as to the actors involved, and they are structured through their very specific interrelations with one another. Therefore, this thesis rejects the idea that time and temporality are now suddenly more important than space and place. The temporal should not be, I argue, ‘all we see’. Indeed, because the only way in which it is possible to ‘see time’ is via material things and embodied, lived experiences, then we must consider time and temporality, space and place all together.

In this project I explore temporalities within the setting of the boreal forest in Sweden and Finland. The temporalities which I follow and notice are therefore specifically boreal forest temporalities. Boreal forest temporalities show how temporal politics plays out in connection to the boreal forest. Boreal forest temporalities, like all temporalities, are political, plural, non-linear, and performed through relations between agential multispecies or more-than-human actors. In addition to humans, I consider how materials, inanimate things and living or once-living nonhuman beings collaborate in shaping these temporalities.

Boreal forest temporalities are inherently political since they always come from somewhere or someone and reflect the needs and behaviours of particular actors. All of these things can also be said about temporalities more generally. At the conceptual level, therefore, not much is different about 'boreal forest temporalities' compared to, say, 'desert temporalities' or 'ocean temporalities'. These other place-specific temporalities would also be revealed as multispecies and political if investigated. However, the stories, emotions, and ways of being which shape boreal forest temporalities are very particular to the boreal forest and region; to its ecology, the particular species present and the groups of people involved.

Sharma (2022) warns that naming time in connection to a particular place or group of people, for example 'ocean time', 'deaf people's time' or 'women's time', risks collapsing everything into the same category and diverting attention away from the varied ways in which different people and groups experience time within those locations and contexts. However, and firstly, thinking about temporalities rather than time means that I emphasise lived experiences and see these lived experiences and expressions, or temporalities, as diverse, specific to the relations and actors involved, and not always adhering to predictable patterns. Secondly, the exact assemblages of actors and materials involved and how they come together are unique to the three cases (the museum, forest conservation areas, the 'mushroom forest') and the associated research sites which I enter. Finally, and within my overall conceptualisation of boreal forest temporalities I also consider the spaces and places which boreal forest temporalities connect together, the ways in which temporalities intersect, their everyday, embodied and more-than-human elements and the ways in which they feed into forest imaginaries and legacies. These conceptualisations, which I expand on below, may also be applied to other temporalities. Thinking with these elements will always work to show how temporalities, in whatever setting or context they are researched, can reveal and explain very particular dynamics and can highlight, rather than obscure, differences. Theorising and working with boreal forest temporalities rather than sticking with singular time is as a whole a way of pointing to the realities of more-than-human multiplicity and the temporal politics inherent to situated relations.

Temporalities as spatial connectors

Boreal forest temporalities unfold in the context of the boreal forest, though as I go on to show through my empirical research, they do not necessarily always

unfold literally *in* the forest. I think of temporalities as spatial connectors. This means that the temporalities of certain processes or those which are tied to certain groups of actors, for example the temporalities of pulp and paper production, can be traced through a range of spatial settings. This works to connect those settings, places and spaces. We could trace a paper-trail of temporalities related to pulp and paper production, for instance, from the physical forest, to paper and pulp mills, to distribution warehouses, to city offices and schools. It is not simply that the processes relating to the production and use of pulp or paper take place in these different locations; this is self-evident. Rather, and in addition, the rhythms, durations and timescales through which these processes unfold and which they depend upon are interconnected across different places and spaces – temporalities tied to one place influence temporalities in another and can make it either possible or less likely for certain things to occur. Related temporalities can be identified and feed into one another across a range of spatial scales. This conceptualisation builds upon existing work across feminist and decolonial scholarship as well as within [re]new[ed] materialism to reveal the interconnections between scales. As geographer Merje Kuus (Kuus, 2019, p. 165) reminds us,

[...] the point in much of feminist scholarship is not simply that we should look at the small rather than the big picture or micro- rather than micro-scale politics. The point is rather to problematize the distinctions between different scales, such as the local and the global, and to thereby illuminate their mutual constitution.

My conceptualisation of temporalities as spatial connectors draws attention to the utility of a temporal framing for following phenomena across spatial scales, and in the process blurring the boundaries between those scales. As we will see, boreal forest temporalities can be expressed within homes, museums, other public institutions and online, just as much as in the forest itself, and many of these places and spaces can be connected and seen as overlapping through temporal as well as spatial analysis.

Temporalities as intersecting

I theorise intersecting temporalities in order to recognise the ways in which different temporal rhythms, durations and framings overlap. This differs from yet complements the idea of temporalities as spatial connectors, because thinking about temporalities as intersecting means considering how multiple temporalities

intersect within one space or during one single moment. As Anna Tsing (2015, p. 24) writes, “factory labor is an exemplar of coordinated progress time. Yet the supply chain is infused with polyphonic rhythms.” To stay with the example mentioned in the previous section above, within what we might call ‘the temporalities of pulp and paper production’, then, there are multiple rhythms, durations and temporal practices. There is never only one single temporality, but rather at all times there is an assemblage, or to use Tsing’s word, a *polyphony* of temporalities. This reveals how processes are never temporally simple; they rely upon and may be disrupted by a range of different intersecting temporalities.

This theorisation of intersecting temporalities has implications not only for understanding the layered nature of temporalities, but also for the understanding of space and place. I am in my work indebted to geographer Doreen Massey for her theorisation of space as made meaningful through the intersections of flows of materials and processes. However, Massey did not explicitly address the role that the *temporal* also has in shaping place and the processes which ‘take place’ in place. As Sharma (2014, p. 10) remarks, “the spatial turn did not acknowledge time as a form of power, a site of material struggle and social difference... space continues to be the valorized site of political life at the expense of time.” I therefore expand on Massey’s work and reflect Sharma’s critique to show how temporalities – not only materials and spatialities – intersect, coalesce and overlap within specific locations and through specific sites in order to produce unique and rich temporal landscapes or timescapes. We can see places not only as the locations where material and physical processes and things intersect, but also as arenas where multiple temporalities intersect. For example, later in this thesis we will see how in specific locations the temporalities associated with harvesting trees intersects with the seasonal temporalities of specific fungi as well as with the personal and everyday temporalities of work and home life of some of the research participants. The unique intersection of multiple temporalities creates temporal dynamics which are unique to the research sites in question. These intersecting temporalities, I argue, bring meaning to places.

Intersecting temporalities as I approach them may be accessed in the immediate here and now, however they can also include perceptions of past moments and events, as well as thoughts about the future. All of these framings may unfold simultaneously in the present moment. Time, whilst retaining its chronological character, can be thought of as “vertical” rather than horizontal (Lopez, 1986) and

looping up, down, and in on itself through the emergence of multiple intersecting temporalities. As Lopez (1986) notes, layers of historic time are always resurfacing, for instance in the form of material expressions and narrated stories at archaeological sites. The author Margaret Atwood (Atwood, 1988, p. 3) writes in *Cat's Eye* that “time is not a line but a dimension, like the dimensions of space.” She (or the character, Elaine) goes on to add that,

I began then to think of time as having a shape, something you could see like a series of liquid transparencies, one laid on top of another. You don't look back along time but down through it, like water. Sometimes this comes to the surface, sometimes that, sometimes nothing. Nothing goes away. (Atwood, 1988, p. 3)

Temporalities as everyday

The overarching research question in this thesis asks about experiences of temporalities in everyday engagements with the forest. The word ‘everyday’ is typically informed by an understanding of quotidian or daily temporalities. In popular usage, ‘everyday’ refers to events or things which occur and appear regularly or which continue constantly and cannot even be described as beginning and ending. The word therefore often means things which are considered unremarkable or mundane and/or which fit with the usual and expected way of doing things (Skelton, 2017). According to Adler et al. (1989) everyday sociology is about “studying people in their natural context: the everyday social world” (emphasis in original). This definition establishes a connection to place and space, and thinking of everyday social life as ‘natural’ assumes a pre-given or pre-defined context in which people are ‘in’ rather than ‘out of place’, and where everything and everyone belongs.

The notion of the everyday as apolitical and even uninteresting is rooted in assumptions about the stability and comfort of the status quo. Feminist scholars especially have critiqued this as a form of blindness or intentional ignorance towards daily struggles, inequalities, labour, adaptation and innovation, as well as a dismissal of the ways in which external or wider dynamics (including temporalities) impact on people's everyday lives (Moulton & Yanac León, 2026; D. E. Smith, 1987). There is, I argue in line with these voices, no time or place which matters more than the everyday. It can be argued that “political power is exercised not only through international summits and negotiations that receive

widespread attention but also in... everyday decisions” (Bee et al., 2015, p. 6). I focus on what I call ‘everyday engagements with the boreal forest’ rather than analysing the proceedings of high-level policy processes, for instance, in order to draw attention to the political nature of “mundane, everyday re-enactments and repetition of certain practices” which “creat[e] lived realities” (Tutton, 2017, p. 487). I research everyday practices as vividly experienced, sensed and embodied. The everyday is not apolitical but on the contrary is imbued with small- and intimate-scale politics and contestations which become known through materials, stories and bodies. I argue that it is precisely *because* some things are thought of as ‘everyday’ that there is a tendency to take them for granted, when in fact they hold great importance personally, politically and temporally. Personal and place-specific engagements are thus my starting point.

Importantly, the ‘everyday’ does not only indicate local-level interactions, even though the everyday and the local are often conflated (Dyck, 2005). I argue that this common conflation between ‘everyday’ and ‘local’ is misleading. Everyday boreal forest temporalities can include temporalities which, as outlined in the section above on temporalities as spatial connectors, cross spatial scales and connect global and international processes and networks with rhythms and processes unfolding at an intimate, even embodied, level. Just as everyday spaces are not isolated from the wider world and are influenced by wider temporal politics, so everyday temporalities are spatially expansive, even though they are always rooted in the immediate and the lived. Paying attention to everyday temporalities means keeping in mind the connections between personal micropolitics and wider contexts, and working to complicate the supposed boundaries between them. This occurs in three main ways. Firstly, everyday temporalities can challenge or disrupt the temporal framings created and sustained by overtly powerful actors. Secondly, it is important to ensure that everyday temporalities are not relegated to being seen as ‘irrelevant’ or ‘far away’ from the concerns of political elites and those with overt power. Thirdly, the grounded and embodied impacts of seemingly abstract or distant moves made by elites and governance bodies must not be overlooked. Considering everyday temporalities therefore means bringing together the concerns and agencies of actors with varying kinds and degrees of power, showing how they feed into and connect with one another. Working with this conceptualisation challenges what Kuus (Kuus, 2019, p. 165) calls “methodological nationalism” in which research into politics assumes the stability of the nation and the state and uses these as a foundation

before moving to look at actors within this framework. Through a focus on the everyday as a spatio-temporal concept, I turn this framing around and begin, as Magnusson and Shaw (2003, p. viii) call it, “to read the global through the local” and to “loosen the grip of those political assumptions that bind us to dreams of empire and obscure other human [and, I would add, more-than-human] possibilities?”

Temporalities as embodied

The visceral and the bodily are inescapable elements of what it means to exist, to be part of one’s surroundings, to sense and to perceive. Temporalities as embodied are therefore closely related to temporalities as everyday, enabling a focus on the only spatial scales at which temporalities can really become known and be experienced. In their work on ‘thick time’, Neimanis & Walker (2014) explain how bodies function as carriers, archives and measures of climate change. Bodies, they argue, ‘weather’ and experience the materialities and temporalities of climate change, rather than simply being ‘in’ a time of climate change. Bodies are not neutral or passive entities – things do not simply happen to bodies. Bodies, and processes of embodiment, participate in and enable contestation, challenge, development, dialogue and encounter. Following this line of thought, I conceptualise [boreal forest] temporalities as embodied in order to capture the bodily, corporeal, visceral and emotional experience of and contribution to changes and processes occurring both within and outside the body. Throughout this thesis I make reference to bodies of different kinds and explore how they are involved in the expression of boreal forest temporalities.

This focus on the body as a scale through which to understand a situation does not mean that other scales are not relevant and cannot be accessed; quite the opposite. There is much literature which focuses on how temporalities become known at grand scales and in high-level governmental spaces, for instance the role of time-keeping and measurement in international policy-making arenas or the detection of global weather and landscape changes via satellite monitoring. Yet critical time studies, with its attention to the structural phenomena which lead to temporal assumptions and understandings, reminds us that temporalities as embodied are not isolated from broader processes. As I wrote above, temporalities are spatial connectors, and the body can be thought of as a space of sorts. This means that temporalities coalesce in and around bodies, connecting them with

other bodies, places and spaces. This conceptualisation echoes “the feminist project of situating the global within the intimate space of the body and the everyday” (Bee et al., 2015, p. 8). Bodies also bear witness to temporalities as intersecting; for instance, human bodies moving through the forest experience the intersection of multiple industrial forestry rhythms, durations of tree growth and decay, and the rhythms of other species. As (Barrineau, 2026, p. 6) writes, “embodied experiences... contain multispecies histories and possibilities of future lives”.

Csordas (1990, p. 8) suggests that embodiment collapses dualisms, and the body is not opposed to the mind. Except for occasions when it is clear that ‘body’ is used metaphorically (for instance, ‘body of thought’) I conceive of bodies as physical entities. However, bodies are more than only physical materials and movements – they carry emotional and sensory capabilities and responses which themselves circle back to impact on the physical body. Emotions are often communicated through bodily gestures and expressions, and some emotions can even have truly physical impacts, for instance the chest pains and tensions caused by stress (Pacciardi, 2025).

Focussing on bodies draws attention to intersectional differences and the ways in which different bodies experience and produce temporalities in varied ways. The ways in which bodies are involved in different activities and the ways in which they must recalibrate to and experience time are uneven and reflect inequalities (Sharma, 2014). The scope of difference can be expanded beyond the human: scholars in plant studies for instance have recently questioned the delimitation of the ‘body’ to invertebrates alone (Lawrence, 2022) and I have written elsewhere about ‘fungal bodies’ (Garson, 2026). Animals, plants and fungi alike sense and move through the forest and in forest-related spaces, for instance as they digest wood (bark beetles - see Marini et al. (2017) or spread underground (mycelium - see Pouliot (2016)). Following nonhuman bodies as well as human bodies introduces a richer understanding of the forest and the challenges which it faces, and throughout this work I refer to bodies in all their forms and shapes as key players in temporal politics.

Temporalities as more-than-human

Thinking of temporalities as spatial connectors, as intersecting, as everyday and as embodied are all linked with the conceptualisation of temporalities as more-than-human. I conceptualise temporalities as more-than-human, firstly, in order to notice materials and expressions which would not otherwise usually be considered because they do not fall into human conceptions of how time is expressed or measured. Techniques other than the use of a clock can be used to follow temporalities; seasonal variations and other more-than-human rhythms can be an alternative (Bastian, 2012). Material things and living beings express temporalities as regular or irregular rhythms and emergence and shifts over time. Their surfaces, bodies, composition, shapes and movements change.

Seeing temporalities as more-than-human also has the result of challenging common temporal categories, especially understandings of the linearity of time. Echoing my conceptualisation of temporalities as intersecting, we can move beyond “linear conceptualizations of time to include active presences of past and future” (Gould et al., 2023, p. 2). The past, present and future are generally thought of as sequential or chronological, however they can exist simultaneously and emerge in the world in a ‘timescape’ (Bear, 2016) or spatio-temporally mapped manner. As Karen Barad puts it, “material-discursive phenomena” (Barad, 2017a, p. G117), for instance “radioactive particles travelling ocean currents”, ‘inhabit’ each other, resulting in myriad temporal moments crossing over, emerging, and re-emerging through materials. Alves (2017) calls the latent potential and histories enmeshed within materials ‘borderless history’ as a challenge to colonial ideas of control and state-centric thinking. She explains how seeds carried in the ballast of ships and deposited along with other detritus in new lands challenge colonial, capitalist time by holding onto their potential for many years, only bursting into growth once they have been subject to the correct conditions (Alves, 2017). This kind of thinking dismisses linearity, clean beginnings and endings and easily-measured metrics.

Finally, recognising all beings and matter as temporal actors leads to a rejection of “notions of nature as timeless” (Bastian, 2009, p. 102). I follow Adam and Groves (2007, p. 108) in explaining that “matter is to be understood not just spatially as frozen in time but also temporally as extended and enduring, interacting and regenerating, decaying and leaving a record, projecting and entailing [...] futurity.” This approach dismisses the temporal ‘void’ mobilised in imperial,

colonial and capitalist contexts (Barad, 2017a) where certain histories and temporal rhythms are ignored or not noticed. Rather, ‘nature’ and the more-than-human are inherently temporal and their plural and changeable temporalities cannot be fully captured or erased.

As I will show in each of the empirical chapters, more-than-human actors do not simply illustrate temporalities; they actively participate in producing the rhythms, durations, and transformations through which temporal politics unfold, and which are harnessed through everyday practices and narratives. Embracing the more-than-human should not, however, be seen as a romanticisation of temporalities as more-than-human – to do so would be to ignore harmful and antagonistic as well as supportive and caring relations. Through processes typical to temporal politics, more-than-human temporalities are privileged or neglected and come to have certain meanings attached to them. These meanings are developed through storytelling and the partial and selective representation of certain temporalities. Understanding temporalities as more-than-human therefore expands both who participates in temporal politics and what kinds of temporal relations become visible.

Forest imaginaries

The word ‘imaginaries’ as I understand it in my work refers to collective (that is, shared or distributed among individuals or organisations) sense-making practices which emerge as visions, dreams and narratives, which enlist and shape materials, and which can refer to the past, the present and the future as well as to other kinds of temporal modes such as nonhuman rhythms (Davoudi & Machen, 2022). Imaginaries are “produced, circulated, normalized and contested by political actors” (Davoudi & Machen, 2022) in order to envision alternatives, to transport us into other realities, and to navigate certain situations. Imagination and imaginaries are not the same as one another – “imagination is a faculty of individual mind while the imaginary is a capacity of a political collective, with an ever present creative interplay between them” (Davoudi & Machen, 2022, p. 205).

My conceptualisation of imaginaries draws not only on the relationship between the future, the present and the past, but also on diverse temporalities from rhythms to periods of time. Anderson (2010) suggests that imagining is a form of

practice through which futures can be perceived in the present, and that in order for futures to be imagined and for imaginaries to be constructed, both the present and past are drawn upon. Here the future is seen as a moment around which to orient possibilities and “how we might be in the world in other, hitherto unthought ways” (Yusoff & Gabrys, 2011, p. 522). I also consider how imaginaries draw upon and notice a range of time-periods, durations, rhythms and unfoldings in order to build a picture, ideal or story about the forest. This is for instance evident in the museum, where the temporalities of non-human lives are illustrated through art and literature as a way of suggesting imaginaries of more biodiverse multispecies forest futures.

As Davoudi and Machen (2022) point out, work on imaginaries has tended to focus on the narrative and intangible ways in which imaginaries are constructed, and yet materiality is also crucial and should not be placed in direct opposition to immaterial elements. Materials actively co-produce imaginaries along with stories. Imaginaries are at once created and circulated through narratives and storytelling, and through material practices and engagements with the world which uphold and even sometimes challenge the stories in which those materials are implicated.

Boreal forest imaginaries draw attention to the ways in which knowledge about the forest is often anchored around certain forest visions, and how those visions in turn feed back into the kinds of knowledges which are shared and privileged (Lefstad et al., 2024). Since particular imaginaries can sometimes obscure other visions, thinking critically and consciously about imaginaries throughout this research requires me to acknowledge my own forest imaginaries, considering how they might influence what I perceive and assume to know.

Forest legacies

Although I do not position my research explicitly within critical heritage studies, work from within critical heritage studies is useful for my theorisation of legacies. As Harrison (2015, p. 34) states, heritage is “concerned with categorizing, curating, and conserving for the future”, just as much as it is about curating elements of the past. Heritage could also be conceptualised as a political resource; one which is mobilised for instance towards the legitimisation of the presence of certain groups and identities and not others, based on a selective reading of the past and things which are purported to come from that particular past (L. Smith

& Campbell, 2015). Similarly, legacies connect the past with the present and with imaginaries of the future (Garbarino & Weisberg, 2020). Forest legacies refer to the elements of and impacts of past events inherited by today's forests and by actors involved with forest, as well as to imaginaries of how today's actions might be carried forward into the future. It is with a critical time studies lens that we can understand the construction – or imagination – of legacies as a power move.

However, I understand legacies as being less frequently imbued with connotations of positivity when compared with heritage. Legacies can be difficult, toxic or unwanted – legacies can involve war and strife, and they can exclude some actors, but they persist nevertheless. Whether we want them to or not, materials and people carry stories, and the past is constantly making itself known in different ways (DeSilvey, 2017; Harrison et al., 2016). Of course, legacies can also be accepted or even highly valued. Legacies are arguably more unavoidable than heritage, which despite the work of critical heritage studies scholars, retains connotations of choice, privilege and welcomed inheritance. Legacies on the other hand emerge through the passing of time, shifting more-than-human temporalities and the exchange of knowledge; elements which cannot be fully controlled.

In this thesis I show how forest legacies include the traces of past and recent land-use being visible in forest environments. These are daily realities which may or may not be valued by different actors, but which nonetheless emerge and must be navigated. As Garbarino & Weisberg (2020, p. 2642) write, “land-use legacy effects are pervasive and need to be incorporated into the investigation of contemporary landscape patterns and processes”. The relationship between forest legacies and knowledge is also key. Firstly, and as we will see, forest legacies can be detected through certain knowledges whilst those who do not hold the same knowledge or embodied abilities may not be able to sense or detect certain forest legacies. Secondly, forest legacies can be comprised of knowledge, or in other words, forest-related knowledge is the legacy, and as such legacies may be tied to individuals and their experiences just as much as they connect with wider societal understandings. In this sense, too, legacies differ from heritage – heritage is more often thought of as a collective resource (Smith & Campbell, 2015), whilst legacies may be individual responsibilities.

Researching with boreal forest temporalities

In this chapter, I have explored how power, politics and temporalities intersect. Temporalities are inherently plural and constructed; they can serve as tools of influence, domination, resistance, and flourishing. A relational and more-than-human approach to agency shows that temporalities are not only expressed through stories and narratives, but are also sensed and enacted through interactions with the material world. Through the interrelations of diverse actors and materials, and through what is communicated by and about them, temporalities are continually encountered, expressed, upheld and unsettled.

So, what can the temporal politics of boreal forest temporalities look like in practice? This is, of course, the focus of the thesis as a whole. Early on in my journey of exploring boreal forest temporalities, I encountered a pinecone which seeded some initial applications of the theory outlined above.

Brittle, slightly resinous, and burst open to scatter its seeds. A woodwork masterpiece in the palm of my hand. The pinecone seems unmoving and inert, but it cannot be witnessed in isolation from wider spatial and temporal contexts. It speaks of the histories of trees, of multispecies interactions, of human demand for resources. It emerges from a tangle of fallen cones and their parent pines shaping places and relations after ice-sheet retreat c. 9,000 years ago, and now the shifts wrought by climate change and the industrial planting of forests. I sense the connection between this pinecone and the place where it touched the earth, between it and the other pines which have grown on that slope, between it and my body.

This vignette was written in response to a moment during my time at Pyhä-Häkki National Park in central Finland in 2021, a place which we will get to know better in Chapter 5. It demonstrates the way in which a small item such as a pinecone can hold multiple temporalities, expressed through its materiality and the stories that are told about it. The pinecone which I held in my hand symbolised pine-tree continuity and survival. The pinecone was many generations removed from the first pines which had grown on this land, yet would not exist were it not for those past trees. What this pinecone began to teach me was that pines are constantly shifting form at different rates, challenging clean-cut beginnings and endings. A mature tree, a pine seed, a pine seedling, a pinecone and a decaying pine log are all inherently interconnected, and arguably there is some ambiguity about where one morphs into the next.

When I was at Pyhä-Häkki, I also spent time considering the ways in which information about the national park was framed and presented to visitors. The most overt way in which this was done was with the use of large information boards outside the entrance to the national park. These presented facts about the founding of the park, about plant-, fungi- and animal-life in the area, and about the importance of leaving fallen trees and branches to decompose on the forest floor. Another set of boards included a presentation of the most ancient standing pine trees. My reflections on the pinecone were partly shaped by the knowledge and framings which I had picked up from the information boards. Without them, I would not have been so open to thoughts about the long histories of pine in the region. By deciding to offer certain information at the park entrance, the managers of Pyhä-Häkki made a move which is connected to their particular understanding and privileging of boreal forest temporalities at the site. This in turn impacted on how I experienced and perceived the national park. In other words, the information boards do not simply convey facts; they guide which temporalities are prioritised and sidelined. They act as tools towards determining which pasts and futures are made visible and which remain unseen. Through such quiet interventions, temporal politics are enacted in practice.

Taken together, then, the conceptualisations covered in this chapter provide the theoretical foundation for the thesis. I develop the concept of boreal forest temporalities in order to describe the temporalities which unfold both physically within and far from the boreal forest. By bringing together perspectives from more-than-human scholarship, critical time studies, and an explicitly political understanding of temporalities, I have outlined a framework that allows me to identify and follow temporalities across boreal forest sites and contexts. I argue for understanding temporalities as the result of the relationship between time and all of the things which shape a place (or between time and the material world). Temporalities are rooted in the real, material world, and this is also what makes it possible for me to use boreal forest temporalities in a situated and practical way in my research locations. In addition, immaterial elements – narratives, utterances, stories, emotions – are also crucial in shaping temporal politics.

These conceptualisations dismiss assumptions about the apolitical nature of the everyday and about the inability of nonhumans to take part in political practices. The boreal forest is a site of political contestation not only in terms of overt and dominant media, policy and advocacy debates about conservation, management

and its future overall, but also in terms of the everyday and sometimes quiet construction and enactment of different temporalities. The framework enables close attention to how boreal forest temporalities emerge and are rendered meaningful in situated, embodied and everyday practices. The assemblage of concepts also requires me to acknowledge the unevenness and power relations inherent to temporal framings.

In the next chapter, in which I discuss my methodology, I describe the approaches which I take to entering the research sites, asking questions, collecting materials, analysing materials and pulling together the many pieces of this project. It is important to note that although in this thesis I have provided 'theory' and 'methodology' with their own separate chapters, the two should be seen as interconnected as they are in reality difficult or even impossible to think about separately. The theory and concepts described in this chapter have informed how I carry out the research as a whole, and moments and encounters during fieldwork have fed into and required me to amend my theorisations.



Chapter 3. Methodology

Studying temporalities methodologically

This thesis understands temporalities as situated experiences, expressions and representations of time. These emerge through specific places, practices, and imaginations of those places, in this case the boreal forest. Studying temporalities and working to understand dynamics which are often not overtly stated or acknowledged is a challenge which has influenced the research process and design. As I will show in this chapter, studying temporalities requires particular ways of noticing, perceiving and navigating research materials and sites.

I title this chapter ‘Methodology’ rather than ‘Method’ because the approaches which I use to define, collect and analyse materials are broader and less cleanly demarcated than pre-determined ‘methods’. Methodology here indicates the strategies of data collection, the theory and concepts used to guide interpretation of materials, the broader ways of perceiving research locations, participants, and materials, and the overall design of the project. It is characterised by ongoing adjustment and reflexive rethinking in response to what emerges during the research process, whilst always being guided by the overall ambition of exploring how boreal forest temporalities are experienced, negotiated and shaped.

In this chapter I firstly discuss my overall research strategy and approach to the project in its entirety. This approach could be described as more-than-human, reflexive, iterative and abductive. I begin by highlighting how the more-than-human ontology which informs my thinking is operationalised via ‘arts of noticing’, a way of seeing and perceiving first described by anthropologist Anna Tsing (2015) in her work on matsutake mushrooms. I outline how noticing applies to following the more-than-human as well as to noticing detail and connections across the entire research process. I then move on to reflect upon my own positionality and those of the participants. A reflexive approach in which I

pay attention to my and others' identities and positions has shaped the theory, concepts and practical approaches to collecting materials. Reflexivity extends to reflections upon interactions with interlocutors, where various identities, positionalities and power relations and hierarchies are at play. It has been crucial to think about how participants might be affected by their role in this project and by the questions asked of them. I next move on to discuss the back-and-forth which has taken place between different elements of the project such as different research moments, the research questions and the theory and concepts, and how this has fed into the development of ideas.

Secondly, the focus shifts to my choice of sites, cases, and overall field. I present the framing of the boreal forest which I adopt in this thesis. This is theoretically-informed but also methodological because it motivates my interest in diverse places and spaces, including those not physically in the forest. I then move on to discuss the multiple boreal forest sites included in this work, and here also discuss the choice and significance of Finland and Sweden as research locations. Finally, I outline the cases which shape the three empirical chapters: curation at the forest museum, conservation spaces and places, and the 'mushroom forest' and foraging.

In the third section I outline the approach to collecting materials. This thesis draws on a wide range of primary and secondary materials which are listed and described. Overall, I describe my work as a multimodal patchwork ethnography. Multimodality refers to my attention to multiple kinds of material, from interview transcripts to photographs and texts, both online and in physical form¹⁰. A patchwork ethnography, meanwhile, recognises materials as fragmentary and partial pieces of a wider puzzle, and collects them through long-term and sometimes even lifelong engagements with a research context within which participants' and researchers' circumstances and relationships shape the research (Günel et al., 2020). In my interpretation, patchwork ethnography incorporates sensitive noticing (Tsing, 2015) in order to collect materials via the senses and the more-than-human, going beyond the visual and anthropocentric alone.

The fourth and final section in this chapter discusses how the analysis of materials was carried out. Here I show how I have approached the materials which I have collected in order to identify findings and draw conclusions. I move through the various material types and describe how I drew out observations. As a whole, the

10 Please see the Appendix for details on the materials collected, consulted and referenced.

analytical approach works to bring together multimodal fragments and patchy observations towards the identification (noticing) of temporal themes and patterns, forming a more cohesive account.

Throughout this chapter I specify the challenges and limitations which I have perceived with some of my methodological choices, and acknowledge the influence of my subjectivity, positionality and biases on the decisions made and the conclusions reached.

Overall, this chapter presents a methodology shaped by reflexive, iterative and experimental approaches and methods appropriate for the study of temporalities. The methodology enables attention to constantly shifting, multispecies, taken-for-granted, unspoken and embodied dimensions of social and ecological life, which, as became increasingly clear as the research progressed, are all possible descriptions of temporalities themselves. Temporalities rarely appear as stable or directly observable objects. Instead, they emerge indirectly through stories, practices, rhythms, materials, embodied experiences and multispecies relations. The thesis' key methodological contribution lies in developing ways of empirically engaging with temporalities that are not always directly articulated, but which emerge through practices, materials, affects, and relations across multiple sites and scales. In doing so, the chapter demonstrates how multimodal, reflexive and more-than-human methodological approaches can help make visible quieter and often overlooked temporal dynamics which shape everyday life.

Overall approach: Noticing in a more-than-human world

In the previous chapter I elaborated on the more-than-human scholarship and perspectives which have inspired my work and theoretical approach. As I have presented, the more-than-human and nonhuman irrevocably shape temporalities. I am also influenced by feminist research which pays attention to silences, power hierarchies, imbalances and the importance of context, especially in terms of Donna Haraway's concept of 'situated knowledge' and the sense that all knowledge originates somewhere (Haraway, 1988). I work from the assumption

that knowledge is always partial, political, and produced through specific relations and positions rather than from any neutral or universal standpoint.

One of the greatest challenges presented by working with the more-than-human is the fact that research is a human-conceived and -conducted affair. As Elton (2019, p. 58) observes, “knowing what to do with the nonhuman participants is not obvious to a researcher like me, shaped and formed by a Euro-Western philosophical tradition... I found myself at a loss for what to record”. Hartigan (2017) similarly reports feeling awkward and unsure of how to behave and what to look for when setting out to research plants. I respond to these challenges in a couple of ways. Firstly, in order to conduct inclusive and honest research we should acknowledge the role and impact of the human in many of the contexts which we study, even and perhaps especially when our work is ‘more-than-human’ or ‘multispecies’, and so I do not obscure traces of the human but instead embrace them. Secondly, I argue for paying attention, as Elton and Hartigan do, to the impact of the researcher’s own perspectives and limitations on how they approach participants, including the more-than-human. I remain wary of ‘speaking for’ humans and nonhumans whom I do not fully understand.

Motivated by the challenges of following the more-than-human and researching temporalities, as well as by the ethical and practical challenges frequently encountered during ethnographic research, I am inspired by ‘arts of noticing’, a term coined by anthropologist Anna Tsing (2015). ‘Arts of noticing’, or even simpler, noticing, in my interpretation shapes the overall perspective on the research process, guides the collection of materials and works as an analytical tool. It is a practice of attention and a way of perceiving. This is especially important when researching temporalities, since temporal dynamics are often difficult to isolate or observe directly. Rather than appearing as stable objects, temporalities emerge through rhythms, absences, memories, repetitions, material changes, embodied practices and relations between human and more-than-human actors. Noticing therefore becomes a methodological practice for tracing how temporalities are sensed, performed and negotiated in everyday life. Tsing reflects that,

When I first learned polyphony, it was a revelation in listening; I was forced to pick out separate, simultaneous melodies and to listen for the moments of harmony and dissonance they created together. This kind of noticing is just what

is needed to appreciate the multiple temporal rhythms and trajectories of the assemblage. (Tsing, 2015, p. 24)

Tsing's arts of noticing is rooted in a centering of more-than-human and multispecies worlds. She argues that any story which is told will only be a partial part of the puzzle, and that there are always "simultaneous melodies" (Ibid.) to identify. In my work I echo Tsing's attention to the everyday, the seemingly silent or quiet and the in-the-margins. Noticing directs attention towards "the improvised quotidian acts that sustain contemporary life" (Kett, n.d., p. 2). Surprising revelations can spring up if one takes the time to be curious, to reflect, to be attentive to all the senses, to zoom in to look at the micro and ground-level, and to draw connections between scales.

Noticing in this methodology applies to the collected materials and also to the wider lens with which I have viewed the project, the concept of boreal forest temporalities and the settings in which I have carried out research. Following Tsing (2015), I have been attentive to harmony and dissonance between different temporal practices, between what participants have said and my experiences of different sites. I have considered the relations between myself and my interlocutors and participants. Noticing has included paying attention to affective atmospheres of discomfort, comfort, struggles, calm, assumptions, and so on. Noticing has also meant

...noticing the plants and animals around us... In fact, there's a lot we can learn just by paying attention. That's one of the basic ideas that I'm trying to promote. (interview with Anna Tsing, Lassila, 2017)

I adapt Tsing's 'arts of noticing' throughout my methodology. Noticing has guided me in being reflexive about my and others' identities and positionalities, and in navigating and connecting different parts of the research process through an abductive and non-linear approach. Noticing has also fed into the use of a multimodal patchwork ethnography for data collection, and into the use of narrative analysis, both of which I describe later in this chapter.

Reflexivity and positionality

Scholars have defined reflexivity in different ways, but I follow Lazard and McAvoy (2020, p. 160) who see reflexivity as “a form of critical thinking which aims to articulate the contexts that shape the processes of doing research and subsequently the knowledge produced.” Critical approaches and focus on context are crucial here. In other words, reflexivity means awareness of how one’s own positions and perspectives, those of others, and the wider setting or environment in which the research takes place might influence the materials and the conclusions. Strong qualitative research design must include an awareness of the self (Lazard & McAvoy, 2020). Reflexivity is about reflecting on personal identity and positions, and also the positions or ‘positionality’ of respondents or interlocutors, especially where identities, beliefs and degrees of privilege may differ from those of the researcher, and which may prompt tensions and risks of misunderstanding or misinterpretation. I argue that ‘subscribing’ to a reflexive approach should not be used to lighten the burden of having to deal with difficult questions about one’s biases and positions. Rather, reflexivity must be about facing up to and reflecting on how those positions have influenced the research, even if the answers raise further questions and challenges.

My personal experiences of the boreal forest and my wider life experiences have influenced my approach to the collection of materials and have shaped my preconceptions about boreal forest temporalities. As mentioned in the thesis prelude, I have spent considerable amounts of time in the boreal forest in central Finland, including for mushroom foraging. My professional background includes a position as a forest campaigner with an NGO where I worked to analyse and influence EU policy files relating to forest management, use and protection, and work for a different NGO on international carbon accounting methodologies. I have interacted all of my life with others including family, friends and wider acquaintances who themselves have strong personal and/or professional connections to the forest, whether as foragers, factory workers or those who simply like to spend time in the forest. In addition, I am a white female researcher who grew up and was educated in UK schools and universities and then in Sweden during the PhD. I have British and Finnish citizenship, have lived in Sweden during the research project and have also spent time living and working in Belgium. I acknowledge the high levels of privilege – professional, educational,

financial, and in terms of my freedom of movement – which these national and institutional geographies and identities bring. These positions and privileges impact upon my perspectives and the ways in which I and participants have related to one another during this project. I reflect on selected elements of these below.

Acknowledging positionality within the 'forestry debate'

In the earliest stages of the project I was reluctant to be open about my background as a forest campaigner or to state my opposition to the scale of intensive clear-cutting across the Nordics and elsewhere. I recognised the position as embedded within one side of what is often framed as a black-and-white debate about how forests should be managed. This was not a debate with which I intended to engage in my academic work. A plethora of academic literature on the 'forestry debate' in the Nordics and Scandinavia, including temporal elements of that debate, already exists within the fields of environmental governance, political science and political geography. My curiosity about the temporal which emerged in the course of the project moved away from the media and EU plenary halls and towards daily lives and nuances, even if some of the latter necessarily intersected with the 'big' forest debates. My engagement on an embodied and local level with the forest and my observation of others' engagements led me to the sense that temporal politics is also inherent to seemingly apolitical practices. This fed into an interest in practices, spaces and actors which are not frequently discussed in the media, in campaign strategies or in policy circles. Furthermore, I believed that talking about my background and opinions could alienate some participants and interlocutors whilst causing others to assume that we shared certain positions or knowledge. As Yip (2024) shows, both researchers and participants make assumptions about one another, and I did not wish to be placed into a category which would mould the responses provided to me more than they would already be influenced by my position as a 'researcher'.

However, a reflexive and ethical approach demanded that I be transparent if asked about my experiences, and that I allow space for participants to talk about public debates and their opinions on forest management. It has not been the aim of this work to assess the 'validity' or 'truth' of statements, but to trace how boreal forest temporalities are perceived and shaped. This frequently has intersected with the realities of industrially-managed forests and the boreal's role in producing materials and resources. The influence of these factors and debates about them on

how boreal temporalities are perceived is not to be underestimated. I did not explicitly ask about the big ‘forestry debate’ or reference current media reports during exchanges. Rather, I allowed the focus on temporalities to lead the way. Participants’ responses and conversations which touched on elements of the ‘forestry debate’, whether or not they named it as such, shed light on how their perceptions of boreal forest temporalities are shaped by what they think about certain forestry activities and what a ‘real’ forest looks like. These factors may frequently be drawn upon by those actively engaged in the forestry debate, but during my research I considered them as points of interest in their own right in connection to temporalities, without feeling the need to pull them into a conversation about values and ‘best practices’ for forest management.

In cases where these topics arose and my opinion was similar to that of my interlocutor I sometimes indicated agreement in order to build rapport. On the other hand, during several exchanges participants voiced opinions which I did not agree with. Rather than ignoring or shutting these down, I saw them as opportunities to dig deeper, asking follow-up questions and ensuring that these comments were given as much consideration as other responses. Often, having such conversations did not require me to express my own opinions. If I was asked, however, and we found that we disagreed, I used the moment to wonder aloud about the differences which our perspectives make to how we experience and think about forest temporalities. As Wibben (2010, p. 2) notes, “the choice to privilege one perspective over another is never innocent or obvious but always intensely political”, and so it has been to navigate my own and others’ positions.

This approach has overall provided avenues for teasing out the nuances which exist within and alongside strongly-defined positions and ways of knowing and seeing. It has drawn on perspectives and positions which, to those who share them, are familiar and unquestioned. Giving space for mentions of public debates and things which would usually be framed as part of those debates has kept conversations anchored in the knowledges and realities which peoples’ experiences of forest temporalities are connected to, rather than constructing an artificial case in which these contexts have no influence. As Howell (2017, p. 18) notes, ethnography need not be about researching the “radically-unknown”; insightful and rich research can draw on previous life experiences and familiar spaces. Massey (2003, p. 80) also writes that, “the aim of research may be to disrupt the reassurance of the apparently familiar”. Although in the beginning of this project

I found it difficult to navigate between my different identities, being more open about my own professional and personal positions also gave rise to the search for the varied experiences of temporalities which lie in-between and within supposedly clear-cut positions on clearcutting (of the forest) and forest protection.

This approach for navigating positionalities and being reflexive has been especially productive because of the loudness and visibility of certain forest debates and positions which often threaten to drown out nuance and overlaps. This thesis is not about the ‘big forestry debate’ or about how conservationists or forest campaigners contribute to that debate through high-level policy work or protests. Instead, my work advances an understanding of the ways in which multiple temporalities play out every day in ‘normal’ and ‘unremarkable’ contexts, and how they are emphasised or discarded behind the scenes or hidden in plain sight.

Recognising privilege and power in temporal framings

It is important to note that the discarding of some temporal framings is itself intertwined with levels of privilege¹¹ and personal or institutional positions. In Chapter 4, on the forest museum, and in Chapter 5, on conservation practices, we will see how some individuals and institutions - by virtue of their professional and institutional identities and positions within society - have the means to discard some temporal framings whilst prioritising others. Chapter 6 also shows how foragers side-line and prioritise varied temporalities, but I suggest that the ability to prioritise or discard particular understandings of temporality is arguably more firmly tied to personal, individual choices and individual embodied privilege and mobility. Meanwhile, my position as a fully-funded PhD researcher has meant that I have been able to take time to focus on everyday lived experiences and more-than-human temporalities which must often be identified via experimental – and slower – methods. I have been able to exit and enter the forest and my ‘research field’ at will. This has allowed me to take the main focus and questioning away from the temporalities of industrial forest management and the forest debates mentioned above – though as explained, these debates still play an important role in this project – and to be selective about the places which I visit and the people whom I speak to. These actions are, in contrast, not always possible

11 Privilege may be understood in a number of ways, from material and financial privilege to the embodied privilege of a healthy and/or young body, and some kinds of privilege may exist whilst others are much less pronounced or non-existent for the same individuals.

for those who work within forestry occupations, who are obliged by their jobs to join public debates, who are physically and financially restricted from travelling or entering the forest, and who do not have time to return and reflect time and again. Being highly mobile and being able to take time to experiment and collect materials have therefore been markers of my own privilege which have influenced the research design.

Iterative and abductive approach

Research is unpredictable. Many if not most scholars who carry out fieldwork and ethnography reassess and amend the design of their project as they go along based on observations and surprises whilst carrying out the research (Kapiszewski et al., 2022). Researchers must deal with a plethora of variables including peoples' schedules, funding availability, their health and that of participants, the weather, transport options, and so on. It is therefore rarely possible nor desirable for a project to be carried out according to a detailed pre-set plan. This research project has been shaped by an iterative and abductive approach which emerged as I worked on making observations and collecting materials whilst developing theory and moving between research sites.

Iteration can be defined as a process of “modifying, specifying, or fleshing out key research design parameters based on what one learns while confronting new realities and cycling between collecting and analysing data” (Kapiszewski et al., 2022, p. 646). Iteration applies to changes made at different moments and levels, from altering the fundamental research design, to adaptive choices made ‘in the field’ (I discuss ‘the field’ later in this chapter) and overall the impact of lessons learned (Kapiszewski et al., 2022). Examples of iteration in this work have been, for instance: My inability to carry out interviews at Pyhä-Häkki national park simply due to the lack of other visitors during two of my visits there despite this taking place during the holiday season and my subsequent decision to focus more heavily on analysis of park design and overall materiality as well as the park’s website; the decision to conduct all of the interviews in this project in Finnish in Finland rather than in English in Sweden due to existing forest-related connections, snowballing of contacts in the country and the benefits of speaking with interlocutors in their native language; a calculation that given the broad way in which the word ‘time’ and the question, “tell me about your experiences of time in the forest” could be interpreted during interviews and surveys, it was

necessary for me to also introduce more specific questions based upon preliminary identification of themes which I wished to explore more deeply; and the choice, at a late stage in the project, to consider an already-created experimental film as part of the corpus of materials following encouragement by colleagues and friends who pointed out its relevance for the chapter on fungi. This list of iterative instances is far from exhaustive and there have been many other moments of modification to the research design and methods used along the way.

Abduction, meanwhile, “constitutes a qualitative data analysis approach aimed at theory construction” (Timmermans & Tavory, 2012, p. 169). It is “an inferential creative process of producing new hypotheses and theories based on surprising research evidence” (Ibid., p.170). I began fieldwork with some overall theoretical grounding and ideas about what might be found (deduction), combined with outlining preliminary findings based on data and observations which were then used to identify patterns and to develop theory (induction), but did not fully commit to either deduction or induction, and agree with the sociologists Jerolmack and Khan (2017) that this division does not reflect the reality of doing research. My adoption of abductive reasoning means that there has been a back-and-forth between theory, materials and research questions, and the conceptual development and teasing out of key concepts and theory has been influenced by moments of surprise and unpredictability and by drawing connections between different empirical moments. Abduction has been suited to critically examining and amending some of my initial conceptual assumptions. For example, an awareness of temporality as something of political and social interest has been present throughout this work. Still, at the outset of the project I did not yet know how central it would become as my interest was focussed on purely spatial and material expressions of forest politics at the local level. It was only through discussion and interactions during my first field visits that temporality as a concept emerged as fascinating, productive, and eventually as the thing which most called for further exploration. Outlining three ‘cases’ (described later in this chapter) through which to explore boreal forest temporalities is another example of a conceptually-led decision which I made later on in the process, again based upon initial analysis of my materials and an acknowledgement of not only the similarities but also the differences and variations in how temporal politics is used and experienced across boreal forest communities and spaces.

Sites, cases and ‘the field’

In this thesis I work with sites and cases. Both of these are methodological concepts for finding ways of engaging in the world and defining the spaces, places and parameters of data collection and knowledge production. This definition of research sites and cases – or, as a whole, of the ‘field’ of one’s research – is a political act carried out by the researcher. It not only includes certain things, but also always leaves something out, separating sites and cases out from the continuities of space and time (Katz, 1994). Sites, cases and the field are constructed and imagined; they only come into being when they are outlined, named and understood as such. Nevertheless, they are inspired by real-world places and situations, and their construction carries implications for the real-world impacts of the research, from researcher-participant relations to outcomes which could inform policies or practices. Sites, cases and the field are therefore highly political: via their conception by someone (in this case me, the researcher, in collaboration with multiple participants), they are assumed to play a purpose and to hold meaning. Draw the lines elsewhere, and the purpose and meaning change.

‘Site’ has topographical origins – it speaks of something rooted in place. I think of sites as points of intersection for practices, actors and materials. Sites are a way of drawing lines around and between the spaces and places where the phenomena which I am interested in play out. Specifying sites directs me where to look. I conceive of sites in primarily physical, material terms, though they can also be virtual and include internet sites. I see sites as overlapping and multiplying across scales – one site could in itself be multi-sited and contain many others, and a site’s social, cultural and political meaning may extend beyond the physical boundaries of a site as imaginaries and meanings are carried along with different actors and relations. Sites might include buildings both public and private, online spaces such as websites, and areas of a region or a landscape. In this thesis they include for example the boreal forest as a whole, the Finnish Forest Museum and the official websites of national park and conservation authorities. I outline the sites which I have explored in greater detail below.

Cases, meanwhile, are seen in this thesis as the definition and delineation of a set of circumstances and actors (themselves tied to sites) which I bring together in order to contribute to answering the research questions from a certain angle. Cases are always a case of something, and are defined by processes and actions. Cases

assemble together different sites and the materials, practices and meanings contained within and connected to them. Beyond the overall case of the boreal forest setting which I have chosen for exploring temporal politics, this thesis includes three primary cases which shape the empirical chapters: the case of curation at the museum, the case of landscape management via conservation practices and organisations, and the case of embodied practice through mushroom foraging communities. I detail these and my justifications for choosing them further below.

The very meaning of ‘the field’ has long been debated in critical geography and anthropological studies. The notion of the field as a place ‘out there’ into which researchers venture in order to return laden with data is now critiqued as being tied to the colonial extraction of resources and knowledge from ‘exotic’ lands for the development of western science and wealth (Massey, 2003). For many projects it is necessary to move from one location to another; that is simply the reality of conducting research. However, decolonial and feminist scholars argue for the avoidance of ‘parachute’ research in which researchers drop briefly into a site only to leave without maintaining connections (Brickell et al., 2024). Researchers are also urged to be sensitive to the consequences of assuming artificial divisions between ‘the field’, ‘the laboratory’ and ‘home’ – knowledge, technologies, personal connections and physical movements constantly connect these together (Latour, 1999). To an extent I agree with Katz (1994, p. 72) that “I am always, everywhere, in ‘the field’”. The boreal forest seeps across borders, and the blurring of boundaries between home and work adds to the constant presence of ‘the field’. Furthermore, as Brinitzer and Benson (2022) note, fieldwork has transformed in recent decades to include online field sites and remote data collection. In this thesis I have looked at the ways in which boreal forest temporalities play out online and offline beyond the physical forest itself. Despite these ways of accessing and being in the field, I follow Massey (2003) in suggesting that neither total objectivity nor total immersion in a field (or site) can ever be achieved, however that field is defined. During my research I was constantly aware of my status as both an insider and an outsider. Even if I have familiarity with and access to the field, I still approach it as a researcher, and the analytical lenses which I carry act to distance me from the field even when I am within it.

During this project, the choice of sites and cases has evolved hand in hand: the exploration of certain sites led to questioning what I was seeing a case of, whilst

an interest in the overall case of how boreal forest temporalities are enacted and experienced presented a wide choice of possible sites to visit and access. The identification of sites has been a tool for practically focussing in on physical and virtual locations within the broader category of a case.

Defining and locating the boreal forest

The boreal forest is at once a site, a case, and the overall ‘field’ for this research. It is a large and expansive site within which I interact with smaller sites in Finland, Sweden and online in order to collect materials. It is also my chosen case for exploring how temporalities are shaped and used, and for experimenting methodologically with ways of researching temporalities.

From 56 to 69 degrees of latitude north, the ‘boreal’ and the forests contained within it forms a ring around all but the very northernmost parts of the planet (Esseen et al., 1997). The forests within this circumpolar belt are characterised by coniferous trees such as pine and spruce as well as broadleaf species such as birch, rowan, and alder. The mapped boreal forest landscape, including the part of it within Fennoscandia (see Figure 2) which features in this thesis, could be understood as a physical territory with obvious boundaries.



Figure 2: Map demonstrating the boundaries of the boreal ecosystem in northern Europe. From Ahti et al. (1968)

Despite this clear cartographic framing, what exactly is meant by ‘the boreal forest’ varies. Asking an ecologist, a social scientist and somebody who lives in the forest may result in different definitions and descriptions. The cross- and interdisciplinary strands of academic influence which feed into this thesis have a bearing on how I understand and locate the boreal forest. This is a thesis within political science. It is driven by an interest in how temporalities figure in politics and in what temporal engagements look like at a small or local scale and in everyday life. It is also a project which draws upon concepts and perspectives from human geography, especially benefitting from core thought in this discipline on the theorisation of space, place and themes of belonging and [un]rootedness to land and location.

The interpretation of any place, including the boreal forest, as a static, cohesive, and firmly-located whole “distances us from the world in critical ways” (Cosgrove, 1985, p. 55) As Lindberg (2019) writes, representations such as maps and images do not correspond to the lived reality on the ground. Landscapes and places are “lived-in” and “practiced”, being shaped and experienced by the humans, nonhumans and inanimate ‘things’ that exist in and move through them (Setten, 2004; Widgren, 2004/2004, p. 458)). Through her description of ‘the event of place’, geographer Doreen Massey (2005) suggests that each place is constantly shifting and changing as a result of movements and processes at different rates and rhythms. As Haskell (2017, p. 51) states, “the edge of the boreal forest... is a place where humans have created particularly intense flows of matter”. In addition, processes and events such as wildfire, the spread of wood-boring insects and tree migration caused by climate change (Gower et al., 2001) mean that the boreal forest is shifting. I argue that whilst one can point to the forest on a map, it is not entirely frozen in place or stationary.

In their edited volume ‘A Political Space: Reading the Global Through Clayoquot Sound’ (Magnusson & Shaw, 2003), which explores the nature of politics in connection to the forests and inhabitants of the Clayoquot Sound in western Canada, Warren Magnusson and Karena Shaw advocate for the approach of starting with ‘the site’ and percolating outwards to encompass spaces and times beyond but still connected to that site. Inspired by this approach, I conceive of the boreal forest as a rooted, physical location, but also as a place which ‘travels’ through stories and materials. It is a physical entity and an imagined place. The boreal forest has a geographical reach across multiple regions and holds cultural

significance for groups and individuals from local to international scales. I see this not only as a theoretical framing but also as a methodological choice. This is because it directs my attention towards physical materials and practices and towards the stories which allow the boreal forest to exist beyond its physical boundaries. The boreal forest is my overarching site, but through the movement of materials and stories it encompasses and connects with many other sites which I outline in the next sub-section.

Even though my work is strongly driven by environmental concern, I do not think of the boreal forest only in “narrowly environmentalist terms” (Magnusson & Shaw, 2003, p. 7). The boreal forest is indeed at the centre of fierce environmentally-focussed debates in a context of climate change and resource pressures. Nevertheless, the boreal forest of overt and contemporary environmental struggle and activism is only one perspective. The boreal forest is “an inhabited landscape” (Teitelbaum et al., 2023) within which numerous and diverse communities live and work with differing levels of reliance upon and connection to the forest. Diverse views of the forest include the forest as a symbol of national identity and geopolitical security (Baldwin, 2009); the forest as a territory, resource and home for Indigenous groups (Östlund & Norstedt, 2021); the forest as a space of shifting gendered labour roles (Reed & Lidestav, 2023); the forest of folklore and artistic inspiration (which may be complicated or updated via attention to the realities of industrialisation (Hiltunen et al., 2020; Jokiranta et al., 2019); the forest of generational wealth and material inheritance (Lähdesmäki & Matilainen, 2014), and the (especially far northern) forest as a peripheral, distant and ‘othered’ or uncivilised place (Berríos-Negrón et al., 2008; Eriksson, 2008).

Furthermore, the forest is just one manifestation and part of the boreal ecosystem. The boreal also includes tundra, wetlands and riparian systems. Human cultures and ways of acting additionally influence and are influenced by the different ecosystems and physical surroundings in question. The boreal landscape in its many forms has been the backdrop to and an active part of struggles for Indigenous Sámi rights in the face of State colonisation; mining and other resource extraction; the creation of art and literature; linguistic development, exchange and loss; and the development of place-specific cuisines¹². As such, this

¹² Threads of this theme can be found in the empirical chapter on the mushroom forest and foraging. However, the gastronomic cultures and legacies of the boreal forest and the wider

work is not an attempt to document or map the boreal or even the boreal forest as a whole. The stories and accounts which I have collected are partial and situated, and much of the epistemological value of this thesis lies in revealing personal and local-level accounts rather than applying colonising or universalising approaches which would obscure the richness and contradictions of everyday life in and around the boreal forest.

A multi-sited project

The boreal forest may be the overarching site considered in this thesis, but in order to practically carry out the research it has been necessary to narrow the scope down to the individual spaces and places where I collect data. Magnusson and Shaw (2003) argue for an approach to politics which locates politics in any space or place, however seemingly unremarkable, by paying close attention to the particularities and dynamics of those places.

I have chosen to research boreal forest temporalities at several sites within Finland and Sweden, as well as through online sites which could be accessed from many different locations but which are also rooted in those two countries. Finland and Sweden were chosen due to my personal connection with Finland and my ability to speak Finnish, and because I currently live in Sweden and have access to materials on Swedish forests. Forests in the two countries are also – in a general and broad sense – relatively similar at first glance. The nationality of the sites where I focus my attention are of lesser importance than the precise sites themselves, and my second and third cases (conservation and foraging) include sites in both Sweden and Finland. This is not a project which aims to compare findings between countries. At the same time, I remain attentive to the ways in which the national identity and positioning of locations where I carry out my research impact upon local conditions and my findings. For example, and as discussed in the third empirical chapter, there are some cultural differences between Sweden and Finland when it comes to preserving fungi, which then impacts on how boreal forest temporalities are navigated by actors within that case. Furthermore, when I visited Simpele, Finland, to attend a forest conservation event which I discuss in the second empirical chapter, the extreme proximity to

boreal, and their associated temporalities, are far more complex and richer than I can do justice to in this thesis.

the national border with Russia seemed to hover in the air as an intangible atmosphere.

The sites to which I travelled include the Finnish Forest Museum (otherwise known as Lusto) in Punkaharju, south-eastern Finland, which I visited in the summers of 2023 and 2024; the Punkaharju forest area in south-eastern Finland which I visited during the same two trips as those to the museum; Hiitolanjoki nature conservation area in south-eastern Finland (2023); Pyhä-Häkki national park in central Finland (2021, 2023 – two visits, and 2024); Kaukametsä forest in central Finland (date unknown – a memory from circa 2010); Sanginjoki nature reserve just east of Oulu in western Finland (2023), and numerous privately-owned forest patches in central and southern Finland throughout these years. I also accessed online sites including but not limited to Lusto's website, the websites of the Swedish national park authority and Swedish national parks including a key focus on Björnlandet National Park, the website of the Finnish Natural Heritage Foundation and especially the page relating to Kaukametsä, the website of the Swedish Mycological Society, the website of the Finnish Mycological Society, and numerous social media pages on Facebook and Instagram connected to the institutions mentioned above, and especially relating to mushroom foraging in both Sweden and Finland. Preliminary or 'pilot' fieldwork was additionally carried out at two sites: Söderåsen National Park and Lund Botanical Garden, both in southern Sweden. Neither are boreal locations. However, the 1.5 hour walking interview with a park manager on the one hand and the 2 hour observation of the garden on the other helped to develop lines of enquiry which eventually led to Chapter 5, to learn from some practical challenges with walking interviews, and to develop my ethnographic approach to exploring temporalities with nonhuman participants.

Many different sites would be relevant for this thesis, and in every chosen site and at every scale boreal forest temporalities can be detected. No matter where I turn, there would be the opportunity to work towards answering my research questions. As Mol (2002, p. 50) writes,

If I slightly altered the lenses of my ethnographic microscope, or shifted my view sideways a bit, I would tell different stories. The specificities would differ. However... the fact that there is multiplicity stays the same, in every site, on every scale.

Griffiths (2026, p. 1074) asks that if “chasing temporalities [is] so certain to result in finding interesting temporal things, might time be excessively enticing, fascinating us into distraction or narrowing our collective gaze?” I take this challenge seriously, and within each of the research sites I pay attention to the very real implications of temporalities for individual lives, everyday interactions and wider social, political and geopolitical dynamics. Researching temporalities across different sites carries ethical obligations to point out power hierarchies and inequalities and to bring out human and more-than-human stories which are less often heard. This dynamic reflects the thesis’ commitment to developing theory on temporalities which could be applied in a number of different contexts, and to developing methods for researching temporalities which again could be used by other researchers in various settings, but never losing sight of the fact that temporalities are inherently political and that research, too, is imbued with power relations and responsibilities.

Case-selection

The three empirical chapters present the three chosen cases. The chapters explore how boreal forest temporalities are experienced, enacted and shaped through: 1) forest museum spaces and curation practices, 2) forest conservation places, spaces and practices and 3) the ‘mushroom forest’ and foraging practices. As mentioned, the choice of cases emerged as a result of my first steps in fieldwork. Aside from the ‘pilot’ visits, my first visit to the Finnish Forest Museum was the first dedicated research trip which I made. During interviews with curators, I learned that the museum is being framed as more than only a building; it is seen as a set of practices which allow the boreal forest to permeate different locations and spaces. Even though the museum building is arguably the ‘core’ place here, as I am told by an interviewee, the museum (and therefore its involvement in boreal forest temporalities) also exists far beyond the walls of the building. This idea that boreal forest temporalities can unfold outside the forest and across spaces and borders turned out to be inspirational for the subsequent choice of cases. Furthermore, my choice to study the forest museum, conservation practices and places and mushroom foraging, as well as the multimodal patchwork ethnography approach, has been influenced by an initial inkling that temporal politics run through the core of all forest-related practices and places, not only those most overtly involved in high-level debates.

In order to be applicable to real lives and events, my interest in boreal forest temporalities is rooted in the specificities of different sites. The progression through the three cases allows an interrogation of the difference which is made to how boreal forest temporalities unfold depending on particular assemblages of spaces and practices. The empirical chapters of this thesis shift from the focus on the actions carried out by actors assembled around the museum, which is a building and a collection of practices characterised by the curation of objects and stories (Chapter 4), to a set of forest sites connected by their shared status as protected and conserved landscapes and patches of differing sizes, ecological make-up and ownership (Chapter 5), to a more seemingly random and dispersed collection of sites which are threaded together via the imaginary of 'mushroom forest' and the actions and knowledges of mushroom foragers (Chapter 6). Each of the cases is molded by my perception of the practices and actions which it holds: curation and the collection of physical objects as well as stories; conservation and protection practices which include the physical management and design of forest landscapes; fungal foraging and individual embodied and multi-sensory engagements with the forest.

The structure created by organising my materials into these three cases and this order provides a way of considering the position of the forest in relation to the sites. In the forest museum, the forest is in a way quite distant – even if we can touch forest products and read about forest histories, we only access the forest and experience its temporalities via acts of curation, mediation and representation. In the conservation setting, we enter the forest and engage more freely with the physicality of the landscape. Visitors are immersed in the living forest. However, there is still a degree of guidance and mediation, and the echoes of governmental documents and legal paperwork relating to the management of protected areas are ever-present. In the mushroom forest and foraging context, boreal forest temporalities are more overtly embodied. In this chapter there is less rigid or 'official' guidance and curation. Mushroom foraging groups and societies play a role, but they are less prescriptive in their approach to forest temporalities, and many are quite informal. Instead, the relationship between people and the forest is dictated by individual and personal preferences and relationships. This ordering of cases and chapters strengthens the overall narrative by moving the reader gradually closer to the forest, both epistemologically and politically. Together, the three cases offer different vantage points from which to explore the temporal

politics of the boreal forest and to understand how boreal forest temporalities bring meaning to everyday life.

Collecting materials: Multimodal patchwork ethnography

I have now outlined a more-than-human, reflexive, iterative approach, a particular understanding of the boreal forest, the multi-sited geographies and places involved in this work and the organisation of concepts and materials into three cases. But how have I gone about engaging with sites and participants and taking note of what I am told and what I perceive? How were the research materials collected?

A core challenge of researching temporalities lies in their simultaneous pervasiveness and evasiveness (Griffiths, 2026). Time is everywhere, but it can be difficult to detect or to even talk about without falling back into simplified language (though note, as I have found, that simplified language is in itself an indicator of certain assumptions about temporalities). In addition, being attentive to the more-than-human also poses methodological challenges. Before I describe the practical steps which I took, a description of multimodal patchwork ethnography which is my overall approach to collecting materials across the research sites, is warranted.

Ethnography, firstly, can be understood as a research approach or ‘philosophy’ of research (Anderson-Levitt, 2006) which originates in anthropology and which uses qualitative and sometimes quantitative methods in order to explore lived experiences and the construction of meanings in everyday life in detail (Fielding et al., 2008; Herbert, 2000). Ethnography best describes what I do due to my attention to myriad interactions, processes and meanings in the everyday in specific situated contexts.

I introduce a focus on multimodality to emphasise the array of materials which have been collected and ultimately analysed. Multimodality as a term originates with the analysis of different linguistically-centered ways (modes) of communicating meaning (see e.g. Kress & Van Leeuwen, 2001). Multimodality has now expanded to move away from the linguistic and ‘texts’ alone (Hurdley & Dicks, 2011). I follow Aru et al. (2017) to understand multimodality to mean the

use of diverse methods from participant observation to sound- and image-recording, the collection and creation of equally diverse types of materials or data, and the commitment to multi-layered accounts which assemble multiple pieces and observations. The multimodality of this project developed naturally as I progressed; when developing techniques to research boreal forest temporalities I found that interviews alone could not always help me to identify and describe different temporal practices, and participants frequently pointed to and referenced other kinds of materials. Therefore I gravitated towards materials and methods which could contribute to recording the “multi-dimensional, the multi-sensory and the in-between” (Aru et al., 2017, p. 152).

Patchwork ethnography, meanwhile, is an approach put forward by Günel, Varma and Watanabe (2020). It refers to

[...] ethnographic processes and protocols designed around short-term field visits, using fragmentary yet rigorous data, and other innovations that resist the fixity, holism, and certainty demanded in the publication process... while fully attending to how changing living and working conditions are profoundly and irrevocably changing knowledge production. (Günel et al., 2020, p. 3)

Patchwork ethnography is ‘patchwork’ in a few ways, each of which make it ideal for investigating temporalities. Firstly, patchwork ethnography acknowledges the necessity of fitting fieldwork and data collection into and in-between other life events and responsibilities as well as the possibility or necessity of drawing upon personal experiences and past events as part of the data collection. Because of the overlaps between personal life, professional work and academic work it can sometimes be difficult to define for certain when and where a research project begins and ends (Christen & Anderson, 2019; Garson, 2025). As discussed above, critical definitions of the ‘field’ include everyday and personal life and reject artificial bordering of ‘research’ and ‘non-research’ spaces. As Günel et al. (2020, p. 3) put it, “patchwork ethnography begins from the acknowledgement that recombinations of “home” and “field” have now become necessities.” Therefore, patchwork ethnography can be used to draw on experiences of temporalities in different places and spaces across the broad spectrum of what could count as ‘the field’.

This thesis primarily draws on materials and observations collected and analysed between June 2021 and April 2026. This data is also supplemented by knowledge

and experiences which I have accumulated during earlier years as well as in contexts where I was acting outside the ‘official’ PhD role. I do not explicitly label observations and knowledge gained in this way unless I am able to locate a clear origin or source, although where appropriate I have indicated if a specific observation originates from my own previous experiences. In contrast, materials collected within the official boundaries of the PhD are documented in this chapter and in the Appendix and bibliography, and are labelled and referenced throughout the thesis. Where quotes and insights are taken from conversations and interviews, these are indicated via reference to the names of my interlocutors, which are listed in the Appendix along with details of the exchange. Online sources of material including websites and digitised magazines are included in the main bibliography (e.g. STUK, 2026).

Although patchwork is temporally piecemeal in that the histories and origins of materials are varied and can be hard to trace, Günel et al. (2020, p. 3) emphasise that “patchwork ethnography refers not to one-time, short, instrumental trips and relationships... but rather, to research efforts that maintain...long-term commitments, language proficiency, contextual knowledge, and slow thinking.” Much like the creation of a physical patchwork quilt, the shaping of a patchwork ethnography takes place over the long-term, even if the materials included within it are fragmentary, incomplete and a mixture of old and new. It can take several engagements with a site before nuances start to become clear – environments, materials and texts must all be “experienced through time, in their different seasons, throughout their (and one’s own) changes” (Bastian, 2009, p. 106). Given that I am conducting a multi-sited ethnography, it was not possible for me to spend long stretches of time at any one site. However, I visited the Finnish Forest Museum twice, the national park Pyhä-Häkki three times, and spent time at other sites which were listed earlier. I maintained ongoing communications via email and phone with a small number of participants who expressed enthusiasm to do so; these continue as this work goes to print. I also became a member of the Finnish Mycological Society, thus allowing me to receive copies of the society’s publications and to attend official meetings. Extending the outputs and exchanges associated with this research, I continue my participation in these networks beyond the conclusion of the thesis. The Mycological Society have invited me to share the findings of this research via the Society’s magazine, and outcomes relevant to Lusto will also be shared with the museum. These contributions aim to feed into ongoing discussions which these actors are having. As such, the

patchwork does not only lie in my hands but is shared, co-created and ‘re-gifted’ to those who have contributed.

Patchwork ethnography is additionally patchwork because “it expands what we consider acceptable materials, tools and objects of our analyses” (Günel et al., 2020, p. 3). Patchwork ethnography, much like the gleaning work done by some patchwork sewers, is suited to multimodality and brings together a range of materials and elements which may not usually be considered in combination with one another. “Patchwork ethnography is not an excuse to be more productive. Instead, it is an effective, but kinder and gentler way to do research” (Günel et al., 2020, p. 3). For example, I have enabled participants to respond by email or text message to my questions if they do not have time or do not feel comfortable with a meeting or a call. This additionally removes some of the pressure associated with setting up meetings and only relying on interview transcripts. Patchwork is also apparent in my use of printed materials which I have collected during site visits, most notably the leaflets and textual displays produced by the forest museum, and the leaflets and magazines of conservation and forest protection groups to which I have referred along the way. These are triangulated with other materials such as participant observation notes, photographs and descriptions of the landscape in my research notebook. I expand in greater detail on the different types of materials later in this section. A multimodal patchwork approach provides a richer and more distinctly multi-layered account than would have been possible had I only referred to one type of material, and in some instances it is more convenient to participants and/or the researcher.

Patchwork ethnography is not only multimodal, but also inherently more-than-human. In my reading of her statement, Tsing (2015, p. 159) is calling for a patchwork ethnography when she advocates studying “combined forms of mindfulness, myths and tales, livelihood practices, archives, scientific reports, and experiments” (Ibid., p.159) as part of a more-than-human project. Below I elaborate on how sensing and embodiment played a role in attending to the more-than-human – and in paying more attuned attention to other humans and to myself – when collecting materials.

Sensing and embodiment

Patchwork ethnography is multi-sensory and multi-layered, and my adoption of this approach during data collection included a focus on senses and the body. In her thesis on fungi, Pouliot (2016, p. 251) asks, “how is the world perceived if not sensorily? For something to make sense in its truest definition, it must be related to the senses.” The senses – touch, smell, sight, taste, hearing – are a key component of how humans and other beings perceive their surroundings. The embodied capabilities of different actors in turn make a difference to how temporalities and places are sensed, experienced and produced (Di Masso et al., 2019).

When paying attention to embodiment during data collection, I have followed more-than-human, feminist and Indigenous theorists in expanding what counts as a body, including for example tree-bodies (Arnold et al., 2021) and fungal bodies (Garson, 2026; E. Mitchell & Vráblíková, 2022), as well as human bodies as legitimate actors rather than objectified ‘things’. This has directed me to ask not only to what there is in a place, but to investigate how multiple different bodies act and interact. Bodies do not all move through or experience the same place on equal terms. Movement is shaped by intersectional and embodied elements of identity such as gender, [dis]ability, age and species. Different practices also require certain movements. Mushroom-hunters, for instance, spend time “pressed against trunks and clambering beneath logs, meandering randomly” (Pouliot, 2016, p. 254). Needing or being able to move in particular ways can be enjoyable, freeing, overly challenging or even impossible. The resulting “affective atmospheres” (Anderson, 2009) or “immaterial, emotional responses, attunements” (Lorimer, 2007, p. 914) vary wildly.

“The familiar repertoire of humanist methods that rely on generating talk and text” should be supplemented with “experimental practices that amplify other sensory, bodily and affective registers” (Whatmore, 2006, p. 606). Studies in multispecies ethnography (an approach outlined by Kirksey & Helmreich, 2010) provide inspiration for how to go about researching the more-than-human via embodied and sensory elements. Through for instance sound recording ((Hunter et al., 2024), drawing (Mathews, 2018), and inviting nonhumans to be active participants in the research (Bastian et al., 2016), more-than-human lives and existences (or non-existences) come to the fore and can help researchers to develop their approaches. As Hartigan (2017, p. 281) writes,

...accounting for plants instead changed my approach to ethnographic description — not just including these life forms in the backdrop... instead, thinking and theorizing with them.

Whenever I spent time at a site, I acknowledged the presence of beings which may usually be overlooked and ‘invisible’ (Head et al., 2014), and although more difficult I also tried to consider what might be missing entirely. I touched and felt surfaces and listened to ambient sounds. I did not rush away but waited to see what would emerge; taking time to sit and sense can prompt gradual responses, especially when those we are researching with do not move at human rates. An example is the rust mentioned in Chapter 4. Walking in the grounds outside the museum, I was not sure what I was looking for. Yet spending time with the machinery, noticing that it was rusting and taking photographs of it revealed the rust as just as much a contributor to the temporalities presented at the museum as the items in the display cases. Rust is one among several unexpected participants in this thesis.

Embodied method and sensitivity to the surroundings was especially central to my engagements with fungi and those searching for them. As Mitchell and Vráblíková (2022 n.p.) state, searching for fungi requires “a particular form of attention manifested in the pacing of movements, a focus on sensation, intense concentration, attentiveness to long and short-term changes in weather conditions and interest in the geology and vegetation of the particular area.”

Using methods focussed on embodied and sensory phenomena also contributes to interactions with human participants. I noted the gestures used by participants, their tones of voice, hesitations and pauses, the atmosphere of the setting and any smells, sounds or additional details. Sound recordings later reminded me of atmospheres and utterances. I attended to how different bodies including my own moved and responded to the environment and to how participants talked about or demonstrated their sensing and embodiment of temporalities. I paid attention to bodies and the senses during participant observation, walking interviews and solo site visits, where changing textures, sounds and smells prompted responses and fed into the conversation and practice(s).

Sensing and embodiment have therefore been crucial in accessing, interpreting and responding to boreal forest temporalities. Through noticing multi-sensory, embodied responses to my own surroundings as well as how human and more-

than-human participants respond to and move in their surroundings, this thesis includes the senses and the body within the overall patchwork.

Materials and data

Ethnographies typically rely heavily on interviews. Although I have conducted interviews for this thesis, they are not the primary method. In line with patchwork ethnography, multimodality and the aim of departing from “talk and text” alone (Whatmore, 2006, p. 606), the collection of in-situ observations, sound recordings, images and other materials are just as important for tracing the privileging of certain temporalities and the shaping of forest legacies and imaginaries. The collected materials consist of a) those relating to interviews, exchanges and conversations: sound recordings, hand-written notes, email excerpts and digital transcripts, b) photographs taken by myself during participant observation as well as during other site visits c) sound recordings made during participant observation and other site visits, d) multimedia written texts and images which include photographs and artwork online, in printed magazines, in leaflets, in exhibition spaces and on notice boards, e) the results of an online survey which contribute mainly to the third empirical chapter but also to some extent to the second empirical chapter, f) a short experimental film made by myself in collaboration with a fungus, and g) a research notebook containing hand-written notes, drawings, and printed materials.

Accessing sites and participants: outreach, the digital, and ethical considerations

Conducting a multi-sited and multimodal patchwork ethnography has meant visiting multiple sites ‘on the ground’ and online. The steps which I took to access research sites and participants included firstly contacting people by email, which was easy to do when their details were available online. This applied mainly to employees at the forest museum, employees of conservation groups and coordinators of the Finnish Mycological Society. I received recommendations of further contacts from these first exchanges and conversations. Through the online survey¹³ distributed with the support of the Finnish Mycological Society and via existing contacts I was able to reach and gain written responses from a much larger number of people. In addition, existing contacts in Finland, both personal

¹³ Details on the survey are provided later in this chapter.

contacts and those made through academic workshops and conferences, facilitated the expansion of my network. Many people expressed enthusiasm towards participating. For instance, Panu told me that having the opportunity for storytelling and self-reflection was welcome due to his stressful job. Milla said that the intersection of museums with fungi fits with what she works on in a professional and volunteer capacity from day to day, and was glad to contribute to both cases. Emilia mentioned that she is always happy to discuss mushrooms with anyone who will listen. In contrast to research where access is complicated by elements such as violent conflicts, overt political tensions and bureaucracy, as well as research where the participants speak a different language to the researcher, practical access to research sites and participants during this project did not pose a major challenge. That said, I was careful to ensure at every stage that participants and those acting as ‘gatekeepers’ understood and were comfortable with my intentions. This not only built rapport but also facilitated access to wider communities and locations; people’s advice and recommendations reassured others that taking part in the project may be interesting or worthwhile.

The online element of my research is not to be underestimated for its contribution to continuous and long-term access to information and materials. In addition to the ability to access certain websites for data collection whenever convenient, I have developed connections with some participants solely via online means, especially Zoom and email. I regard participants with whom the conversation began by email or by Zoom and in some cases continued in these ways as those where connections may easily continue, certainly online and perhaps in person, because the nature of connection is established as remote and online and is therefore arguably most convenient to uphold over long periods of time. In contrast, those with whom the initial connection was in person have in some cases proven more difficult to reach at a later date and are more likely to shift in and out of contact. In-person encounters with people and places have throughout provided rich sources of information, especially relating to embodiment, and greater opportunity for spontaneous exploration and follow-up when compared with online or digital fieldwork. Still, emphasising “digital-material binaries” (Abdelmoez, 2025, p. 36) and only focusing on either the digital or the physical underestimates “the mutual permeation of the virtual with the physical world” (Frömming et al., 2017, p. 13) and the extent to which the digital seeps into everyday embodied life, whilst everyday embodied life inspires what is shared online (Boellstorff et al., 2012). This project shows that the digital, especially in

the form of websites and social media pages, plays a strong role in how temporalities are mediated and expressed.

Ethical considerations and ensuring that all participants are as comfortable and supported as possible has been a priority throughout. When initiating contact, whether by email, phone or in person, I made sure to introduce myself as a researcher from Lund University, to explain my research, to clearly invite the person to an interview or conversation which may be recorded depending on their consent, and to be clear about the person's right to withdraw or refuse participation. On a couple of occasions, a telephone introduction was only long enough for me to introduce myself quickly due to poor phone signal or because the person I was speaking to was busy. However, I ensured that potential participants received the relevant information as soon as possible. The exact text and wording used varied slightly, but an example (translated) can be viewed in the Appendix. Although I carried a version of this text with me during the early stages of the project, it often proved awkward and overly formal to pull a paper out. Instead, a verbal introduction covered the key points, and I offered participants my contact details in case they would like to follow up for more information or to withdraw.

Although most people expressed indifference when asked, I chose to pseudonymise all (human) participants. Some participants chose their own pseudonyms or approved the pseudonyms which I had chosen for them (for instance, 'Ruusu' or 'Rose' expressed happiness with her new name, since coincidentally when taking English classes at school she was given the English name 'Rose'). Pseudonymisation ensured equal treatment and provided a layer of reassurance to those who had not taken part in research before or who indicated that they were expressing a mixture of personal and professional views. All pseudonyms are unique; that is, no same name is repeated in indication of different people. Some pseudonyms were chosen to reflect the nationality of participants – not all participants are Swedish or Finnish, even though all have experience of boreal forests. All pseudonyms are listed in the Appendix along with additional (limited) information about participants. This means that whenever a name is mentioned in the text, that name can be cross-referenced to the Appendix for background on the nature of my interaction with that person. When it is the first time that I mention them, whenever I got to know certain people better, and/or where it provides further context to explain and back up their

contributions, I have included short descriptions of individuals within the empirical chapters.

I acquired research ethics clearance for this project from the Swedish Research Ethics Council (reference number 2023-04293-01), as well as completing a two-week Research Ethics course at Lund University in 2021.

A note on co-creation

The materials collected for this thesis have been largely co-created along with participants, even though the responsibility for their interpretation, the overall design, and accountability for any misrepresentations lies entirely with me. Through the approaches outlined in this chapter I have allowed participants, from humans to other species and non-living beings, a strong say in what kind of information I have been able to collect, and ultimately also a say in the stories¹⁴ which I represent in this work. Achieving this for more-than-human and nonhuman participants is trickiest because their input is in the first instance not in human language and requires an additional layer of interpretation. However, through sensory and embodied practices such as listening, touching, and recording, their ways of being have been included and allowed to shape the materials both in connection with and independently of the inputs from human participants. Many of the collected materials exist as texts and images, as well as a film. Some have been created by myself in response to what I am told and experience. Some have been created by participants, either directly in response to my enquiries or as part of their pre-existing activities. Where images and texts already exist, i.e. I came across them during data collection, I have collected them as much as possible as they already are rather than taking only small parts. It was not always possible to do this, for example when considering displays of text in the museum which I then had to photograph, however it was easy to achieve in the case of leaflets and magazines which I picked up and added to my patchwork of physical materials. I have included a number of these images and texts within the empirical chapters. Later in this chapter I outline the narrative analysis which I have undertaken in order to identify stories within and across materials.

¹⁴ See later in this chapter for elaboration on narratives and stories.

Interview and conversation materials

The information gleaned from interviews and conversations exists in the form of written transcripts, excerpts and notes. I use the term 'interview' to indicate pre-agreed and also spontaneous spoken exchanges which participants agreed to make time for and which I usually recorded with participants' permission and their acknowledgement that the material would feed into my thesis. I mention 'conversations' in order to cover more organically-arising exchanges which were often shorter and which took place without sound recording, either because there was no chance to request to record and/or because it was practically difficult to do so (for instance if walking in the forest in the rain). In these cases, participants had already been informed of my purpose and interests, and knew that I was collecting material for my doctoral project, but the exchange did not always take the form of me asking questions and receiving answers. Conversations included brief remarks, as well as back-and-forth. During this project I additionally made use of email exchanges in which participants chose to respond to my questions by email, providing written responses of different lengths. The email format allowed participants to respond at their convenience and by-passed the need for transcription, though was also less spontaneous and allowed less adaptation of the conversation than spoken exchanges.

In the case of pre-agreed interviews in particular as well as in the email exchanges I made use of a short guide (see Appendix), however interviews and discussions were only partly structured by myself. The interview guides were refined over the course of the project as themes and connections emerged. In general, interviews followed this sequence: I began with questions to open up the overall topic of time (I used this word instead of temporalities for ease of understanding) and the forest. I then moved to questions about specific practices, and those tailored to the situation and who I was talking to. For example, I prepared questions relevant to the curation, design and aims of the museum; conservation practices; forest ownership; family and generational knowledge; interactions with nature and other species; and mushroom foraging. Given the overlap between peoples' various engagements with the forest, in some discussions all of these were covered, and even if I did not bring them up in the beginning many surfaced later. Though I usually began by asking predetermined questions, the interviews were strongly shaped around peoples' responses, and I allowed them to steer the discussion towards more niche topics of interest. If there was still time towards the end of the interview I would check if any of my prioritised questions remained

outstanding. Spontaneous conversations did not rely on the interview guide, but I found that I could recall some questions which I had asked previously, as well as again allowing participants and the situation that we found ourselves in (for instance looking at something in the forest) to guide the conversation.

Exchanges ranged in length from ten minutes to two hours, though some interviews and conversations ended and then started up again later, extending over the course of a day. This was applicable for instance at Sanginjoki nature reserve, and similarly at the Hiitolanjoki conservation event. Regarding email exchanges, these typically lasted a few days to a couple of weeks but in one instance has continued for years, albeit with periods of time without communication.

For interviews and conversations, whenever participants allowed me permission to do so I recorded our conversation. For the majority of the interviews the discussions were in Finnish. In the case of more spontaneous conversations and/or where overtly recording may have broken the atmosphere, I took rough handwritten notes. The process of transcription, or transforming spoken words into written copy, sits somewhere between data collection and analysis. I discuss my transcription of the sound recordings and notes in detail in the section on analysis.

During or as soon as possible following interviews I often made extra hand-written notes even if I was already sound recording the conversation. These covered things which might not be captured by the sound recording and which I could have forgotten after a few weeks. They included for instance descriptions of atmosphere; scents and smells; temperature; interlocutors' hand-movements, other movements and overall demeanour; and reminders of what came before or after the sound recording if it was the case that I had already started or continued the conversation when not recording. Immediate and fresh impressions may lack theoretical sophistication and/or linguistic coherence but they are crucial for ensuring that details are not forgotten. I did not consider using my laptop because I judged that this would lend an unwanted air of formality to the conversation and perhaps make participants less comfortable. Indeed, a laptop would also have taken up too much space or been out of place or ridiculous in situations where the conversation took place at a lunch table, in a car and in the forest. Equally, the use of a phone may have seemed detached or rude. Instead, notes were often taken on a small piece of paper or in a small notebook. This allowed my note-

taking to be as un-intrusive as possible within the interview or within the setting in which I found myself after the interview.

Sound recordings taken during participant observation and site visits

Whenever it was convenient to do so I made sound recordings to document ambient sounds during participant observation and other moments. These sound recordings differ from the recordings of interviews and conversations in that they are not necessarily intended to capture speech or to focus on anything in particular. They capture the sounds produced by the surrounding environment and things within it. Sounds heard in such recordings include echoes in hallways and open spaces and the murmur of the breeze in vegetation. At the forest museum, one recording includes a recording of wind in the trees which was used in the exhibition space. Some of the recordings made during participant observation, where people occasionally speak, also capture additional sounds, as do the interview recordings.

Photographs taken during participant observation and site visits

I took a number of photographs during site visits. These were captured in a relaxed manner when walking or sitting on my own, quickly in the midst of conversations or when walking with other people, or hurriedly in order to record something for later reflection. Photographs have been a way of reminding myself of parts of what I experienced, especially for reference when listening back to interviews or to cross-reference with written descriptions of locations. I did not take photographs with the aim of analysing them in their own right, yet their influence on my recollections of different moments should not be denied (Da Silva & Pink, 2004). No image or the way it is created is neutral; visuals always exclude something which lies beyond the frame (Lindberg, 2019). What is in the frame and how it looks is dictated by calculated choices in the moment, the type of camera used, photography skills, and coincidental and unpredictable elements such as the movement of people (Liu, 2022). Photography as a practice is influenced by the emotions and by the photographer's connection to a place (Schwartz & Ryan, 2003); my photographs reflect my ideas about what mattered most in a location and what seemed most interesting in the project at that time, sometimes drawing attention to "moments and/or objects we all know exist but which are meant to remain invisible" (Andrews, 2002, p. 4). Yet when focussing on the rusting machines outside the forest museum, for example, what might I also have

excluded? Photographs should therefore be critically considered as partial representations of a situation. I follow the guidance that photographs “must be integrated with fieldwork notes and transcriptions” (Aru et al., 2017, p. 153) and set in context as much as possible, which is something which I do whenever I introduce a photograph in the empirical chapters.

Multimedia texts and images

Throughout this study I have collected written texts and images in various forms such as pamphlets, leaflets, posters and the content of web pages. I also took photographs of texts and images which I could not otherwise take with me, for example the signs and information plaques at national parks and nature reserves and images and displays of text in the museum exhibition. In addition, I have identified a rich source of information in the form of articles and images published in three different magazines: *Vuosilusto* or *Growth Ring*, a peer-reviewed publication published every other year as a collaboration between Lusto, the Finnish Forest Museum, and the Finnish Forest History Society; *Luonto* or *Nature*, a magazine published ten times per year by the Finnish Association for Nature Conservation; and *Sienilehti* or Mushroom Magazine, the magazine of the Finnish Mycological Society, which emerges four times per year. *Vuosilusto* includes articles by researchers, practitioners and experts in forests from a range of angles including nature, history and management. *Luonto* is largely written by Finnish Association for Nature Conservation employees and commissioned experts, with some guest articles, and deals with a number of topics relevant to nature conservation in Finland and internationally. *Sienilehti*, meanwhile, contains contributions from society members and the Society board. During initial scoping I found that the articles published in *Sienilehti* reflect a diversity of perspectives on fungi. As a whole these publications provide insight into how these organisations, their networks and those who work for or with them frame and respond to boreal forest temporalities. I have overall approached these materials as background, rather than pulling out text for direct reference, finding that given their extensive scope they were most helpful with consolidating key themes rather than over-saturating my analysis with additional detail. Some of the online materials which I have analysed, notably those originating in the Facebook groups for the Finnish Mycological Society, come from individuals rather than representing the views of an organisation as a whole. I differentiate the images produced by others from the photographs which I have taken. I include the former

in my analysis of materials and the ways in which boreal forest temporalities are instrumentalised and interpreted, whereas my photographs, as outlined above, complement rather than form a central part of the analysed materials.

Online survey

Having observed the high levels of activity in online mushroom foraging forums and websites and having received positive and curious reactions to my research via contacts at the Finnish Mycological Society, I created an online survey via the survey platform SurveyMars as a way of reaching a wider community of foragers and fungus enthusiasts than was possible through small groups of local contacts. This was distributed with the aid of the Finnish Mycological Society and is in Finnish. The survey, now closed, has gathered 44 unique responses (duplicates whereby respondents had submitted the same responses more than once have been excluded from the count).

The survey uses multiple-choice options as well as allowing respondents to write freely in text boxes. It echoes many of the guiding questions which I have used during interviews, and integrates questions specifically about mushroom foraging with questions about perceptions of time in the forest more generally. With the aim of giving participants the opportunity to 'show' as well as to 'tell', I provided an option for people to upload one or two of their own photographs in connection to themes of forest temporalities. The survey has given me access to a range of descriptions of everyday experiences in connection to the forest around Finland.

Several challenges arise from using the survey format when compared to other more ongoing and/or adaptable approaches such as interviews and participant observation. Firstly, it does not provide opportunity for the researcher to further explain or expand on the questions asked, or for respondents to indicate every time they struggle with a question or want to add more detail. A small number of people indicated within the open text-box response field that they did not understand or know how to respond to the question about noticing non-humans and/or non-human rhythms in the forest, for instance. On the one hand this may be an issue of wording in the question, and in other cases it may reveal something interesting about the lack of discussion about non-humans and their lives in the usual day to day. In contrast, I discussed this topic at length with some interviewees. I provided my contact details at both the beginning and end of the survey so that people could reach out with questions or in case they wished to

withdraw their data. However, this does not solve the problem in the moment that people are engaging with the survey. Furthermore, because of this lack of exchange a survey remains relatively impersonal and there is very limited opportunity for the researcher to get to know the respondents. In my use of data from the survey in this thesis it has been more difficult to provide information about the (pseudonymised) person or people in question than when referring to interview data for instance. Because of these challenges it has been important to see the survey responses as incomplete snapshots, strongly influenced by the questions which I have asked as well as by technological restraints, which can support and/or challenge some of the responses and observations collected via other methods.

Research should, I argue, as much as possible be used not only to understand real-world phenomena but also be put to use in practical and productive ways. In line with this I included an open question at the end of the survey about the message which people would like policy-makers to hear about forests and fungi. The answers to this question provided a window into the utility of the findings of this research: several of them affirm why a temporal lens on the forest matters, how thinking about fungi can help to see forest temporalities in a different way, and demonstrate that people would like policy-makers to hear messages which are often either explicitly or implicitly shaped around temporal framings and assumptions about time. These responses are discussed in the empirical chapters and conclusions.

Experimental film

During the autumn of 2024 I joined ‘The Stories Our Bodies Hold’, an online embodied documentary film-making workshop. The course was led by IMPRINT Documentary Collective and was aimed at beginner and amateur filmmakers. Having been intrigued by the process of growing an oyster mushroom fungus, *Pleurotus pulmonarius*, on cardboard and used coffee grounds in my kitchen in Sweden, I decided to focus my film on the fungus, its ‘body’, and the relationship between us. After receiving feedback on the work in progress during a departmental seminar, I completed the film during the summer of 2025 and presented it again, once more at the department and then at a September 2025 conference in London. The film is just over seven minutes long. It is comprised of footage from the forest in Sweden and Denmark interspersed with documentation of moments during the fungus-growing process. With the aim of

providing narration I enlisted two friends to talk with me and to interview me about the fungus and fungi more generally. I recorded and transcribed these conversations and inserted excerpts of the resulting audio and transcripts into the film (see Figure 3).

I did not initially consider the film to be relevant for the thesis, especially given that the original wild fungus did not come from the boreal forest but from southern Sweden. However, following discussion during the seminars I was encouraged to consider the ways in which the process of collecting, observing, tending to and storytelling about the fungus shed light on more-than-human and forest temporalities, even if those which I was exploring in the film were not necessarily *boreal* forest temporalities. My engagement with the concept of the body via the film has also been helpful for thinking about more-than-human bodies in this thesis. I only explicitly reference the film in Chapter Six, however it has informed my thinking on temporalities, embodiment and the senses and how to research them throughout.

It is important to highlight here that similar critiques to those levelled at photographs and static visuals also apply to the film: it is a highly curated, personal and partial representation which would surely not look the same if someone else had made it, or if I had made it at different times and using slightly different equipment. Therefore, as with the other materials used, I consider the film not in isolation but in conversation with other fragments of the patchwork. It is a productive element which provides one small part of the puzzle.



Figure 3: Still from the film¹⁵

The film not only proved helpful for thinking through themes and theory, but it was also an unexpected aid for the development of other methods. Having people ask me questions rather than the other way around prompted me to reconsider and develop the questions which I was asking others during the PhD project. For instance, one friend asked, “I just think it’s interesting – how do you relate to the fungus?” I enjoyed thinking about and answering this question, and realised that it was not something which I had considered asking the mushroom foragers taking part in my research. So far, I had been more focussed on asking questions about rhythms, forest temporalities, knowledge and embodied practices, but had not asked what the foragers thought of the mushrooms themselves or of their relationship with them. Being interviewed helped me to assess the questions that I was asking and led to development of the online survey and email correspondences. The experience also prompted me to encourage interlocutors to ask me questions whenever they liked. Even if people did not always take me up on this offer, providing the possibility acted to partially flip researcher-participant power relations and to give participants more ability to steer our conversations.

¹⁵ The film, titled ‘From Food to Strange Friend’, can be viewed at:
<https://vimeo.com/1113854816>

As such, the film helped me to evaluate my approach to interviews and conversations and to work further toward strengthening reciprocity and trust.

Research notebooks

Given the volume of physical materials which I collected during fieldwork as well as the observations, reminders and thoughts which occurred to me, keeping a research notebook became an important way of literally and metaphorically sticking everything together. I have two such notebooks. The first is focussed on project formulation in the early stages and carries the seeds of theory and lines of enquiry in this project. The second notebook continues these but is more deeply dedicated to fieldwork and data collection at physical research sites. Together, the notebooks record fragments, bringing them together in one place. I took the second notebook on all of my research trips, however depending on what else I was carrying and my consideration of how practical it would be to take it out during the visit it did not accompany me every day to each site or locale. Instead I often added materials to the notebook when I was back at my desk or lodgings.

The notebook firstly has been a practical storage place for physical materials relating to the data collection methods described above. As mentioned, I made some hand-written notes during and after interviews, conversations and solo site visits. These notes were usually taken on loose pieces of paper, in smaller notebooks or even on the backs of receipts and any other paper which was available. In order to then ensure that these were not lost I added them to the research notebook as soon as possible. Some (though not all) of the leaflets, flyers and other printed materials which were collected are also included in the notebook. I made a small number of drawings based on my observations of the forest landscape and elements of interest within it. These, too, are included in the notebook.

Secondly, the notebook is a reminder and a memo. It has acted to preserve memories of atmospheres, encounters, site visits and conversations which may be forgotten, misremembered or left out of sound recordings. It has also reminded me of my thoughts on thematic or theoretical connections and people to follow up with later. Through this act of reminding, the research notebook allowed things which may otherwise be left out to be more present in my analysis.

The research notebook can as a whole be understood as the physical container or canvas which reflects and contributes to the ongoing cycle of collecting material

and beginning to conduct analysis. Flicking through the pages of the notebook provides a very quick way of moving through different moments in the research project. I have found this to be smoother to navigate than moving between different files in my digital storage folder, where things remain inherently disjointed and separate. However, looking through the notebook has on a number of occasions prompted me to look for something in my files, and looking at my typed-up transcripts and photographs has conversely prompted me to turn to the notebook. I must emphasise that there were many things which did not get recorded on paper, so the iterative back and forth between notebook, other materials and memories has been crucial. Moments during the project are generally recorded in chronological order from the front to the back of the notebook. However, I have drawn some lines between them and referred myself to different pages, and when looking through I have noticed connections and been reminded of things which have prompted realisations or new questions. This, then, is where I have begun to make connections between separately-collected materials and to formulate some cohesive preliminary findings.

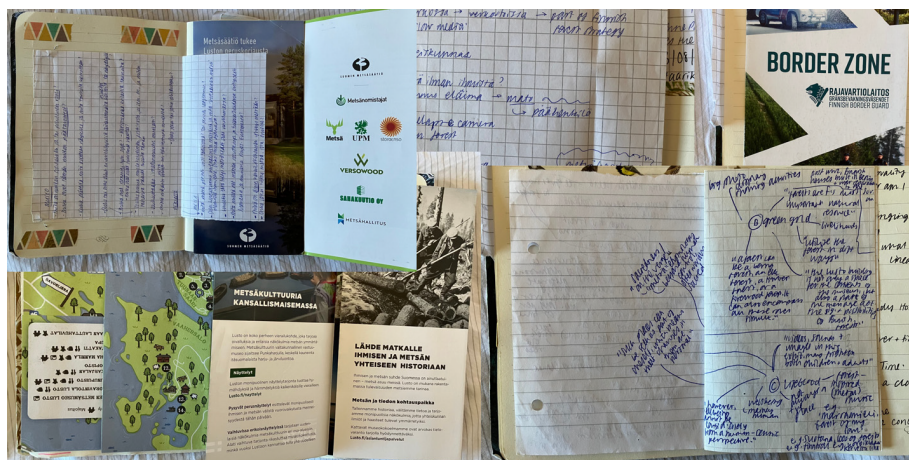


Figure 4: Selection of pages in the research notebook

Analytical approach: From fragments to temporal patterns

My analysis of materials has focussed on bringing fragments together into an assemblage organised around cases, patterns and themes. As Pryke et al. (2003, p. 143) note, “this process is often, perhaps inevitably, one where we balance disciplining our material with allowing it to develop.” As they also state, “novelty may emerge through analysis, rather than it being about working out prior theories or prepared explanations” (Ibid., p.137), and “we create ideas from the juxtaposition of very different types of materials.” (Ibid., p.137). Analysis, just like the design of the project and the collection of materials, has involved balancing my own subjectivity and practical desires to keep ‘control’ of the project with the motivation to reveal detailed and sometimes surprising findings which could not have necessarily been predicted in the beginning. Assembling a patchwork has avoided “imposing an over-coherent view of the world” (Pryke et al., 2003, p. 143), whilst providing some order and allowing me to deal with the multiple materials which emerged throughout the project.

The final aim of analysis, in line with the main research question, was to identify how boreal forest temporalities shape, challenge and bring meaning to everyday human and more-than-human engagements with the boreal forest. Along the way and in dialogue with the materials I became most curious about how different temporalities are privileged or neglected, how they feed into imaginations of the forest, and how they surface through understandings of legacy and inheritance. In addition, I remained attentive throughout to how and to what extent sensory and embodied elements emerged and contributed. In order to achieve this, the ethos of noticing has again been central, guiding me to pay attention at every stage to details, connections and possible interpretations.

Analysis occurred most intentionally and consciously in the middle and late stages of the research. However, analysis also took place in the earlier stages and was greatly aided by the existence of the research notebook which acted as a place to create preliminary connections. Since “we might think of the analytical approaches as activities, as the practice of weaving the material into a text” (Pryke et al., 2003, p. 129), this already begins in the very earliest stages of a project, as soon as something is recorded or taken note of, and continues late into the final stages.

The analysis reflects the abductive and non-linear approach of the research design. This has meant a back and forth between noticing, narrating and interpretation, in which I and various research participants have been involved and which I unpack in further detail below. This applies to the noticing of narratives, the noticing of embodied and sensed expressions, and the noticing of possible conceptual, thematic or meaningful connections between materials and already-identified themes and questions. It applies to the narration, by participants, of their own stories and accounts, and narration by me of what I have found, leading to the creation of an overall story in the form of this thesis, progressing through seven chapters including the main ‘arc’ of three central empirical chapters. Throughout all of this, interpretation and re-interpretation takes place.

Narrating, noticing and interpreting temporalities

Narratives have been defined in a number of ways across linguistic and social science literatures. Andrews et al. (2015, p. 141) assert that “narratives are the stories people construct to make sense of their reality.” They are not, however, limited to individuals; groups and organisations can also produce narratives through practices and processes (Gubrium & Holstein, 2007). Furthermore, like Andrews et al., I use ‘narrative’ and ‘story’ interchangeably, but subtle distinctions should be acknowledged. Primarily, narratives can be understood as an overarching “genre that comprises different types of stories”, whilst stories are “prototypical” narratives (De Fina, 2018, p. 234). Not all narratives are stories, but all stories reflect elements of a narrative (De Fina, 2018). Narratives “report series of events” (Culler, 1981, p. 118) and outline how they are connected, but they are not fixed. They evolve as people react to changing circumstances, life events, and other narratives (Björninen et al., 2020). Narratives are varied and diverse. They are an assemblage of culturally-constructed meanings and connections which can be drawn upon in the form of stories in order to make sense of situations.

Narratives and stories are “sites of the exercise of power; through narratives, we not only investigate but also invent an order for the world”, though some narratives can contest and disrupt existing orders (Wibben, 2010, p. 2). I follow De Fina in suggesting that since politics includes “the domain of private (or less public) discourses and practices” and “terrain for the proposal of solutions” whilst also being “an arena for the imposition of power”, “then our definition of what

kinds of narratives are political also needs to be expanded” (De Fina, 2018, p. 236). In this thesis I include personal, organisational and institutional narratives which recount experiences and framings of boreal forest temporalities in everyday contexts, at the local and landscape level and through embodied experiences. Different people will draw on the same narratives in slightly different ways, producing different stories.

It is also important to distinguish between narratives and discourses. Narratives narrate, i.e. they provide a commentary or guide, and are commonly, though not always, recounted in chronological order. On the other hand, discourse is the linguistically-based social practice through which power relations, values and ideologies are expressed and embedded in society. Discourse is about the intertwining of language with actions and practices (Van Hulst et al., 2025); discourses do not constitute stories or narratives because they are not recounting or stringings-together of events (Souto-Manning, 2014). Instead, discourses dictate how certain things are spoken about and expressed, and how certain people act in certain situations. Dominant societal discourses may result in the expression of particular narratives, and narratives are constructed so that people can orient themselves within and navigate particular discourses (Van Hulst et al., 2025).

To analyse the data I have employed a combination of narrative analysis along with attention to non-narrative, experiential and embodied information. I have done this in order to attend to the narratives or storytelling within many of the accounts provided by human participants, as well as information which cannot, I argue, be interpreted as narrative, and which originates from the more-than-human.

Narrative analysis deals with storied data (B. Smith, 2016). This means that a narrative analysis analyses the stories that are told, looks at how those who tell them as well as those who are mentioned in the stories are included (Somers, 1994) and considers for instance in what order stories are told and how much space or time is given to particular elements. Narrative analysis proceeds from the assumption that knowledge is constructed and that no meanings are pre-existing. There is no absolute ‘truth’ (B. Smith, 2016). I have used narrative analysis as a way of identifying the narratives and stories which are told about boreal forest temporalities, or which reveal particular experiences of forest temporalities even if the stories are not explicitly or intentionally focussed on temporalities. Importantly, since I conceive of narratives as arising not only through text and

speech but also through processes and practices, these stories are not only told through speech and writing (though these are important in my work) but in the materials that I have analysed are also communicated through bodily expressions, movements and responses; through the inclusion of images alongside texts; and via the placement of objects in particular locations, such as in the museum (Gubrium & Holstein, 2007). Following Gubrium and Holstein (2007, p. 19), I have conducted narrative analysis whilst asking, “who produces particular kinds of stories?”, “what are their consequences?”, “under what circumstances are particular narratives more or less accountable?”, “what interests publicise them?”, “how do they gain popularity, and how are they challenged?” When reading narratives I have also paid attention to ‘counter narratives’ (Bamberg & Andrews, 2004) or the narratives which are laid out in opposition to ‘master narratives’ because the teller’s experiences do not match with dominant narratives.

I have also collected materials which should not, I argue, be interpreted through narrative. These especially include how the more-than-human appears across sound recordings, photographs, and my and others’ accounts. Embodied and sensed experiences and reactions do not come fully packaged as narratives or stories. Narrative analysis is therefore combined with noticing materiality, embodiment, and the senses. I search the data not only for linguistic and written expressions which already exist as narratives (for instance those told to me or printed in leaflets), but also for evidence of material, embodied and sensed expressions which in contrast came not as fully-formed narratives but as impressions, quick responses and instincts. Conquergood (2013a, p. 34) remarks that “scholarship is so skewed toward texts that even when researchers do attend to extralinguistic human action and embodied events they construe them as texts to be read.” I have treated ‘extralinguistic’ and embodied elements as different kinds of materials in their own right. Examples include mention of certain sensed atmospheres, drawings, and descriptions of objects and settings which are not placed within a wider narrative structure. Taking note of things which may not be picked up in recordings or photographs – for instance a gut feeling, textures, smells, the atmosphere of an interview setting, the gestures made by interlocutors or the particular subtle sounds of the forest – acted as reminders and prompts when I returned to analyse materials. Sometimes these made little difference to the conclusions which arose. In other instances, it proved productive to be reminded of atmospheres and how I or my interlocutors were affected by the topic of conversation or by the setting. Via noticing, my analysis does not ‘slip back’

into a privileging of language alone, since this can obscure more-than-human expressions and participants' accounts which surface as feelings and impressions rather than as constructed stories (Magnat, 2022).

Overall, while temporalities often emerge through memories, emotions, values, identities and stories, I have not treated these as separate to embodied and material practices. I consider narrative and intangible and embodied, visible and physical elements together. I have been interested in how participants related pasts, presents and futures, described rhythms, durations and change, and how they connected these temporal understandings to practices, things and places. Temporalities therefore became visible through, rather than separate from, narratives, embodied experiences and material encounters.

Translations, transformations and connections

Narrating, noticing and interpreting all play a role in the analysis and in moving from fragments to the identification of patterns and conclusions. Concretely, this has consisted of several steps of analysis. These often occurred simultaneously when I was working with different materials.

The first step involved transformation of collected non-textual and/or non-visual materials into textual and/or visual form, as well as the selection of relevant existing texts. When applied to recorded interviews and conversations, this meant transcription of spoken words and other sounds into written text. For other kinds of materials such as other sound recordings, photographs or drawings, I have had to rely on experimental written description and note-taking. From my position as researcher of the-more-than-human who has also drawn inspiration and support from feminist and decolonial literatures I am aware of the political and ethical ramifications of this transformation. As Conquergood (2013b, p. 48) notes, "knowledge in the West is scriptocentric" and is intertwined with the oppression of alternative languages and modes of expression and communication. As referenced earlier, several more-than-human scholars have advocated for methods which do not deal with human speech and text. Some of these methods resulted in the non-linguistic materials which I collected. However, institutional and academic barriers still remain to finding solutions which avoid the transformation of sensory and artistic data into writing in order to present a final piece of work. By translating speech, rustles, whispers, tingles, roughness, smoothness and so on,

I am falling in line with the expectations of an anthropocentric and Western academy. In order to draw meaning from the materials, I have to some extent found no way around this. At the same time, I did not discard the original materials and impressions once I had transcribed or described them in writing, and returning to some of them later proved helpful in addition to reading the ‘translations’.

Regarding transcription, I listened to the recordings of interviews as soon as possible after they occurred, and translated them into English as I went along. Translation from one language to another is never a neutral or smooth process, instead requiring interpretation of meaning and occasional omissions where it is not possible to hear a word or where the meaning is unclear. Indeed, transcription itself “is not a transparent or politically innocent model for conceptualizing and engaging the world” (Conquergood, 2013b, p. 34), and although at all times I strove to translate as exactly as possible, adhering to the original meaning, in some cases small nuances may have been lost. Once I had transcribed an exchange I went back and listened again, paying attention to moments of confusion or inaudibility and making a note of anything which I should check again later. In transcription I have paid attention not only to what people say, but to how they say things, and to moments when they do not speak. My transcriptions include description of pauses and sounds apart from speech. Putting someone’s spoken words into writing involves beginning to notice themes and thinking of connections with other materials, so while transcribing I was interested in what messages and stories were most emphasised through repetition or tone of voice, and whether subjects came up which I had already encountered in other materials.

Some materials already existed as written text, in particular the three publications *Vuosilusto*, *Luonto* and *Sienilehti*. As a publication by the museum about the boreal forest, each issue of *Vuosilusto* seemed relevant and I chose to include the five most recent within my scoping analysis. My approach to *Sienilehti* was to take magazines from 2020 onwards, and due to the larger number of issues of *Luonto* each year, I chose magazines from 2020, 2021 and 2022. I scanned the articles listed on the contents page and disregarded those which clearly focussed on topics of little relevance to the intersection of boreal forest environments and temporalities. The only exceptions I made to this rule in *Sienilehti* occurred when an article title suggested that time and temporality would be directly addressed even if forests were not in focus – if the focus was on temporality via fungi, then

there may be a connection to forests, too. I identified this via the presence of words such as ‘time’, ‘old’, ‘new’, ‘generations’, and so on. In *Sienilehti* I also noticed that many issues included articles under the theme ‘my mushroom forest’, which because of the forest focus were added to my review list. In each of the three publications I chose to review the introductory section written by the editor(s), which helped me to understand the overall circumstances in which the issue was published. In *Vuosilusto* I chose to include only the foreword and the introduction within my collected materials, since although the range of other articles are published and supported by the Forest Museum, they may not necessarily reflect the views and work of the museum to as close a degree as each issue’s foreword and first introductory article, which were written by museum employees. It is possible that this approach meant that some articles of relevance have been missed, while I spent time reviewing other articles which turned out to hold less relevance. Nevertheless, this semi-structured approach to magazine article selection has led me to identify relevant articles which have been included in the corpus of materials (see Appendix).

The second step in data analysis involved combing through all of materials in search of themes and narratives. I manually coded all of the transcriptions, notes and texts, by which I mean that I went through them searching for prominent temporal themes, direct mentions of time and temporality, and narratives about the forest and its temporalities. Not wanting to impose prior assumptions about how temporalities unfold and are communicated, I did not initially look for or ask for narratives, and especially avoided chronologically-focussed questions to participants such as “what happened next?” and “starting from the beginning...”. However, like many researchers, I “discover[ed] the presence of story-like qualities in an interviewee’s account during the analysis stage of a study” (Earthy & Cronin, 2008 n.p.). The repetition of narrative-style accounts across spoken interviews and conversations as well as in written texts, especially at the museum and in written responses to the survey, led me to note this as a way in which boreal temporalities are communicated and perceived. I then decided to search for further nuance in how these narratives about forest temporalities are communicated, with attention to both content and form. Early on in the project and before the privileging and neglect of temporalities, forest/landscape imaginaries, and legacy had emerged as significant themes, I noted a large number of different possible themes and connections across the materials. I did not rush to narrow these down, since this could cause me to exclude interesting elements

too early. I allowed a larger quantity of materials, from transcriptions to notes and observations of webpages, to accumulate first. In the early and mid-stages of the project, then, I was simultaneously collecting, transcribing and describing, whilst searching for and identifying themes. Themes and possible patterns were noted within transcriptions as well as being listed separately in the research notebook. Midway through the project, step two of analysis also resulted in the identification of the three areas of inquiry which would become the three sub-questions. This was done by noticing the repetition of stories and expressions which connect to the power relations inherent to temporal framings, to different imaginaries of the forest, and to legacy or inheritance.

For the vast majority of collected materials, by the time I reached the third step I had decided that I wished to do justice to the different research sites, locations and practices and their particular kinds of forest temporalities, as well as to explore how my theorisations about temporalities apply to a number of different sites, with different outcomes. I therefore separated my materials into cases delineated by type of research site and practice (museums and curation, protected forests and conservation/protection, fungal/mushroom forest landscapes and foraging) rather than by temporal themes, which would appear across the thesis as a whole. I sorted my collected materials into assemblages or 'piles'. This was conducted simply by mapping out my materials using a pen and paper, sorting them into three groups. This continued over a period of time as materials were analysed. The assemblages indicated whether the materials primarily related to the museum (for instance, 'Lusto leaflets', 'interview with Leila'), conservation places (for instance, 'photographs from Pyhä-Häkki', 'sound recording 5'), or foraging and the mushroom forest (for instance, 'interview with Panu', 'Facebook screenshots 1-10'). Some materials, especially interviews and the survey data, intersected with two or more of the cases, which I indicated by drawing lines from materials in one case to another case.

The fourth step, which largely occurred in tandem with sorting materials into cases, was to condense down the themes and sub-themes which emerged in response to the research questions. Cross-referencing, cycling back and frequent re-assessment of meaning was crucial here. What I refer to as step four was applied both in the middle and later stages of the project, when a corpus of materials had already been collected and questions noted down. Sometimes re-listening, re-reading and re-viewing helps to make connections between events and why

something was said or expressed in a certain way. Overall, reflecting on materials from different sites again and identifying themes and overall findings via constant reiteration of the steps above has helped me to view the collected materials not as entirely disparate pieces, but as an assembled patchwork with connected patterns and directions.



Chapter 4. Museum temporalities and curation as balancing act



Figure 5: View of the museum building from the road (August 2024)

It's August 2023 when I first visit the Finnish Forest Museum, also known as Lusto, in Punkaharju, Eastern Finland. The museum building is near the tiny local train station and is easy to spot across the road. Wooden, modern and block-like, it rises up from a surrounding of pine trees. After an early start, it's a relief to

lock eyes on my destination. Once inside, I enter a spacious entry hall and walk to the front desk, where a friendly volunteer lets me store my bag and calls ahead to the first person I have scheduled an interview with. The air smells faintly of timber, and the sound of faint music and people talking echoes softly across from the exhibition space.

One year later, in August 2024, I again arrive at the train station. From outside, things look more or less the same as last time. Before entering the museum building, I reflect on the conversations I had with museum staff a year ago. I wonder how the updated exhibition will look. In particular, I am curious to find out how Lusto have brought in the multispecies and more-than-human elements which were only present in the exhibition in pilot form last time round, but which informed so much of the conversations which I had.

This first empirical chapter begins the journey of researching how boreal forest temporalities bring meaning to everyday engagements with the boreal forest. In order to do so, the chapter casts a critical eye on the work done by museums, especially the Finnish Forest Museum (otherwise known as Lusto), in enacting temporal politics in relation to the forest. I consider the ways in which the more-than-human is enlisted in the expression of temporalities, and consider how museum work is not only political and subjective, but also a multispecies endeavour. I wonder about the extent to which certain boreal forest pasts, presents and futures are described in written words or through the gathering-together of images and artefacts at the museum. I also wonder if, in what I call ‘museum spaces’, the diverse – especially more-than-human and non-linear - temporalities of the forest are always reduced and simplified, or whether a combination of creative curatorial decisions at Lusto has enabled the freer expression of boreal forest temporalities.

This chapter primarily addresses how boreal forest temporalities are privileged and neglected by the museum, and how the temporalities which are made most visible and tangible feed into certain imaginaries of the forest, or are valued as forest legacies. Simultaneously, the temporalities which are sidelined are discussed, even though the challenge of tracing that which is no longer present is greater. By examining how museums curate and communicate particular forest temporalities, I explore how temporal politics unfolds within a major public-facing cultural institution.

The name 'Lusto' derives from the Finnish word 'vuosilusto', meaning a tree's annual growth ring. I initially chose the Finnish Forest Museum as a research site due to its visibility as a major public-facing cultural institution which contributes to knowledge and narratives about the forest. Exactly how boreal forest temporalities are expressed at the museum requires an awareness of the socio-political factors which mean that they can even be expressed in the first place. It is important to interrogate Lusto's positionality as part of understanding the values and tools which the museum draws upon in performing boreal temporalities. Every curatorial decision should be questioned, from the positioning of a display cabinet and the layout of a wall display, to the choice of natural materials from the forest.

This research site is more than simply a grounded location. Rather, it is a network of interconnected physical and virtual spaces, which I call 'museum spaces'. These include the space of the museum inside the building, space immediately outside the museum building, the official museum website, its Facebook page, and spaces provided for comment and debate within these arenas, for instance workshops and consultations, and online public comment boxes. Therefore, my analysis is based on my own experiences at the museum building, where I took ethnographic fieldnotes and conducted interviews, and is also an analysis of brochures, displays, and texts which scatter far beyond Punkaharju. This echoes how I understand the other sites in my research, too: as spaces and communities of knowledge-production, communication and debate which unfold across multiple spatial scales and are not necessarily always physical.

The chapter proceeds with a brief review of the more-than-human within museum spaces, showing how a more-than-human lens can help reveal the contested and shifting nature of the temporal politics playing out in museum spaces. I then go on to situate Lusto in an historic context. This involves a brief history of the rise of forest museums within the Nordic region, and an overview of Lusto's development in the past 30 years. The rest of the chapter is dedicated to understanding and analysing the ways in which boreal forest temporalities are privileged and neglected at the museum, how actions and practices which are not seemingly meant to draw attention nevertheless enact temporal politics, and how these dynamics feed into forest imaginaries and legacies.

I begin by mapping out Lusto's multiple museum spaces, which are both physical and virtual, and span across spatial scales. Included within my conceptualisation

of museum spaces are the physical building and the layout of the building itself, the presence of certain artifacts, and outreach in the form of consultations and workshops, online videos, and a lively social media presence. I see the updated design of the museum, the 'dynamic museum', as a performance which aims to challenge the status quo relating to what a museum is and what it can do. These spaces and places which, as we will see, are deeply implicated in the expression of temporalities, and which themselves are also shaped by temporal politics. The next section considers the balancing and bridge-building conducted by the museum, whereby the museum navigates between competing and often frictional temporal framings of the forest. I show how, through its position within a particular geographical and political context, the Finnish Forest Museum retains and upholds pre-existing relations of power which privilege certain understandings of forest temporality. Still, as I go on to reveal, there are also forces at work which 'spill over' and resist curation. Following this, I focus on the ways in which the museum curates elements of the past in order to shape imaginaries of the future. Finally, I reflect on the temporalities of the things which seemingly 'escape' curation, yet which are nevertheless present in the narratives and material expressions at the museum, and which as a result also bring meaning to engagements with the forest.

More-than-human agencies within and despite museums

Critical study of museums is nothing new. Message and Witcomb (2015) write that academics became interested in museums from an historical and cultural perspective in the second half of the 20th century, at a time when their establishment went hand-in-hand with a phase of European nation-building. This was followed by a so-called 'new museology', which emerged in a post-1989 context "to show how museums were embedded within a network of power relations that supported dominant interests" (Message & Witcomb, 2015, p. xxxvii). Adhering to my view, inspired by Haraway (1988), that all knowledge comes from somewhere, and that all institutions, constructions and processes are therefore inherently partial and political, it follows that museums are political institutions. Even if they do not consciously try to do so, museums, as sites of the representation of particular histories, stories and lives, engage in processes of temporal politics. By this I mean that they privilege particular histories and moments in time. These histories and moments are then performed and made

visible or accessible to an audience with the help of certain actors. Paaskoski puts it well:

Despite employing scientific principles, museums can never be entirely objective, and museum projects can never convey absolute truths. Instead, the documented, preserved and presented past refers to the past but is inevitably a reconstruction created by individual museum actors, museum professionals, or enthusiasts, with their own viewpoints and conscious or unconscious motives. (Paaskoski, 2014, p. 34)

Many museums are now being re-shaped or otherwise critiqued as a result of their previous and ongoing roles in upholding certain societal and cultural inequalities. Much has been written about museums' struggles in returning or not returning items to the communities and countries from which they were taken within contexts of colonialism and domination (J. A. Bell et al., 2013; Cuno, 2014) and museums' 21st-Century shift to self-critique, reflection and reparation, for instance Dutch museums' reckoning with histories of slavery (Balkenhol & Modest, 2019) and the role of museums in building caring relations with local communities (Morse, 2020). Yet these recent shifts are not without challenges. As Vawda (2019, p. 76) states, "despite consultation and engagement, the dominant position of the museum expert... triggers an epistemological violence and injustice."

I agree with the critical museum studies scholars who have written before me in acknowledging that how a museum situates itself in a particular location and socio-political context is key to understanding how it operates and how exhibitions are designed. There is a need to critically consider not only what is included within the exhibitions, but also to investigate a museum's political, economic and social connections on a local and national level. In what follows, I therefore consider Lusto's history and standing within society. This helps me to better understand how and why the museum does what it does.

Still, despite the richness of existing critical approaches to museum cultures and processes, much remains to be said when it comes to giving proper acknowledgement to multispecies and more-than-human actors at the museum. By this I mean, firstly, paying attention to the stories and displays about things and phenomena beyond the purely anthropocentric. For example, how are accounts given about the narration of glacier retreat, or how certain plants

reproduce? Whose stories are allowed to come through here, and how? Understandings about the forest may be attached to specific items and artefacts which are discussed both inside and outside the museum building, and to different practices and behaviours which also travel beyond the geographical site. As Herle (1997, p. 65) writes, “museums and the artefacts they contain are spaces for transitive, entangled and often contested realities. In addition to marking social changes, the objects in our collections can be seen to play an active role in changing social relation”. As such, the practices of the museum may be conceptualised as more-than-human and networked, attached both to material things as well as being carried forward in the form of knowledge and thoughts. I also mean to pay attention to the ways in which more-than-human actors themselves perform and negotiate their own stories within, beyond and despite the confines of museum spaces. Within the museum, an institution so deeply concerned with history and time, and perhaps especially in a museum concerned with the ‘natural world’, I argue that it is important to think about those multiple others, both known and unknown, whose existences and lives form the patchwork of the museum and of the wider world itself. In my interactions with Lusto’s museum spaces, I became interested not only in the ways in which boreal pasts, presents and futures are intentionally curated and represented through the display and collection of particular things and materials, but also in the lives of those things and materials. In other words, what is being curated and represented may, as is the case in many museums, be a narrow snapshot of a wider and richer world.

This chapter takes inspiration from literature on the more-than-human and multispecies studies, which inform the thesis as a whole. I hope that my own empirical findings at Lusto can speak to literature on museums and other public-facing ‘curated spaces’, placing importance on the uncovering of power relations and positionalities in the museum as a whole, as well as in relation to the involvement of specific actors. I enter into conversation with researchers who have previously thought about museums and similar spaces and the temporalities which they might create, represent and silence. By bringing together thinking on the more-than-human and multispecies studies with heritage studies and museum literatures, I suggest some ways in which to analyse museum spaces, to understand how they illuminate and shape temporalities, and how we could access the non-linear more-than-human temporalities unfolding there. I argue that the boreal pasts, presents and futures which become known through museum spaces and processes – and which are present and unfolding now rather than remaining

frozen in the past or untouchable in the future - are inherently multispecies and more-than-human.

Situating Lusto temporally and spatially

The rise of the forest museum

The notion of a 'forest museum' first arose in Europe in the mid-20th Century (Paaskoski, 2014). This was largely in response to changes in attitudes towards forestry and forest workers, whose place in society shifted as a result of rapid industrialisation and intensification of forestry activities after World War II, especially in the Nordic countries (Edwards et al., 2022). Suddenly, manpower was being replaced by machines, and there was a feeling that old traditions must be recorded within museum collections. At the same time, pre-existing national pride connected to the forest landscape as the source of livelihoods and artistic inspiration swelled, and it became important to create forest museums as a symbol of this pride and sense of unity (Kjeldstadli, 2008). The opening of the first dedicated Nordic forest museum - Denmark's Dansk Jagt- og Skovbrugsmuseum, or the Museum of Hunting and Forestry – took place in 1942 (Paaskoski, 2014). Since then, a number of nature and forest museums have been established across the Nordic countries. Silvanum, in Sweden, opened in 1961 and was initially concerned with modern forestry. Lapland's Forest Museum was the first forest museum in Finland, opening in 1962. The Finnish Forest Museum was not established until 1994 (Lusto, n.d.).

Although these museums and many others around the world share an interest in the forest or include forest elements within their collections and exhibitions, what they actually contain and exhibit and what their motivations, aims and values are varies widely (Paaskoski, 2014). Some of the forest museums in the Nordic countries concentrate on the history of a particular locality or only one way of accessing and understanding the forest, such as through hunting or through its biodiversity, whilst others encompass a wider range of concerns. In this chapter, in order to allow a great level of analytical depth I focus on Lusto, the Finnish Forest Museum. However, the reflections and findings here bear relevance for the

study of other museums and public-facing cultural institutions of other kinds, too.

Before exploring how the museum contributes to the shaping of boreal forest temporalities, I describe the spaces through which these processes and practices unfold.

Mapping Lusto's museum spaces

About four hours north-east by train from Helsinki, and 30km west of the border with Russia at its closest point, Lusto is located in Punkaharju, part of the Savonlinna municipality in south-eastern Finland. The museum sits on an island, Laukansaari. This island is connected by bridges and narrow spits of land to other nearby islands and the 'mainland' within a forested lakeland landscape. Nearby is the Punkaharju nature conservation area, and the interconnected water basins in the area are part of the extensive Lake Saimaa (on the final approach to Retretti, the train station near the museum, my view was much more taken up with lake than with forest). The town of Savonlinna is about 30 minutes to the north-west by train or car.

I do not think of the museum as one distinct space, but as a series of interconnected spaces at different scales. Museum spaces exist from the level of the object or 'thing', for instance a single artifact within a display case, through to a national and international scale, for instance outreach in different communities, and websites which can be viewed in numerous locations. As I elaborated on earlier in the thesis, "time and space must be thought together" (Massey, 2005, p. 18). I agree with Massey (2005) that the relation between space and time is not one-directional; space should not be seen as subordinate to and only impacted by time. As I show below, space – with its arrangements of objects, materials and living things – simultaneously impacts on how temporalities unfold. Meanwhile, I think of scales as nested, like Russian dolls, with one scale infused within another within another within another. One space may encompass and connect a number of scales. For example, artifacts in the museum exhibition may appear on the intimate and small scale, but, depending on what they are, they could maintain myriad connections to the nation state or continental scale. Therefore, I describe different museum spaces separately in this sub-section so that you can get a good sense of what they are. However, in order to illustrate my observations about the performance and negotiation of boreal forest temporalities, I have blurred the

boundaries between museum spaces in my analysis which forms the bulk of the chapter.

The building and its surroundings

The original museum building is circular in shape, much like the trunk of a tree. It was designed by the architects Rainer Mahlamäki and Ilmari Lahdelma and completed in 1994 (Lahdelma & Mahlamäki, 2024; Lusto, n.d.). This building is composed of a concrete base and frame, steel supports and wood panels. In 2005, a rectangular extension, designed by the same architects, was added in order to provide additional space for a restaurant and more exhibition and storage space (Lahdelma & Mahlamäki, 2024). By this time, building regulations had changed and allowed the use of more timber in the extension than in the original building (Lusto, n.d.). As the architects write on their webpage, it was in this period that an “outdoor display area” was designed outside the building (Lahdelma & Mahlamäki, 2024, n.p.) I observed that this consists of wooden walls where photographs may be displayed, and, although I am unsure if the architects intended the ‘display area’ to extend so far, could also include the meadow which lies behind the museum.

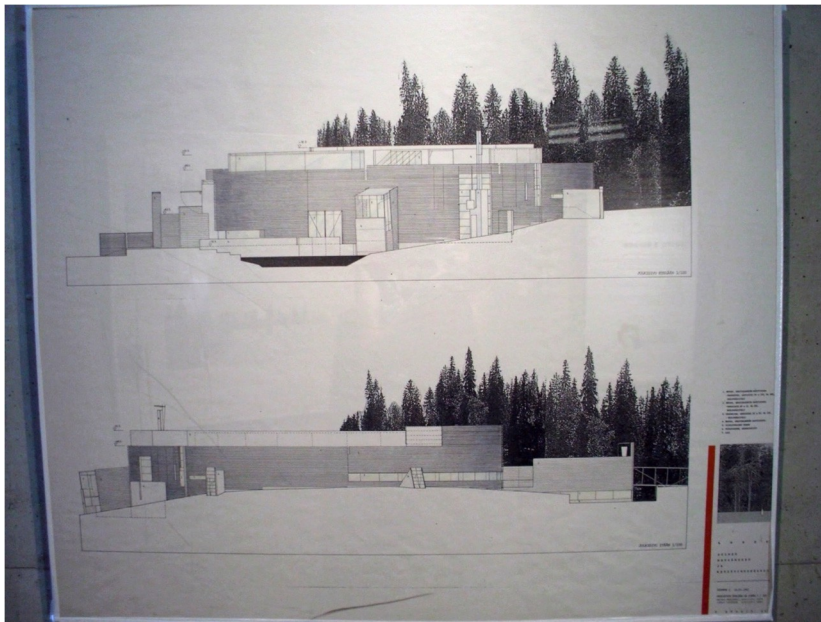


Figure 6: Architectural drawings of the museum as displayed on the wall of the exhibition (August 2023)

The meadow, an area of rough grass which can be accessed by exiting the museum restaurant or main building and then going down a set of stairs, is bordered on two sides by pine and birch trees typical of the region. The meadow slopes gently downwards away from the museum; at the far end, reedbeds signal the beginning of the lake.



Figure 7: The museum is situated in a patchwork landscape of forests and water. Screenshot from the museum website (Lusto, n.d.)

The indoor exhibition

With the exception of some smaller spaces and wall displays in the extension (2,200m²), the indoor exhibition is housed within the original 4,400m² circular structure (Lahdelma & Mahlamäki, 2024, n.p.). The entrance into the museum from the road is at a higher level than most of the exhibition space; the museum shop and welcome desk open out onto a balcony overlooking the floor below. Further along, there is a walkway and an elevator down to that lower level.

Since the recent renovation and re-design of the museum exhibition, which will be discussed in this chapter, the exhibition is divided into six thematic sections and one area for a temporary special exhibition. These are mostly demarcated by walls which already exist within the structure. In places, the end of one thematic section and the beginning of another is indicated only by the signage on the walls.

Online spaces

Lusto also exists in the online sphere. The museum website is available in Finnish, Swedish and English. Lusto also has a Facebook page, which is significant for the platform which it provides for public discussion and commenting. These, I suggest, act to further the museum's actions beyond its own four walls and online spaces, and into people's everyday lives and homes.

Balancing and bridge-building

This thesis opened with an acknowledgement of the many pressures faced by the boreal forest, and the competing perspectives on whose knowledge counts and how those knowledges should be used in managing the forest. Leena Paaskoski, Lusto's director of development, states in an article on the website of Kollin Säätiö, a foundation which is one of the funders of the museum, that "forests have different meanings for all of us. They can represent experiences related to everyday life and nature, but forests also have economic and political meanings. It is across this diversity that Lusto wants to act as a bridge builder." (Kollin Säätiö, 2024, n.p.)

I first accessed the museum website – a rich source of visual and linguistic expressions of the forest – several months before my first visit to Punkaharju. I began to build a picture of Lusto as trying to balance a number of different understandings and expressions of the forest and forest temporality. In balancing and bridge-building across a diverse forest-invested community, the museum highlights particular elements of forest history and present-day experiences, and a range of temporalities are enlisted and expressed. As you will see below, I perceived such balancing and bridge-building across Lusto's museum spaces.

A national museum

The role of balancer and bridge-builder cannot emerge from nothing. Even though 'bridge-building' and especially 'balancing' hint at neutrality, I argue against this assumption. In order to balance something and to act as a bridge-builder, an actor must occupy a position; something to hold onto and guide them as they balance and construct bridges between existing viewpoints and

perspectives. Otherwise, how and for whom is all of this discursive and political work taking place? I suggest that there has to be a starting point or anchoring position which endows the actor with the power necessary to fulfil their role. For Lusto, the anchor which I have identified is its position as a national forest museum.

Lusto's exhibition is not about just any northern forests, anywhere. From its name (Suomen metsämuseo, or the Finnish Forest Museum), to repeated references to the country within the exhibition and online, Lusto consistently refers to the *Finnish* forest. Many of the museum's narratives are strongly rooted in the idea of the boreal forest as a key element of Finnish national identity and the national landscape. What is included in and communicated via the work of the museum is shaped by the position of the museum as a national player with a role in national discussions on issues connected to Finnish forests. The balancing of priorities and bridge-building between ways of knowing, perspectives and communities is made possible by Lusto's national status. The museum's connection to the state endows the museum with the power to perform and negotiate forest temporalities in the myriad ways that it does.

Lusto's position on the national stage also poses a challenge for the museum, since as was made clear during conversations and my reading of materials, the museum is therefore expected to attend to the needs of many actors and viewpoints which push themselves forward within the Finnish context. Holding this label of 'Finnishness' and aiming to represent the forest-related values of a nation therefore comes with the need to perform a balancing act. That is why I have added 'balancing' to Paaskoski's term 'bridge-builder'. For bridge-building to succeed, different interests also need to be balanced, lest everything slip out of control.

Representing a forest which 'connects with everything'

The museum is in a state of transformation – but from and to what?

(Fieldwork notebook, August 2023)

When I first arrive at Lusto in August 2023, I step into a space in flux. There is the smell of sawdust in the air, and a feeling that things are unfolding. Based on my reading of the website, attention to the Facebook page and initial

correspondence with interviewees, I already know that the museum is undergoing intensive changes. I happen to have become interested in the Forest Museum at a time when it is undergoing renovations and an overall re-thinking of its role within society. However, it is not yet clear to me what the motivations were behind these changes, and what impact they might have on the narratives – and, crucially, temporalities – conveyed by the museum.

Over lunch, one of the curators that I speak to, Leila, tells me that “we’re in this turning point where everything is being updated... Now we want to look at the forest from different perspectives because it connects with everything.” The notion of the forest as entangled with all aspects of social and cultural life seems to be at the heart of the renovation and changes underway. I am told that the exhibition to date (developed between 2008 and 2013 (Lusto, 2024b) had been very focussed on the forestry industry, nationally and especially locally. The Punkaharju region, where the museum is located, has a history since the early 1900s of intensive forestry, facilitated by the ability to float large quantities of logs along the lakeland waterways to sawmills. Before the introduction of heavier mechanised machinery, forestry work was characterised by a ‘craft’ approach, with a focus on small-scale artisans and subsistence.

As I discover after our lunch, there are significant remnants of the old exhibition still within the museum space, although the majority of the building is closed to visitors as renovation work is ongoing. My eye is drawn to the forestry machinery and tools hung on the walls and filling some of the floor space. The machinery is interspersed with black and white photographs of men working in the forest, and information plaques about the local history of forest work (Figure 9). The temporal durations invoked here are fairly recent: the metal and wooden items date from the 21st century, and the earliest photographs (those which I made note of) are from the late 1800s. The items on display not only privileged forestry and forest work within a framework of industrial production and economic progress, but also made visible and performed recent forest histories rather than taking a long-term view. As is explained in a Lusto blog post (Lusto, 2024b) the previous exhibition “...consisted of ‘Old Savotta’, which depicted the history of forestry work in the handicraft period, ‘The century of the forest managers’, which told the history of silviculture in the 20th century, ‘Machine Age’, which shed light on the stages of mechanization of forestry, and the Finnish Forests section, which

approached the multiple use of forests.” Thus, the perspective of the old permanent exhibition was strongly oriented towards the history of forestry.

As I walk around what remains of the exhibition, I reflect on the change which is on its way. Leila tells me:

So in this new exhibition... it’s going to have six sections. One talks about the forest as an ecosystem, so without people, what is the forest? Then we talk about forest resources, from the perspective of raw materials and what kinds of things have been produced from the forest. Its name is ‘green gold’. Then we talk about the different kinds of benefits that the forest provides, like health or individual wellbeing, so it’s about personal wellbeing. That’s ‘lifeblood’. Then we have a part which deals with identities - ‘the forest dwellers’. Then there’s a part which deals with values - ‘valued forest’. Then a part which considers the forest as a workplace, ‘forest work’. So via these six different parts we open up some different perspectives into what the forest symbolises and what kind of history is included in it.

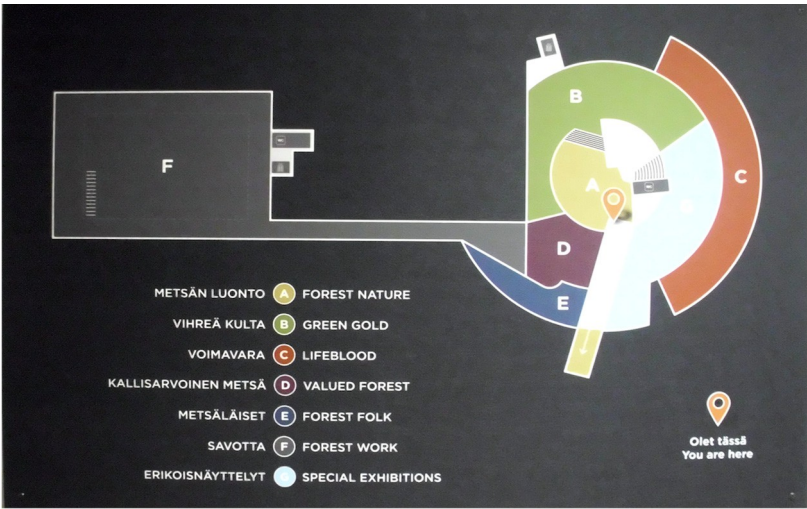


Figure 8: A poster in the exhibition showing the layout and thematic sections of the museum (August 2024)

In the year between my first and second visit, the narratives conveyed by the museum shifted and diversified to encompass these six themes. The updated main exhibition, directly translated as ‘The Land of Forest Relations’, but translated into English by the museum as ‘The Land of Forestfulness’ was opened to the

public on May 17th 2024. The six sections of the exhibition, plus a seventh temporary or rotating exhibition area (seen in the layout in Figure 8) together present a multi-faceted picture of the forest. The new exhibition aims to show the boreal forest as complex and plural, in which no single history is more important than the others, and in which different more-than-human rhythms and ways of being unfold. Leila continues to say that “we’ve always thought that everything connected with the forest is included here [in the museum]”.



Figure 9: Objects and photographs representing the forestry industry within remnants of the old exhibition (August 2023)

A delicate interplay between compliance and breaking out of the status quo is unfolding across Lusto’s museum spaces. There is the need to respond to an increasing sense of pressure and urgency on the part of the forestry industry and government climate and energy legislation about the role that biomass and timber can play in the move towards decarbonisation and climate action. There is also the need to respond to urgency and alarm within non-governmental civil society organisations and some segments of the general public about the emissions associated with burning wood for energy on a large scale, and the importance of

leaving forests standing rather than cutting them down. Among many stakeholders there is interest in the promise of ‘green jobs’ and a decarbonised economy, whilst disagreement remains about what ‘green’ actually means. As such, climate and energy are key areas of controversy and debate which Lusto tries to accommodate. There appears to be consensus across the exhibition that forests are a point of pride for Finns and Finland, however the reasons for and consequences of that pride vary, from increased industrialisation and innovation in forestry techniques, to moving away from intensive forestry and prioritising locking in carbon by building with timber whilst allowing forests to age without intervention. Therefore, museum curators have tried to attend to a variety of public and private interests within forest debates and discourse, acting to acknowledge the forest challenges faced not only within the local area, but in Finland as a whole.

Regardless of the obvious care and dedication to balance and bridge-building between stakeholders and interests with which the new exhibition has been designed, there is still a feeling that tensions and contestation stir beneath the surface; it is difficult to please everyone. As Leila says,

I mean, in our topic the communities aren’t in any way homogenous, so there’s a lot of conflicting perspectives and we often need to somehow live in that often conflicted world...

[several seconds of silence, sounds of cutlery]

There is always room for misinterpretation, but the pause in our conversation here seems meaningful. I do not wish to interrupt, in case Leila might tell me something more about the ways in which the museum deals with conflict and debates. But Leila pauses and moves on to make a comment about something else as I continue cutting the food on my plate. As I show below, Lusto has moved to respond to and pre-empt critique. The strategies through which the museum represents and performs particular forest temporalities, are, I argue, consciously designed in order to navigate the tensions within the ‘conflicted world’ to which Leila alludes.

Negotiating the temporalities of the forestry industry and forestry work

Industrial forestry and forestry work encompass the range of activities which treat wood and biomass as a resource to be harvested, sold, and transformed (into planks for construction, bioenergy, pulp for paper and packaging, and so on). They take place on a range of scales from local-level small-scale industries, to national and international flows of materials and capital. Regardless of the exact approach to forestry, each variation comes with its own set of temporal durations and rhythms. These include, for example, the length of time it takes trees to reach what is considered ‘maturity’, the extent to which all or just some of the trees’ growth is encouraged, and the physical entry of machines and workers into the forest for certain periods of time on a daily, weekly or monthly basis.

The connections between forestry, jobs, and societal wellbeing, communicated through a dense exposé of machinery and historical documents, were previously the main narratives at the museum. A Lusto blog states that “the perspective of the old permanent exhibition was strongly in the history of forestry” (Lusto, 2024b). In the new iteration of the museum, Finland’s forestry history and tradition remains clearly expressed, especially via the themes ‘green gold’ and ‘forest work’. ‘Green gold’ emphasises community and individual connections to the forest, and slower, perhaps sometimes intimate and personal craft practices (e.g. via the photographs in Figure 10). ‘Forest work’ showcases the forest as a source of income on a larger scale, with a focus on modern industry and machinery.



Figure 10: Photographs from private collections showing history of forest work and rural life (August 2024)

The role of the state in pushing forward forest management agendas and prompting the museum to display certain things is also directly acknowledged by my interviewees. As Leila explains:

We are a national forest museum, so the forestry industry is included within our collective preservation work because it's such a big part of Finnish culture. So we have very strongly had this forestry industry label, in the minds of many.

In our recording and archiving work, forest industry has a heavy impact. But maybe until now it was also quite heavily apparent in the exhibition. We have such big machines and that kind of thing. It's been that kind of thing which is very visible and concrete.

Leila's choice of the words 'heavy', 'big', 'visible' and 'concrete' echo my impressions of the ways in which forestry industry and forestry work temporalities continue to be performed here. Part of the 2005 extension building is dedicated to the display of modern forestry machinery within the 'forest work' theme. Lusto has chosen to display several machines, creating the largest section in terms of

volume and floor space (F in Figure 8). Photographs of the room also feature on the museum website, for instance at the top of the main page containing details of the permanent exhibition (Figure 11), and individual machines appear in Facebook posts from early 2024 onwards. Each machine is large, being designed to cross uneven terrain and to fell, process and transport entire trees. The machinery made of metal, plastic and rubber seems permanent and long-lasting.



Figure 11: 'Forest work' section as shown on the Lusto website (Lusto, 2026)

All of this can be read as a performance of temporal rhythms of efficiency and rapid extraction of materials, as also revealed in the video 'with wood into better days' (Figure 12), in which stacks of wood are shown outside factories and on their way to be processed. By placing emphasis on the machines and tools of the trade, and by focussing not on the ecosystem but on individual wood types and uses, as well as images of logs being transported, the forest is rendered a resource, its temporality linear and ordered.

However, what is visible in the 'forest work' and 'green gold' sections today as well as online is, by all accounts, a reduced version of what was here before. Leila emphasises to me that the machinery in particular, quite literally due to its large size, was previously very dominant in the exhibition, and took up a lot of space, but that change has occurred:

And now we're changing it. We just removed 200 chainsaws from the exhibition, and they will return still, but not 200. And maybe not even 20.

I notice, too, that in numbering the sections of the exhibition at the museum, as well as presenting them on the Lusto website, the 'forest work' theme comes last. This is not, I would suggest, a coincidence.

The move to reduce the presence of the forestry industry section in the museum has been met with some criticism and disappointment. Leila says, "we get responses about where the chainsaws have disappeared to. For some people that was important". I was fascinated by this comment about the chainsaws. It seems that this piece of equipment in particular, out of the tens, if not possibly hundreds of items previously shown in the exhibition, had created some of the strongest reactions. In the video 'With wood into better days' (Figure 12), men can be seen using chainsaws to fell individual trees. Not only are there rapid and linear temporalities on display, but industrial and/or labour-centred interactions with the forest are also expressed as personal, hands-on, and embodied: boreal temporalities are tied to human lifespans and to how individuals and communities have interacted with the forest through their daily lives. This may go some way to explaining why the removal of chainsaws in particular created contestation; the chainsaw, unlike large-scale logging machinery, is held directly in the hand, and symbolizes a more intimate experience of carrying out forestry work in close proximity to each tree. These objects are more than only metal and plastic; their materiality is imbued with meaning. "Why has the number of machines been reduced and the chainsaw tower been removed?" is a Frequently Asked Question on the Lusto website. Lusto respond that, "the exhibition space was densely filled with large machines. The aim of the renovation was... to tell about the work related to forests and the work done in the forest in a more human-friendly way and by opening up broader contexts... The mechanization of forestry is only one perspective and part of the story. For the same reason, the number of chainsaws in the exhibition was also reduced and the large chainsaw tower was dismantled."



Figure 12: Still from the video 'With wood into better days'. The subtitle reads, "things were made more efficient and speeded up" (Lusto, 2023)

Re-acknowledging forgotten histories: medicines against amnesia

At Lusto, there is a strong emphasis on history. This focus on history is not surprising for a museum, but at Lusto there is a re-thinking of what forest histories can and should be told. In particular, moves are being made to counter the apparent forgetting of particular forest histories. The online video collection *Lääkkeitä metsäkeskustelun muistinmenetykseen* or 'Medicines against amnesia in the forest debate' presents six videos (Lusto, 2024a, n.p.), one of which I have already mentioned. The videos are titled *Metsän arvot* or 'the values of the forest'; *Puolukkakuume ja jokaisenoikeudet* or 'lingonberry madness and everyman's right'; *Puu pulasta pelasti!* or 'wood saved us from shortages'; *Metsien loppumisen pelko* or 'the fear of running out of forests'; *Puulla parempiin päiviin* or 'with wood into better days'; and *Kansallisaarten omistajat* or 'the owners of a national treasure' (Lusto, 2024a). As is written on the website:

The social debate on forests suffers from amnesia, as it often forgets history and a long-term perspective. A constructive coordination of forest-related objectives in society requires an understanding of forest-related perceptions, values, decisions and cause-and-effect relationships in the long term. (Lusto, 2024a)

Here the sense of bridge-building and balance is present in the use of the word *yhteensovittaminen*, literally ‘together-fitting’. I have translated this more smoothly as ‘coordination’ in the quote above.

Making more-than-human temporalities tangible

Lusto deals with the more-than-human within its representations of periods and durations of time, and rhythms. However, the challenge of trying to represent the more-than-human is that, unlike in a story where the focus is on one main character, there is no single most important character in the more-than-human story, and further than this, telling stories about more-than-humans in a forest setting whilst inside a building poses an additional challenge.

On my way to the section ‘forest nature’, I stop to wonder at a strange sound which builds gradually. At first, I cannot work out what it is. Then I realise it is the rushing of wind high up in the treetops, and that it is coming from speakers lining the walkway (Figure 13). The sound ebbs and flows but it has no obvious beginning or end. Its continuity and flow evoke expansiveness and space.

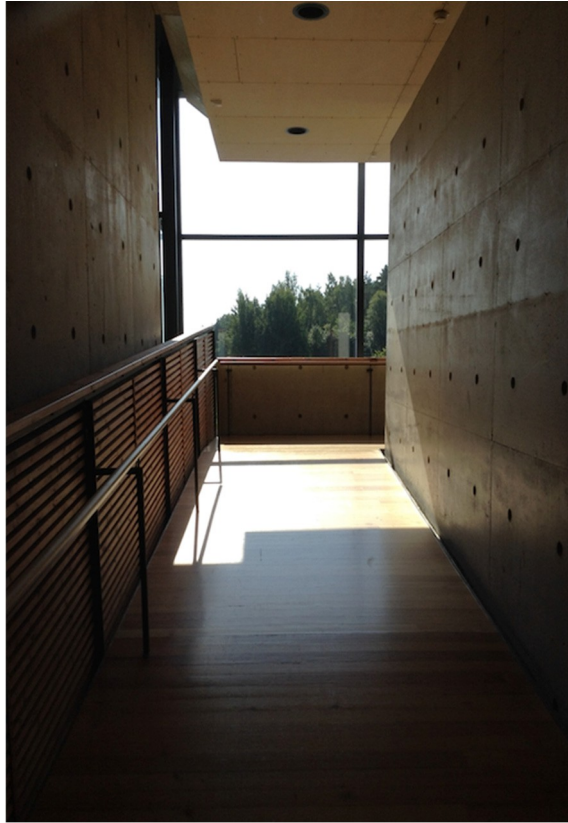


Figure 13: The sound of wind rushing through treetops accompanies visitors along this walkway (August 2024)

“Hanging texts, moving slightly in the air, tactile surfaces”, I scrawl in my fieldwork notebook when I get to the ‘forest nature’ section. Blocks of text literally hang from the ceiling on pliable material. Each block contains a detailed account of different periods in the history of the forest. These accounts center non-human actors, with references made to multiple creatures and plants which can be found in the forest. As such, Lusto employs written narratives as a way of centering temporalities beyond the human alone. A few of these more-than-humans are more specifically emphasised as central characters in these stories. For instance, Leila described “a small soil-dwelling potworm which makes everything possible”. This is the main protagonist of the ‘ecosystem’ section of the new exhibition. She elaborated:

We also have symbolic or charismatic animals, and for that we wanted to choose the most important animal in the forest. According to the biologists that's a potworm.

We thought for a really long time about how to illustrate that part of the exhibition. Because when a person thinks about the forest they'll picture certain scenery and it's a very human perspective. We've now had for 1.5 years a timelapse camera in the forest, and it illustrates... it's quite near to the surface of the soil so there's ants scurrying around and that kind of thing... it's quite interesting to see what's there. We're going to use that in the big exhibition... to show what happens there when we're not there looking at it.

Spreading far and wide: museum as concept

For many months, I thought only of the building where the exhibition is displayed as the focus of my research. This was, for a while, what came to mind when thinking of 'the museum'. However, throughout our conversations, participants at the museum emphasised that although the museum is, on the one hand, a physical, grounded place, on the other hand the museum also moves through the work which its employees undertake in spaces beyond the museum building. They repeated that I and others should not assume that the museum is only 'here', but actually that it travels. The representation of forest heritage extends beyond these walls, via the work of the 'dynamic museum'.

Leila says that, "from this there comes the question that the museum isn't only a visiting place, but it's before all else a concept which can be taken wherever, to where it's needed." She tells me about the work of museum employees in carrying the museum with them as they travel across the country, and talks at length about the ways in which the museum should not necessarily be seen as only a building, but as knowledge and ideas which are carried by employees and which can also be taken away by visitors. Later in the discussion, she says that "it isn't only contained within this building but the contents are also in a network of circulating implementations." The materials, resources and knowledge held within and represented in the museum building are not only anchored and contained there. They are also connected to many other locations and are inducted into many different conversations via the movements of employees, museum visitors or 'users' movements, and governmental policy and legislative processes relating to energy and the environment, to name a few.

I think about the physical and imagined format and conceptualisation of the museum. This includes the conceptualisation of the museum as a cultural institution which travels beyond the confines of the museum's walls. Forest-related knowledges and values are held by museum employees and representatives, as well as within the museum's online spaces, and through these channels are broadcast far beyond the museum building. In this way, boreal forest temporalities may be contained within a physical structure through the accumulation of items and the discourses attached to those items, but temporalities also travel as stories and discourses through the exchange of information across multiple scales.

Expansive temporalities: Curating imagined possibilities

Unsettling dominant ideas about the temporal is about acknowledging multiple histories and temporal rhythms through memories and materials. But it is also about moving beyond what is and has been, to consider what could be, and thinking of temporalities as a realm of possibility. Through analysis of the materials, it becomes clear that temporalities are used quite consciously as tools with which to think about the future. I have observed that Lusto employs creative engagement with and expression of temporalities as a way of identifying problems and trying to find solutions. The museum has for many years been tasked with finding solutions to pervasive socio-environmental issues such as climate change, biodiversity loss, and finding spaces for people to enjoy forests recreationally. Now, the concept of the 'dynamic museum', which is solution-oriented, adaptable and experimental, is central.

Leila: At the moment we're really confirming the concept of the dynamic museum. That concept really interests us a lot. And really the basic thinking is very simple: it's that we have a world where there are an awful lot of challenges, and all kinds of problems, but above all else of course the need for ecological re-building and the whole of this, er, resilience in the face of disruption. And then we have a museum which has a lot of strengths in how it works, for example the museum works on the level of everyday life, close to people and publics.... it's about the ability to participate... So, could those abilities and strengths be used to help solve some of the issues of the world, together with those people and communities?

Whilst, as mentioned in my previous story, multiple forest histories are being acknowledged and re-acknowledged, those histories do not end in the present day.

Imaginaries of the future, with the past in the rear-view mirror

The past is ever-present, but that it is no longer the only or main concern. Rather, the past, which as we saw in the first story I told is not singular but multiple, is used as an inspiration for what could be, the rates at which things can change, and the temporal rhythms which we should be attentive to when thinking about what is to come. In this way, Lusto “want to build a good forest discussion that reaches into the future and draws on an understanding of the past” (Lusto, 2024, n.p.). This sentiment is precisely echoed in interviews with both Leila and Riikka. Leila explains that,

...we turn the focus towards the future and not towards the past, and think that we need knowledge about the past in order to navigate towards the future, but that the future is the thing which primarily interests us, but we have the past in our rear-view mirrors, because really no other institution in society works in that way.

The museum is invoked here as holding a unique position which enables it to curate pasts whilst also curating futures. The past ‘in the rear view mirror’ is a reminder (especially with the ‘medicines against amnesia’), but the main normative aim of the museum seems to be working towards different conceptualisations of the future.

As a museum which is more of a concept than a purely rooted and located entity, Lusto can send its initiatives and knowledges out into different communities with whom the museum employees are able to imagine multiple futures.

Leila: Yes, and in the future heritage workshops, we’ve usually done a thing to try to get the participants detached from this current moment and into the future, and one fun thing has been that we make a newspaper that is published in 2075 and what does it talk about and what are the stories about. For example because in Finland there’s a magazine called *Maaseudun Tulevaisuus* [the Future of the Landscape], well we made an issue of *Maaseudun Tulevaisuus* for 2070. So we thought about what articles are in there and what issues people are thinking about. So people kind of, erm, dared to use their imagination and detach themselves from the current moment.

That's really hard. We've called it this kind of future jump, so as if we really move to that future in the workshop. We've also done a past jump, where we look at the past. What did the future look like, say, fifty years ago, one hundred years ago? Those have also been really interesting.

Within Lusto's imaginary-building practices, as Leila expresses, there are challenges. It can be difficult for people to imagine 'forwards' a long way. However, the curators emphasise that change can be inspirational. Leila tells me:

When we really get to grips with the change, things can really change a lot. They can change quite quickly, too. I've reflected a lot on the change, cultural change. If we aim for transformation, and we have very little time, like when thinking about climate change or something, then is there enough time? But in crises, culture changes very quickly, if we think about for instance corona virus.

Beyond curation? Unruly legacies at the museum

This third and final story provides a place for the processes and things across Lusto's museum spaces which do not fit into balancing and building bridges, or into the curation of multiple futures, but which still express and negotiate boreal forest temporalities.

On my second visit, I arrive around 11am. It is a halcyon day with barely a breath of wind to stir the trees; the sun is already high in the sky. I feel sleep-deprived and slightly dazed after an early start and a long train journey, so the brightness is invigorating. Since the scheduled interview is not due to begin for another hour, I have time to explore outside the museum building. At the bottom of the steps I wander onto the grass and initially think that this would be a good moment to take a photo of the museum building. But I am distracted and drawn in by a mysterious collection of large sculptural objects slightly off to the side which seem to have landed from somewhere and become moored in the meadow. As I get closer, my suspicions are confirmed: these must be old forest machines. But why are they here? There are no labels or explanatory plaques. The only thing which can speak to me is the thick rust which envelops every one of them, turning them russet against the backdrop of green. I interpret the lack of signage to indicate that these objects are not important, and that they are not part of the official

exhibition. In this way the museum, through lack of acknowledgement of these machines, challenges their meaning and their cultural legacy. I note, however, that it cannot entirely deny them their material legacy, which continues to unfold as they rust and flake off into the earth.

When I mention this rusted machinery to Riikka, my interviewee, her response suggests that there is not that much to say about it: “Oh yes, there are a few things out there, too...” How long, I wonder, before the museum needs to respond to visitors about why this machinery is being allowed to rust outside? Or do I misread the situation, and in fact am looking at machinery which should, in the eyes of many, be outside, as part of the landscape, uncontroversially? It seems older than the machinery which is indoors, so perhaps in contrast to the modern pieces in the exhibition, this is well into its retirement years and fits into temporal framings of bygone days. Perhaps it was left there because there was no-where else for it to go. Perhaps it is accepted that these machines have transitioned into slowly becoming one with their surroundings. I still do not know quite what to make of this rusted collection, but encountering it prompts thoughts on imaginaries and legacies as co-created through more-than-human engagements, which continue throughout my research.

While the rate of rusting is much slower than the timescales which we as humans are used to noticing and paying attention to, the leaking of oil from machinery onto a museum floor is faster, and causes more concern. Visitors have apparently asked ‘why is there no longer a “block simulator” in Lusto?’ The museum responds that this machine sometimes leaked oil, and in addition that the noise of the machine was disturbing within the otherwise quiet museum (Lusto, 2024b). Even though the ‘block simulator’ could be a key part of a forestry practice on industrial forest land, it became out of place within the museum. In the forest, the noise would not be seen as a matter of concern, and perhaps oil, too, would be allowed to leak out in small quantities. However, there is seemingly a limit, connected to objects’ materialities and ways of behaving in certain spaces, to the extent to which they can be used to perform temporalities. If they are enlisted anyway, they may well ‘misbehave’.



Figure 14: Machinery at rest (2024)



Figure 15: The machinery from a distance becomes more abstract (2024)



Figure 16: The museum and machinery as seen from the bottom of the meadow – a landscape of metal and biomass (2024)

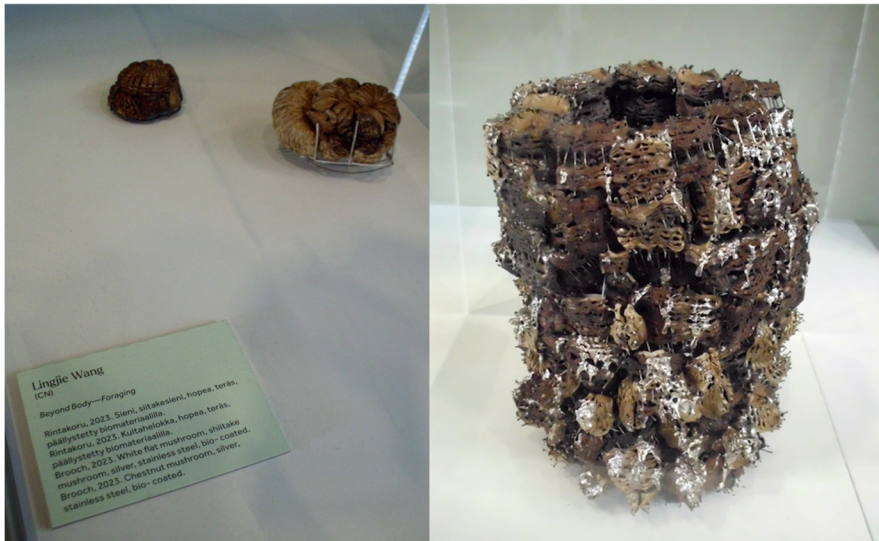


Figure 17: 'Beyond Body - Foraging' and 'Fluid Vessel' - artworks by Lingjie Wang, 2023 (2024)



Figure 18: Abstract artwork at the museum (2024)

A final observation worth noting is that, as seen in Figures 17 and 18, and as I experienced in many more instances throughout my second visit to Lusto, there is now an emphasis on what may be called ‘experimental’ and even ‘messy’ or ‘abstract’ art within the museum spaces. Although arguably more tightly controlled than the rusting machinery, and certainly consciously designed in order to communicate certain messages, these artworks nevertheless also communicate unruly more-than-human boreal forest temporalities. Lingjie Wang’s mix of fungi and metals in the ‘Beyond Body’ installations (Figure 17) express the blurring of boundaries between materials, and upon observation are shrivelled and dry, echoing the transformation that fungi go through when they do not receive water.

The swirling installation suspended above the exhibition space, meanwhile (Figure 18) evokes clouds, wind, or other unspecified natural phenomena which one might encounter in the forest. Although it may not be the intention of the curators and designers to express temporalities or time specifically through this artwork, I suggest that its organic and abstract form reflects the gradual and subtle shifts encountered in a forest environment. In combination with the poster reading 'Save the Forests!' in the background of my photograph, the entire assemblage and layout of the room speaks of hoped-for future legacies of non-linear and more-than-human boreal forest temporalities.

Conclusions

This chapter has given an account of how the Finnish Forest Museum, in its role as a national institution suspended between past, present and future, and in concert with a host of other actors, materials, and living and non-living beings, negotiates and shapes varied and conflicting boreal forest temporalities. I have explored, firstly, how the museum works to pull off a balancing act in which it treads the line between competing priorities, visions and desires relating to the boreal forest. Lusto is perceived as and positions itself as a representative of national and local interests in the forest. These interests range from concern for forest biodiversity and the role of the forest as a carbon sink, to the forest as a source of materials – biomass and timber for energy and building needs; jobs – in the forestry industry, and 'cultural experiences' – spiritual, artistic, and recreational. In this position, the museum emphasises temporalities of forest resources, forest labour, the timescales imagined for the forest within the context of meeting national climate goals, and the importance to local communities of legacies of forest work, shown through for example the display of old photographs and more modern machinery. The museum, with its financial backing in national and industrial enterprises, and its position as a national museum, is a prime example of the ways in which some institutions hold the political and social power necessary to mould and navigate pervasive assumptions and desires. The museum must therefore walk a tricky line in its effort to maintain equal representation between these interests.

Secondly, the chapter outlined how the museum works with ideas about the future. This occurs both within the context of ‘walking the line’ between the priorities just mentioned, but also beyond this as an innovative and creative form of temporal practice. This positions the museum as more than simply a national institution or an educational facility – the museum is emerging as a creative hub which is active rather than passive in the formulation of new temporal ideas.

Finally, I have shown how despite the many curatorial tendencies of the museum and its attempts to control its outputs, even in the case of more unique and innovative initiatives, there is always something which slips out of control and out of the intended frame. Noticing more-than-human actors’ behaviours has revealed the ways in which the temporalities privileged by museum spaces are not without challenges from unexpected directions.

Privileging and neglecting temporalities through curation

The Finnish Forest Museum privileges and neglects certain boreal temporalities through a number of what I have called ‘museum spaces’. Of all three cases which I explore in this thesis, the spaces of the museum and the curatorial practices involved are arguably those which are most obviously choreographed and designed in order to navigate temporal politics. The museum building and its physical surroundings are instrumentalised as a space within which to exhibit objects and stories which are designed to make visible a number of carefully-selected temporal framings. Within these spaces, physical materialities (of exhibition items and the museum building itself) and texts and images alike are enlisted as symbolic and meaningful within certain accounts of the forest and its temporalities.

The museum exists not only in the form of the museum building itself, but also in online spaces, especially the museum website and its publications. Not only is the museum rooted in place, but it operates through its employees, who can travel, and through its online spaces, which can reach anyone with an internet connection. The museum works as a set of knowledges which are carried through collaborative workshops and the online sphere into homes and lives around Finland, the Nordic region, and internationally. These spaces welcome and reach a range of audiences, enabling certain temporalities to be carried far and wide, connecting spaces, whilst others are not granted this same space-crossing ability.

The materials and movements enlisted include the physical exhibition divided into seven sections and items within those sections, to curators' visits to officials in Helsinki, to online publications and videos which cater to different themes and audiences. The Finnish Forest Museum, in order to privilege and neglect certain temporalities, acts as bridge-builder and balancer between varied and often competing understandings of and hopes for the boreal forest. The extent to which this results in contentment for all parties can be questioned; indeed, as I have shown, some people have voiced their discomfort with some of the curatorial decisions, and the museum has both pre-emptively and in retrospect issued explanations about certain things, pointing to the negotiation of ongoing contestation. Nevertheless, the carefully choreographed expression of multiple temporalities is crucial in trying to keep the balance. In particular, the museum uses photography, written accounts (online and in the exhibition), films, and artefacts ranging from axes to folkloric talismans to remind visitors about almost-forgotten or unacknowledged histories which have been previously sidelined. Forest history is made complicated and multiple, rather than linear and singular. The multiple human and more-than-human origins and backstories of today's boreal forest are brought to the fore. Instead of relying on only one, dominantly industrial past, Lusto performs a range of different pasts, from the deep history of glacial movements, to more recent histories of forest work, folklore and craft.

I have shown that the museum is no longer focussed only on the forestry industry and production-oriented temporalities. Instead, tales are being told of the many species which live in and depend on the forest. Rather than discussing these 'other species' generally and as a whole, individual species such as the potworm and pine trees are singled out through artwork and the display of texts, with the effect that varied temporalities – indeed potworm and pine tree temporalities - become visible, more intelligible and encourage visitors to take a critical perspective on their own human lifespans and experiences of the forest.

Lusto's updated exhibition thus reflects some broader concerns within museum- and gallery- spaces. These concerns centre on the need to overcome abiding societal and cultural dualisms which feed into a number of environmental and social crises. Whilst the focus of concern varies depending on context and the aims of those behind each exhibition, and whilst much of the museum literature to date has been interested in issues linked to [post-]colonialism, race and identity, I believe that a conversation about the role of the more-than-human within and

beyond museums is also a relevant part of this debate. After all, as feminist scholars such as Val Plumwood have written, all dualisms are interconnected and mutually reinforcing.

Forest imaginaries at the museum

Although a number of different temporalities are expressed at the museum, the most prevalent forest imaginaries which surface in these spaces concern the forest as multispecies, and forest futures as equally multispecies and diverse. It could be argued that this takes place within the frame of balancing and making space for different interests; indeed, the possible forest futures which are performed through museum spaces are influenced by the needs and desires of particular actors such as the forestry industry, forest owners, and conservationists. Yet more expansive, long-term and creative thinking which consciously connects multiple pasts with multiple futures is also exhibited at the museum.

Reflection upon the more-than-human is also important here. At the museum, multispecies and more-than-human actors and agencies are being harnessed and used with intention as collaborators in the communication of possibilities. Abstract artworks may seem just that – abstract – but their use of unusual materials such as fungi and felted wool suggests an openness to alternative ways of thinking and seeing; to working together with other species and materials. The museum is shown to be oriented not only towards exploring different forest pasts, but also towards curating multiple forest futures based on multiple acknowledged and extended pasts. This, then, is an opportunity to think and talk in new ways and to be more open to possibilities and imaginaries. All of these remain in the making and are expressed through art and storytelling.

The curation of forest legacies

As I laid out in the theory chapter, legacies can be understood as material and storied (or narratively- expressed) echoes of past moments and events which extend into the present moment. They may be undesirable to some actors whilst others embrace them. The forest museum acknowledges numerous forest legacies, from legacies of forest folklore to the legacies of previous manifestations of the forestry industry. To take the latter, the rusting metal machinery put out to

pasture in the meadow behind the museum poignantly communicates forest legacies which the museum, as a public institution upholding ideas about Finnish national identity and pride in forestry histories, feels that it is expected to carry. These legacies can be heavy, both literally and metaphorically speaking. The forest museum has put these old pieces of machinery to the side rather than positioning them centrally within an exhibition space, suggesting an attempt at neglect or at least sidelining. Another striking example has been the decision to reduce the number of chainsaws in the exhibition; this was a move by the museum to communicate, via a simple physical action imbued with symbolism, that although the act of cutting down trees continues to be of great importance for individuals and for society as a whole, going forward this legacy would be balanced with or perhaps even challenged by other legacies. This chapter has furthermore shown that more-than-human actors can act to uphold and strengthen as well as challenge the intended results of curatorial practices. In the example of the machinery, the presence of rust only serves to further emphasise the left-behind status of these pieces and the era which they represent.

An analysis of museum spaces as more-than-human and as attempting to represent more-than-human processes and boreal forest stories reveals that things sometimes behave or unfold in ways which cannot be contained or controlled by curation. Even among the powerful structures and practices of the museum there are opportunities for disruption of curated performances; for unacknowledged actors and uncontrollable temporalities. The ability and power of more-than-human actors to tell their own stories and to create their own changes should not be forgotten. The beings and materials initially enlisted to help tell certain stories about the forest in museum spaces have lives and agencies of their own. As we will go on to see in the rest of this thesis, these lessons apply not only to museum spaces, but also to wider spaces of forest management and conservation. Here, developing an awareness of the ways in which particular materials and species may behave, and the knowledge that they could behave unpredictably, is valuable.

Taken together, these findings show that boreal forest temporalities do not exist independently of the institutions, materials and actors through which they are expressed. At Lusto, temporalities are actively curated, negotiated and contested

through museum spaces and practices. Certain forest histories, presents and futures are made visible and amplified, whilst others remain marginal or are only partially acknowledged. At the same time, the chapter demonstrates that temporal politics is never fully controlled. More-than-human actors, material processes and unexpected encounters continually exceed and complicate curated narratives. Boreal forest temporalities therefore emerge not as fixed accounts of the forest, but as dynamic and contested relations between pasts, presents and futures, continually made and remade through human and more-than-human engagements.

The chapter contributes to literature on museums, showing that there is productive potential in thinking about the temporal practices of an institution which is itself inherently temporally-oriented. I reaffirm the importance of existing research on museum politics, but instead of only looking at spatial factors, or alternatively only considering what temporalities the museum privileges rather than why, I have demonstrated the utility of using a temporal lens to better understand museums' role in society. Ultimately this means thinking about the influence which they have and the work that they can do across their networks and in communities. This could include, for example, researching forest histories as a way of understanding certain peoples' reactions to an updated exhibit. The chapter also contributes to discussions on the challenges of curation, with more-than-human actors and processes constantly threatening to distract from, pollute, break down or otherwise alter seemingly stable curated items and displays.

In the next empirical chapter I build on the themes which have begun to emerge here as we enter the physical forest itself for the first time. Themes of control and power continue, but rather than being held in the metaphorical hands of a single institution and its more-than-human collaborators, temporal politics is shown to play out through the forest landscape, through its very particular and ever-shifting multispecies communities, and through overt and clear temporal narratives presented in ways reminiscent of some of the techniques used at the museum.



Chapter 5. Conservation temporalities and the process of landscape



Figure 19: Outside the meeting building at the forest event in Simpele, Finland, August 2023

The room is rapt with attention as Jouni clicks through to the next slide. A kuukkeli or Siberian Jay perches on a branch. In the next photograph, the gnarled limbs of a huge pine tree twist and turn. I write in my notebook, “does this count as conservation and/or forest mgmt [management]?” That the forest in the photographs has been protected and

conserved is obvious; it is the subject of Jouni's presentation. What I am wondering about is how 'conservation' and 'forest management' relate to one another, as well as the ways in which this meeting, the presentation, and the ideas being put out into the room link up with those concepts and how they are expressed.

(At the 'Haarikon Taika', or 'Magic of the Haarikko region' event organised in Simpele by the Finnish Association for Nature Conservation, August 2023).

In this chapter, I explore temporal politics through the lens of nature conservation practices and spaces. Moving away from the walls and concept of the museum, this chapter questions the nature and political role of temporalities within a much wider vessel or canvas – the forest landscape itself. Specifically, I look at the ways in which temporal understandings are applied to the forest in places where that forest has been set aside as a protected area, or where approaches are taken which could fall into the category of conservation, protection or restoration.

In response to the question which I raised in the vignette above, I have chosen to use the term 'conservation' broadly. I frame conservation as a form of forest management and as an active and consciously designed rather than passive activity. I acknowledge that there are multiple hybrid approaches to forest management which may not usually fall under the 'conservation' label. They nevertheless include some elements of what I am here calling conservation. These could be for instance the prevention of logging in a small patch of otherwise more frequently cut forest. Although conservation most obviously takes place in officially-designated conservation areas and national parks, it also plays out within privately-owned forests. Therefore, although in this chapter I do primarily focus on national parks and forest landscapes designated as conservation areas, the chapter also includes complementary views from private forest owners. In this sense conservation may be understood as one component of active and ongoing forest management. It is not necessarily a forest owner's whole 'ethos' or 'approach', but it can play a role which is constantly re-evaluated. During my research, I came across individuals who practice what could be called conservation on their forest land. I did not seek these people out; their status as forest owners and as forest owners who do forest management "differently to most people" (as Bettina, an attendee at the nature protection event in Simpele put it) emerged in conversation about their perspectives on forests in general.

The argument, then, is that actors involved in conservation-oriented approaches to forest management both intentionally and unintentionally utilise and express temporalities as political tools, and that conservation as a practice of temporal politics arises within and outside protected forests. This chapter not only looks at the physical forest, but also interrogates the narratives and stories which capture and describe the forest. I consider how conserved forests and forested landscapes can be interpreted as temporal storytellers. I wonder how the sites, actors, places and spaces assembled within discourses and practices of forest conservation encounter, express, sense and shape different temporalities. I argue that landscapes are actively made to narrate certain forest pasts, presents and futures, thereby shaping what kinds of forest worlds are imagined, experienced, and sustained.

It is useful to distinguish between the spaces and places where conservation occurs. In-situ conservation can be defined as “the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings”, whilst ex-situ conservation is “the conservation of species outside their natural range such as in zoos, botanic gardens, aquaria and seed banks” (Fetene et al., 2012, p. 53). Whilst in the previous empirical chapter I explored how forest temporalities are curated largely in an ‘ex-situ’ setting away from the physical forest - the forest museum - in this chapter we enter the forest. Here I deal with in-situ conservation in the form of national parks, nature reserves, and some privately-owned forests. That said, and again echoing my approach to digital materials in the previous chapter, I also include the ex-situ spaces of websites and the materials such as manifestos, organisational statements and policy documents which are found there. I contend that digital spaces are an important source of narratives about forest temporalities within conservation just as they contribute to emphasising the temporalities privileged at the forest museum. As such, though the chapter is primarily anchored within the forest landscape, I consider how the temporal narratives and physical practices associated with conservation are also mobilised from within and upheld or challenged in spaces and places away from the geographical location of the conserved forest.

In this chapter, I deal with a number of different geographical locations. Firstly, Pyhä-Häkki is a national park in central Finland. The area comprises 13 square kilometres of forests and bogs in central Finland. It is a patchwork of logging, agriculture, private inheritance, and State ownership. Pyhä-Häkki was first named as a nature park in 1912. Secondly, Sanginjoki is a 14.35km² nature reserve

located just east of the city of Oulu in western Finland. I visited Sanginjoki in August 2023 along with other members of the 'Mushroom Methods' workshop which I attended in Oulu. Third, Hiitolanjoki outside of Simpele is located in south-eastern Finland, very close to the Russian border. This was the location for an event on nature conservation led by the Finnish Association for Nature Conservation. Fourth, Björnlandet is a 23.7 km² Swedish national park located in Vasterbotten county. It is characterised by mixed old-growth forest and wetlands. Fifth, Kaukametsä protected forest is a small area of protected forest which I first mentioned in the Prelude to the thesis. It is owned by the Natural Heritage Foundation and is situated in Pirkanmaa, Finland. In addition to these specifically named locations, the chapter also includes participants' stories about other areas, and due to the relevance to this chapter of the themes of the interviews, materials from the Finnish Forest Museum.

Sanginjoki was initially primarily a site which would feed into my thinking about fungal temporalities. However, when walking through the area, I was struck by its status as a reserve in development, the roots of trees literally entangled in the silt of forestry operations and walking trails still in the process of being constructed. Not only, then, does this chapter consider long-established conservation sites in the forms of Pyhä-Häkki and Björnlandet, it also reflects on how temporalities are done in contexts where conservation is, so to speak, only in the process of arriving as a form of forest management.



Figure 20: Map of Sanginjoki area (Metsähallitus, n.d.)

Next I discuss the connections between conservation, temporalities and the political. I clarify my own reading of conservation as an inherently political, temporal practice which applies both within and outside government-mandated and ‘official’ protected areas. The chapter then moves on to a brief history of forest conservation in Sweden and Finland. The empirical analysis then begins with an elaboration on specific ways in which conservation actors and landscapes engage and are engaged in expressing temporalities, both privileging and neglecting particular temporal framings. This is followed by an account of the forest imaginaries and forest legacies which arise through and may be contested by conservation practices.

The temporal politics of conservation

As many scholars have noted, conservation is inherently political due to its conceptualisation of ‘nature’ and ‘biodiversity’ as resources to be fenced off, protected and/or restored to a certain state. In addition, conservation initiatives are often critiqued for their attempts to ‘freeze’ places and things in time, despite the lively behaviours and agencies of those places and things. As I go on to show in this chapter, this judgement about conservation does not always hold true; conservation may in fact privilege process and change just as much as preservation. Indeed, conservation and preservation could mean the conservation and preservation of process. We move on to this later in the chapter.

The concept of conservation as it is commonly understood collects together value-laden practices and discourses oriented around ideas about protecting and/or sustainably using ecosystems and natural resources so they that can continue to exist into the future (Fetene et al., 2012). According to the 1992 Global Biodiversity Strategy (WRI et al., 1992, p. 228) conservation involves

the management of human use of the biosphere so that it may yield the greatest sustainable benefit to current generations while maintaining its potential to meet the needs and aspirations of future generations: thus conservation is positive, embracing preservation, maintenance, sustainable utilization, restoration, and enhancement of the natural environment.

Such descriptions are never neutral; they result from specific knowledges and subjective desires which do not satisfy all needs and which at worst may harm certain species and communities. This broad definition, with its dual focus on the use and protection of nature and the environment and its statement that regardless of the multiple possible conservation practices listed, it is ‘positive’, provokes critique. Framing conservation as a neutral or uniformly positive practice which can achieve several things at once obscures the ways in which particular desires and needs are prioritised while others are marginalised or silenced.

In March 2001, the Swedish government presented a letter to the Riksdag titled ‘En samlad naturvårdspolitik’ or “A comprehensive nature conservation policy”, in which it outlined observations and recommendations regarding nature

conservation in Sweden¹⁶. “Since man by his actions affects and will affect nature, it is up to humans and society to choose what kind of nature we want in the future”, it stated (Regeringskansliet, 2001, p. 25, translated). This sentence suggests that ‘man’ is in control of ‘nature’ and that this level of control imbues ‘humans and society’ with the ability to shape the future. A degree of control over a separate, singular and objectified yet valued nature is imagined, and it is also suggested that ‘the future’ in which a certain kind of nature exists can also be neatly described and controlled by means of this power and control. In this temporal framing, humans are positioned as the primary agents responsible for shaping how nature develops over time.

Biodiversity, too, is a value- and power-laden concept within conservation discourse. The terms ‘conservation’ and ‘biodiversity’ came into being around the same time, the former in the mid-1980s and the latter in the early 1990s, both then being solidified in the publication of the Global Biodiversity Strategy (Ochoa-Ochoa et al., 2023; WRI et al., 1992). They were and arguably remain anchored in colonial, settler, and what Ochoa-Ochoa et al. (2023) term ‘Atlanticist’ epistemologies based on the control of a nature separate to humans, the accumulation of capital and the extraction of resources. Ochoa-Ochoa et al. (2023, p. 3) note that “a pervasive thought remains around the world in which to conserve means to “keep safe from humans””. Yet even if there is often the intention to separate humans from nature, this is never achieved in practice. Indeed, Ozguc and Little (2023, p. 572) paradoxically describe conservation itself as “biopolitical interventions into non-human bodies”. The attempt to control nature and keep it separate from the human creates undeniable effects in terms of how temporalities are done. I therefore approach this work with a keen awareness of the assumptions and histories behind the word ‘conservation’. Therefore, as Shackleton et al. (2023, p. e12878) write, there are normative, justice-based and practical reasons for scrutinizing power within conservation practices:

Identifying and understanding the stakes, interactions and relationships of different actors and ideas in conservation...can help to reveal entrenched power relations, why and how conservation conflicts and conservation failures emerge, how certain discourses dominate the field and what it would take to address some of these issues. A better understanding of power in conservation and environmental

16 The letter calls for a review of the 1989 national park plan produced by the Swedish Environmental Protection Agency (EPA).

governance can improve outcomes and help to build more equitable and sustainable pathways in the long-term.

In this chapter, I suggest that conservation is, as echoed by the quote above from the Swedish government's 2001 letter, not only about protecting elements of the past but about making decisions which will shape the future. As the letter states, 'humans and society' must make decisions about the future. Yet the kind of prefiguration and imagination which I explore in this chapter goes beyond a binary relationship, instead enlisting more-than-human actors as collaborators and co-conspirators in the experiencing of different histories and possible forest futures in the present. I echo scholars such as Ozguc and Little (2023) and Barad (e.g. 2017b) who argue that it is unrealistic to attempt to entirely separate past, present and future. I conceive of temporalities as overlapping and arising simultaneously. What precisely is meant by 'past', 'present' and 'future' varies from actor to actor, and the idea that temporalities have durations and are unfolding never-endingly means that the past and future are in the process of becoming in the present; neither the past nor the future here have clear temporal horizons. In this chapter, past, present and future all feature, as do the multiple rhythmic and processual temporalities of more-than-human assemblages.

There are some important exceptions which I would identify as studies of more-than-human temporal politics and the doing of temporalities in connection to conservation. A rich discussion has grown in the past five to ten years regarding the ways in which conservation initiatives frequently ignore colonial histories and Indigenous everyday realities on the land which is being 'conserved', and sideline Indigenous and minority experiences of time and temporality (Collins et al., 2021; Eichler & Baumeister, 2021). Anthropologists González-Duarte and Méndez-Arreola (2024, p. 220) in their study of monarch butterfly conservation in México describe the "imposed conservation timescape" which has been applied to the landscape and local Indigenous peoples, and discuss how different temporalities are contested. Scholars are also talking about how conservation practices are sometimes based on logically and physically impossible-to-achieve temporal ideals. Anthropologist Knut Nustad discusses how, despite the fact that life continues and change cannot be undone, ideas about 'reversibility' shape conservation initiatives focussed on 'restoring' ecosystems to a previous state (Nustad, 2020). Finally, there is an emerging body of work on contexts in which several competing visions of the future create 'temporal chokepoints' which

restrict and compromise future life (Cons, 2023). Despite these areas of discussion, doing temporalities within conservation is not much explored, and there is little to no discussion on the specificities and politics of doing specifically boreal forest temporalities and the role of the more-than-human in these contexts in relation to conservation.

The emergence of forest conservation in Sweden and Finland

Forest conservation came into being within the frame of the wider conservation movement. Conservation as a distinct movement emerged in the late 1800s in Sweden. In Sweden, nine national parks were established in 1909, being chosen primarily for aesthetic reasons. There are currently 41 national parks in Finland, and 29 in Sweden.

As Fälton and Mels (2024) note, from the birth of the Swedish conservation movement at the end of the 19th Century until the early 2000s, the discursive (and, I add, material and physical) construction of Swedish national parks moved through a number of different phases of engagement with the ‘nonhuman world’. Before the 1950s in particular, nature and the nonhuman were discursively constructed as ‘wild’, as ‘belonging to the land’, and placed within a romanticised aesthetic of the national park as pristine, sublime and sometimes dangerous (Fälton & Mels, 2024). Sámi Indigenous groups, too, were treated similarly in that they were seen as a ‘natural’ part of the landscape, neither interfering with the planning of national parks nor belonging to the category of people who were ultimately meant to benefit from the parks. This framing served to silence and marginalise Indigenous voices and to treat their involvement in national parks as passive and predetermined. Later in the century, tourism and recreation emerged as increasingly dominant motivations for the development of existing and new national parks. Throughout this time, a common theme was that the ‘nonhuman’ was seen as distinct and separate from the human - whether from the perspective of a romantic sublime nature, a nature constructed as important for the recreational enjoyment of visitors, or a nature whose value as a resource was emphasised as extractive practices such as mining began to push into national park territory (Fälton & Mels, 2024). Indeed, as these same authors state (2024, p. 71),

we are living through a period of intensified commodification of the non-human world, engulfing both tourism development and conservation policies in Swedish national parks.

Following this line of thinking, I argue that forest conservation in Sweden and Finland should not be thought of in isolation from other perspectives and intended uses of the forest, especially the forest as a resource from which to take timber and biomass for pulp, paper, bioenergy and construction timber. Just as commodification and market forces influence conservation policies, they also influence temporalities. This chapter delves into more-than-human, intertwined and non-linear temporalities which contrast with hegemonic past/present/future separations. This is important normative and justice-oriented work which would be weaker without recognition of the real context at hand. Hegemonic discourses and imaginaries are the backdrop against which alternatives may be perceived and imagined. As Sundberg (2011) notes, we must attend to lived realities rather than falling into a trap of romanticisation and claiming that friction is not present. Therefore, as in the rest of this thesis, the large-scale forestry industry is present as a necessary part of the puzzle given that – as I contend – some forms of ‘conservation’ take place within unprotected industrially-managed forests.

The 2001 letter from the Swedish government to the Riksdag which was mentioned earlier called for a review of what was at the time the current national park plan, a plan laid out by the Swedish Environmental Protection Agency in 1989. Following the government’s recommendations and subsequent years of discussion and consultation, a new ‘National Park Plan for Sweden’ (Swedish EPA, 2008) was published in 2008. This was seen as a new long-term plan for the management of Sweden’s existing national parks and also as a guide to the creation of new parks.

The rest of the chapter is comprised of four thematic sections. The first thematic section analyses the ways in which some boreal forest temporalities are being forgotten, sidelined or are simply dwindling within national parks, nature reserves and other forms of ‘conserved’ forest landscapes, as well as through the narratives constructed by the organisations and individuals responsible for the upkeep of these areas. In the second section, which should be read not as entirely separate to the first, but as complimentary and demonstrative of the constant back and forth between temporal privileging and neglecting, I apply a similar approach to temporalities which are privileged, uplifted and valued. Expanding on some of the

themes from the first two sections, I then move on to consider forest imaginaries and how the temporalities particular to protected forests and conservation practices feed into certain imaginaries and dreams of the forest. Finally, I turn to legacies, discussing how particular legacies emerge and are acknowledged and sometimes also challenged within forest conservation contexts.

Closing temporalities

Conservation may seem to be about preservation, but in order to save and preserve something, something else is often discarded, forgotten or framed as undesirable or even impossible. Still, in forest landscapes undergoing conservation efforts, the attempt to marginalise or conceal particular histories, rhythms or ideas about what could come next does not always have immediate effect. Rather, the landscapes with which I interacted ‘remember’: they bear the shadows and traces of previous times, and some stories are still told even if they are not told by many people or nonhumans. As such, these demonstrate ‘closing’ but not ‘closed’ temporalities, and exemplify the ways in which different temporalities intersect in materials and locations, with some temporalities ever so gradually fading whilst others appear.

Closing temporalities may be located in an imagined past (where they fade but are not forgotten) or future (where they become less likely than other framings, but where they remain possible). As the examples below demonstrate, these temporalities of endings, fading-out and dwindling are perhaps most accurately seen as slowly closing within both the past and the future. Despite this, they are necessarily accessed and perceived through everyday realities within the present moment.

Closing industrial temporalities

Perhaps the most immediately obvious form of temporalities which can be identified as closing within the conservation context is that of industrial temporalities. This must come with the note that in Sweden and Finland as a whole, the forest is strongly seen by many as a source of timber and biomass and in that sense is a key part of the national economy. The industrial mindset and the management of forests for biomass is by no means a single mindset,

perspective, or way of approaching the forest. Rather, management of forests as ‘production forests’ takes varied physical forms and leaves different traces in the landscape depending on the exact decisions which have been taken by forest owners. The ways in which I encounter industrial temporalities in the forest landscape are as such here only a couple of examples from what is a much wider range of possibilities. The closing of industrial temporalities is a phenomenon which can be encountered across conservation-oriented sites, but in varied ways.

At the same time, industrially- or production-oriented sites may themselves also include conservation-oriented practices, since many forest owners do not only care about producing biomass, but also about creating biodiverse environments and ensuring a healthy and attractive forest which is pleasant to move through, beneficial to different species and a suitable environment for the growth of quality timber. In these contexts, production-oriented temporalities such as the linear planning and monitoring of tree growth into the future rub shoulders with privileging of conservation values such as allowing space for certain species to thrive. As forest-owner and survey respondent Esteri tells me,

An overly dense production forest makes me sad, since it doesn’t have anything to offer to its owner and in that kind of condition it’s also not really valued as a conservation place, either.

Liisa, another survey respondent, complements Esteri’s thoughts when she adds that “badly-managed forests are sometimes even scary, if they are really thick.” Here, the dense growth which may be associated by some as a characteristic of ‘conservation’, i.e. allowing the forest to grow and develop unheeded, is not here seen as a positive conservation move, and the thick, hard-to-move-through forest is instead seen as suffering from neglect and poor management. The suggestion here is that conservation can exist in the context of production, but that simply leaving the forest alone and allowing all trees to grow and spread is the opposite of the carefully-considered decision-making which should be part of good conservation practice.

The intersection between ‘industrial’, ‘production’ and ‘conservation’ forests, practices and temporalities is therefore highly complex and cannot be reduced to a black and white picture. I bear this in mind as I reflect on the traces of industrial management within conserved forest areas, and as I encounter instances of conservation in production forests. What can be said, however, is that industrial

temporalities, in their multiplicity, do intersect with and often exist in tension with conservation practices. In contexts of forest conservation specifically, the rhythms and physical infrastructure of the industrial are slowly being removed and devalued even as their material persistence remains.

At Sanginjoki nature reserve in the north of Finland, which until recently was a more intensively-managed and logged forest, there are traces or even very obvious signs of the use of the forest for timber and biomass extraction. The photograph in Figure 21 shows one of the numerous drainage ditches which cross the forest, muddy with silt from unstable soils. These ditches are common in forests managed primarily for biomass production, since draining the forest is important for both the easy movement of forestry machinery, and to produce conditions more conducive to productive tree growth.



Figure 21: A drainage ditch at Sanginjoki

The ditches are mostly straight, and as can be seen when looking at the map (Figure 22), criss-cross the nature reserve. Viewing a map of the area, I was curious to see how these drainage ditches occupy large areas and network across the site.

In contrast, as can be seen in the map of the much older national park (Figure 23), the drainage ditches almost entirely stop at the border. On the website of Sanginjoki nature reserve (Metsähallitus, n.d., emphasis added), it is stated that:

...in many places, Sanginjoki's forests consist of former, slow-growing commercial forests whose most common tree species is pine (*Pinus sylvestris*). The value of areas reserved for conservation purposes *lies in the future* as the former commercial forests gradually age. In addition to these forests, there are old-growth forest areas that are magnificent and varying in terms of biodiversity, such as spruce mires.

Here, the industrial past of the nature reserve is fully acknowledged as a key part of the structure of the site. The ditches and the presence of younger trees cannot be removed, and yet as the text above indicates, 'gradual aging' is desired for the forest and the echoes of industrial activity are intended to slowly disappear. Closing industrial temporalities here will continue to linger into the future rather than being immediately closed, but that future is presented as more positive in a context where those temporalities – and the physical phenomena through which they are detected – have reduced.

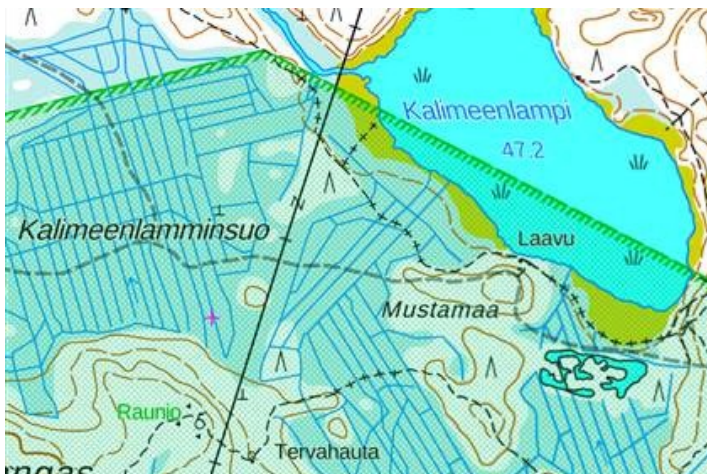


Figure 22: Close-up of ditches at the northern edge of Sanginjoki (nature reserve boundary in green) (retkikartta.fi, 2026, n.p.)



Figure 23: Map showing ditches ending at the border of Pyhä-Häkki (park boundary in dark blue and green) (retkikartta.fi, 2026b, n.p.)

Ongoing temporalities

In contrast to the temporal framings which are being gradually closed, I have also identified numerous instances of temporalities which are open, ongoing, and being brought into being. Typically, these forest temporalities are seen as accessible and I present them here as ‘opening’ because they are experienced, lived, and ongoing. Crucially, not all ongoing temporalities are desirable for everyone. For example, the ongoing openness of industrial temporalities of different kinds is not prioritised by the forest conservation movement. However, industrial traces can be found in many parts of the landscape, and industrial histories remain a valued part of local communities’ legacies, meaning that they continue to influence protected and conserved forests and the stories told about them today.

In what follows, I explore how ancient trees are memorialised and positioned as highly valued and charismatic, how a national park is imagined and gradually being brought into being, and how acts of prefiguration help people to experience possible forest futures in the present. Rather than treating these as sequential or mutually exclusive, the following sections show how these modes often overlap and coexist within the same conservation landscapes.

Charismatic ancients and thousand-year storytelling

Across the collected conservation-related materials, trees are framed as conduits for communicating deep histories and more-than-human timescales. At Pyhä-Häkki, in the public-facing materials such as the website and the in-situ information plaques, the old-growth nature of the site is emphasised, as is the importance of dead wood for biodiversity. Pine especially is a prominent inhabitant of my fieldwork setting - the boreal forests of Finland. Scots pine is the most common tree in Finnish forests (Finnish Statistical Yearbook of Forestry 2009), and the oldest tree in Finland is said to be a pine of about 800 years old, in Urho Kekkonen National Park (Koskinen, 2015). The reader might also recall the earlier vignette involving a pinecone.

These are perhaps familiar storylines for anybody who has visited a national park or read about conservation. Furthermore, given their visibility and centrality to the boreal forest landscape, it follows that trees are enlisted in techniques of expressing temporalities¹⁷. However, I am surprised by the ways in which at Pyhä-Häkki two pines are placed centre stage. These ancient pine trees (Figure 24) have been elevated to local celebrity status by being singled out and named - one as 'Vanha Iso Puu', or 'Old Big Tree', and the other as 'Uusi Iso Puu', or 'New Big Tree'. What makes one old, and one new? The simple answer is that one is dead and no longer growing, whilst the other is alive. The old big tree is said to have died in 2004, at 486 years old. The new big tree has been alive since 1641, making it 382 years old. Both of these charismatic ancients – made more 'charismatic' and unforgettable, I argue, by the information which is given about them and by the way in which they are put on display – are used by the managers of the national park to transport visitors back to a period of time when the trees first germinated from pine seeds.

Surrounded by wooden decking which protects its roots from walkers' feet and circled by a low wooden barrier, the 'New Big Tree' is clearly marked out as an individual apart from the other trees in the nearby forest. The 'Old Big Tree', meanwhile, is not physically protected by any barriers, but a nearby sign nevertheless provides information about its life and death.

17 It is worth noting that this occurs not only in conservation settings, but also within the forestry and biomass industry, where tree growth is often referred to as a marker of sustainability and renewal.



Figure 24: Views of the 'old big tree' at Pyhä-Häkki (2023)



Figure 25: The 'new big tree' and its information plaque (2021)

However, I am struck by the number of times the words ‘one thousand’, especially ‘one thousand years’ come up when studying materials associated with conservation and protected forests.

The reference to 1,000 years is used, for instance, by the artists Sanni Seppo and Ritva Kovalainen in their extensive photography of pine trees (Figure 26). The rough, swirled bark and different colours of the trees are interpreted as a material narration of 1,000 years of pine presence in the forest. A focus on varying textures and surfaces is used to communicate the physical outcomes of the passing of time for a tree, in the process arguably providing a more emotive and sensory experience than would be created by, for instance, counting the growth-rings in a tree trunk or analysing soil deposits and geology to communicate the same 1,000-year period.



Figure 26: The artwork ‘Männyn tuhat vuotta’ or ‘A thousand years of a pine’ by Sanni Seppo and Ritva Kovalainen (FMP, 2022)

The Management Plan for Björnlandet National Park meanwhile states that:

Björnlandet truly lives up to its name as the “1,000-Year-Old Forest.” The national park’s forests have a structure and fire history that offer a rare glimpse into what the forests might have looked like in northern Sweden’s interior before the advent of commercial forestry (Swedish EPA, 2017, p. 3).

Here, 1,000 years is more than simply a catchy slogan, and in contrast to the work by the photographers, this written account indicates some tension and contrasting boreal forest temporalities which come into friction with one another. The Swedish EPA’s brief mention of ‘commercial forestry’ as a force which has led to

the dwindling of ancient forests in Sweden echoes the sentiment expressed more strongly in a social media post by the Finnish Natural History Museum Luomus. On their Facebook page, Luomus states that not only can pines persist in the landscape for 1,000 years, but also that the ‘industrial use’ of trees acts to abruptly cut short this pine-span of pine-time:

“It is said that a pine tree grows for 200 years, lives for 200 years, and dies over the course of 200 years... If left undisturbed, a pine could influence its environment for as long as a thousand years. The pine is the most common tree in commercial forests, but the list of endangered species that depend on it is long. For industrial use, trees are felled while young, before they reach 100 years of age. As a result, the pine’s entire adulthood, old age, and death are missing from its contribution to the ecosystem.” (Luomus, 2025).

The use of other numbers of years and days is also often invoked in order to express expansive temporalities in line with ecological processes and sometimes in contrast to other kinds of temporalities which are not accepted within conservation settings. For instance, the Natural Heritage Foundation in their description of the ‘Kaukametsä’ forest which they purchased from my family write that:

...the forest has an “ephemeral atmosphere”. Brilliant green moss covers the ground, from which rise mighty spruce giants... On the hill to the south, magnificent, centuries-old shield pines grow. The entire area is not in the same natural state; there is a small patch of younger, planted forest near the northern border, but it is happily unmanaged and, alongside the old forest, is very capable of recovery (LPS, 2026, n.p.).

Echoing the narrative built around the charismatic trees seen at Pyhä-Häkki, the Foundation here also turn to ancient trees, in this case ‘centuries-old’ pines, privileging through narrative description the ongoing process of trees ageing in the forest. The Foundation’s framing takes care to point out that the younger forest which can be found within the same area is not as ‘natural’ as the rest of the forest. Similarly to the accounts from the Swedish EPA and Luomus, reference is thus made to the fact that threats exist and have long existed to the existence of older forests, as temporalities of forest logging for different uses intersect with the much longer temporalities of pines. In contrast with the narratives sometimes told by forest owners, ‘forgetting’ a forest is therefore framed as a positive rather than

a negative phenomenon, leading to the development of untouched and deeply historic forest stands:

As a whole, Kaukametsä is a rare, forgotten and freely growing forest, whose roots literally go back hundreds of years – to a time when the heartlands of Finland were largely unconquered. (LPS, 2026, n.p.)

To have been forgotten here means to have been left to grow freely, without interruption, rather than carrying any negative connotations of neglect or disrespect. This statement also highlights the extent to which ancient forests and old trees in conservation areas are connected not only with biodiversity values, as may be assumed, but are also imagined to connect with a time in history when landscapes, in this case the Finnish ‘heartlands’, were ‘unconquered’ by the reach of human activities into the forest. The Finnish Natural Heritage Foundation thus relies upon the ‘hundreds of years’ framing to emphasise the standing forest and tree roots as temporal messengers; messengers from a different time in history which today we may find hard to imagine were it not for the ongoing growth of the ancient forest.

As a whole, the Swedish EPA, Luomus and the Natural Heritage Foundation all place the industrial temporalities of logging and expanding biomass-use in direct opposition with the ‘1,000 years’ (or hundreds of years, or centuries-old) temporalities of ‘natural’ pine growth, life and death. All three actors also rely upon the visible and touchable material qualities of ancient pines and other trees such as spruce in order to tell stories about forest history.

Finally, and departing from ‘years’, the wording ‘1,000 days’ is used by mycologist Alison Pouliot in the narrative which she tells about her time in the forest researching fungi (2016). Although of course this is different to ‘1,000 years’, I suggest that the technique for navigating and expressing temporalities here is the same. Trees are in conservation settings associated with continuity of a degree which can be measured in years, whereas the more rapid changeability of fungal bodies in the forest is more easily associated with the span of days – thousands of them¹⁸. Whether 1,000 years or 1,000 days, conservation-oriented perspectives and those focussed on more-than-human relations grasp at what are seen as long

¹⁸ See the next empirical chapter for an extensive discussion on the role of forest fungi in expressing and shaping boreal forest temporalities.

timescales going beyond usual human thinking, whilst still continuing to describe those timescales in ways understood by most people: years and days.

In the examples above, these actors refer to time-scales beyond the duration of human lives in order to emphasise the value of ongoing life and also decay in a forest site. By referring to ‘one thousand years’ or ‘one thousand days’, conservation representatives and biodiversity researchers prompt the imagination of change and processes in the forest beyond the human norm. This technique is used, I argue, to emphasise ongoing life and also decay at a forest site within which ongoing processes far outstrip the duration of human lives.

In settings not shaped by conservation and preservation, it can be argued that pines and other trees are seen as a common and even unremarkable, if crucial, feature of the boreal forest. On the other hand, my analysis shows that within conservation settings trees, and especially pines, are transformed through processes of memorialisation and temporal storytelling into key protagonists in the privileging of long, expansive and explicitly more-than-human timescales.

Protected forest landscape imaginaries

The imaginaries constructed within and in connection to conservation practices do not only rely on human desires, even if human desires are undoubtedly shown to be the impetus. Rather, these imaginaries strongly depend on the behaviours and different temporal manifestations of nonhumans, as well as simply on the existence of the nonhumans themselves in a particular location, as is shown below.

Just as heritage sites or historical re-enactments enable visitors to ‘experience the past’, so, I suggest, are many sites designed to enable people to experience possible futures. The act of conservation is just as future-oriented as it is to do with the past. Crucially, current experience as it is performed in the present moment plays a strong role in the formation of experiences of forest future(s). As Hölling puts it, “linking past and future elicits the rhetoric of conservation that asserts its ability to enter the past by manipulating the objects’ condition in the present” (2017, p. 1). Hölling is writing about art conservation, but the idea that something can be manipulated today in order to ‘enter’ the past, or indeed the future, is revealing when considering the national park in particular. This, then, is where we move to

consider the forest landscape imaginaries which are shaped and upheld through temporal understandings and expressions within national parks and forest conservation areas.

Prefiguration

Although futures are not always explicitly mentioned in the data, I read the practices and discourses unfolding in and around the spaces and places of boreal forest conservation, especially national parks but also other locations, as prefigurative. This means that through experiences in the present moment, futures are brought into being in the here and now. Actors in relation to most if not all of the sites with which I have engaged during my consideration of conservation have displayed, if not through spoken or written words, then through performative expressions, an orientation towards forest futures. Prefigurative politics can be understood as

a self-conscious effort to direct energy into practising in the present the future that is sought. Finally [...] to qualify as prefigurative politics, a set of practices must involve issues of power, conflict, and transformation. (Jeffrey & Dyson, 2021, p. 644).

I suggest that the ways in which boreal forest temporalities are done in and by national parks and conservation initiatives is often centred around prefiguration and enabling an experience of possible futures in the present moment. Conservation practices are a form of active shaping of what people can experience and consider possible. As people walk around the national park or view images of it, they can feel and imagine what all forests could possibly be like in the future, which in a sense is already here with us in the present.

At the Finnish Forest Museum, my interlocutors described the workshops which they have run where participants were encouraged to imagine the forests of the future. An interesting observation which one interviewee provided is that if the date which is selected for those future forests is not far enough in the future, people have trouble imagining that anything much could possibly have changed. As a result, the ability to think creatively and imaginatively about the future is dampened by the awareness of a soon-upcoming date in which life will surely still

be very similar to how it is now. On the other hand, very distant dates can also have the effect of hampering the ability to imagine:

Leila: If it's nearby, they think that everything in a way, everything will continue as before, but maybe a bit better, or a bit worse. If it's too far away then somehow it's very hard to keep it in mind, and...

Katja: "It doesn't concern me!"

Leila: Yes, yes, and what does it even mean, if it's something entirely different.

While 'nearby' dates and timeframes can seem too close to invite innovation and free thinking outside the box, distant dates and timeframes become too abstract and divorced from each person's lived reality; even our grandchildren and great-grandchildren will not experience a date 500 years in the future. As a result, there is difficulty in even imagining what the world could look like then.

Physical interventions in national parks and nature reserves



Figure 27: Boardwalk at the national park (2021)

Physical interventions connect with the notion of prefiguration, since physical alterations and design of the landscape can, I have observed, ensure that a specific future can be ‘tested’ and even realised and made possible in-situ. Rather than pushing the future into a realm which is totally untouchable and which can only be imagined intangibly and through stories and narratives, the actions of forest owners and conservation authorities make particular forest futures not only hoped for and dreamed of, but possible to touch and experience in an embodied manner in the here and now.

At Pyhä-Häkki, which is characterised not only by forest but also by wetlands and areas in the forest which would be boggy and difficult to walk through, boardwalks have been laid down in order to facilitate easier movement across the area, and in order to prevent visitors from wandering into ecologically sensitive areas. These boardwalks are not only spatial infrastructures: they can be read as shaping the temporal experience which each visitor has of the site, by speeding up the body’s progress and ‘displaying’ the surrounding landscape like a movie reel passing by with ease as the visitor walks along the boardwalk¹⁹. Whilst walking these boardwalks, my impression was not only of observing the ancient trees and decaying wood, but also of being in touch with a possible future for this site.

Although ecologically-motivated and done in response to the material realities of the site today, management decisions at the national park also act to distinguish between desirable and undesirable futures.

¹⁹ I note as an aside that a similar effect is given by the film shown on the wall of the tunnel opposite the platform at Malmö central station; although the setting is very different, the film taken from a moving train provides waiting travellers with a snapshot of passing landscapes, momentarily transporting them to a different moment and place. Of course, in the case of Pyhä-Häkki, however, the moving visitor creates rather than simply views the ‘film’!



Figure 28: Musicians prepare to perform on the stage with Hiitolanjoki (Hiitola river) behind them

At the ‘Haarikon Taika’ or ‘Magic of the Haarikko’ event organised by the Finnish Association for Nature Conservation, organisation representative Kosti stands on the wooden stage. Behind him, the Hiitola river, green-brown and full, flows calmly through the forest from west to east, eventually emptying into Lake Ladoga in Russia. I note the picturesque surroundings and how they complement the story which Kosti goes on to tell. Kosti speaks into a microphone to address the audience, which includes me, assembled on the tiered seating. He explains that

The Haarikko and Hiitola river area is familiar from films as a region of forests and lakes. It is Southern Savo’s unique gem of nature - national park material.

Here, and in the Haarikko, there are flying squirrels. The southernmost Siberian jays in Finland live there.

The area is also important for the Fennoscandian green belt, and Haarikko has been proposed as a national park. And I really hope that I will sometime manage to move in that kind of place.

Here the Haarikko area is presented as possessing the qualities necessary for national park status. The emphasis on specific species in Kosti's introduction, along with stories told on the local conservation group website, present the area as already embodying the values which are required, rather than suggesting that there is more work which needs to be done in order for the forest to become an item of national conservation interest.

Of particular note is Kosti's mention of the Siberian jay. This is a bird species, *Perisoreus infaustus*, typically associated with more northerly regions and old-growth forests, because of the types of ecosystems which it is known to require in order to thrive. The Siberian jay is held up as a symbol of untouched nature and biodiversity, and by mentioning this bird in his introduction it is my perception that Kosti is signalling the extent to which the Haarikko currently represents the southernmost 'frontline' of pristine old-growth forest. That the Siberian jay has already made the Haarikko its home suggests, at least to the nature association and local volunteers, that the Haarikko is already, in all but name, providing the natural landscapes and services of a national park.

Figure 29 shows a screenshot displaying a view of the landscape in the same area of south-eastern Finland where the new national park is proposed. Analysis of the website materials and of presentations at the 'Haarikon Taika' event in combination show that this currently-existing, living forested landscape is being imagined as a national park not only proposed, but already in many ways existing in people's minds.

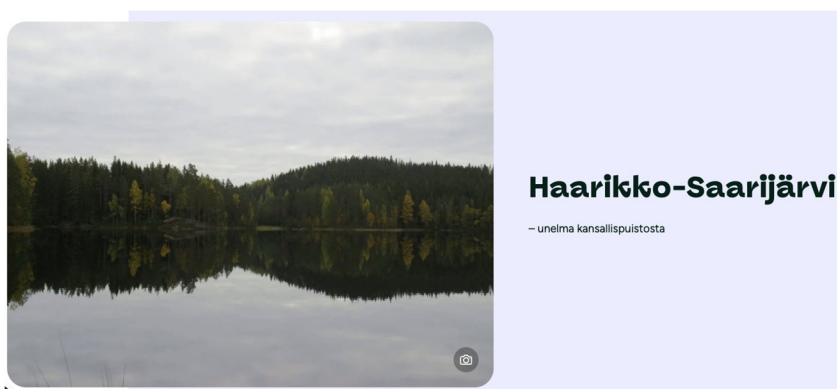


Figure 29: Screenshot from the South Karelia page of the Finnish Association for Nature Conservation with the subtitle, 'the dream of a national park' (SLL, 2026)

This imaginary is furthermore complementary to the imaginary of forests as places of urgency and hope in the context of climate change and competing demands, which is explored in the next chapter. However, whilst that imaginary is mainly fed and upheld via individual embodied interactions and is not always outwardly or visibly expressed, being carried in personal thoughts and reflections, the imaginary of a future national park is more strongly shaped through public narratives and is spoken about in open forums. Storytelling about the possible future national park unfolds through collective gatherings and exhibitions such as the one which I attended outside Simpele. The ‘dream of a national park’ is reiterated and strengthened through public statements, appearing as written stories presented on webpages and in magazines.

Forest landscape legacies

The theme of legacies has already existed in the background of this chapter, from the legacies carried by the charismatic old trees to the legacies of past land-use which linger. Here I turn in greater depth to the legacies which are acknowledged, challenged and remade within the context of forest protection and conservation measures. As we saw above, efforts are being made to prompt the imagination of the protected and conserved forests of the future, as well as the experience, in the present moment, of what those forests could be like. Imaginaries always retain a degree of uncertainty; the discussions about the Haarikko national park focus on making the case for the creation of the national park, but it is unclear whether it will be officially recognised. In contrast, legacies are already here. They are comprised of temporalities which intersect in already-present materials and spaces, or in other words, legacies in conservation contexts are embedded in existing forest materialities and do not require further legitimisation or acknowledgement to actually be brought into being. However, some legacies are nevertheless more highly valued than others.

When researching legacies, as in the previous parts of this chapter I pay close attention to multispecies landscapes and the physical phenomena which can be followed across these landscapes. I argue that whilst national park managers and land-use planners also consider smaller-scale, individual and embodied rhythms and processes, and whilst these play a crucial role in which legacies come to be

acknowledged whilst others are challenges, as a whole the focus is on the interconnectivity or intersection of temporal processes across the landscape as a whole.

Dwindling legacies

Some of my interlocutors indicated that forest legacies of practical skills and knowledge relating to the forest are dwindling, but still cling on. The ongoing loss of forest legacies in the form of old trees and other markers of age is, however, perhaps more keenly felt and perceived as much more difficult to prevent. Noora, a representative from the Finnish Association for Nature Conservation tells me that

In Finland there are lots of young forests, lots of very heavily managed forests. In Finland, forest management has been quite extensive. So my perspective is that forest nature is doing quite badly in Finland.

Another instance of reference to the age of the forest remains with me. This occurred at Hiitolanjoki, Simpele, where I was attending the forest conservation event centered on the protection of local forests and the possible creation of a new national park. I am sitting in the car with Kosti. As we wait for the rain to stop before going to the event, Kosti tells me that “just across the border on the Russian side, the lichen in the forest grows so deep, it’s halfway up your legs!” (note in fieldwork notebook, 2023). He states that he wishes it would be possible for there to be lichen like this on the Finnish side, too. However, the tone which I hear in his voice and the context of this comment in a conversation which mainly focussed on the logging practices of big forestry industry companies indicates that he does not believe that current management practices can allow for this form of material legacy in the Finnish forest.

Returning to Noora, she tells me that her family has a history of working in the forest, and in contrast to herself, her father and grandfather were both employed in the forestry industry. She explains that

My situation is that my father has been working in forest areas, and my grandad also has been working in the forest. So there’s a personal connection there. I myself also take care of a forest. So I think I have received this work as a kind of inheritance, even though now I’m working on it from a slightly different angle.

As a conservation organisation employee, Noora presents herself as occupying a different position when it comes to how her family has historically connected with the forest. The ‘closing temporalities’ here concern not only the fact that the forests are increasingly full of young rather than old trees, which as a conservation employee she bemoans, but also that some families are moving away from industrial forest work and industrial forestry rhythms. These are no longer part of Noora’s life, even though she frames her own forest work as connected to these ways of being via the intergenerational inheritance of forest work more broadly. She goes on to say that

But I have a feeling that in Finland the idea of inheriting forests or forest knowledge hasn’t really continued.

It is unclear what kind of ‘forest knowledge’ Noora is thinking of. Nevertheless, her account demonstrates that although she works as a conservation organisation representative ‘taking care’ of the forest, neither this nor other forms of forest knowledge are being carried forward.

Back at the Finnish Forest Museum, Riikka shares with me about the conversations which she has been having with forest owners, in which the theme of dwindling and disappearing legacies comes through:

I was just at a meeting where we were talking about the ‘quiet knowledge’ of forest ownership, and a forest expert who works with forest owners got animated and stated that not all of the quiet knowledge of forest ownership... that there’s a lot in there which should actually stay quiet. As in, not all of the traditions are seen as good, and it shouldn’t be necessary to move all of them forward.

Here it is clear that some legacies and ‘traditions’ are intentionally being sidelined and forgotten, although the precise reasons for this are unexplained. ‘Quiet’ knowledge which is held by individuals naturally comes with a range of individual perspectives on forest management and protection which do not always appeal to everyone. Riikka goes on:

And we talked about the silent voices of the forest, and it’s the young coming future generation which is silenced, and in a way the older generation makes statements and dictates and measures and opposes things for the next generation. And then the next generation wants to be heard, too, and want to be able to do things following their own values.

From this insight it becomes clear that some of the drive to sideline some forest legacies and knowledges comes about due to generational differences, and that the extent to which certain practices are allowed to continue or not may be decided by ‘the older generation’ which ‘dictates’ how things should be. As such, legacies in the context of forest management decisions and ways of valuing the forest are upheld and challenged via pre-existing and developing generational power structures.

The example of fires

Fire is increasing with climate change, and presents a perceived threat to the forest conservation movement. At Pyhä-Häkki, perhaps the most striking and overt statement of the closing of a particular forest temporality relates to the foreclosing of forest futures, rather than pasts, involving forest fires. Signage in the park (Figure 30) indicates that “since the 1500s some 44 forest fires have raged through Pyhä-Häkki”. Despite a roughly forty- to fifty-year interval on average between the fires recorded in the growth rings of an ancient tree (Figure 31, showing the cross-section of the tree mounted on a display), according to another display board (not pictured), the most recent fire was now “as long ago as 1921”. Fires are now rendered a thing of the past by direct measures taken to quell fires as soon as they start.

Although the landscape is acknowledged as “shaped by forest fires” (Figure 30), these landscapes will no longer be subject to the forces of fire in the future, whilst the physical evidence of fires is likely to remain for some time as “blackened scars on the lower trunks of some older pines” (Figure 30). As I walked around Pyhä-Häkki, I saw a few of what seemed to be fire-scars. There is therefore a disjuncture between the landscape which a visitor experiences now, and the more spruce-dominated and fire-free landscape which is likely to characterise Pyhä-Häkki in the future as even traces of previous fires disappear. Read in temporal terms, the suppression of fire constitutes an active intervention into forest rhythms, transforming fire from a regenerative force into a future that must not be allowed to unfold but whose once-possible nature remains in the form of physical reminders – burned trees and stunted tree-rings.

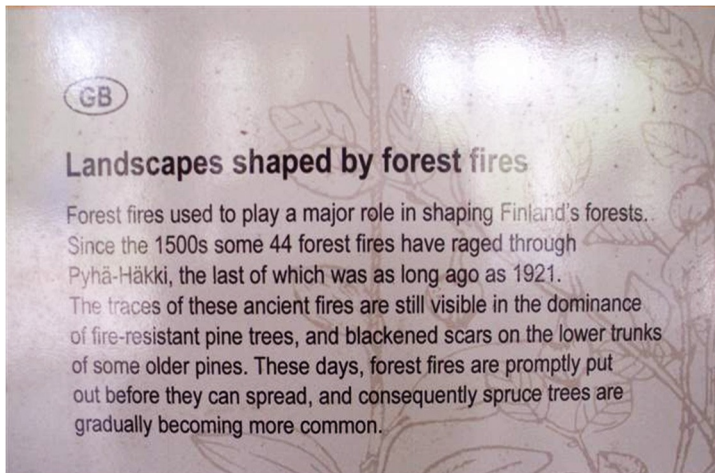


Figure 30: notice board about fire at the national park (2023).



Figure 31: A display board at Pyhä-Häkki shows a cross-section through an ancient pine, with each setback in growth revealing forest fires (2023)



Figure 32: At the national park, a dead, fire-blackened pine trunk is seen in the distance (2021)

Conclusions

This chapter has foregrounded the ever-changing nature of the boreal forest, including landscapes where conservation practices are playing out even if they are not official national parks or nature conservation locations. The chapter shows that conservation practices and places are imbued with temporal politics in the form of the negotiation between contrasting modes of managing and accessing the forest, and how multiple temporalities are actively assembled through physical experiences and material arrangements, stories, and imaginations. As I have shown, conservation landscapes can be read for traces of histories, legacies, and futures still coming into being, including in places not always publicly framed as sites of conservation but where acts of protection, preservation, and restoration nevertheless take place. Forest conservation-related practices and discourses are more-than-human and hybrid (involving a diverse constellation of beings, materials and things which move beyond binaries and cannot be easily labelled and categorised); active rather than passive in their engagement with the forest – rarely simply ‘leaving the forest be’ whilst nevertheless contesting wider societal narratives about decay and rot; and, in many cases, prefigurative and enabling the experience of possible boreal forest futures in the present moment rather than only talking about and imagining the future. Over all, conservation landscapes and the forests within them can be understood as always being in-process.

The privileged and neglected temporalities of conservation

Specifically, the chapter has revealed three core findings relating to the ways in which temporalities are privileged or conversely neglected or sidelined. Firstly, the chapter has shown that although a visit to a national park or nature reserve is shaped by an individual's own bodily abilities, preferences and perspectives, the experience is nevertheless curated and guided, and individuals are encouraged to perceive the forest according to particular narratives and stories. These narratives are typically communicated via information plaques and signs in-situ at the forest site, as well as through digital media. In this sense, time spent at the national park bears similarities to a visit to the forest museum, in that one is encouraged to view the landscape in a certain way, with the gaze being directed, for instance, towards the most valued and oldest trees. At the same time, there may also be more subtle and inherently more-than-human agencies at play which again, as in the case of the museum, it can be difficult for national park managers to control entirely.

Secondly, this chapter reveals that although the past and the future are key temporal framings which feed into how and why conservation is done, their relationship to one another is less clear-cut than it may seem at first glance. In short, both the past and the future act in the present, and their convergence in the present is used as a tool to shape the future. Although conservation is often framed as an act of preservation and safekeeping, multiple interventions are made which aim to cut short certain rhythms or which allow particular framings to gradually fade. Conservation emerges here not as the absence of intervention, but as an active temporal practice in which particular forest rhythms and stories are stabilised whilst others are curtailed.

Finally, and to build on the previous point, although forest pasts remain a key concern of conservation initiatives, and although attempts are made to move away from certain ecological states, they are not relegated purely to 'the past'. In fact, markers of age and 'the ancient' are highly valued by conservation groups, and are key components of imagining and even experiencing possible forest futures. The material traces of forest histories and more-than-human lives may be found in a number of conservation settings where they are memorialised and protected even as their physical forms gradually disappear. Conservation therefore strives to give life to that which may no longer be alive, and to carry the idea of that life forward as prefiguration of new-yet-ancient forests for the future. I have shown how

forested places subjected to conservation measures enable embodied and experienced-now futures. Forest futures are prefigured in the present moment.

Forest imaginaries in the conservation context

Imaginaries in the setting of forest conservation specifically, rather than in experiences of the forest more generally, are here shown to be largely future-oriented, such as in the case of the creation of a new national park. Conservation-shaped imaginaries also act to prefigure certain forest futures, which means that they bring the future into the present through physical interventions in the forest landscape, enabling visitors to physically experience what kinds of forest landscapes could be possible in the future. The ancient trees which I mention in the section on ‘opening temporalities’ can also be seen as part of the forest imaginaries which are upheld and privileged in conservation settings – temporalities of thousands of years, of timescales beyond usual human lifespans. These temporalities and the imaginaries which they feed into are communicated through very tangible means on the one hand – through growing biomass, the direction provided by pathways and boardwalks, and the physical elements of the forest surrounding any visitor. However, they are crucially also held together by emotional, emotive narratives about ‘magnificent’ trees and a sense of grandeur which seemingly can only be accessed through interactions with ancient beings.

As outlined in Chapter 1 and Chapter 2, Western socio-political and philosophical conceptions see time as linear and dependably connected to material things (Bastian, 2009). Re-thinking time via plants and other nonhuman and more-than-human actors has normative and ethical implications tied to the complication of temporal and spatial scales. When left to their own devices, pines and other trees in the forest move and develop at different rates, and shift through multiple forms. These shifting forms are instrumentalised within conservation initiatives and settings in order to tell stories and to build up imaginaries about the forest as an ancient place.

Conserving legacies

By paying attention to the materials and textures of the forest landscape, this chapter has shown that legacies are entangled within growing and living things in

conservation spaces. Legacies are acknowledged and strengthened through the intentional setting-aside, preservation and memorialization of certain physical beings and materials by national park authorities. However, and in contrast, in some locations, for instance forests which are being shifted from industrial and extractive purposes to a conservation focus, the forests' prior history is being allowed to fade from view, and its material legacies of industrial rhythms are fading from our perception. In addition, we received a look in this chapter at the generational dynamics which contribute to dwindling legacies and knowledge being sidelined. Although as we saw in Chapter 4 the forest museum is working to diversify and expand the range of ways in which forests are viewed, in Chapter 5 it has become apparent that forest owners, including older generations, hold the power and means to stick to tried and tested ways of managing the forest.

Alongside human actors such as governments, national park authorities and visitors to national parks and nature reserves, I have in this chapter highlighted the pine as a key actor which is caught up in relations with many others and which acts to co-constitute boreal forest conservation pasts, presents and futures. In many cases, the pine can be seen as a carrier of forest legacies. I have shown how the pine is a symbol and carrier of the long history of the forest. The pine is enlisted within conservation measures as something which on the one hand is 'protected', but which when thinking about futures also carries a kind of 'ghostly absence' in the present moment: since at some sites such as Pyhä-Häkki the future forests will be less and less characterised by forest fires, then we can assume that pines will slowly become less prominent and will be intermingled with other less fire-resistant trees such as spruce. Furthermore, as powerfully illustrated through photography and artistic practices which draw attention to ancient pines, truly ancient pine trees are no longer common in Finland and Sweden. These old pine trees are much fewer in number than the young pines planted for industrial uses.

Methodologically, this chapter has expanded on the multi-method approach introduced in the first empirical chapter. I have traced how boreal forest temporalities are emerge and bring meaning to engagements with the forest via official reports and communications relating to conservation, through embodied in-the-moment experiences when walking in national parks and other forested

landscapes; through analysis of information panels in national parks and nature reserves; through considering other elements of the physical and aesthetic design of national parks and nature reserves such as pathways and the removal (or not) of fallen trees; and through reference to online materials and media.

This chapter is a contribution to literatures on the politics of conservation, as well as to the study of temporalities and the temporally-constitutive nature of more-than-human relations, which run throughout the thesis. It raises questions about how more critical awareness of the politics of time and temporality could be applied in conservation as well as in forest management scenarios more generally. Just as decolonial perspectives can counter dominant practices in conservation (Corbera et al., 2024), so, too, I argue, can critical engagements with temporalities. Conservation is an inherently temporal practice, which at its core is focussed on protecting, preserving and restoring certain ‘natural’ things which are deemed valuable. Acknowledging and researching the temporal politics of conservation could prompt different kinds of conservation practices. For instance, the recognition of the long natural lifespans (and ‘deathspans’) of pine could encourage the adoption of alternative forest management methods which do not focus only on obvious growth but which consider the presence of dead and decaying matter as a marker of a well-managed forest. In contrast to many studies that have already looked at the ways in which conservation (and particularly ‘protection’) is a past-oriented and history-making practice, I have explored the ways in which multiple temporalities and more-than-human agencies come together in the present moment in contexts of conservation. This chapter suggests that making temporal politics explicit could enable conservation and forest management practices that more consciously acknowledge multispecies lifespans, deathspans, and rhythms, rather than privileging growth-oriented narratives and temporalities.

Finally, even though my focus here has not been on explanation or locating causes, understanding how temporalities are instrumentalised and acknowledged within conservation practices can also be an important element of explaining and constructively critiquing decisions made by forest owners, or the choices made by national park managers. Such insights can additionally provide these same actors with self-reflective, constructive insights into their own activities, leading to more informed decision-making and management of officially protected and unprotected areas alike.

Chapter 6. Fungal temporalities and embodied relations



Figure 33: At Sanginjoki nature reserve (2023)

It was an extremely wet day. Rain dripped down everything – tree trunks, leaves, the backs of our coats and even, somehow, down our sleeves and into our boots. In the fogginess of thick rain, blurred figures meandered in and out of the trees, disappearing in and out of sight. Every now and then, there was a brief shout as someone discovered something interesting. We’d given up trying to stay dry by now. Our wet fingers carefully lifted slippery fungal forms from the moss, and prised mushroom stems from the earth, before slipping them into bags, buckets and baskets. People occasionally beckoned to others – “Look at this! What is it?” – and small clusters formed in the forest as we leaned in to inspect the discoveries, either in baskets or still in the ground, from various

angles. The field trip into the forest was strongly attended. After spending time indoors discussing fungi and the environments in which they grow, everyone was keen to get outside, despite the pouring rain. Some people were familiar with foraging for edible mushrooms, some preferred to collect fungi for identification and educational purposes, some were in both camps, and for others, this was their first time entering the forest in search of mushrooms. (At Sanginjoki nature reserve, August 2023)

This final empirical chapter presents fungi as temporal actors and explores the boreal forest temporalities which become known through human–fungal and multispecies relations. Focusing on wild mushroom foraging and fungal lives, I show how fungi and those who interact with them make time tangible — materially, sensorially, and politically — as temporalities, and how these temporalities of fungi and foraging are intersecting, space-connecting and can be traced across forest, domestic, and online spaces. I foreground fungi as place- and temporality-shaping actors with relational agency and change-making abilities in their own right. I also investigate how human expressions of identity, belonging and connection to place are mediated through and with forest fungi. This means that on the one hand the chapter explores how boreal forest temporalities emerge through the existence and behaviours of wild fungi in relation to their environment and surroundings, and through peoples’ attention to those behaviours, but not necessarily always within the context of foraging. On the other hand, the chapter explores how temporalities are shaped by wild fungi and human foragers together through cultures of forest mushroom foraging and the consumption of wild forest fungi. Foraging is characterised, across the majority of the accounts provided to me and in the narratives which I have identified, by human bodies meeting other-than-human bodies and material elements in the environment. Foraging is also, secondly and more abstractly, a bringing-together. It is a guided or negotiated meeting of things, whether similar or different to one another, and whether thought of as alive or dead, sentient or non-sentient, and everything in-between. In this sense, foraging is constructed as a temporal practice shaped via the relations between material things and intangible and immaterial things such as observations, feelings, memories and stories.

In the discussion which follows, I draw on data collected through interviews and survey responses by members of the Finnish Mycological Society, as well as those

who are not members but who regularly engage in mushroom foraging or, in some cases, other forms of engagement with wild forest fungi. I also bring in observations of online materials from the websites of mycological societies, as well as referring to mentions of fungi in the publications *Sienilehti* and *Luonto*, and the use of fungi in artistic practices.

I am deeply indebted in the initial conception of this chapter to the organisers of the ‘Mushroom Methods’ workshop which I attended in Oulu, Finland in August 2023. In particular, the workshop contributed to how I consider fungi as a portal to knowing the forest differently. The following questions from Bankovska et al. (2023) have guided me in this research: “Can we do research not on, but with mushrooms? Can we learn from mushrooms, not just about mushrooms?”, “How does mushroom-oriented research and social activity link with climate change, biodiversity loss, environmental toxicity, and other challenges related to the ‘Anthropocene?’” and “How do human-fungi relations matter to different groups of people and in different places? In what ways are fungi relevant to Finland, the Nordics, and the wider world?”

In this chapter, I reveal the ways in which foraging cultures are political and create and enlist different temporalities, these temporalities themselves imbued with a layer of political meaning. For instance, as we will see, foraging for wild fungi can be a conscious choice which is made in order to counter capitalist, commercial and/or apparently ‘less natural’ infrastructures and systems. At the same time, many foraging practices navigate through and draw from the material and temporal realities of the industrial forestry landscape in which they take place, and as such are in contact with wider patterns of capital, accumulation and resource extraction. Many if not all foraging practices – and the growth and lives of the fungi themselves – occur in some form of dialogue with regional, national and even international systems. Mushroom-picking furthermore can be a form of self-expression which connects to personal, family, local and national identity and histories. Foraging, preparing foraged fungi for consumption, and sharing knowledge about these things enlists the senses of smell, touch, sight and hearing, as well as lived experiences, memories and hopes. As such, these are subjective and individual as well collective activities, and they can exclude some people just as much as they draw people with shared feelings and experiences together.

The geographies and places with which I engage in this chapter span the Oulu workshop already mentioned above, and specifically the Sanginjoki nature reserve

which we visited; several locations in the forest in central Finland; forests in and near to Punkaharju (my visits to the Forest Museum were not without a fungal component); the local foraging patches of people across Sweden, Finland, and to some extent Russia; and the homes and kitchens of these people and others.

I have chosen not to write about farmed, commercially-produced fungi here. To do so would be out of joint with my intention to focus on boreal forest temporalities; farmed fungi are usually disconnected from forest ecosystems and from the tree roots which some species of fungi must literally be able to touch in order to thrive²⁰. This means that species which rely on mycorrhizal relations are difficult to cultivate away from the forest. Not all farmed fungi would naturally occur in forest ecosystems, and of those that would, only a handful of species could conceivably be found in the boreal. The ways in which some farmed fungi are grown may sometimes attempt to imitate forest conditions, but the fungi remain isolated from the webs of relations which shape boreal forest temporalities. The temporalities unfolding within commercial mushroom factories are thus not specifically boreal forest temporalities, reliant as they are on man-made technologies, temperature regulation and built shelters designed to ensure the year-round production of sporing bodies.

The chapter continues firstly with a focus on the lives and temporalities of fungi themselves. I show how fungi shape and respond to boreal forest temporalities; they are temporal actors. Next, I move to focus on fungal foraging cultures, which include foraging practices and the organisations which encourage engagement with forest fungi, and explore how through these practices and informal organisations and communities, certain boreal forest temporalities are privileged and sidelined. The third section builds upon some of the themes introduced in the first two sections in order to dig more deeply into the forest imaginaries which are explicitly shaped through interactions with fungi and through fungal behaviours. The penultimate section explores how fungi contribute to forest legacies, and how forest legacies are acknowledged, challenged and remade with and by fungi. I show that the legacies revealed via fungal engagements are sometimes unexpected or unwanted as well as highly valued and treasured, if they

20 There are some exceptions to this. Many mushrooms depend upon mycorrhizal relations with tree roots for an exchange of nutrients, and there are examples of successful truffle cultivation, for instance, where fungi have been nurtured alongside select tree species so as to provide the beneficial relations which would usually arise 'in the wild'

are even known about at all. As a whole, the chapter draws upon affective and embodied observations of and encounters with fungi, conversations with foragers, and the analysis of online and printed written and visual materials. Through this patchwork of approaches I explore how the temporalities of forest fungi and the temporalities produced and expressed through human engagements with those forest fungi shape, challenge and bring meaning to encounters with the boreal forest.

Fungi as temporal actors

Fungi are neither plants nor animals. Fungi occupy their own realm, the kingdom Fungi, which is set apart from animals, plants, prokaryotes and protists, although debate is ongoing relating to the boundaries between some fungi and some protists. In order to appreciate fungi not as static beings and not only as what they are named but as moving, changing, processual and coordinated, we can think about ‘fungal bodies’ (Garson, 2026). This expands on conversations in critical plant studies (for example, Lawrence, 2022) that unsettle the idea of bodies as only human or mammal. Extending the idea of the body to encompass many multispecies and multimatter things, from fungi to granite, I suggest, is an important part of acknowledging the political agency and material intentionality of the more-than-human. This understanding leads to conceiving of embodiment as something which is done and experienced not only by humans and not only by invertebrates, but by a range of things and beings, including fungi. Temporalities are inscribed into and expressed through foragers’, mushrooms’ and others’ bodies.

What is it to be a fungus? Anthropologist Tim Ingold writes that instead of thinking of an animal as something which is to be classified and put into a fixed category²¹, we can consider it as “a going on: not as a living thing of a certain kind but as the manifestation of a process of becoming, of continuous creation, or

21 In contrast to Ingold’s statement, I argue that categorisation to the extent of naming something (such as different species of fungi, which I refer to by name throughout my interactions with them and with foragers) does not obscure those beings’ lifeworlds or behaviours. I name fungi as a way of becoming familiar with them, and acknowledge that they can still act and create change in the world regardless of the categories which we might place them into.

simply of being alive” (Ingold, 2021, p. 174). The work that fungi do as temporal actors is directly connected to their constant and incessant becoming – they are ‘goings on’. Fungi are at all times entangled in numerous temporal exploits, from nutrient-cycling to reacting to a changing season or climate.

Gently lifting up the moss on the forest floor to see what is underneath can reveal the hitherto hidden part of a fungal body – the mycelium. Images of mycelium can be seen below in screenshots from the film which I created when growing an oyster mushroom fungus (Figure 34). This mycelium, rather than what we know as mushrooms, comprises the main mass of mycorrhizal fungi²². The mycelium is a network of hyphae. Hyphae, the building-blocks of most fungal bodies, are delicate single-cell-wide filaments which spread through soils and organic matter, and which are as much part of the fungus as the mushrooms which we see above ground (Sheldrake, 2021). The mycelia of mycorrhizal fungi interact in mutual exchange with the roots of trees and other vascular plants (Lindahl & Tunlid, 2015) those of saprophytic or saprobic fungi break down wood and cellulose, and those of parasitic fungi act to steal nutrients from their living hosts (Alekkett & Boddy, 2021). The fungus as a whole can thus be thought of as a “body without a body plan”, which creeps through soils and biomass (Sheldrake, 2021, p. 55).

Just as the final physical stage of the reproductive cycle of a tree or plant is called a ‘fruiting body’, so we can think of mushrooms as ‘sporing bodies’ or sporebodies (Pouliot, 2016), named after the spores which they disperse into the air. In the absence of other language to describe what it is that a fungus possesses - the combination of mycelium, the emerging ‘pins’ of mushrooms, and the mushrooms or sporing bodies themselves – the concept of the ‘body’ enables an awareness of the physical reach of the fungus (and other more-than-human actors), and its connectedness with the world around it, whilst retaining a sense of it as a coherent whole. As Alekkett and Boddy (2021) have argued, fungi can and should be studied through a behavioural ecology lens which acknowledges their many ways of being in the world, from communicating and engaging in mutually-beneficial exchanges, to reacting to the presence of chemicals. In the

22 Mycorrhizal fungi are divided into two types. First, ectomycorrhizal, where the hyphae of the mycelium envelop tree root tips in a mantle or sheath. Second, endomycorrhizal, where the hyphae penetrate the tree roots (Reddy & Saravanan, 2013). In either case, water and nutrients are transferred from the fungus to the tree, and carbohydrates from the tree to the fungus (Sheldrake, 2021).

film which I created, and in the process of interacting with the oyster mushroom fungus, I became acquainted with the fungus as a cohesive body (see Figure 34). This is in contrast to the perception of fungi as materially or temporally fragmented beings. Being able to observe the mycelium, I found that even when no 'sporing bodies' (mushrooms) are visible, the fungus itself persists as a reactive living thing.



Figure 34: Two stills from the film²³

²³ The film, titled 'From Food to Strange Friend', can be viewed at:
<https://vimeo.com/1113854816>

Noticing polypores and wood-decayers

About 5300 years ago, a birch polypore fungus (*Piptoporus betulinus*), possibly used as an antiseptic, was carried by the ‘iceman’ Ötzi, whose body much more recently emerged from a melting alpine glacier (Peintner et al., 2000). Ötzi noticed the fungus thousands of years ago, and polypores of different kinds unexpectedly arose several times throughout my much more contemporary collected materials and made themselves known as central in signaling forest temporalities of decay and perseverance.

Polypores, or bracket fungi, as a genus or family of fungi are both temporally expansive and materially visible when compared with many other fungi. Their sporing bodies remain on the sides of both living and decaying trees for many years. Using terms such as ‘slow’ and ‘fast’ or ‘old’ can be critiqued as relying upon pre-existing human understandings which do not leave sufficient richness within temporal descriptions. It can be hard to avoid it, and in several parts of my work I do use these words. Still, to encounter a polypore and to call it ‘slow’ or ‘fast’ would be to subscribe to human measures of speed and rate and to reduce the beings’ own unique temporal characteristics. Polypores’ expansiveness was indicated several times throughout the course of my research.

Mari Koppanen, an artist who attended the Mushroom Methods workshop, works closely with polypores, specifically the birch-tree-dependent tinder fungus (*Fomes fomentarius*) in her practice. In her 2025 exhibition ‘KÄÄPÄ’ (POLYPORE) at the Nordic Museum in Stockholm, she emphasises the strength of this fungus, which she uses to fashion bags, hats and other items. On the website advertising the exhibition, she is quoted as calling the fungus a “forgotten material”, suggesting that through her artistic practice she is re-invigorating and drawing attention to something which would otherwise be overlooked in today’s society (Nordiskamuseet, 2025).

Like all fungi, polypores shape and are shaped by temporalities. Polypores’ temporalities intersect with the temporalities of the trees which they grow on and thus provide material and visual markers of ongoing tree growth as well as decay. Milla, an environmental educator and biologist who specialises in fungi which decompose organic matter, talks with enthusiasm about polypores. She tells me that:

Overall I see a nature protection angle [when thinking about them]. Decomposer fungi are good indicators of an old forest. Especially polypores... which is quite a small group of fungi... Because they're well-known, it's been possible to develop an old-growth forest indicator in Finland using polypores.

There is a dominant discourse in western society which frames decay and rot as negative and in direct opposition to growth. Slime, mould and disintegration are controversial. Falling apart, being broken down and being digested may be equated with loss or thought of as unfortunate, dangerous, disgusting or unsavoury. Fungi often become tied up in these discourses of disgust since many fungi are saprophytes, meaning that they rely upon decaying matter such as wood and fallen leaves for nutrients (Frey et al., 2003). Yet fungal bodies in the boreal forest demonstrate the life and vibrancy which can come out of simultaneous death and decay. The spread of saprophytic fungi can be thought of as the transformation of decay into life; the negotiation and denial of final endings in favour of ongoing processes.

Figure 35 shows the sporing body of a decay-loving and decay-doing polypore fungus. The fallen or cut tree shown is a birch tree, pictured at a certain moment in its process of decomposition. Shorohova et al. (2008) found that birch bark decomposes more quickly than birch wood itself, and indeed the fallen tree where the polypore was growing no longer had its bark. In boreal forests, fallen logs and tree stumps tend to be colonised by decomposing organisms such as fungi within ten years of the tree falling or dying, and after this time, active decomposition begins. As such, certain fungi mark particular moments in a tree's life and death, and a wider presence of these fungi across the forest can reflect a high percentage of dead and decaying wood in that forest. In contrast with negative societal attitudes towards decay, deadwood has been connected to higher levels of biodiversity over all (Thorn et al., 2020) and wood-decomposing fungi not only perform decomposition and recycling, but also, where they occur repeatedly across the forest, indicate the existence of a biodiverse and likely carbon-rich ecosystem.



Figure 35: A polypore on a decaying fallen birch tree, scattered with birch seeds (2023)

Saprophytic fungi in particular have much to share about waiting, or to put it another way, about extending a certain part of the process of being a fungus. Aleklett and Boddy (2021) note that some fungi which specialise in breaking down the heartwood of tree trunks may wait many years before producing mushrooms, despite having inhabited the tree trunk and expanded their territory in the meantime. Wood-decaying polypores are long-lived, both in terms of the entirety of the fungus as it spreads through dead wood, and the bracket fungus mushroom which grows from the tree's surface (Penttilä et al., 2004). It can be hypothesised that their lives are often spent waiting for their preferred sporing environments to literally materialise. Polypores prefer to grow on wood which is at a certain stage of decay. Although the log in the photograph is lying on the forest floor, the polypores shown are growing horizontally above the earth; they began to grow on the fallen tree trunk sometime after the tree fell to the ground. It is interesting to note the faint 'tracks' on the surface of the log in Figure 35, suggesting that the tree was infested with wood-boring insects at an earlier point in time, perhaps helping to prepare the wood for the arrival of the polypore fungus.

Life, death, growth and decomposition overlap and should not be framed as binaries when we are thinking with fungal temporalities, which involve simultaneous breaking down and building up of matter. The political ecologists Ramakrishnan et al (2021, p. 669) put it well when they write that “though decay and repair are framed as a binary, we seek to capture the fluctuation between the two, and what happens in between”. There is a lot of this ‘in-between’ to be found when we get close to fungi and their environments. Slowly-collapsing tree branches splinter and crumble, making space for others to fill, and hollowing out homes for birds. Mycelium moves through matter and then suddenly sends up sporing bodies in the humous created by the rotting biomass of pines. This thinking is in contrast with anthropocentric narratives in which change is seen as uniform and where cause and consequence are neatly pinned down to one moment and one material thing.

Signalling seasons and a changing climate

While most fungi remain largely hidden to the human eye for most of the year, many produce sporing bodies (mushrooms) in sync with the seasons, mostly in summer and autumn, and respond to local-level fluctuations in temperature, humidity and precipitation (Hawkes et al., 2011). Therefore, at the simplest level, the appearance or absence of sporing bodies above the moss or leaf litter narrates the seasons, and shifts in the timings of their emergence might suggest a changing climate. The sporing bodies shown in Figure 36 are *Craterellus tubaeformis*, *suppilovahvero*, *trattkantarell*, winter chanterelles or funnel chanterelles. I highlight these fungi because typically in Sweden and Finland, they usually appear in September and persist through October, “the wane of the standard mushroom season” (Svanberg & Løvaas, 2023, p. 8) and sometimes even into November. However, the mushrooms in the photograph were already present in the Central Finnish forest in mid-August of 2024 . A few days later, I came across many more in a different location, showing that their emergence was not an isolated event. Such appearances prompt questions about the conditions that cause fungi to deviate from assumed norms for their growth. They prompt us to wonder what is happening in the relationship between the land, the climate, mycelia, and the wider forest ecosystem. Fungal bodies have stories to tell when it comes to narrating local and perhaps even global shifts in climate, which in turn affect forest environments. The summer of 2024 was the warmest on record in northern

Fennoscandia, and was additionally thought to be the warmest in 2000 years in the region (Rantanen et al., 2025). As the climate warms, possible changes in tree- and plant- species in the forest as well as in the minerals in the soil are likely to lead to shifts in the diversity of fungi in the boreal forest (Mucha et al., 2018).



Figure 36: Winter chanterelles

The sporing bodies of many fungi might not appear until the summer or autumn, but there are also many species which reside entirely below the surface underground, or which do not produce mushrooms. There are therefore countless fungi which I did not see and which I could not photograph during my walks in the forest, not only because they were not at that time ‘sporing’, but because they never emerge at all. Endomycorrhizal fungi (see footnote) in particular do not produce mushrooms (Reddy & Saravanan, 2013). Nevertheless, biologists and ecologists increasingly emphasise the importance of the fungi within soils and biomass for the work that they do in helping plants to store carbon in soils, for example (Jørgensen et al., 2022).

As a whole, fungi act as temporal communicators and intermediaries between multiple different temporal modes and framings. They reflect and react to

seasonal changes, as well as to more long-term shifts in the climate. At the core of all of their behaviours is the fact that they are simply trying to survive. Their ongoing survival is reliant upon the simultaneous survival of certain tree species and/or the persistence of particular conditions. Those future matured trees and ideal conditions have not yet fully materialised, so much of what it is to live a fungal life is to be opportunistic, to thrive in the here and now, and to constantly negotiate between periods of growth and reproduction. As living beings within a forest ecosystem, fungi inhabit tree stumps, occupy soils, and spread their spores on the wind. A key observation is that fungi are able to ‘wait’ – they hang around, waiting for the moment when conditions are favourable for the production of sporing bodies, for instance. In this sense, fungal processes may always be unfolding, but this does not always happen at the same rate, since ‘exploration’ of soils and tree stumps may continue for a while before sporing bodies are pushed forth. Fungal bodies reach beyond the present moment, connecting the long past of the forest through its present and into the future.

Fungal foraging cultures

It is mid-June and I am out for a run along the forest track. The air is not warm; it has been chilly recently and it feels as though summer has not yet really begun. I am nearly at the far end of my usual back-and-forth route and the grit crunches beneath my trainers as I make a final push to get to the imagined finish line. To my right is an old, mossy stand of spruce, dark and foreboding. The trees, planted probably at least seventy years ago, repeat and repeat evenly before vanishing into the darkness beyond. I have been in there before, to look for mushrooms. To my left is a breeze-swept, whispering clump of young birches and pines rising from a tangle of wild raspberries, boulders and tree stumps scattered when the area was logged a few years ago. I have been in there once, too, but to search for raspberries. It was treacherously uneven going. As I finally stop and catch my breath, I see a bicycle rounding the top of the long slope in front of me. She is still some distance away, but I can tell it's our neighbour. Soon she is beside me, and I see that she has an empty basket on the back of her bike... I wonder how many times she will go into the forest to look for mushrooms in the coming days. (Account based on notes from research diary, June 2025).

In mycophilic (fungi-loving) cultures, fungi have been a mainstay of traditional cuisine for hundreds if not thousands of years. In many cultures, there is openness

to eating a range of species (Li et al., 2021). Furthermore, in the past ten years or so interest in fungi has burgeoned across popular culture and the social sciences, including across geographies and in the homes of people who may not previously have engaged. Recent curiosity about fungi goes beyond perspectives from biology and ecology alone: researchers in the humanities, arts and social sciences, too, have become intrigued by the sheer variety of fungi, their significance across cultures, and what they can teach us. Mushrooms have become the focus of popular science books, films and art. See, for instance, the series *The Last of Us* (Mazin, 2023) and the book *Entangled Life* by Merlin Sheldrake (2021). Anna Tsing's *The Mushroom at the End of the World* (2015) is frequently cited, including in my own work. Some fungi, such as the matsutake (*Tricholoma matsutake*) and the golden chanterelle (*Cantharellus cibarius*) have gained a 'celebrity' status, and can be found in northern forests. However, there are also many fungi which are less well-known across cultures and borders, but which are commonly collected in certain regions and by certain communities. My own personal connection to wild fungi is lifelong. My grandfather introduced me to picking forest mushrooms in Finland from an early age, and for many years my father would search for 'field mushrooms' in the grassy landscapes of northern England, where I grew up.

The attitudes towards fungi and the recent renaissance of fungal culture which I so briefly outline above hint at the ways in which fungi are embedded in wider socio-political shifts and the circulation of knowledge. There is no definitive single answer as to why fungi have suddenly become so popular, and the reasons for their popularity will likely vary with different demographics. However, we are living through a period not only of climate and environmental change and turmoil, but also an era in which accounts of these changes are communicated instantly and constantly around the world via the media and personal contacts. Humans and nature have for a long time been seen as separate, but climate change and other challenges such as the COVID-19 pandemic have led to a deep re-thinking, in some quarters, of these anthropocentric paradigms. Fungi are now understood to be crucial to ecosystem health, and they play a central role in ensuring that forests and other ecosystems can store carbon. Their ability to suddenly emerge in unexpected places and to thrive on decomposing matter adds to the sense that they are problem-solvers. At the same time, fungi are also responsible for billions of dollars of damage to buildings and crops each year (Money, 2006; Singh & Thakur, 2023). Fungi are thus perfectly positioned to speak to a number of

contemporary societal concerns, whilst retaining a certain air of mystery which adds to their allure.

In the discussion below, I write about the ‘mushroom forest’. This is a direct translation from the Finnish term which is used to describe any forest that one enters in search of edible fungi.

It must be underlined, before discussing how foraging for mushrooms influences people’s perceptions of and moulding of temporalities that, as Osmo insightfully mentions, “I am not sure if this is anyway specifically to do with forests or mushrooms, but more broadly an experience connected with enjoyable experiences.” Milla echoes this point, saying that she wonders if what she describes has more to do with being in the forest, generally speaking. She tells me that she lives right next to the forest, which she goes into every day and therefore her engagement with the forest is not limited to ‘mushroom season’. There is therefore an important note to be made here, that whilst on the one hand several people emphasised the connections between searching for fungi and the things which they experience and notice in the forest, others may also share thoughts which are to do more generally with the time which they spend in the forest. Fungi only appear in the forest at certain times of year, and for some participants the fungi are the main attraction, and so their forest engagements are limited to mushroom season. For others, going into the forest is more of an integral part of their lives year-round. Nevertheless, I uphold the argument that foraging as an embodied activity encourages people to go into the forest, and that in addition for many of the people with whom I spoke it is an important lens for being attentive to the forest environment. In what follows, we meet several fungal foragers and learn what temporalities mean to them in the mushroom forest.

There is no ‘time’ in the forest

When thinking about the forest and time, well the forest is the one place where there isn’t any time. It’s a place which doesn’t change. Well, it does change of course a lot during the year, but nevertheless it stays more or less the same. (Jaime)

By far the most often-repeated and emphasised point made by participants about temporalities (or, as we called it during interviews and exchanges, ‘time’) in the forest is that time ‘stops’ in the forest, that there is no time there, that even if there

is time you don't notice it, and that the forest is 'without time'. Responses included, "I don't think about time in the forest" (Melissa); "time moves really quickly in the forest" (Seila, Sylvia); "I don't pay attention to the clock (time)" (Jaakko); "time stops" (Raila); "time speeds by unnoticed" (Oliver); "you don't feel time in the forest" (Terhi); and "time doesn't feel like anything" (Mirjam). Jaime provides an emotive description of his experiences:

From when I leave my car to go into the forest, until when I get back to the car, it's exactly the same. As in, all the time it's the same moment. Exactly like this – the same moment. A bit like one second is [makes whooshing noise, indicates stretching out with his hands] all the time and I'm inside it. And it's the same when you come out as when you went in – nothing happened there.

The word 'time' is strikingly almost always used to refer to clock-time, to linear projections and the presence, in some cases, of external pressures and deadlines. That is, temporalities of professional work and of wider society. Some of these people belong to mycological societies, whilst others do not but are nevertheless keen mushroom foragers. Their statements suggest that a large part of the reason that they enjoy searching for mushrooms or more generally being in the forest is precisely due to the perceived lack of time in these settings. This explanation may also be turned around on itself: The message that time is not experienced in the forest was tied by some people to the idea that since the forest is where they most want to be, they are no longer thinking about anywhere else, and so time, which according to these accounts only arises from other contexts, disappears. This logic can be summarised as, 'There is no time in the forest so I enjoy being there' yet also, 'I most want to be in the forest, compared with anywhere else, so when I'm there it is timeless.' Eemil also echoes the latter point when he says, "when you're in the forest you've arrived, and time loses its significance." To no longer be striving to get somewhere is perceived as a time-dispelling mode of being. In this way, many mushroom pickers privilege the *temporalities* of the multispecies boreal forest whilst rejecting the *time* of capitalism, labour, clocks and calendars. Time is perceived as disrupting and breaking up the flows and rhythms of the forest, and whilst it continues flowing constantly, foragers, immersed in their activities and surrounded by different temporal rhythms, pay it no heed, or prefer not to.

Timed foraging: the mushroom shop

Despite the forest as a timeless place being emphasised over and over again, some interlocutors talked about occasionally needing to think about clock time, and the impact that this has on their foraging practices. Jaime asked me not to introduce my research in more detail at the beginning of our conversation so that he would not mould his answers to the initial framings which I provided. Instead, at the end of the interview he requested that I finally explain my interests further. Having done this, he responded:

I've maybe talked more about timelessness, than about time. That's the most important thing for me.

When I'm in a rush, though... In Finland it's a bit like a shop. As in, I don't go foraging or searching, I go to get some mushrooms. I know there are mushrooms, I know where they are, and... I force myself not to look around, otherwise I'd be there three times longer, and it would get dark!

When I am thinking about time, I don't perceive that I'm in the forest. I'm in a mushroom shop.

For Jaime, the forest becomes a 'shop', in the sense of an urban or anthropocentric temporal mentality in which time is ticking and regimented, when he decides to simply rush in to look for specific fungi in a spot that he knows. Meanwhile, Esteri, a forest owner, tells me that "I go specifically to fetch edible mushrooms (chanterelles and boletes) from familiar spots. At the end of the autumn I make urgent trips to go and look for trumpet fungi, but I've not found any of those yet." She indicates that the timed search for fungi is a 'fetching' and something which does not involve much meandering. Veronika reveals that when it is the "peak season" for a particular species, she "goes more directly to the known environments where they grow. For example, in the spring the false morel spots, or the early morel groves." Similarly, Jaime's account of visiting the 'mushroom shop' includes a reluctance to pay attention to other things around him in the forest, lest he become distracted and take too much time (the danger being that his surroundings might morph back from 'mushroom shop' to 'forest'). Anna extends the thought about what happens when time 'runs short':

I don't look at the clock, I only notice it when I can almost not see properly any more in the forest and someone calls to check up on me.

Here, someone who is likely not in the forest calls Anna, and this along with daylight fading reminds her that it is getting late. Osmo similarly states that there are “unusual situations when I have a rush to go somewhere else after the trip and time is limited: in this case I'm even too aware of time, time runs quickly and the minutes seem to speed up.”

As a whole, even if my interlocutors expressed that there is no time in the forest, they occasionally ‘carry’ time with them through thoughts of the tasks which they must accomplish and the schedules which they need to adhere to. In these situations, foraging practices rely on existing knowledge about the location or behaviours of specific fungi, and embodied engagement with the forest environment is toned down so as to reduce the amount of (measured, linear) time spent looking and sensing temporalities and materialities.

Embodied sensing of situated temporalities

It's quiet. Not eerily or unnaturally so, but as if the forest is patiently waiting - a deep green pause. It cannot truly be this quiet. I get the sense that there are sounds which my ears are simply not attuned to, and no matter how hard I strain, I cannot hear them. The light is golden-chartreuse, woven between the trees near and far like a tapestry. Glancing ahead to plot a winding path, I tread among patchworks of moss and fallen logs. My feet find the hollows where logging machinery has been.

[later...] The chanterelles have longer stems than I expected. The moss is deep. I reach the fingers of my right hand down through the damp fibres around one of the fungi, no longer able to see where the mushroom goes, delicately tracing its smooth contours. Just as the moss reaches my wrist, I take the knife in my other hand and gently but firmly make a cut at the base of the stem. I raise my right hand, cup my fingers under the mushroom's cap, and lift. Emerging from its boreal blanket, the chanterelle is cold and mildly fragrant.

(Thoughts during a foraging trip, Central Finland, August 2024).

Just like the forest through which we move, “our bodies are indeterminate, continually unfolding with injury and alterations, technology and habitual

activities” (Carolan, 2008, p. 414). I find that walking and even simply sitting in the forest changes you slightly. All beings are profoundly shaped by the environments that they are immersed in and/or passing through.

I find when engaging with mushroom foragers that embodied experiences of being in the forest contribute to the rejection of linear clock time. Osmo describes the way in which “especially when looking for mushrooms in the forest and when taking pictures of them, the perception of time disappears entirely, you sink into the forest.” Joanna describes searching for boletes in the spruce forest as being “wholly restorative” and as creating “a total feeling of wellbeing from being in the forest”.

Emilia, a participant whom I spent time with in the forest near her home, tells me how “a person moves by walking, under the power of their own muscles in the forest”, and that this forms the richness of the experience of being in place, with all your senses open. According to Emilia,

With mushrooms, it means your senses have to be open... It advances that kind of state of mind. For me at least that’s really important.

If you were to go into the mushroom forest while talking on the phone (laughs) then it doesn’t really work in the same way.

The time I spend with her, walking through a patch of forest near her home in Central Finland as we look for mushrooms, certainly demonstrates the specific movements that people have to adopt to get through the forest, and the connection between these and their overall stories about that place. I make mental notes which I write up later: legs over logs, hands gripping branches, scanning ahead for hollows and things to stand on, balancing with difficulty, brushing off wet leaves, tripping and reorienting, turning again... In this case, we are wandering through a patch which Emilia did not previously walk through and which is not where the ‘good’ fungi such as boletes and chanterelles grow, but which she has been forced to start crossing due to recent logging.

A kind of ‘fleshy knowledge’ (Paton, 2020, p. 181) made itself known several times throughout this research: people spoke of the ways in which their hands and fingers became accustomed to the specific movements of twists and careful but firm pinches required to pick berries, and I watched as fungi were quickly but

carefully cut from the ground, the knife serving to minimise debris dropped into the basket (Figure 37).



Figure 37: Emilia picking winter chanterelles (2024)

Identifying and ‘testing-out’ the reliability of a mushroom- or berry-picking spot can take many seasons. Several people (notably Emilia, Panu, Esteri) mention that the precise locations which they visit to forage are by no means random. Instead, they’ve been patiently returning to the same spots each year, armed with the memory of where they saw particular mushrooms or found large and plentiful berries in previous years. Emilia points several times in different directions with explanations of what has been growing there. She tells me that “this here is the dry patch where there have been quite a lot of *voitatti*. And here, here’s a spot where there have been false morels.”

Relationships between people and the land are inherently political and informed by histories and current experiences of ownership and access, ideas of identity and belonging, and struggles for survival.

Foraging with and against industrial temporalities

The forest machine felled an ancient conifer stump where an orange polypore was living... It was a really ideal place for the polypore. Now I don't know how far away the next polypore is, and they can't grow in clearcuts. (Anna, a survey respondent)

Whenever I spent time in the forest during the course of this research, the industrial influences on the forest were never far from my mind. Even if not all boreal forests are being actively managed for the production of timber and biomass, it can be said that the majority of boreal forest in Sweden and Finland fits into this category. With industrial forest management comes a particular set of logics and temporalities. These are shaped by relative regularity, a belief in continuation of pre-existing status quo (with some exceptions), and a reliance on prediction (for instance of tree growth rates and levels of maturity in a certain number of years). Industrial forest temporalities can physically manifest as logging cycles, machinery activity and the re-planting and re-growth of saplings to replace logged trees.

Foraging for fungi and being fungi in these forests involves living both with and against industrial temporalities. On the one hand, fungi and foragers living in and passing through these forests feed into and benefit from industrial forest temporalities. On the other hand, although industrial temporalities arguably continue to dominate, foragers and fungi may also sense, negotiate and perform alternative temporalities which contest and push back against those logics. Some foragers and fungi in fact benefit from and navigate the landscapes marked by logging.

Anna, a survey respondent, says that “an industrial forest isn't a forest, it's a tree field, where all life has been killed.” “Criminalise clearcuts” says Kirsí. Joanna notes that when looking for false morels she experiences both “joy in finding mushrooms and sadness about the logging of our forests.” Meanwhile Ida, another survey respondent, similarly says that “clear-cut forests make me sad, but I am able to enjoy looking for false morels in logged areas.” False morels are fungi which rely on disturbance to spread and thrive.

For those who are consciously acting to counter industrial temporalities, foraging is a practice which intentionally draws on the organic, fluid, more-than-human and ‘natural’ elements of the forest. Other apparently less-desirable ways of being

in the world and the places and spaces associated with them (consumer culture, ‘dirty’ urban environments, and so on) are therefore discursively and imaginatively present even if they might be physically distant, since their critique and dismissal is, for some people, necessary for the legitimization of foraging practices. In this way, boreal forest temporalities as multispecies and ‘natural’ are privileged by placing them in contrast with the other temporalities which must be overcome. This may be done consciously or unfolds as an unconsidered daily norm. This could be read as something of a paradox for those who express that they forage in order to attempt to resist certain logics. People who forage because they wish to live ‘the good life’ or to counter capitalist systems nevertheless more often than not are picking mushrooms in young, planted forests or forests which are due to be logged in some number of years. I do not wish to suggest that this hampers these people’s ability to live what they think of as a ‘good life’, nor that foraging in industrially-managed forests delegitimises the personal benefits of certain embodied and culinary practices. Merely, that the values which are held by some foragers seem in tension with the values underpinning the creation of particular landscapes and their associated temporalities. Likewise, those who do not overtly express such desires of course also pass through similar landscapes. In some cases, depending on the species of mushroom, foragers actually rely on habitats created by logging, though there are also many examples where logging has destroyed foraging patches.

With intensive forest management comes disturbance. False morels are well known as fungi which thrive on such disturbance (Savinotko, 2022). According to Emilia, they like sandy soil, and may be found along roadsides, on ridges, and exposed ground. Their sporing bodies emerge, unusually, in the spring, and particularly thrive within the conditions created by the rhythms and physical realities of industrial tree harvesting. The forest, having grown for somewhere in the range of 20 to 50 years, is cleared of trees by heavy machinery; soils and sand are churned up as the machines cross the land; left-over branches and twigs are often swept away from the ground surface; and new trees are often replanted, but these are small saplings and it will take several years before they begin to anchor the soils and create shade. These open, sandy and unstable conditions suit false morels literally down to the ground (Figure 38). False morels do not disrupt or intervene in forestry industry activities or biomass markets, instead in contrast taking advantage of the gritty ground. In this way, European and global demands

for timber and biomass unintentionally create the perfect conditions for at least one species of fungus.

Savinotko (2022) notes that there is a difficult tension to navigate between celebrating connection to place via people's ability to walk and find food for free in the forest, and acknowledging the intensive forest management practices which lead to clearcutting and the creation of false morel habitats alongside the loss of other species. Although it is a fungus which is very much associated with upheaval and disturbance in a way that others are not, the false morel is still just one of many fungi which will appear around human-led upheaval, construction and destruction; filling up tread-marks, colonising wooden structures (Mattsson et al., 2010) and occupying post-extractive landscapes (Carrenho et al., 2018).

Axel is a forager who benefits from industrial forestry practices, not only because he is someone who searches specifically for false morels, but also because of his archaeological interests, which are mentioned later in this chapter. Forestry companies and machine manufacturers have in recent years made efforts to reduce the impacts which their machines have on forest soils, with Ponsse, leading in machine sales in Finland, going so far as to say that “if the cut-to-length method is carried out properly, the surface pressure on the ground caused by the machine is comparable to a human footprint” (Ponsse Oyj, 2024, n.p.). However, “at logging sites, forestry machines... can break up the moss and the surface of the soil, when the items I was talking about [quartz shavings] are revealed and spread in the path of the machine” (Axel).



Figure 38: A false morel. Photograph by Axel, used with permission

The appearance of the land can change dramatically following logging, especially with a combination of heavy machinery and a clearcutting approach, in which the majority of trees across a patch of forest are felled. Such activities prompt thinking across temporalities even if you are not a historian or an archaeologist. The presence of industrial forestry, as Axel mentioned, is often obvious. A considerable amount of disruption is required to churn up the forest floor enough to reveal Mesolithic remains. Thinking about the layers of historic time revealed by these activities provokes conflicting responses. On the one hand, we might think ourselves very small in comparison with the immense and grand stretches of time which the land and the forest have been witness to. Generations of humans have now disappeared without a trace except for a few quartz shavings, tools, and burnt stones, which themselves are only revealed in the patches subject to modern forestry activities. Our foraging activities seem likely to leave even less trace; our actions feel insignificant.

On the other hand, and as is expanded upon below, participants also expressed dismay and frustration when recounting stories of coming across what they see as destruction of the forest ecosystem by heavy machinery. This disruption may benefit some species of flora, fauna and fungi, but it also impacts others negatively. Chanterelles will not return again for a very long time to a previously mossy, boulder-strewn area which was clear-cut, boulders turned over for the first time in thousands of years. These physical changes are often met with feelings of grief and loss.

Fungi and those who search for them favour many different kinds of forest habitat, from sun-dappled glades to mossy patches with deep shade. However, a common theme is that most of the mushrooms which people talked about or showed me seem to prefer forests where forestry machinery has not been for a long time (if at all, though this is rare in unprotected forests). Where the forest was altered by logging, the absence of certain species and that of the forest as it used to be was keenly felt. As knowledge of a forest increases, so, it seems, do feelings of protectiveness and possession. Emilia says

That was our, it was the lähimetsä (nearby forest) which we would always go into. It was lovely. There was moss, and there were fallen trees which were kind of like a playground.

Therefore, when talking about forest which had been clearcut, several people expressed distress at the loss of what had been there before. They indicated that their practice of collecting mushrooms had increased their awareness of what had gone, and the loss which they felt. Emilia and I discussed what happened to the forest near her home:

Emilia: Here where we're setting off from now, there used to be a really lovely forest. And there were good numbers of boletes, 'penny buns', and it was a very beautiful forest. But two years ago it was logged, and it was so tragic.

Me: Did you already know beforehand that it was going to be logged?

Emilia: Well only a really short time beforehand. It was quite a shock... The forest was in a way 'ripe' for logging, but it's possible that the logging was hastened by one of our neighbours who wanted to see the back of that shade-creating forest. And it was pretty sad news for us. We didn't know that the neighbour wanted the forest gone.

...The part where we're walking now, I never used to come here at all because over there there was a very nice path... This is always what happens when something is logged – the first thing that happens is that this tall grass comes and it's true that the grass does go away, but the grass smothers everything. The small shrubs and mosses can't survive... This area which we're entering now, the forest used to be like this. But the trees were even older than these ones. Very old trees, very big. A place of conifers. And there were kuusenherkkutatti [boletes which grow in symbiosis with conifers] here, which are quite rare, and really nice.

Emilia's comment that "the grass smothers everything" suggests that even if new growth does appear, it is not enough that things are green again. The exact species which surrounded us were pointed out, and some, such as the grass, were not valued as highly as the now-disappeared old trees, moss, and fungi. Grass, often seemingly innocuous, marginal and out of the way, is viewed by Emilia as a symbol of the loss of the older forest. In the wake of grief caused by disappeared foraging patches, the growth of grass comes to carry a deeper meaning and antagonistic presence.

In hindsight, a selection of photographs would have helped to demonstrate the stark differences between the forest landscapes which we could see – the logged area with the grass, and the mossy area which we also walked through –, however

such was Emilia's disparagement of the grassy area that I, too, deemed it unworthy of much attention. As we walked on, I asked what we were aiming for, and Emilia mentioned that she would try to bring us onto the path, wherever it might be. At several points in our meanderings, she pointed towards where she thought that path would be, and also asked me if I could see any openings among the trees. It took a long time to find the path, clambering over fallen logs and damp, ferny ditches along the way.

My experience of walking through the forest with Emilia reminded me that she was only just becoming acquainted with this patch following the upheaval created by logging. Passing by the previously forested and now clearcut, grass-covered area served as a reminder of what used to be, and forced Emilia (and myself) to explore the fungi growing in a different, less familiar part of the forest. This experience brings to mind what Butler et al. (2021, p. 3) call the "desolate and alien landscape" which emerged following a wildfire in Sweden. Although the areas of forest clearcut and burned each year in Sweden and Finland vary greatly, the feelings of loss and being unable to find the way which these events invoke, especially in people who have become familiar with the forest via situated and embodied foraging, are similar.

Fungal temporalities as conduits for forest imaginaries

Fungal lives and foraging cultures and the temporalities which they privilege and neglect or sideline all contribute to and intersect within the construction of particular forest imaginaries. In other words, certain temporal engagements with fungi and with the forest where those fungi are encountered help to shape forest imaginaries, visions, constructions and narratives. Although imaginaries are often assumed to be future-oriented, as we see here, the imaginaries of the forest which arise through fungal temporalities do not all have to do with the future, often being deeply rooted in the present moment and experience.

"The forest is a room": the forest as a personal space

To my mind it feels like I really know the forests which I have spent time in for years and years. I can't imagine my life without forests. (Iris, a survey respondent)

In an earlier part of this chapter, I drew attention to the ways in which embodied engagements with fungi and with the more-than-human temporalities of the forest create impressions of the forest as a place where ‘time stops’ and where only the body’s movements and multi-sensual reactions are noticed; everything outside of the immediate lived experience disappears or at least becomes less noticeable. These experiences of in-the-moment foraging and fungal temporalities also feed into a particular imaginary of the forest as a personal space characterised and shaped by different temporalities than are prioritised outside of the rooted forest.

During our conversation, Helsinki-based forager Jaime, who is a member of the Finnish Mycological Society or *Sieniseura*, emphasises that he goes into the forest near to where he lives almost every day, including in the winter, for which he bought a pair of snow-shoes especially. During mushroom season he goes in search of mushrooms, but also in search of ‘peace’ and a place to reflect and relax whilst looking for mushrooms. Jaime tells me that he thinks of the forest as a ‘room’. This ‘room’ of the forest, as Jaime put it, is the central and sometimes ‘timeless’ space where daily concerns and worries are put aside, or alternatively where the conversations already happening in someone’s personal life can continue in more expansive and sometimes more relaxed ways. Jaime reveals that he has had productive conversations about work when walking in the forest and looking at mushrooms. Jaime says:

I have talked a lot about what I do in the forest when I’m on my own, but I also have taken a lot of friends and colleagues into the forest. And that’s maybe another way of spending time. I really like being on my own and doing things on my own. It would be really hard to get me to stay at a party for three or four hours and talk to people. But I say, let’s go into the forest! Let’s go and pick mushrooms! Then we’ll be there for three or four hours and, and that’s a different way of being. You don’t even have to speak. I mean if you want to speak for an hour, or be quiet for an hour... If you want to talk, then there’s nothing else to do so that’s also easy. So I think I value the time and the place which the forest provides when I go there as part of a small group...

The forest as a ‘room’ can therefore be understood as the space where dialogues which might usually feel awkward or difficult to broach can be opened up, and where friends or family can reconnect after many years apart. It may provide a space for the extension of dynamics which already exist in someone’s life, but because of its ‘timeless’ and immersive character, the forest does not demand

anything from you, as Jaime emphasises. Jaime elaborates that “it feels like my forest – I can point to this mushroom and that one and say that here is the place where the snakes usually are...” Although this is a spatial framing anchored in imaginaries of belonging to place and even a metaphorical sense of ownerships, it is only possible through acknowledgement of temporalities which are sensed and felt through the body and through interactions with the ‘mushroom forest’.

This idea of the forest as a room is not repeated in the same words by other people. However, several of my interlocutors expressed the sense that the forest as a space composed of different temporalities, or indeed as a ‘timeless’ space, as discussed earlier, contributes to them thinking of it as a particular space which they can enter and leave at will, and which they use to achieve different personal aims. For Panu, he both “want[s] to share this knowledge” because “this is something you go along with others to do”, and “I’m in the forest a lot on my own and love being on my own in the forest”. His words strikingly echo those of Jaime, in that he enjoys solitude as well as being with others, talking and sharing knowledge. In this way, the imaginary of the forest as a personal space allows choices to be made in similar ways as they might be made at home or in other spaces deemed personal – to be on one’s own or to go in company; to engage in discussion or to be silent.

Contrasting socio-climatic imaginaries: urgency and hope

Another form of forest imaginary which I draw out of the data in connection to foraging is that of the forest as a place where urgency and hope meet in the context of narratives about climate change and pressures on the forest. Here, urgency and hope are in constant interplay. This imaginary is rooted in the present moment; however it also makes connections to both the future and the past. As Emilia says, “it would be really interesting to see the future, to see how these forests look in, say, fifty years.” In contrast, Satu expresses that “in some issues we need to go back in time and consider what has been done over the years. Have solutions destroyed the forest or has the forest been managed in the correct way?” Although such opinions could exist away from the context of fungal foraging, participants emphasised the connection between foraging and noticing change in the forest.

Throughout interviews, conversations and my reading of *Sieniseura* magazine articles and engagement with online fungal forums, expressions of urgency and the need for positive change in the light of climate and other societal pressures

were expressed. Although this theme and imaginary has, as we have seen, also surfaced within the data on museums and protected forests, it is through engagements with fungi and the mushroom forest as a space that it is most emphatically expressed. Sometimes, I find, urgency in the absence of significant hope turns to feelings of despair and concern for the future. At other times, and often in tandem with acknowledgement of the resilience and adaptability of fungi, urgency and hope come together to emphasise the forest as a space of possibility and solutions.

“Without fungi there is no forest, and we need the forest to live”. These are Panu’s words, but they are echoed in various forms by several foragers. My interlocutors emphasised the connection between fungal health and forest health, representing the forest as dependent upon fungi for its continued survival. Within this framing, the forest was described as a place which all humans need in order to achieve healthy and well-resourced lives. The narrative about fungi supporting the health of the forest and the forest supporting that of people often also included references to climate issues. Jaakko tells me that “climate change brings dryness and poor mushrooming years”. In response to these observations of climate impacts in the forest, some people emphasise the need for immediate action. Emilia shares that “sometimes it feels like decisions are being made now, and now we have to make a difference. So at times there are a more difficult things to think about.” Satu argues that “forest owners should become more active – there’s a lot of forest which is a thicket-like space and there’s no light.”

Emilia looks around thoughtfully at the lake glinting between the tree-trunks as she ponders her answer to my question about what might be next for the forest and the mushrooms in it. She replies that:

On the one hand, some mushrooms might disappear locally, but on the other hand mushrooms are the food of the future, too... Sure, mushrooms live in symbiosis with many other species, but they are also so diverse, and as we learn more about them... Mushrooms feel more like something that awakens hope in some way. And mushrooms, or some mushrooms, very often appear in places where people dig up and destroy...

The story which Emilia tells here places fungi directly in forest environments which are frequently disturbed and altered by human activities. However, she interprets the relations between fungi and other species as a source of hope, and

sees fungi as something which extend into the future, both of the mushroom forest and of society more widely. Hope, I suggest, stems from two things. Firstly, hope is sometimes due to an awareness of how things used to be, and therefore it follows that it might be possible for things to be that way once more. Secondly, hope can also be the result of acknowledging the world today and observing resilience and survival in the face of challenges in the present moment. That resilience can include acceptance of some level of change. As Emilia continues, “maybe we can’t keep hold of everything. Maybe it’s inevitable that some things will change.” This reflects the focus on processes and change which emerged during the previous empirical chapter, where the forest landscape was understood not as a static entity but as something always moving, shifting and responding to altering dynamics.

Foraging itself can be described through my materials as a form of imaginative movement which helps foragers to imagine potentials and inspiration for thinking about possible boreal forest futures. Emilia reflects that

I know there are some philosophisers who say that you shouldn’t utilise or make the forest into a resource, or take things away from it, but myself anyway I think that berry- and mushroom-picking is more about the creation of connection than being totally one-sided, as if you’re stealing or taking.

Raila, a survey respondent, says that “seeing naava [beard moss] in some forests delights me.” Beard moss hangs from trees, is known to grow slowly, and only grows in clean, unpolluted forest environments. It is considered an indicator of biodiversity and forest health. Although I did not have the opportunity to ask Raila more questions about beard moss, I interpret her comment as indicating her pleasure at seeing something which takes a long time in the forest, which literally sticks to the older materials of the forest and which outlasts human ideas about temporal durations, leading to hope that the forest will continue to persist in this form going forwards. Furthermore, Emilia states that

In lots of places there are these layers, like I’ll remember that for example here three years ago there were good boletes here, and now there is something totally different here. And I sometimes wonder what this will look like in the future, but I hope that the area will recover in some way.

I don't know how things will go with mushrooms and climate change. How mushrooms will react. I'm sure that just like berries, they will suffer, but... well at the same time, mushrooms can also be grown.

I read this statement as an expression of hope based on memories of the forest as it was previously, an acknowledgement that forest ecologies can move and change rapidly, an understanding that in the future there may again be "something totally different" there, and acceptance that it will nevertheless be something which equates to 'recovery'. Emilia gathers together her memories, current observations, and hopes for the future, all oriented around an interest in finding mushrooms in this spot, and fueled by concerns about forest management. In addition, her acknowledgement that "mushrooms can also be grown" suggests that fungi, combined with expert knowledge about them, can lead to productive fungal futures, even if those futures may no longer be entirely intertwined with the forest.

It is important to point out Emilia's mention of berries. Emilia, with whom I've mainly spoken about fungi, also mentions that "in relation to berries I'm quite worried about forest management and clearcutting, and about how the forests are becoming fragmented, and how berries come through that". Understanding the dynamics of legacy, nostalgia and hope relating to mushrooms and fungal environments can therefore perhaps also shed light on how people are more or less hopeful or nostalgic about other forest-dwellers such as berries, as well as actors in other ecosystems. The overall forest imaginaries which arise through engagements with boreal forest temporalities are informed by a range of temporalities, rather than 'only' fungal temporalities. The realities of berry temporalities, expressed by Emilia as the dwindling and disappearance of berry plants due to over-exposure to the sun after forest logging, temper the imaginary which she provides of the forest as a place of hope through the fungal lens. Berries, according to her, turn the picture towards greater concern.

Fungal legacies

This final themed section of the chapter centres on the idea of fungal legacies and forest legacies in the context of engagements with fungi. I found this to be a particularly significant theme in connection to the collected materials on fungi. In what follows, I show that, in the mushroom forest, legacies in the form of

patterns of past land-use change which are often the focus of ecological and landscape-centred research are important. Indeed, some of the traces left in the forest landscape have already been discussed as key elements of how foragers encounter the temporalities of industrial forestry. However, fungal encounters also draw attention to other discoveries and forms of legacy in and beyond the physical forest. I firstly show how foraging can be interpreted as a form of usually inadvertent (though sometimes intentional and based on the forager's existing knowledge) archaeology which reveals material traces of histories, lives and processes in the forest. I then move on to show how knowledge about fungi, and especially practices of collecting and preserving particular fungi, connect people to each other across generations. These intergenerational knowledges echo past and ongoing connections to the land, to national histories and politics and to national identities which become expressed via the collection and consumption of fungi. The third part of the section on legacies then continues to consider fungi as lenses through which to traverse spatio-temporal scales. It discusses how foragers and the materialities of the fungi themselves can be thought of as geopolitical commentators, connected to different places and moments through gastronomic and nuclear legacies. It should be noted that, although a separate sub-section, this section on legacies also speaks to the theme of imaginaries. Many legacies can be said to feed into forest imaginaries, and are in turn also constantly re-made via the imaginaries which they create.

Foraging as archaeology: more-than-human remains and echoes

Foraging is a search, and foragers are tuned to notice and to be highly attentive to their surroundings. It follows that, throughout my collected materials on foraging for fungi, foragers reveal that they find many things in the forest. Often, these are not only fungi. These things come to have stories attached to them; stories which are shaped and elaborated through foragers' existing knowledges as well as through their experiences in the forest in the moment they came across the things in question. In some cases, they also literally have fungi attached to them – fungi therefore guide and direct attention. Some of these items have been 'put out to pasture' by people; abandoned or otherwise left to meld back into the landscape. Some may have been dropped accidentally, or forgotten. Others have been shed and discarded by nonhuman beings. Sometimes they are the remains of those nonhumans. Furthermore, many foragers whom I spoke with expressed that they

use their knowledge about the past and not only the present of the forest landscape in order to help them locate certain species of fungi. This connection of temporal knowledges and foraging renders foraging a kind of archaeology which throws up both mushrooms and other artefacts.

We begin with a trained archaeologist, Axel, whom we have already met briefly. Axel is primed to pick out signs of former human lives in the landscape across scales of thousands of years; something which I am not able to do when walking in the forest, and something which he acknowledges as a frame with which he looks at the world. Axel mentions that whilst searching for false morels, “you can search for the stone age on sandy ridges at the same time.” Surprised and curious about this comment, I ask what he means. He explains that it’s about

Searching for false morels and Mesolithic living places at the same time, and how you can find both mushrooms, and also quartz shavings and burnt stone in the soil layer which has been broken up by forestry machinery. Quartz shavings and burnt stone are at least in Finland some of the clearer signs of locations of stone-age habitation, for an archaeologist.

Foraging for Axel means not only the collection of mushrooms, but also the collection of pieces of stone which, for him, tell a story about the history of the landscape. His account suggests a time-travel-like or memorialising agency for the quartz shavings and other stones, which act as traces of previous times. The way that Axel describes how quartz shavings and burnt stone are produced brings to mind scenes which happened in what is now a logged forest, thousands of years ago: “when quartz tools are produced, smaller items will be made from a larger piece of raw material, and the pieces which fall off during this work are called quartz chips or shavings (*kvartsi-iskoksia*)”, and burnt stones “have been used to line the fireplace or they were used for heating up water or for cooking food. Stones used for a long time burn to a reddish colour, and they can shatter or split like old sauna stove stones.”

Axel’s search for false morels and pieces of stone is not only a physical foraging and engagement of his body with the forest, but it is a foraging-together, too, of different moments. The two forms of foraging are inseparable: ‘then’ and ‘now’ are brought together, as false morels, quartz shavings and burnt stone come into contact with human hands and with each other. Crucially, it is Axel’s knowledge of archaeological methods and the Mesolithic period, combined with recognition

of certain mushrooms, which renders this foraging meaningful in these ways. Knowledge transfers value to the stones as well as to the mushrooms, allowing Axel to sense, through the material surfaces of today's boreal forest, the recent and distant pasts which are locked into the materials.

Axel's quartz shard discoveries are the oldest artefacts created by humans and found in the forest which I have been told about during the course of my research. Others are more recent: "I found a wonderful old plough blade," writes Kaisla, a survey respondent, in her account of foraging, also in her case for false morels. I am reminded by the plough blade of the rusting machinery which I spent time observing outside the forest museum. Both carry possible stories of technologies and practices now superseded by newer, more efficient ways of working.

At Sanginjoki, a workshop attendee, Franz, shows off a mossy and algae-stained deer or elk skull (Figure 39) which he found in the forest whilst searching for mushrooms. Rather than leaving the skull where it was, he carried it back to the parking area where everyone gathered at the end of the trip. "Look at the mycelium spreading across the bone", he says excitedly. His enthusiasm about the mycelium is palpable. "It looks like a sculpture", adds fellow workshop attendee Dilara, while other attendees express, through their facial expressions and body language, a little less interest in the item. The discovery was shown off because of the presence of fungi colonising the bone. This can be seen as a subtle white dusting in the photograph which I took (see Figure 39). Franz is a keen mushroom-grower who spends time not only foraging for fungi but also inoculating logs with spores from different species. Growing fungi, as I found during the time I spent nurturing the oyster mushroom fungus which features in my film and from which screenshots can be seen at the beginning of this chapter, requires intimate engagement with mycelium. Mushroom growers become familiar with the many forms which fungi can take. I wondered if, had it not been for the mycelial fungus being seen as a thing of interest, the skull would have been removed from the forest at all. Recognition of fungal temporalities and ways of being prompted the act of carrying and displaying the skull, providing it with a symbolism and a story reminiscent of the results of the curation practices taking place at the museum.



Figure 39: The fungus-inhabited skull found in the forest at Sanginjoki

Foraging thus allows us to access temporal layers which become gathered together and tumbled over one another. Forest pasts, including those which are incredibly distant, can also be perceived through the body, in combination with certain knowledge. The timescales which can be accessed when foraging may even stretch beyond a human lifespan. The material world which we touch right now is our portal for time-travel. Through material interactions we can sense the past and what has come before, and which continues to unfold in the present.

Intergenerational knowledge

But you know, then again, now I've been reflecting, well berry-picking and mushroom-picking and overall being in the forest are a kind of knowledge, maybe a more rare, or well not rare... but it's a way of being in touch with nature. (Emilia)

Mentions of different generations and the ways in which knowledge is shared between them as a way of making sense of fungi and of the forest arise throughout the data. I entered conversations about intergenerational knowledge-sharing with the assumption (perhaps shaped by my own history of having learned my first mushrooms from my grandfather) that I would hear about the knowledge shared by older generations with younger generations. In some instances, this held true. For example, Panu shares that:

I made a friend when I was younger who had really inherited an interest in mushrooms, and this was in his family, so we shared time together and I think that's where the curiosity grew from.

Sometimes, foraging may simply be the normal and easy thing to do. Axel, who discusses his childhood growing up in the forest, and who later goes on to tell me about his ongoing foraging trips to the north of the country, tells me that:

My home town was really in the middle of the forest, so mushroom-picking and other kinds of foraging were a strong part of life and interactions with the nearby environment.

In Axel's case, both convenience and necessity – “not to do it would have been strange”, he adds – are at play. His family home was within easy walking distance of extensive forests, and foraging was a normal part of life.

Intergenerational knowledge is strongly attached to memories, and many comments from participants during interviews and through the survey indicate the presence of positive nostalgia about the past and the origins of their engagement with fungi and forests. Nostalgia for previous times and situations is the ‘softer’ side of the sharp grief expressed by interviewees when speaking about the loss of their favourite mushroom foraging forests. Nostalgia, in contrast to grief, does not focus on the moment of rupture – the moment which caused the pain of grief, and indeed perhaps change was not so sudden, but gradual – but instead looks back to remember a time of pleasant memories. Mihails’ reflections about his childhood, for instance, are striking here:

Yeah, so I guess my journey into mushrooms was sort of, yeah, one of self-discovery, because I'm ethnically Russian but I'm from Latvia, and when I was born, my first formative years, mushrooming was just a fact of life. It's just

something that we did in the summers at our family farmstead, a cabin I guess, a cottage, a dacha. And, yeah, this is something that my, that particularly my grandmother taught, but my entire family was kind of into it.

On the one hand Panu's new interest in fungi arose from the knowledge which his friend had gained from his family, likely including older generations. Similarly, Mihails mentions his grandmother's role in teaching him about fungi. On the other hand, however, Panu emphasised the importance of the experiences which he had spending time with his young friend when they were growing up together, pointing to the exchange of knowledge between not only 'elders' and young people, but also between peers. Milla says that once she started studying biology and fungi at university, her knowledge quickly exceeded that of her mother.

Overall, the materials tell a story of fungal knowledge as shared between people of different ages in 'both directions'. That is to say, older generations both receive and share knowledge from and with younger generations. The legacies of knowledge which arise from mushroom foraging and more generally an interest in fungi are largely shaped by experience, and a greater level of lived and practical experience is not limited to older people.

As Jari tells me,

On my mushroom courses there are almost always attendees who are older than me. That means I also share knowledge with older generations. In the same exchange I might receive some other knowledge, for example about the forest. This also happens with younger people, too, but less often [is knowledge shared] in my direction. I'm more often the one who is sharing.

This account suggests that access to fungal and forest knowledge is not uniform, but varies throughout people's life-courses. Indeed, Ruusu, a retired biologist, reveals that since she retired she has had more time to engage with mushrooms, even though they have been an interest of hers for years. She now engages with them regularly as a nature guide, and has attended mycological courses and workshops.

Foraging courses such as the ones run by Jari and mentioned by Ruusu provide a forum for exchange in all directions, acting to shape new knowledge-oriented forest legacies for some people. Knowledge is not only shared from person to person in one-on-one interactions. The expansion of mushroom-identifying and

knowledge-sharing technologies and tools such as apps, interactive maps and online forums mean that knowledge about fungi is now available to a wider range of people than ever before, and in some cases it is younger generations who gain knowledge in this way. Jari goes on:

Knowledge about mushrooms has grown a noticeable amount in recent years, so I'm not sure if I would dare take tips from the older generation, especially without checking them first. The responsibility to share correct information is considerable, but I am very happy to do it.

Jari's suggested reluctance to take information provided by older generations at face value reveals that in at least some cases, the legacies of inherited mycological knowledge which were perhaps previously accepted as correct and reliable are now increasingly being questioned and double-checked against other sources of information. I reflect in my field notes that there is a 'buzz' around fungi – at the Mushroom Methods workshop fungi are framed as something mysterious, exciting and alluring. This may partly explain why fungal knowledge is now so dispersed across generations, with younger people now becoming more absorbed, especially through online information-sharing, whilst knowledge about the forest is perhaps still more strongly associated with longer life experience as well as forest ownership. I am furthermore reminded of a moment some years ago, when, emerging from the forest with my mushroom basket I met a man walking the other way, ostensibly on his way back from checking his post-box which is located by the roadside some way from his home. This older man not only seemed surprised to see me coming out of the forest, but it became clear during our brief exchange that he was much more baffled that I had been collecting mushrooms. I know that this person had been living in the area in the midst of forested and mushroom-filled landscapes for many years, yet the 'mushroom buzz' did not seem to have reached him.

People are often accessing histories, acknowledging legacies and furthermore re-making and continuing those legacies when they decide what to forage for. At times they may be borrowing from other contexts and histories, such as in the case of knowledge gained online, and there is certainly nuance in the extent to which different histories will impact on individual foraging decisions today.

Emilia: I see a lot of good and hope in that. In the way that if people continue that and transfer that from generation to generation, then maybe people at the same

time transfer that kind of knowledge which helps... maybe a sort of caring for the environment. And if our children and coming generations want to preserve that, hopefully it's going to be possible.

Forest foraging as geopolitical

The final theme which I explore in this section and in this chapter ties together temporalities which are experienced at the scale of the body and even the molecular with temporalities which emerge from international-scale dynamics. On the one hand I argue, based on the ways in which foragers instrumentalise the more-than-human temporalities of the forest in order to 'treat' themselves, to relax and escape everyday tensions as well as to express parts of themselves which might usually remain hidden, that local-level and embodied practices are political at the personal level, and sometimes contentious in and of themselves. This is, I suggest, regardless of connections across scales to the international level, and regardless of the 'official' governance regimes enacted in forest management. On the other hand, I have also found that foraging practices are nevertheless also deeply informed by national and international 'big-P' Politics as it has touched human lives over decades and centuries. This, then, is where we consider forest foraging as geopolitical, and look at how the temporalities of the State on the world stage are woven into everyday foraging practices and communities.

Wherever foraging takes place, it is rooted in long histories and present-day dynamics which often include the influence of state politics and borders. Although in my experience most foragers rarely talk or think much about these histories without specific prompting, historical political legacies are apparent in the ways in which certain fungi are referred to. By starting with fungi and fungal relations, international and geopolitical elements become apparent.

All land-related activities, in Sweden and Finland at least, occur on ground which is owned by someone, and which has been historically contested. Foraging in the boreal forest is no exception, since forests grow on someone's national territory. Through foraging on land whose borders and therefore human cultures and politics have shifted throughout history, foragers interact, through the fungi which they are collecting, and the ways in which they prepare them for consumption, with histories of occupation, attempted self-determination, and personal struggles for survival in often rough rural contexts.

Echoing an argument which I made in the other chapters, exploring boreal forest temporalities with fungi and fungal foraging cultures reveals that boreal forest temporalities cannot be neatly separated from the temporalities and politics of the state. Framing the state as part of a discussion on legacies enables me to reflect on the ways in which the state has been not only a key influence on the ways in which state-owned forests have been managed, but also on mushroom foraging cultures and practices over time. When practiced today in the forest and in people's kitchens, foraging and consumption of mushrooms reproduce knowledges which are rooted in national logics, ideologies and the claiming of land. These fungal cultures and practices continue in the present day, and may continue into the future as a form of legacy. Fungal foraging legacies do, however, also include other elements. It would be inaccurate to claim that all boreal forest legacies are somehow connected to the Swedish, Finnish (or Norwegian, American, Canadian, Russian) state. Even if the state is ever-present, there are also processes and ways of being which transcend or do not pay attention to the desires of the state, for example as seen in the collecting of mushrooms which people learn about via the internet, rather than due to their location and local cultures.

Gastronomic legacies

Although this chapter has focussed more on the act of foraging than on consuming foraged fungi, the majority of people included in this study who search for and pick mushrooms do so in order to eat them. Consuming milkcap fungi (*Lactarius*) was repeatedly framed by interviewees as a practice originating in Russia and seeping across the border via Karelia into Eastern Finland. The practice of milkcap foraging is common today as a gastronomic legacy of occupation across the post-Soviet countries, whereas western European countries possess their own set of fungal preferences, mainly focussed on the celebration of golden chanterelles (*Cantharellus cibarius*) and *Boletus* species, for instance. Yamin-Pasternak (2007, p. 123) reflects that “rather than being a small innovation, mushroom consumption was part of a vast transformation in food and landscape values taking place during the Soviet period... mushroom consumption and the entire set of tasks and practices it entails, were not only a result but also a means of coping with the myriad transformations taking place in the context of rapid social change.”

Lactarius species are bitter and unpalatable when raw, and retain this bitterness even when cooked if they are not properly prepared first, by boiling them for a

few minutes. A neighbour in Finland has told me that she never collects milkcaps, seeing other species as superior. Mihails reflects that

I guess there's grades of mushroom knowledge. There's plenty of people who talk only about chanterelles. And then it kind of goes from there. And it's true I think, because milkcaps are not I guess the best edible, people tend to not go for them.

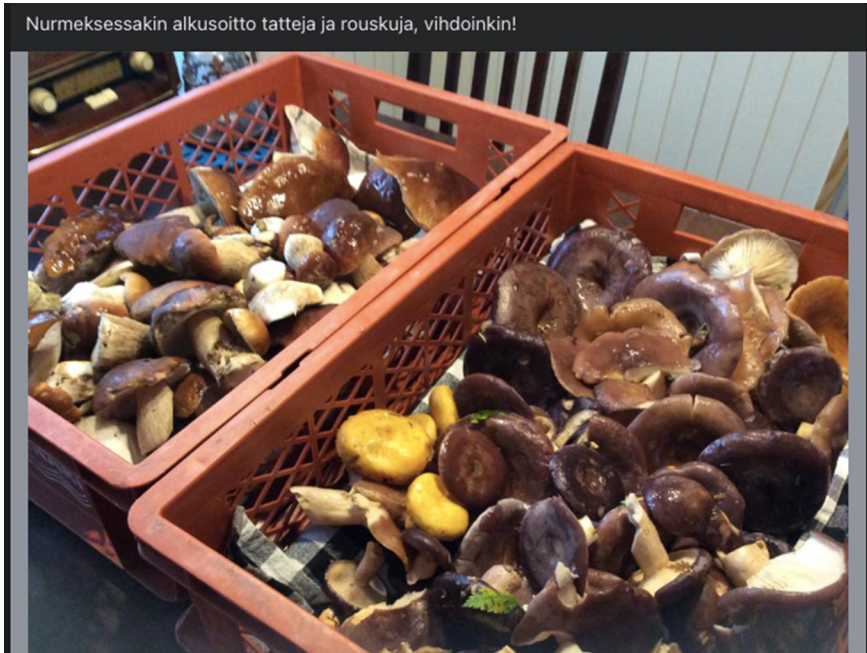


Figure 40: Screenshot from Finnish Mycological Society Facebook page showing baskets full of boletes and milkcaps, and the description 'In Nurmes finally the first flush of boletes and milkcaps!' (Facebook contributor, 2014, n.p.)

Panu shares with me that when he was a child, his father would sometimes fry pre-prepared milkcaps, but given the strong flavor which remains even following this preparation, Panu did not enjoy eating these fungi. Although, during my research, nobody professed a love for milkcaps, their suitability for eating was clearly stated by Mihails and Emilia, as well as being expressed in the Finnish Mycological Society Facebook group. In the screenshot below, somebody has placed milkcaps into the same basket as boletes, which are more widely accepted as delicious edible mushrooms.

Mihails backs this up:

But especially in the Finnish context, because there's, there seems to be two mushrooming cultures and identities at play. Well, there's three if you include the Sámi. But in southern Finland there's influence from the east and there's influence from the west. And from the east, that's a lot of old mycophilic influence from Russia, via Karelia. Whereas in the western part of the country there doesn't seem to have been a mushroom tradition, hence there was a concerted effort by Swedish authorities to encourage people to pick mushrooms, which is also in line with what was happening in Sweden.

As such, certain species of fungi, especially milkcaps as demonstrated through these interactions, are entangled with national identity and the previous movements of populations across borders. Fungal bodies can be seen as connectors to previous moments in time which usually would be indicated in museums, history books and documentaries. Foragers collecting and consuming milkcaps acknowledge geopolitical legacies as narrated and sometimes literally consumed through embodied practices, rather than only told through history books.

Nuclear legacies

Between July and November 2025, people across Finland were invited by the Säteilyturvakeskus (STUK, the Finnish Radiation and Nuclear Safety Authority) to collect fungi from their local areas and to submit them for radiation testing. STUK have been monitoring the presence of cesium (Cs-137) in fungi as a result of the 1987 explosion at the Chernobyl nuclear reactor in Ukraine, which caused radioactive particles to drift as far as Scandinavia and the Nordics, settling in waters, soils, and ultimately in fungal bodies over the years. STUK received 875 samples including 60 species of fungi from 510 people in response to their call, and published the findings in a report released in April 2026 (Roivainen et al., 2026; STUK, 2025).

Different species of fungi were found to contain different average levels of cesium, with smoky wax caps (*Hygrophorus camarophyllus*), gypsy mushrooms (*Cortinarius caperatus*) and velvet boletes (*Suillus variegatus*) containing the most, whilst orange birch boletes (*Leccinum versipelle*), penny buns (*Boletus edulis*) and edible fungi in the *Russula* genus contain the least (Roivainen et al., 2026). Members of the Finnish Mycological Society Facebook group shared the individual results which they received from analysis of the samples which they had

provided, and remarked about the striking differences in the levels of Cs-137 between different species of fungi. During the Mushroom Methods visit to Sanginjoki nature reserve, before the STUK study, a couple of attendees mentioned that they do not pick gypsy mushrooms because of these mushrooms' uptake of cesium. This understanding likely continues to percolate. However, STUK emphasise that when compared with previous measurements, the quantities of cesium in fungi are reduced, and that people should not fear eating mushrooms because of concerns about radioactivity. The STUK website (STUK, 2026) states, "the radiation dose from consuming them is small – even for heavy consumers, it is well under 1 percent of the annual radiation dose Finns receive from other sources." As the website further reminds its readers, people would need to consume 12 kilograms of smoky wax caps in order to be exposed to the same level of radiation as on a flight from Helsinki to New York (STUK, 2026).

Through the discussion of wild forest fungi as carriers of cesium, STUK and the mushroom foragers who provided samples contribute, firstly, to the acknowledgement of international historical nuclear legacies as not only emotional and human but also as material and more-than-human. The specific 1987 nuclear event which continues to leave traces in the boreal forest is acknowledged and reaffirmed as the geographical and temporal starting point for these legacies. Nuclear legacies, as such, become known and accessible through fungal bodies, fungal foraging communities and laboratory analyses as material and imagined boreal forest temporalities. Secondly, via the observation that cesium levels are reducing and that fungi can be safely consumed even if they contain Cs-137, STUK challenge some of the fear and sensitivity which is often attached to nuclear legacies. Fungi are understood to embody radioactivity in their tissues, but the ongoing use of fungi in everyday contexts and the certification of the safety of these uses break down assumptions about all radioactivity as comprehensively, consistently and entirely harmful. Through following fungi and foragers, we therefore find that nuclear legacies as they appear in the boreal forest and in Finland more generally are re-made. They are not re-made as entirely 'safe' or 'comfortable' everywhere, of course (the very existence of STUK and its Swedish counterpart, Strålsäkerhetsmyndigheten (Swedish Radiation Safety Authority) / SSM, signal many years of careful monitoring and the seriousness with which these Nordic states continue to treat nuclear issues). Yet the familiarity with which many people treat the forest fungi known to absorb most cesium demonstrates that, in the boreal forest at least, these specific nuclear legacies and

temporalities are not matters of great concern. The low levels of cesium present in fungi are but miniscule echoes and temporal ripples of the original quantities released at Chernobyl in 1987.

It is important to note here that, in contrast with the examples of the other legacies, the nuclear legacies carried in fungal bodies require an additional layer of translation – analysis in a laboratory – before they can be acknowledged and understood. Until the analysis was carried out and individual results were received in email inboxes, foragers and mushroom-eaters had no way of knowing, feeling or sensing whether the species and fungal bodies which they were handling contained more or less Cs-137 than the next. Other legacies, in contrast, may become known through sight, touch, sound and smell.

Conclusions

This chapter has explored how fungi and fungal foraging highlight and bring different temporalities into being. Fungi are, as I have shown, temporal actors. The seasonal growth of fungal bodies reflects annual and monthly cycles, but further than this the appearance and disappearance of fungal bodies may contribute to the expression of climatic changes and interventions caused by different forest management decisions. Fungi therefore carry and perform multiple temporalities. The chapter has also revealed some of the values, meanings and knowledges attached to foraging; how these inform personal and collective approaches to foraging; and how engagements with fungi connect the forest, and foragers, to other places and moments through time.

Different temporalities do not all mesh neatly together, but rather may be in friction with one another. I have identified particular friction between industrial temporalities such as short-term logging cycles and the movement of heavy forest machinery through the landscape on the one hand, and the temporalities of waiting for fungi to emerge in a favourite foraging patch year after year until their habitat is destroyed, on the other. Fungi themselves display often unpredictable and inexplicable growth patterns and behaviours; they may manage to continue and thrive in the midst of disruption and disturbance, or may also be removed by physical upheaval. The ways in which fungi respond to their environments are seen by many participants as sources of inspiration for forest imaginaries and for thinking about more expansive social and political challenges, too.

In particular, through spending time with fungi and with foragers, this chapter emphasises that boreal forest temporalities are done by and through bodies. Foragers' experiences are dictated by their bodies, senses and abilities, and by the bodies, senses and abilities of others with whom they forage or from who they have received knowledge. Bodies, through multiple senses, connect with and get to know their surrounding environments, from the creep of mycelium searching for tree roots, to human bodies living in or near the forest and going into the forest to collect fungi. Embodiment reveals foraging as a subjective and political activity; bodily abilities mean that some people may literally not be able to enter the forest – there is a hierarchy of abilities which facilitates foraging for certain people, whilst limiting it for others.

I have shown how studying temporal politics with fungi means moving like a fungus, too: moving away from any pre-determined 'centre' and being opportunistic. This kind of following led me beyond the geographical boundaries of the forest, to meet the boreal forest as it manifests through foraged fungi in people's homes and private lives.

Privileging and neglecting temporalities with fungi

The chapter has shown how foragers shape boreal forest temporalities both within and against non-forest temporalities and ways of life, as well as within and against particular forest temporalities. Non-forest temporalities (such as work schedules) become the wider modes within which forest time must be experienced, and it is this logic which led to some of the foragers in this chapter filling hats, pockets and even a bra with mushrooms when the foraging trip was rushed or unplanned. These were examples of the attempted prioritization of foraging temporalities, even when other time pressures ultimately took over. Some people also noted their opposition to logging of the forest, and showed distress at losing their foraging spots overnight. Applying a temporal lens to the practice of foraging reveals foraging as a technique of personal and collective navigation of societal challenges, from climate change impacts to the demands of office jobs.

This chapter reveals several findings centred around the connection (and disconnection) between temporalities. The 'mushroom forest' which participants enter in order to look for mushrooms is described as a place where 'there is no time', 'where time stops' and where one does not need to think about time. The

multi-sensory and embodied ways in which people experience being in the forest are connected to these perceptions. Instead of thinking about time, which was often understood as 'clock time', frequently positioned as a nuisance or seen as irrelevant, foragers' focus is on their bodies and on, quite simply, just being. Indeed, time is framed as a disturbance to the calm of the forest environment. This clear effort by several participants to reject the entire notion of time in the forest is one which I take seriously. Further questioning and investigation revealed that whilst there is a strong desire to move beyond time through mushroom foraging, careful attention must be paid to the exact words used. The focus on timelessness is revealed in my analysis not as a rejection of temporalities as a whole, but as a rejection of temporalities which are placed by my interlocutors in opposition with the more desirable, enjoyable, and/or valued temporalities of the forest.

The bodies of fungi themselves direct attention to more-than-human temporalities. The example of polypore fungi was mentioned by several participants as well as being represented through artistic reflections and photography. Polypores act as a visible, material measures of forest timescales and prompt reflection on decay and slow shifts in the forest; temporalities which are sometimes disrupted by logging or forest fires. Nevertheless, when marks left on the forest floor by forestry machinery or the clearcuts created by intensive logging are encountered, wider structures and narratives about the forest as a source of national revenue and employment are talked about, along with their supporting temporalities. In addition, some fungi such as false morels thrive on physical disturbance, and remind us that there is no clean line demarcating 'destructive' from 'productive' temporalities.

Fungi enact temporal politics which are written into and expressed via their fungal bodies and the wider materiality of the forest. Fungi are indisputably temporal actors: they emerge among tree roots, soils and decaying matter, all of which have their own rhythms and processes. They can persist as mycelial bodies thriving beneath the surface for periods of time so long that they are almost inconceivable to humans. They come and go seemingly unpredictably, and intermingle with other species. Foraging practices engage a constellation of actors, from the fungi and foragers themselves, to plants, animals, soils and geologies, as well as other human protagonists.

Fungi as co-creators of forest imaginaries

Via foraging practices, people develop and strengthen certain imaginaries of the forest. In this chapter, I have singled out, firstly, the imaginary of the forest as a personal space in which people can move and spend time. Foragers are shown to adopt the forest as a 'room' of their own in which they are able to conduct private conversations with no fear of being surveilled or overheard, and where they feel free to act and behave as they like. Here, the 'timelessness' of the forest and its perceived lack of linear or rigid 'time' (rather than 'temporalities') as discussed earlier in the chapter feeds into the imagination of the forest as a freeing, relaxing and immersive space. Within this understanding, the body is important as a scale through which the forest is experienced and multispecies rhythms are perceived. Therefore the temporal is far from absent, but it is imagined as lived, open, and characterised by choice, whilst the demands of rigid time are rejected. Secondly, I have described socio-climatic imaginaries whereby the forest is a source of feelings of urgency as well as hope in the context of climate change and societal debates. Here, urgency and hope are engaged in an interplay which sometimes also results in feelings of despair or anger when hope cannot grow enough to keep up with the urgency of achieving certain goals. Foraging collates personal, situated and embodied experiences and knowledges, as well as knowledge and visions of forest pasts and futures. The imaginaries which emerge are informed by lived experiences, memories and knowledge tied to specific places, locations and lives, but they are also to do with much wider concerns and ways of engaging with the boreal forest beyond those boundaries.

Foraging as a window into patchy forest legacies

Legacies as I interpret them through the data are left-overs, echoes, continuations and persistences. Because mushroom foraging is an inherently search-oriented practice in which paying close attention to one's surroundings is crucial, foraging acts as a form of archaeological practice which can reveal multiple forest legacies. These legacies encapsulate varied temporalities, from the temporalities of deer- or elk-lives, to the temporalities of past industries. Foraging reveals the forest to be "shot through by absences where distant others, removed in space and time, haunt the sites" (Crang, 2006, p. 49). In addition, forest legacies of knowledge also surface in this chapter, which shows how engagements with fungi are informed

by intergenerational knowledges, memories and varying kinds and degrees of experience.

Mushroom foraging has here been explored as a practice and a way of being in the forest which reveals forest legacies in inherently patchy and usually unplanned ways. Forest legacies are upheld and challenged in multi-sensory and tactile ways through mushroom foragers' embodied and sensory practices as well as narratives. Indeed, the results of experiencing different temporalities – from daily foraging trips to intergenerational knowledge – are in some cases literally ingested. The piecemeal way in which legacies are revealed and spoken about (or not spoken about) suggests that many more forest legacies remain hidden and sometimes literally buried. The legacies themselves are also patchy – materially, temporally and emotionally. The legacies encountered through fungal bodies and foraging, unlike the usually highly-valued 'heritage' described by critical heritage studies scholars, can be unwanted and unwelcome as well as desired. Indeed, these legacies are sometimes treated with indifference and can even be unknown in the absence of concerted efforts to locate and analyse them. The legacies which have surfaced through this research make no claim to value in and of themselves, and are only made meaningful when they are included within or further shaped through narratives about the forest, the wider environment and society.

Even though “fungi are, in part, decomposers, and when they enter heritage institutions, they are often seen and treated as a threat” (Venovcevs, 2026, p. 3), in this chapter fungi are shown to be an integral part of forest legacies and personal histories. They are sometimes valued and sometimes sidelined or feared, constantly shaping and re-shaping the forest.

In summary, this chapter has shown that fungi, as part of multispecies boreal forest relations, have much to teach about the forest. Exploring the forest with fungi and those who search for them is a window into boreal forest temporalities – including timescales, histories, stories and rhythms – which may otherwise be unacknowledged or not understood as interconnected.

The chapter contributes to political science and other politically-motivated disciplines by demonstrating that foraging and fungi themselves should as not be seen as apolitical or uninteresting for the study of politics. Rather, fungal

temporalities are inherently connected with personally and collectively meaningful issues of identity, belonging, and the navigation of competing priorities. At the same time, this work speaks to the expanding literatures on fungi and foraging, providing a critical lens on the politics of foraging.

The chapter has shown the ways in which historical political shifts, the crossing and redrawing of borders, and personal connections to other countries may impact upon fungal foraging practices today, highlighting the fact that fungi and foraging are not isolated from wider structures and processes of migration, economy, capital and identity politics.

The findings of the chapter therefore also point towards the need for the decisions made in overt and 'official' institutional chambers of power to pay attention to the everyday and embodied experiences of temporalities, including fungi-specific temporalities, which play out in the forest and in peoples' homes. The decisions made on forestry activities and the treatment of forest areas directly impact on fungi and those who forage for them. These everyday and more-than-human temporalities are inherently implicated and entangled with temporalities of national governance, environmental policy and geopolitics.

As this final empirical chapter draws to a close, we are closer than we have ever been to the physical forest itself. We are among the mosses, the tree stumps and logging detritus, the machinery tyre tracks, the prehistoric quartz chips, the ferns and the wrecks of abandoned cars. All of these things express temporal politics; the negotiation and expression of different temporalities connected to different desires and processes. We are also, I would argue, more deeply entangled in international networks and geopolitics than we have so far been at any point in this thesis. In the previous chapter, Kosti talked about the height of the lichen in nearby Russian forests, and, though it was not mentioned in the chapter, I was allowed a (literally) fleeting glimpse of cross-border dynamics when a helicopter which appeared overhead turned out to be friendly Finnish border guards. But being attentive to temporalities when following foragers and fungi allows us to reach further across borders and time periods. From those who have consumed fungi containing radioactive cesium lingering in soils since the fallout from the Chernobyl explosion to those who have cooked *Lactarius* species following their grandmother's family knowledge from the East, the embodiment of boreal forest temporalities as international and geopolitical is absolute. Meanwhile, even as they prompt the acknowledgement of desired and undesired forest legacies, and even

as they seed forest imaginaries extending into the future, diverse fungal experiences emphasise the immediacy of boreal forest temporalities. These accounts and experiences dispel notions of uniform 'time' and replace it with temporalities; more-than-human, everyday, embodied and lived.



Chapter 7. Conclusions

Through a multi-sited patchwork ethnography in three interconnected yet different empirical cases across Finland and Sweden, this thesis has explored the ways in which human and more-than-human actors pay attention to, express and mobilise boreal forest temporalities. My work has investigated how understandings and experiences of temporality shape, challenge and bring meaning to everyday engagements with the boreal forest. As scholars in the interdisciplinary area of critical time studies have discussed, temporalities are not simply pre-existing, passive or neutral phenomena. Instead, they are constructed, contested, and shape and are influenced by multispecies lived experiences at every spatial scale. Temporalities, in short, are active participants in everyday life. With this theoretical premise as an initial prompt, the four objectives which emerged at the beginning of this work were: 1) to investigate the ways in which temporal framings are inherently political; 2) to develop a more-than-human understanding of temporality; 3) to examine temporal politics at small and granular scales, and 4) to show how multiple temporalities intersect in the present.

As I have alluded to throughout, the forest in both Sweden and Finland is enlisted in narratives of national identity, economic growth, climate mitigation, nature conservation, art and folklore, to name a few. The boreal forest is a case ideally suited to studying temporal politics; it brings together ecological lifespans, cycles and patterns of industrial extraction, conservation regimes, and multispecies relations. These overlapping framings often lead to extensive debate and publicity. Forest issues, whether relating to purchases and sales, forest fires, conflicts between logging companies and Sámi peoples, or the status of forest biodiversity, are rarely out of the news in Sweden and Finland. Similarly, academic literature abounds on forest policy-making processes and the discussions on how the forests in these countries as well as others should be managed. My professional work in the area of forest policy advocacy and my personal experiences in the forest have

contributed to my interest in studying boreal forest temporalities, especially from the everyday, local and personal level.

In this concluding chapter I summarise the main findings, arguments and conclusions of the thesis. I firstly provide an overall response to the main research question: “how do temporalities shape, challenge and bring meaning to everyday human and more-than-human engagements with the boreal forest?”, and then move on to answer the three sub-questions, with reference to the findings from each empirical chapter. The sub-questions are: “how are different boreal forest temporalities privileged or neglected?”, “how are different imaginations of the forest upheld via temporal framings?” and “how are forest legacies acknowledged, challenged, and remade in these settings?” After this I move on to discuss the contributions of my work to boreal forest literatures, critical time studies, political science and more-than-human scholarship, which here also encompasses the [re]new[ed] materialisms. The penultimate section deals with methodology and reflects on how this thesis has contributed to methodological approaches for studying time and temporality. Finally, I acknowledge limitations and suggest pathways for further research.

The temporal politics of the boreal forest

Overall, this thesis shows that boreal forest politics is also temporal politics, and that all engagements with the boreal forest are at once inherently temporal and political. The thesis finds that multiple temporalities (rather than linear and singular ‘time’) are crucial in the formulation of engagements with the forest. Although the aims and desires of actors and stakeholders vary, I show that temporalities are viewed and treated as opportunities to be harnessed. It is this recognition, whether conscious or not, of the multiplicity and variability of temporal relations which in its most essential form brings meaning to everyday human and more-than-human engagements with the boreal forest. Across the three cases which this work explores, temporalities are produced, sustained and negotiated through stories and narratives, embodied practices and material expressions.

Inspired by interdisciplinary work in critical time studies, I have worked with the temporal as a political arena which is encountered across scales and which can be

traced through attention to material expressions as well as narratives. Developing on existing scholarly foundations in order to shape and apply my concept of boreal forest temporalities, this research shows how time and temporality are enacted through tangible and material practices from which they cannot be separated and through which they become known. Importantly, matter, space and spatiality do not disappear with a focus on time and temporality. Rather, these registers must be thought of together. This thesis has demonstrated that the material dimensions of everyday life are crucial to how time and temporality are accessed, understood, interpreted and used to different ends. Temporal processes and narratives, meanwhile, influence the material world.

I have demonstrated that temporal politics does not only unfold within formal arenas or public forest debates. The thesis shows that forest politics is not restricted to the realm of official decision-makers, nor does it rely on logics of the nation state or formal governance structures (even if these are frequently sensed and perceived across scales). There is methodological and conceptual value to sometimes literally touching the forest floor, moving through domestic spaces and interacting with 'mundane' materials. In doing so, this thesis brings attention to quieter and more subtle forms of political and temporal negotiation which are less immediately recognisable as political in the most commonly-used sense of the word, and which do not necessarily draw the attention of the wider public or media. Yet temporalities are constantly sustained, challenged and remade in everyday life, and feed into forest imaginaries and legacies. The thesis therefore expands understandings of both politics and temporalities beyond institutional and anthropocentric framings and shows how temporal politics unfolds through more-than-human relations across multiple sites and scales.

Rather than trying to resolve the tensions between temporalities, my work makes tensions visible by tracing how temporalities coexist, collide, and are negotiated in practice. It furthermore finds that temporal framings need not always be in tension or 'negative'; rather, they can also be productive and create arenas for finding ways forward. I find that different ways of dealing with temporalities are used by actors to reiterate or navigate their positions within present-day dynamics, as well as shaping which forest futures become possible. I have shown that in addition, temporalities may be harnessed as tools of self-expression and resilience in contexts of change and competing desires.

Chapter 4 focusses on museums, especially Lusto, the Finnish Forest Museum. This chapter shows the ways in which the politics of the museum and of museum curation practices are inextricably tied to and result from ideas about temporalities – from the local forest histories which are displayed and/or preserved, to the stories being told and debated about forest ecology and the lives of multiple nonhumans, to the noticing of patterns of rust and decay which affect the preservation of museum exhibits. It reveals curation to be a more-than-human temporal practice in which multispecies actors and even the elements themselves can alter the curated materials. The museum as an idea and as a network rather than only a building or a space also emerges as important, with curators emphasising that the museum provides services beyond its walls, effectively allowing the museum's representation of boreal forest temporalities to travel.

Chapter 5 presents an account of temporal politics in national parks and other protected forest areas, as well as tracing how boreal forest temporalities emerge in conversations about conservation more generally. The chapter shows how conservation, already understood in the conservation and critical heritage studies literature as political, is political not only because of the ways in which it, for instance, is funded and influenced by a range of state- and non-state actors, or reflects or challenges the desires of other environmental and local actors. It is also political because it intervenes within and relies upon the pre-existing and temporally-shaped materialities and agencies of the landscape. Conservation initiatives and landscapes project certain narratives and construct certain imaginaries – present and future – of the forest, through the physical structure and living things in that forest.

Chapter 6 explores encounters with fungi in the forest. Although embodiment is also present in the previous empirical chapters, forest temporalities as embodied are especially significant in the data here. Physical and sensory experiences as mediated by bodies, both human and more-than-human, contribute to forest imaginaries. This chapter shows how memories, individual and collective histories and hopes for the future – including those held at some time in history by States and political leaders – might be rendered present today through searching for, picking and eating particular mushrooms. The chapter reveals how attending closely to the materialities of personal and day-to-day contexts whilst asking questions about temporalities leads to deeper understandings not only of those

contexts in the here and now, but also to understanding how they are connected to the global and the international.

Privileging and neglecting temporalities

Boreal forest temporalities are privileged in a number of ways. Firstly, in the museum setting, curators are increasingly re-thinking their exhibitions in order to narrate the forest as a relational and ever-shifting entity. Lusto (as well as museums more broadly) curates physical objects and written narratives in order to signal the value of particular forest histories, in addition to presenting desires and hopes for forest futures. The Lusto museum exhibition is divided into parts in order to balance between different ways of understanding the forest and its temporalities. The things displayed in the exhibition, from large artworks, to wood-cutting tools to a nature film, are all ways of showcasing and privileging particular temporalities. This thesis finds that the museum is working to privilege the idea of temporal multiplicity and the multi-dimensional nature of the forest. Through workshops and emotive techniques such as storytelling, the museum creates opportunities for societal dialogue and conscious reflection on forest histories as well as possible futures. Secondly, in national parks and nature reserves, decaying wood and newly-germinated plants alike are lifted up as symbolising landscape in process. This research therefore challenges assumptions about national parks and nature conservation areas as attempting to hold landscapes still or in stasis. Rather, processual temporalities, change and ongoing-ness are strongly privileged. Finally, through fungal bodies and foraging practices, fungi and foragers alike find ways of thriving in changing forest landscapes. The changeability and adaptability of fungi is seen by foragers as providing ongoing education, entertainment and inspiration for resilience in light of climate change as well as personal struggles. In addition, the ‘archaeology’ provided by the exploratory and search-oriented practice of foraging means that different people draw on different knowledges and interests in order to notice and access different elements of the forest’s material legacies.

While certain temporalities are privileged, others are also neglected and sidelined. This neglecting and sidelining, made possible by temporalities’ plurality, brings additional meaning to actors’ engagements with the forest. At the museum, histories of forestry industry activities are being quietly toned down so that they do not take up more space than stories about biodiversity and forest folklore. It

must be emphasised that these histories and modern realities of forest work remain important and are by no means totally sidelined, however temporalities of extended tree growth and forests' ecological health outside of and in spite of industrial temporalities are positioned as more urgent. At the national park, fire-branded trees may be left in the forest as markers of previous events, however fire is now suppressed and measures are being taken to prevent its return to the area. At the nature reserve in Sanginjoki, echoes of previous forestry activities are still visible, yet these are being allowed to literally grow over and be submerged by undergrowth. Within fungal foraging communities and individual foraging practices, certain species of mushrooms are regarded with indifference, caution or even disdain because, for example, they are not seen as fitting into local gastronomic legacies or because they may carry toxic or harmful compounds. Here, the ways in which fungi are temporally entangled with cultures, places and events, and the narratives told about these things, comes to the fore. The intersection of the temporalities privileged through individual choices and freedom with the temporalities emphasised by external, non-forest-related demands such as work schedules is also striking in the chapter on fungi. Foraging patterns must often adhere to, for instance, seasonal changes and waiting times and external pressures such as jobs. Several participants expressed having to privilege and neglect both foraging-related and non-foraging-related temporalities. The chapter shows how temporal regimes such as those used by employers and by the large-scale forestry industry act as temporal vessels or backdrops against which mushroom foragers shape and experience temporalities.

Upholding forest imaginaries via temporal framings

At the museum, the forest is, as a whole, imagined as a place of possibility. Through stories about more-than-human temporalities as well as narratives about refuge and escape, the forest is presented as a site of value for climate, biodiversity and human wellbeing. The imaginary of the forest as a folkloric, mythical and 'ancient' place is also being revived through similar references to more-than-human temporalities where clock-time is not present. The museum's re-imagination of the forest also acts to support and is supported by the very visible presentation of, for instance, abstract art sculptures and a film about forest nature, while artefacts such as chainsaws and forest machinery are reduced in number and housed in less central spaces. Moving to the national park and nature reserves, the

forest is imagined as a living landscape which showcases previous events and histories, present-day realities, and possible futures. These different temporal moments are laced with a sense of improvement towards an ecological ideal. Material infrastructure such as display boards and boardwalks are employed to guide visitors' movements and perceptions of the forest. Here, landscape change often comes with reassurance and guidance. What is best for nature or what is happening in the landscape is not necessarily obvious, so it is frequently pointed out. As such, boreal forest temporalities here are symbolic of narratives beyond what might be immediately obvious to a visitor moving along the path. The forest's cyclical temporalities are furthermore imagined as connecting the past through the present and into the future; the wood of ancient trees is enlisted in telling stories about growth and regeneration. Finally, among foragers and in fungal foraging communities, the forest is imagined as an at-once central and marginal location, not only in terms of space and place but also in terms of time and temporality. Here, human bodies are immersed in the temporalities of the rooted forest, away from the bustle of urban, domestic or work settings. The forest is central because for many foragers it is 'the destination' where they try to spend as long as possible. The forest is framed as a space, in some cases as a 'room', into which one's body can disappear and where 'time stops', in search of fungi. Although many participants emphasised the imaginary of a 'timeless' forest, I nevertheless find that such forest imaginaries are made possible precisely by temporalities of different kinds, and especially by the ongoing more-than-human temporalities of mushroom foraging which allow some people to immerse themselves in the landscape or to stop thinking about everyday work and family concerns. Indeed, the framing of the forest as 'timeless' can be understood as an act of escape, refuge, contestation or even defiance against the highly 'timed' and busy nature of many participants' lives outside of the forest setting. It is also important to note that although participants use guidebooks and internet forums for reference and when starting out, individual mushroom foragers build forest imaginaries in a diverse range of ways. Unlike at the museum and in nature reserves, mechanisms for governing and controlling how the temporalities which feed into imaginaries are experienced and expressed are not constant.

Acknowledging, challenging and re-making forest legacies

Forest legacies are acknowledged at the museum through decisions about what items to display and what stories to tell. Legacies of both manual and mechanised labour and local and national economic gain based on resource extraction are acknowledged through the inclusion of chainsaws, axes, old photographs from log-floating and logging activities, and through the dedication of an entire room to modern forestry machinery. The museum however simultaneously challenges the dominance of these legacies by balancing them with a number of other stories – about biodiversity and ecosystems, about the health and wellbeing benefits provided by the forest, about small-scale craft work and personal connections to the forest, about folklore and forest myths. Evidence of legacies being re-made is not, I suggest, present here; rather, the museum takes existing legacies and either acknowledges and strengthens or challenges them. At the national park and in other protected forests, forest legacies are acknowledged via storytelling about the growth rates and rhythms of trees, especially pines, which are privileged and politicised. By moulding and playing with ecological histories and the ever-changing physical matter of the forest itself, those involved in hands-on forest protection as well as in telling stories about conservation uphold forest legacies of natural decay and regeneration. Visible legacies of previous industrial land-use are also acknowledged through signage and written information, but are challenged and allowed to become submerged under growing vegetation – the forest is tasked with reclaiming its own ‘wildness’. Finally, mushroom foragers practice some of the most unintentional acknowledgement of some legacies when compared to other human participants in this research: when foraging, they come across material forest legacies in the form of, for instance, the remains of human activities which impact on how fungi and trees grow today. However, not all legacies have roots in the past. Some foragers emphasised the importance of knowledge. This may be received from older generations, however many foragers are in the process of expanding their mycological and forest knowledges with the help of technologies, forums and other foragers. Knowledge is therefore a constantly renewing form of legacy which is continually re-made through personal and community interactions. As a whole, fungal growth and mushroom picking span deep forest histories, intergenerational knowledges and geopolitical shifts. International and cross-border events come to be known and to some extent preserved as legacies thorough small-scale and local practices which at first glance seem entirely disconnected from the global. In this way, the use of a more-than-

human temporal politics framing has uncovered the links between mushroom foraging and international geopolitics in different corners of Sweden and Finland, revealing surprising and unexpected spatio-temporal connections.

Key contributions

Contributions to boreal forest scholarship

This research contributes to conversations about forest management and to boreal forest scholarship. Firstly, rather than approaching the boreal forest as a singular or static landscape, I show that it is a relational, multi-sited and temporally-layered assemblage. The materials and participants which I have worked with have shown throughout that the boreal forest does not exist in only one form across only one section of a map. The ‘material’ might seem to anchor the forest in place, but as I have shown, material travels. Narratives may appear to be airy and untethered as they live in the mind and in stories, but as I have shown, they are attached to the material world. This interpretation should not reduce the importance of the physical forest itself. Rather, the possibility of detecting the forest across a number of spatial scales and locations highlights its influence across space and time - the temporalities which are tied to the forest echo through and across scales.

Furthermore, existing studies which take an interest in the boreal forest as a site of politics often focus on governance processes, policy conflicts and highly visible struggles over forest management. Polarised debates between forest protection or conservation advocates and forestry industry representatives in particular are emphasised in the literature. In this thesis, I have acknowledged the importance of these debates and the existence of strong opinions on ‘both sides’ of the forest debate in Finland and Sweden. Their echoes arise constantly in my materials. However, the use of more-than-human and [re]new[ed] materialist theory combined with mixed ethnographic methods has enabled and even necessitated attention to ‘quiet’ local-level and personal participation within the context of these debates. In response to nascent discussions in critical forest studies, I have highlighted sensory and embodied elements of the time spent in forests, as well as paying attention to intersectional identities of participants and my own experiences in the forest.

A focus on everyday and embodied elements contributes to highlighting the ways in which boreal forest scholarship can inform official decision-making and governance processes. Based on my findings and in conversation with emerging work in critical forest studies, the boreal is not one singular forest which can be categorised as existing in one 'time' and within a linear temporal understanding. Rather, it can and should be understood through diverse personal and community histories, everyday encounters and multispecies interactions. The Finnish Forest Museum has already expressed recognition of this, and further work between policy makers and cultural institutions along with reference to research in critical forest studies can help to mould policy and management to the varied needs at hand. I have shown that policy processes and management decisions impact on multiple boreal forest temporalities and lives which exist and unfold regardless of whether they are recognised or not. I argue for that recognition. Processual temporalities, change and ongoing-ness should be acknowledged in decision-making on protected area management. My contribution here is therefore not only to bring the embodied and everyday into boreal forest scholarship, but also to show how this expanded and creative iteration of boreal forest scholarship can contribute to effective and impactful forest policy and governance.

Finally, the temporal focus is in itself a significant contribution to boreal forest scholarship and can bridge between forest scholarship in the natural and social sciences. Temporal approaches are encountered in the natural and biological sciences (for instance in surveys of ecosystem change over time). However, and although there are many studies across the social sciences of personal engagements with forests (including the boreal forest in North America and Europe), very few of those forest projects hone in on the temporal as an object of particular critical interest, or focus on the temporalities of the boreal forest. I suggest that temporal studies of the boreal forest can prompt conversation between the natural and social sciences. For instance, Chapter 6 reaffirms existing knowledge within biology and ecology on the growth rates and lifespans of polypore fungi, but brings this into a social science arena and proposes bracket fungi, as well as other forest species, as interesting research participants with which communities and individuals can think and talk about forest pasts, presents and futures.

Contributions to critical time studies, political science and more-than-human scholarship

The centering of time and temporality within this research places my work within a repertoire of literature across the social sciences and humanities which takes an interest in temporal concepts. This thesis has contributed to a wide area of research on forests and temporalities. It has also occupied a niche by using the concepts of temporal politics and boreal forest temporalities to describe and explore the intersections between time and temporality, the political, and the empirical setting of the boreal forest. Conceptually and theoretically I have built upon research in critical time studies, the new or ‘renewed’ materialisms, and theories of the more-than-human.

My work contributes firstly to conversations in critical time studies. My findings echo the work of other scholars in critical time studies, as I have found that people use temporal framings in order to navigate the world and to make sense of their lives and experiences. However, I move beyond and advance understandings of temporal politics in dialogue with these critical time literatures on two main fronts. Firstly, outside of critical time studies, time and temporality are often portrayed as abstract, neutral and taken-for-granted backdrops to social, cultural and political life. I have drawn inspiration from critical time studies in order to show that time and temporality are constructed, contested, entangled and plural. Secondly, I build upon this understanding by showing the ways in which temporalities are lived, material and inherently multispecies. In demonstrating evidence for this assertion throughout this thesis, I make the point that critical time studies need not only focus on institutional and organisational regimes and processes, but also on local-level, everyday, ecological, sensed and embodied practices. The focus on the more-than-human therefore acts as a path towards attention to other actors and beings who may not usually be considered as legitimate temporal and political actors.

This thesis contributes to political science by showing how temporal framings operate as mechanisms of political ordering and by expanding understandings of where politics unfold. Rather than locating politics only within institutions, governance processes or formal public debate, this thesis demonstrates how temporal politics is continuously enacted through everyday embodied, material and multispecies practices. By attending to apparently ‘unlikely’ political actors such as the items in a display case, the boardwalk looping through a national park,

and mushroom foragers and mushrooms themselves, this research contributes to political science by extending political analysis beyond human actors alone. Furthermore, whilst in political science time is often discussed in relation to institutions and governance, it is less frequently recognised as a contested terrain or political tool in its own right. I follow scholars such as Sarah Sharma, Michelle Bastian and Naomi Lazar to argue for time as a contested terrain which must be fought for or over. Via these contributions I respond to Audra Mitchell's call for work towards 'generative decay' in which scholars of international relations and global environmental studies (I would add political scientists, too) support the breaking-down of entrenched assumptions and dominant knowledge systems centred around, for example, anthropocentrism, "refusal of relations and resentment of dynamic earth processes" (Mitchell, 2024, n.p.).

A final key area of scholarship to which I contribute theoretically and conceptually is work on the more-than-human, also including the [re]new[ed] materialisms. Existing work on the more-than-human acknowledges and emphasises the agency of beings which are not human or which are not only human. In this thesis I contribute to literatures in more-than-human studies by showing how more-than-human actors who may not usually be interpreted as politically active or influential engage in the enactment of temporal politics and boreal forest temporalities. The actors involved in enacting boreal forest temporalities include inanimate materials (metal is discussed in Chapter 4, deadwood in Chapter 5, stone in Chapter 6); nonhuman living beings (trees and plants in Chapter 5, reindeer and fungi in Chapter 6); and objects such as forestry machinery (Chapter 4) and mobile phones (Chapter 6). The account of temporal politics which has been laid out in this thesis also includes many human actors and additional more-than-human aids which are enlisted in the expression and shaping of temporalities. Specifically, these are digital technologies (featured across Chapters 4, 5 and 6) and physical sources of written information such as signs and plaques (Chapters 4 and 5). This list is not exhaustive. Although enacted and negotiated with and through these multiple more-than-human actors, each empirical chapter shows that temporal politics is not attached to any single actor. Instead it is relational, arising out of the connections between actors.

These, then, are the differences made by thinking temporally with other species and materials. A temporal and more-than-human approach allows interrogation of the connections between temporalities, and of the temporal connections

between places. Here, the more-than-human serves to ensure that the temporal is always grounded in space and place and that the real-world effects of temporalities on environments, places and different species are never ignored. A focus on the temporal, meanwhile, ensures recognition of the ways in which myriad legacies, memories, hopes for the future and rhythms which unfold in the day to day are interconnected and influential in the shaping of dynamics in peoples' and ecosystems' everyday lives.

Although I have outlined the areas of contribution above as applying to separate areas of work, these contributions are not as separate as they may appear at first, since they are all connected by my methodological contributions.

Methodological contributions

Methodologically, this thesis contributes to ongoing discussions about how research fields, sites and cases are imagined and approached. Earlier in this thesis, I drew on Doreen Massey's (2005) relational conceptualisation of space in order to challenge bounded and static understandings of the boreal forest. Massey's work also has methodological implications: If spaces and fields are relational, dispersed and constantly in the making, then research design cannot simply assume fixed and clearly bounded locations. This becomes especially important when studying temporalities, which emerge across multiple sites, scales, materials and relations rather than existing neatly within one identifiable field site. Approaching boreal forest temporalities therefore requires moving beyond conventional spatial imaginaries of fieldwork. Rather than understanding research sites as stable locations which can be entered and exited, this thesis has approached the field as relational, multisited and temporally layered. I have shown how temporalities emerge through museums, conservation spaces, fungal foraging communities, digital platforms, stories, embodied encounters and material practices distributed across Finland and Sweden.

In response to these methodological challenges, this thesis has firstly employed a multimodal patchwork ethnography. Combining interviews, participant observation, photographs, a survey, online content, sensory impressions and embodied experiences has enabled temporalities to be followed across fragmented and dispersed settings rather than through one singular methodological approach or site. Multimodal patchwork ethnography is both spatially and temporally

patchy. Through this patchiness, the approach is adaptable to different research fields as well as to the personal and professional realities of researchers, therefore providing approaches of use to scholars across the disciplines and fields mentioned above, as well as many others.

Second, this thesis has developed forms of noticing attentive to quieter, indirect and often difficult-to-articulate temporal dynamics. Temporalities rarely appeared as stable empirical objects. Instead, they emerged through rhythms, absences, material changes, stories, atmospheres, multispecies encounters and embodied practices encountered across the research process. I employed a combination of narrative analysis and close attention to embodied practices, affects, emotional expressions and other non-linguistic modes of communication and meaning-making as a way of noticing subtle references to different temporal framings. This take on Tsing's 'arts of noticing' expands on moves towards 'multispecies archaeology', 'multispecies ecology' and methodological attention to intimate, embodied multispecies perspectives as a whole (Birch, 2018).

Third, research on boreal forest temporalities has required attention to the ways in which forests and forest practices exist beyond physical forest locations. Instead of keeping my empirical research anchored within the physical forest, this work shows how temporalities travel across space and place, and therefore I have included other places and sites in this project. Imaginaries, identities and temporal negotiations emerge through digital platforms, online communities, individuals' homes, media materials and dispersed interactions which form part of the wider field of boreal forest temporalities.

Overall, then, whilst fieldwork is usually imagined spatially, this thesis shows what can be done when temporalities are the object of study. It showcases methodological strategies to deal with researching temporalities, as well as re-imagining fieldwork as an inherently temporal endeavour. Researching temporalities requires approaches capable of attending to indirect, fragmented and often difficult-to-articulate dynamics. Temporalities rarely appear as stable empirical objects. Instead, they emerge through stories, materials, rhythms, embodied practices, multispecies encounters and sensed changes across sites and scales. Meanwhile the multimodal patchwork ethnography and abductive approach highlight and work with, rather than against, the inherently temporal nature of doing research. My work as a whole demonstrates how multimodal, patchwork, abductive and more-than-human methodologies can make

temporalities empirically perceptible and analytically traceable across multiple sites, scales and forms of experience.

Pathways for future research

This thesis has predominantly focussed on how boreal forest temporalities are known and navigated, how they appear in everyday life and how they can be identified through certain research methods. The question of why particular temporalities are shaped in particular ways or privileged whilst others fade away is only lightly discussed in this thesis. In-depth explanation and the detection of causation was not an aim here. That said, many of the stories told throughout hint at answers to the ‘why’ question. Chapter 4 cited funding sources and curators’ work outside the museum within government as a couple of possible explanations for Lusto’s chosen temporal narratives. Chapter 5 suggested that the temporalities privileged in forest conservation spaces often relate to cycles of both decay and growth because protected areas are imagined as ‘uninterrupted’ places which carry legacies of century-old ideals of pristine nature, whilst also navigating desires for regeneration in the context of landscape change and forestry practices. Chapter 6 suggested that histories of Russian and Swedish rule feed into the picking of particular forest fungi, and the sharing of particular intergenerational knowledges about the forest in different parts of Finland. The role of emotions in engagements with the forest can also explain the stories that people tell, this being especially notable in Chapter 4 and Chapter 6. The possibilities are too numerous to list, but further research could build on any of the themes and findings across the chapters to explore causality.

The future is an important theme which warrants ongoing investigation. The work of critical futures studies scholars in particular could intersect with the themes opened up in this thesis. Critical futures studies may be understood as “involving the exploration and interrogation of the ways in which society thinks, imagines and talks about the future” (Godhe & Goode, 2018, p. 152). Increasing numbers of scholars focussing on the challenges of ecological and climate crises (Coleman & Tutton, 2017) are studying ‘imagined futures’ which are performative in the present (Groves, 2017; Jasanoff & Kim, 2015; Urry, 2016). This means that futures can be thought of not as ‘empty’ or distant, but as shaped

and lived in the here and now (Adam & Groves, 2007; Sandford, 2019). Hajer and Pelzer (2018, p. 225) describe “practices bringing together actors around one or more imagined futures and through which actors come to share particular orientations for action”. The future features in my findings, and especially in relation to forest imaginaries and legacies which often draw upon and influence ideas about the future. Yet wishing to move beyond rigid categorisations of ‘past’, ‘present’ and ‘future’ in order to delve more deeply into the core of what temporalities are and how they can be identified, this project has not focussed explicitly on the future. Neither have I tried to investigate why particular ideas about the future in connection to forests might be more dominant than others. Meanwhile, as Oomen et al. (2022) write, how futures become socially performative in the present is not well-investigated. Since I have asked ‘how’ questions, I have to an extent contributed to answering this last question whenever I have identified future-oriented elements. However, further research could place greater emphasis on boreal forest futures by asking, for instance, “what ‘lived’ boreal forest futures can be identified in [name of actor group or setting]?”, “to what extent do the boreal forest futures represented in [name of space or setting] differ from those represented in [name of space or setting], and why?”, and “to what extent are certain actors more or less invested in shaping futures in the present, and why?”

In addition to asking ‘why’ and thinking about the future, ideas for further research can be drawn from across the thesis. The foci of Chapters 4, 5 and 6 can each be seen as a distinct area of research, and each of these chapters is a case study in its own right. Presenting three different yet interconnected settings (the museum, conservation spaces, and fungal foraging communities) in this manner rather than integrating the full breadth of spaces and places across the whole thesis has allowed me to test the theoretical and methodological approach via three cases. It has also made it possible to confirm that some of the broader empirical findings are applicable in more than one setting. This reaffirms the strength of the concepts and methods which I have worked with. However, the choice to work on three different settings can also be read as a design-driven limitation of the thesis. The choice has meant that there have been practical and temporal restrictions on the possibility to explore each setting in even greater depth. Below I outline a few more avenues for future research whilst noting that these suggestions are non-exhaustive and remain oriented around some of the trajectories present in my work.

I have used digital dimensions to carry out some of the fieldwork for this project. I have done so partly for reasons of convenience and partly due to the recognition that digital spaces cannot be wholly disassociated from the physical, the embodied and the everyday. I have not, however, explicitly set out to study the role played by digital spaces in enacting boreal forest temporalities. My focus has been on using digital fieldwork as well as in-person and physical fieldwork to shed light on experiences of boreal temporalities overall, whether or not those temporalities become known online, offline or through dialogue between physical and virtual worlds. As Petridis et al. (2022) note, there is much scope for research on how digital technologies impact on people's perceptions of temporalities. There is also scope for research on how different perceptions of temporalities are expressed within digital spaces. To take the former, future studies could explore how an increase in digital interactions, including the use of social media and applications designed for use in certain settings, impact on perceptions and experiences of temporality in the forest and other environments. To what extent does the use of digital applications (apps) for identifying flora and fungi or for pinning the locations of discoveries, for example, influence how people experience time and perceive temporalities in the forest? To take the latter, research could look at how boreal forest (or other) temporalities are expressed via specific digital spaces. This likely varies depending on the online spaces in question, whether these are forums, social media groups, institutional websites or something else. Institutional actors' efforts to control narratives, including within the environmental sphere, are the subject of much research. In this thesis, the potential of informal networks to up-end pre-set narratives about forest temporalities has been apparent in digital and online spaces. I have found many of these spaces to be loosely-controlled arenas where different stories are told and shared. They are also spaces where some institutions move away from traditional roles by embracing creative media and storytelling. Overall, further ethnographic work could combine research on-the-ground with digital ethnography and observation towards understanding the role that online spaces play in legitimising, affirming, challenging and derailing particular temporal narratives.

The connections between financial incentives and positions and the expression of temporalities has only been briefly explored in this thesis. This occurred most notably in Chapter 4, which connected South Eastern Finland's forestry with the local and national economy, and which mentioned the financial support received by Lusto. Within and beyond the realm of forest studies there is a rich body of

work on the influence of financial investment and market processes on ecosystem management and change. This may relate for instance to trends in philanthropic support for non-governmental organisations, the allocation of government subsidies which drive particular forms of resource extraction, or the demand for a commodity which shapes labour dynamics and landscapes across an entire region, country or internationally. This thesis has argued for the value of multi-scalar thinking which pays attention to the actions of ‘smaller’ as well as big players; which starts from everyday encounters and which moves from the bottom up. Future research might explore how participants’ personal financial positions and interests connect with temporal themes and feed into which histories, futures and temporal patterns they privilege and sideline and how. It might also look at the extent to which philanthropic interests are oriented towards privileging particular temporalities in the forest and other landscapes, and the ways in which philanthropy and funders’ decisions impact on the stories told about forest pasts and futures.

In a similar vein, it should not be assumed that everyone has the time and the means, whether financially or physically, to enter the forest. This work has focussed on those who go into the forest and can move freely, as well as on settings which have been curated and prepared to welcome those who are able to travel and/or to move across a landscape. However, since boreal forest temporalities do not only apply within the physical forest, there is a gap to be filled which engages with people who cannot or do not enter the forest. These may include those who are able but who choose not to go to the forest, those who are dis- or differently-abled, or those who lack the time to travel. At the national park, who could not be there? How do people writing online about fungi and mushroom picking who very rarely if ever go into the forest perceive boreal forest temporalities? This area of study also connects to possible questions about forgetting and the fading-out of certain histories, which may happen when mobility and intergenerational knowledge-sharing decrease.

Finally, and although assumptions cannot be made about all participants, the people mentioned in this work who have spent time in the forest have seemingly done so of their own accord and for recreation. My position as somebody who enjoys going into the forest has surely impacted on the conversations which I have had and the kinds of people I have spoken to. Yet there are thousands of people employed in seasonal labour as berry-pickers, for instance, for whom the forest

and its associated temporalities likely present quite differently. Further investigations, especially those motivated by feminist and/or decolonial aims and literatures, might study the connections between more oppressive/oppressed or less free or autonomous engagements with forest environments, and how these kinds of relations and contexts impact upon perceptions of temporality.

As a whole, this thesis has highlighted the importance of critically investigating temporalities, especially the more-than-human, imagined and embodied aspects of those temporalities, at the small- and local-scale in protected areas, production forests, and more broadly in contexts of land-use change and environmental change. My work emphasises the need for ongoing attention to framings of temporalities in forest management, conservation, and the public-, community- and member- engagement work carried out by organisations. Such attention is necessary because as I have shown, temporalities are constantly unfolding and have real, lived effects. Temporalities shape how people and organisations perceive different environments, how they react to situations, how they tell stories about their experiences, what they find important and how they justify their actions. My theorisation of boreal forest temporalities has enabled me to draw connections across temporal and spatial scales, showing how people's and organisations' everyday activities and decisions in relation to the boreal forest link to dynamics at other moments and in other places. Noticing temporalities also means noticing the agency, lives and effects of nonhuman and more-than-human actors, acknowledging the role that they play in human lives and experiences as well as learning about them and recognising their inherent value in and of themselves. This element is, I argue, crucial at a moment when ideas about the separation of humans from nature continue to underpin many societies and governance regimes.

Attending to temporal politics raises a broader question for environmental governance and practice: not only whose values and perspectives count, but also whose temporalities are allowed to matter. This is a theoretical and practical question with real-world implications. The everyday boreal forest -related experiences described throughout this thesis reveal more-than-human temporalities: time is experienced and expressed in different ways via multispecies relations and through everyday situations. The boreal forest, like all places, spaces and environments, is temporally multiple – this thesis has rejected the reduction of the forest to an entity which follows a clean linear temporal trajectory. Overall,

researching boreal forest temporalities in this way has presented actors and relations which do not usually feature in dominant public, media, or policy narratives about environmental change. There is a need for further work which recognises temporalities as political and constructed. In doing so, such work should resist reproducing temporal assumptions and oversimplifications, instead paying attention to the ways in which time is experienced intersectionally, in diverse ways and with diverse consequences. Future research and non-academic practice alike should take seriously the creative, regenerative, reparative and justice-oriented possibilities which arise from thinking with more-than-human lived, embodied, material and imagined temporalities.



Photo by Charlotte Fitt. Used with permission.

Appendix

Overview of empirical sources

Item 1: Table 1. List of organisations engaged with and/or mentioned

Organisation name in original language (and English) / acronym used, if applicable	Country / location	Description
Naturvårdsverket (Swedish Environmental Protection Agency) / Swedish EPA	Sweden	A governmental body which oversees environmental work in Sweden and bears the main responsibility for nature protection.
Länsstyrelsen (County Administrative Board)	Sweden	In each of the 21 Swedish counties the county-specific administrative board is responsible for the state administration. This includes the management of national parks and protected government-owned forests.
Skogsstyrelsen (Swedish Forest Agency) / Swedish FA	Sweden	Responsible for the management of Swedish forests, including meeting goals for carbon sequestration, biodiversity protection and forest economy.
Metsähallitus (Forest Administration)	Finland	A state-owned enterprise whose mission is to use, manage and protect the Finnish state's land and water areas sustainably. Responsible for the management of the majority of Finland's protected areas, including national parks and nature reserves.
Suomen Luonnonsuojeluliitto (Finnish Association for Nature Conservation) / SLL	Finland	The oldest Finnish environmental organisation working on nature protection across Finland. SLL has 150 local associations and volunteer groups.
Luonnon perintösäätiö (Finnish natural heritage foundation) / LPS	Finland	Protects Finnish nature, especially rare forests, by buying land and gaining legal protected status for those purchased areas.

Suomen Metsähistorian Seura (Finnish Forest History Society) / SMS	Finland	Promotes the multidisciplinary research, preservation and practice of forest history and heritage. Functions as a network for forest history researchers and enthusiasts as well as for forestry professionals.
Suomen Sieniseura (Finnish Mycological Society) / SS	Finland	Finland's largest mycological association. Promotes mushroom foraging, research, and the sharing of mycological knowledge.
Sveriges Mykologiska Förening Svampvänner (Swedish Mycological Society) / SMF	Sweden	Sweden's largest mycological association. Promotes mycological knowledge and foraging, and aims for fungi to be given a higher status in conservation initiatives.
Säteilyturvakeskus (Finnish Radiation and Nuclear Safety Authority) / STUK	Finland	Independent authority which promotes radiation safety across Finland, providing information on best practices and risks and participating in the development of legislation.
Strålsäkerhetsmyndigheten (Swedish Radiation Safety Authority) / SSM	Sweden	Holds overall responsibility in Sweden in the areas of radiation protection, nuclear safety and nuclear non-proliferation. Reports to the Ministry of Climate and Enterprise under mandates from the Swedish Government.

Item 2: Table 2. Spoken and written exchanges

#	Pseudonym(s)	Interlocutor details	Description of exchange	Location	Date
1	Tilda	National park manager	Interview	Online	April 2023
2	Tilda (as above)	National park manager	Follow-up walking interview during tour of Söderåsen	Söderåsen National Park, Sweden	May 2023
3	Kosti	SLL employee	Interview at Haarikon Taika event	Hiitolanjoki, Simpele, Finland	August 2023
4	Bettina	Local forest owner and conservation group volunteer	Exchange at Haarikon Taika event	Hiitolanjoki, Simpele, Finland	August 2023
5	Tanja	Local conservation group volunteer	Exchange at Haarikon Taika event	Hiitolanjoki, Simpele, Finland	August 2023
6	Matti	Local resident	Conversation and mushroom picking on forest path	Punkaharju, Finland	August 2023
7	Leila	Lusto museum employee, local resident	Interview at Lusto museum (joint interview with Riikka)	Punkaharju, Finland	August 2023
8	Riikka	Lusto museum employee, local resident	Interview at Lusto museum (joint interview with Leila)	Punkaharju, Finland	August 2023
9	Dilara	Student	Exchange at Mushroom Methods workshop	Sanginjoki, Finland	August 2023
10	Franz	Mushroom grower and enthusiast, forager	Exchange at Mushroom Methods workshop	Sanginjoki, Finland	August 2023
11	Kalina	Researcher, forager	Conversation at Mushroom Methods workshop	Sanginjoki, Finland	August 2023
12	Helmi	Student, local resident	Exchange at Mushroom Methods workshop	Sanginjoki, Finland	August 2023
13	Noora	SLL employee	Interview	Online	September 2023

14	Mihails	Forager, researcher	Interview	Online	March 2024
15	Axel	Archaeologist, forager	In-person conversation followed by email exchange	Turku, Finland and online	March 2024 – May 2026 (ongoing)
16	Emilia	Environmental social science researcher, forager	Interview and exchange in four parts over a day (in a café, in the car, walking in the forest and at her home)	Jyväskylä, Finland	August 2024
17	Riikka (as above)	Lusto museum employee	Follow-up interview at Lusto museum	Punkaharju, Finland	August 2024
18	Jari	Mushroom forager, resident of Oulu area	Email exchange	Online	April/May 2026
19	Panu	Finnish Mycological Society member, entrepreneur	Interview	Online	April 2026
20	Milla	Finnish Mycological Society member, biologist and museum employee	Interview	Online	May 2026
21	Jaime	Finnish Mycological Society member, resident of Helsinki area	Interview	Online	May 2026
22	Ruusu	Finnish Mycological Society member, nature guide and retired biologist	Interview	Online	May 2026

Item 3: Interview guide (Finnish original)

Kiitos, että suostuit tähän keskusteluun.

Aluksi haluaisin kertoa hieman tarkemmin siitä, mitä tutkimuksessani teen. Olen brittiläis-suomalainen tohtoritutkija Ruotsin Lundin yliopistossa. Opiskelen valtiotieteiden laitoksella, ja taustani on ympäristö- ja kulttuurintutkimuksessa. Yleisesti ottaen minua kiinnostavat ajan kokemukset metsän yhteydessä. Tutkin miten aikaa koetaan ja esitetään museoissa, suojelluilla alueilla, kuten kansallispuistoissa, sekä sienten yhteydessä ja sienimetsässä. Aihepiiri on siis varsin laaja, mutta näiden asioiden välillä on paljon päällekkäisyyksiä, ja pääpaino on ajan kokemuksissa.

Keskustelu kestää enintään tunnin, mutta voi olla lyhyempi. Haluaisin mieluummin nauhoittaa keskustelua, ja kukaan muu ei pääse käsiksi äänitteeseen tai transkriptioihin. Jos se ei sovi sinulle, voin ottaa muistinpäpanoja. Anonymisoin osallistujat, niin nimesi ei tule näkyviin kirjoituksessani. Sinulla on oikeus perua osallistumisesi milloin tahansa.

Onko sinulla yhtään kysymyksiä?

Sopiiko, jos nauhoitan?

Yleiset kysymykset

- Miksi päätit osallistua?
- Miten kuvailisit suhdettasi metsään?
- Oletko sattumalta metsänomistaja?
- Onko sinulla suosikkimetsätyyppi? Miksi?
- Jos käyt metsässä - Miten liikut metsässä? Miltä se tuntuu kehossasi?
- Miltä aika tuntuu metsässä?
- Minkä viestin mielestäsi päätöksentekijöiden tulisi kuulla metsistä?
- (Viimeinen kysymys) Onko sinulla minulle kysymyksiä tai haluaisitko vielä kertoa jotain?

Museot

- Mitkä ovat mielestäsi museon tärkeimmät tavoitteet?
- ja missä määrin ne tavoitteet liittyvät ajan käsityksiin?
- Millaisia asioita museonäyttelyssä välitetään metsästä tai metsän ajasta?
- Miten kuvailisit museon yleistä suunnittelua, eli miltä se näyttää sisältä?
- Miten päätetään, mitä näyttelyihin sisällytetään?
- Onko museo saanut palautetta näyttelystä tai tapahtuneista muutoksista?
- Onko museossa jotain, mikä on herättänyt kiistaa tai jakaneet mielipiteitä?

Sienet

- Miten kuvailisit itseäsi ja suhdettasi sieniin?
- Oletko sienestäjä, keräilijä tai sienitutkija? Kiinnostaako sinua kaikki sienet vai vain tietyt lajit?
- Missä päin Suomea käyt yleensä sienestämässä?
- Onko suhtautumisesi sieniin muuttunut ajan myötä, ja jos on, niin miten?
- Miten ja milloin varaat aikaa sienestykseen?
- Pitääkö sinun 'varata' aikaa, onko se oikea sana?
- Miltä aika tuntuu sienimetsässä?
- Saako sienestys sinut ajattelemaan muutoksia metsässä tai laajemmassa maisemassa, ja jos näin on, niin miten?
- Millaisia kokemuksia sinulla on sienestämisestä metsissä, joita on hyödynnetty ja hoidettu eri tavoin?
- Herättääkö metsäsienten etsiminen ja poiminta aikaan liittyviä tunteita? Esimerkiksi toivoa, nostalgiaa jne.
- Oletko perinyt tai jakanut sienestystietoutta muilta sukupolvilta tai muiden sukupolvien kanssa?
- Ovatko sienet tärkeitä, ja jos ovat, millä tavoin?

Muut teemat ja aiheehdotukset

- kuulumisen tunne
- ajatuksia menetyksestä tai kasvusta
- tietoa menneisyyden boreaalimetsistä
- ajatuksia tulevaisuuden boreaalimetsistä
- missä metsä on?

Item 4: Interview guide (English translation)

Thank you for agreeing to this conversation.

First, I'd like to explain a little more about what I'm doing in my research. I'm a doctoral researcher at Lund University in Sweden. I'm studying at the Department of Political Science, and my background is in environmental and cultural studies. Generally speaking, I'm interested in experiences of time in connection with forests. I'm researching how time is experienced and represented in museums, in protected areas such as national parks, and in connection with mushrooms and in mushroom forests. The subject area is quite broad, but there is a lot of overlap between these topics, and the main focus is on experiences of time.

The conversation will last no more than an hour, but may be shorter. I would prefer to record the conversation, and no one else will have access to the recording or transcripts. If that doesn't work for you, I can take notes. I'll anonymise the participants, so your name won't appear in my writing. You have the right to withdraw your participation at any time.

Do you have any questions?

Is it okay if I record the conversation?

General questions

- What made you interested to take part?
- How would you describe your relationship with the forest?
- Are you a forest owner?
- Do you have a favourite type of forest? Why?
- If you go into the forest - how do you move there? How does it feel in your body?
- How does time feel in the forest?
- What message do you think decision-makers should hear about forests?

(At the end of the interview) Do you have any questions for me, or is there anything else you'd like to share?

Museums

- What do you think are the most important goals of a museum?
- and to what extent are those goals related to perceptions of time?
- What kinds of things are conveyed in the museum exhibition relating to the forest or to time in the forest?
- How would you describe the museum's overall design—that is, what does it look like inside?
- How is it decided what is included in the exhibitions?
- Has the museum received feedback on the exhibition or on changes that have taken place?
- Is there anything in the museum that has sparked controversy or divided opinions?

Fungi

- How would you describe yourself and your relationship with fungi?
- Are you a mushroom picker/forager, collector, or researcher? Are you interested in all fungi or just certain species?
- Where do you usually go mushroom foraging?
- Has your attitude toward fungi changed over time, and if so, how?

- How and when do you set aside time for mushroom foraging?
- Do you have to “set aside” time—is that the right word?
- How does time feel in the mushroom forest?
- Does looking for fungi make you think about changes in the forest or the wider landscape, and if so, how?
- What kinds of experiences do you have with noticing fungi in forests that have been used and managed in different ways?
- Does searching for and picking forest mushrooms prompt any time-related feelings for you? For example: hope, nostalgia and so on.
- Have you inherited or shared fungal knowledge from other generations or with other generations?
- Are fungi important, and if so, in what ways?

Other themes and topic suggestions

- sense of belonging
- thoughts on loss and growth
- knowledge about previous/past boreal forests
- thoughts on the boreal forests of the future
- where is the forest?

Item 5: Email outreach example, fungi focus (Finnish original)

Hei,

Olen tohtoritutkija Ruotsin Lundin yliopistossa. Etsin haastateltavia projektiani varten. Yleisesti ottaen tutkimukseni koskee ajan kokemuksia metsän yhteydessä. Merkittävä osa tutkimuksestani keskittyy siihen, miten sienestäjät kokevat ja ajattelevat aikaa. Esitän kysymyksiä kuten "miten/milloin varaat aikaa sienestykseen?", "miltä aika tuntuu metsässä?" ja "saako sienestys tai sienet sinut ajattelemaan muutoksia metsässä tai laajemmassa maisemassa, ja jos näin on, niin miten?"

Yksi tutkimukseni luvuista käsittelee sieniä ja sienestystä, mutta tutkin myös sitä, miten aikaa koetaan ja esitetään metsämuseossa sekä suojelluilla metsäalueilla, kuten kansallispuistoissa. Näiden asioiden välillä on paljon päällekkäisyyksiä, ja pääpaino on ajan kokemuksissa.

Etsin ihmisiä, jotka olisivat kiinnostuneita keskustelemaan kokemuksistaan sienistä ja metsistä sekä siitä, mitä "metsän aika" heille merkitsee.

Keskustelu kestäisi enintään tunnin, mutta voi olla lyhyempi. Haluaisin mieluummin nauhoittaa keskustelua, ja kukaan muu ei pääse käsiksi äänitteeseen tai transkriptioihin. Jos se ei sovi sinulle,

voin ottaa muistiinpanoja. Anonymisoin osallistujat, niin nimesi ei tule näkyviin kirjoituksessani. Sinulla on oikeus perua osallistumisesi milloin tahansa, ja tämä ei aiheuttaisi sinulle eikä minulle ongelmia. Jos haluat vastata mieluummin sähköpostitse, sekin käy hyvin ja voin lähettää kysymyksiä.

Jos olet kiinnostunut, ottakaa minuun yhteyttä osoitteessa _____

Terveisin,

Katja Garson

Item 6: Email outreach example, fungi focus (English translation)

Hello,

I am a doctoral researcher at Lund University in Sweden, and am searching for interviewees for my project. Overall, my project is focussed on experiences of time in relation to the forest. A significant part of my research focuses on how mushroom pickers experience and think about time. I ask questions such as “how/when do you set aside time for mushroom picking?”, “how does time feel in the forest?”, and “does mushroom picking or mushrooms make you think about changes in the forest or the wider landscape, and if so, how?”

One chapter of my research deals with mushrooms and mushroom picking, but I also examine how time is experienced and presented in the museum as well as in protected forest areas such as national parks. There is a lot of overlap between these topics, and the main focus is on experiences of time.

I am looking for people who would be interested in discussing their experiences with mushrooms and forests, as well as what “forest time” means to them.

The conversation would last no more than an hour, but it could be shorter. I would prefer to record the conversation, and no-one else would have access to the recording or the transcriptions. However, if that doesn't work for you then I can take notes. I will anonymise the participants, so your name will not appear in any of my writing. You have the right to withdraw your participation at any time, with no negative effects for me or you. If you'd prefer to respond via email, that's fine too, and I can send you the questions.

If you're interested, please contact me at _____

Best wishes,

Katja Garson

Item 7: Table 3. Observations and participation

Event/moment	Description	Location	Date
Forest walks and foraging	Multiple solo forest walks and mushroom foraging, sometimes including photography, drawing, sound-recording and note-taking.	Central and southern Finland	2021-2025
Visit to Pyhä-Häkki (1)	Visit to Pyhä-Häkki National Park. Walking, sensing, observing, photography.	Central Finland	June 2021
Visit to Söderåsen	Walking interview (see 'Tilda') including observing elements of the landscape and listening to stories about national park development.	Söderåsen National Park, Skåne, Sweden	May 2023
Visit to industrial forestry forest stand and clearcut	Walk through spruce forest and presentation of a clearcut by forestry employee.	Sweden	2023
Visit to Pyhä-Häkki (2)	Visit to Pyhä-Häkki National Park. Walking, sensing, observing, photography.	Central Finland	June 2023
Visit to Pyhä-Häkki (3)	Visit to Pyhä-Häkki National Park. Walking, sensing, observing, photography, sound-recording.	Central Finland	July 2023
Visit to Lusto (1)	Visit to the Finnish Forest Museum Lusto, including observation, photography and note-taking around the indoor exhibitions as well as the outdoor space.	Central Finland	August 2023
Walks in Punkaharju	Several walks of different lengths in the forests around Punkaharju.	Punkaharju, Finland	August 2023
Talks and photography exhibition	SLL-organised 'forest day' with members of the local community and local conservation volunteers showcasing photography of local nature and discussing the idea of creating a new national park.	Hiitolanjoki, Simpele, Finland	August 2023
Workshop	Mushroom Methods Workshop organised by Oulu University researchers, centred around exploring innovative research on and with fungi. Presentations, group discussions.	Oulu, Finland	August 2023

Walk around Sanginjoki Nature Reserve	An afternoon spent in the forest of Sanginjoki Nature Reserve searching for and talking about mushrooms with attendees of the Mushroom Methods Workshop.	Sanginjoki, Finland	August 2023
Fungi workshop	Visit to the forest to study fungi led by ecologists and biologists. Time spent walking and collecting before joining together to discuss our finds.	Skåne, Sweden	October 2023
Visit to Pyhä-Häkki (4)	Visit to Pyhä-Häkki National Park. Walking, observing, photography and sound-recording.	Central Finland	August 2024
Walk in the forest	Walking interview and guided tour of a forest patch (see 'Emilia')	Jyväskylä, Finland	August 2024
Visit to Lusto (2)	A second visit to the Finnish Forest Museum Lusto, including a walk around the updated exhibition, extended observation, sound-recording, photography and note-taking around the indoor exhibitions as well as the outdoor space.	Punkaharju, Finland	August 2024
Film-making workshop	Attendance at a month-long film-making workshop led by IMPRINT Documentary Collective, during which I began to create the short film which I completed over the course of the next year, and which feeds into chapter 6. The film can be viewed at: https://vimeo.com/1113854816	Online and in Swedish and Danish forests	October 2024 – September 2025
Annual General Meeting	Annual General Meeting of the Finnish Mycological Society.	Online	March 2026

Item 8: Survey introduction text (Finnish original)

Kiitos, että olet kiinnostunut tästä kyselystä. Kyselyn tarkoituksena on kerätä ihmisten kokemuksia ja ajatuksia pohjoisten metsien ja sienten yhteydessä. Erityistä huomiota kiinnitetään aikaan liittyviin kokemuksiin. Tämä on osa tohtorintutkimusta Ruotsin Lundin yliopistossa. Tutkimuksessa tarkastelen pohjoiseurooppalaisten boreaalisten metsien ja ajan suhdetta museoissa, metsäsuojelualueilla, sekä sienimetsässä ja sienestysyhteisöissä.

Konkreettisesti ottaen teen tutkimusta eniten Suomessa ja myös Ruotsissa. No itse käynyt tutkimusta varten Sápmissa, mutta otan mielelläni vastaan palautetta kaikilta Saamen kansaan kuuluvilta sekä niiltä, jotka tunnustavat Sápmin alueNomassaolon. Jos sinulla on kokemuksia esimerkiksi Norjasta, Kanadasta tai Venäjältä niin sekin käy. Mainitsehan tämän selvästi, esimerkiksi vastauksessasi kysymykseen "missä asut?".

Lähehtämällä kyselyn annat suostumuksesi siihen, että voin viitata antamiasi tietoja tutkimuksessani. Kaikki nimet muutetaan salanimiksi; saat käyttää jo salanimeä lomakkeessa, jos haluat. Jos muutat mieltäsi osallistumisesta lomakkeen lähehtämisen jälkeen, lähetä minulle sähköpostia, niin poistan tietosi.

Melkein kaikki kysymykset ovat vapaaehtoisia. Monissa voit valita useita vaihtoehtoja ja/tai antaa lisätietoja.

Jos haluat keskustella näistä aiheista lisää, lähetä minulle sähköpostia; jatkokeskustelut ovat tervetulleita.

Kiitos avustasi!

Katja Garson
katja.garson@svet.lu.se

Item 9: Survey introduction text (English translation)

Thank you for your interest in this survey. The purpose of the survey is to collect people's experiences and thoughts in connection with northern forests and mushrooms. Special attention is paid to experiences related to time. This is part of a doctoral thesis at Lund University in Sweden. In my research, I examine the relationship between northern European boreal forests and time in museums, protected forests, and mushroom forests and fungal foraging communities.

I do most of my research in Finland and also in Sweden. I have not visited Sápmi myself for the research, but I would be happy to receive feedback from Sámi peoples and those who recognise the Sápmi region. If you have experiences from, for example, Norway, Canada or Russia, that is also fine. Please state this clearly, for example in your answer to the question "where do you live?".

By submitting the survey, you agree that I can refer to the information you provide in my writing. All names will be changed to pseudonyms; you can already use a pseudonym in the form if you wish. If you change your mind about participating after submitting the form, please email me and I will remove your information.

Almost all questions are optional. Many allow you to select multiple options and/or to provide additional information.

If you would like to discuss these topics further, please email me; further discussions are welcome.

Thank you for your help!

Katja Garson
katja.garson@svet.lu.se

Item 10: Table 4. Online survey respondents (n=44) (note: not all directly referenced in text)

Pseudonym	Finnish Mycological Society Member?	Pseudonym	Finnish Mycological Society Member?
SIIRI	No	KAISLA	No
SEILA	Yes	VERONIKA	Yes
MELISSA	Yes	SOILE	No
SYLVIA	No	AILA	Yes
OSMO	Yes	SIGNE	No
RAILA	No	JOANNA	No
JAAKKO	Yes	SATU	No
ANJA	Yes	KATRI	No

OLIVER	No	REIMA	No
TERHI	No	TIIA	No
MIRJAM	No	LILLI	Yes
HEINI	No	IIRIS	No
ANNA	Yes	LIISA	No
EEMIL	Yes	IDA	Yes
TUULIKKI	No	JOONAS	No
MARIA	Yes	RUUT	No
ILKKA	No	AMANDA	No
SANNA	No	PIRJO	Yes
REBEKKA	No	PETJA	No
PAULA	No	HELKA	No
ELLI	No	ESTERI	No
MARJA	No	HEIDI	No

Item 11: Table 5. Magazine articles (mainly background)

Magazine name / organisation involved	Issues included (date published and name)	Articles analysed
Vuosilusto / Finnish Forest Museum Lusto and Finnish Forest History Society	2016 – Vuosilusto 11 - Metsä tekee hyvää! – The forest does good!	Foreword
		Introduction
	2018 – Vuosilusto 12 - Suomalainen metsäsuhde – The Finnish relationship to forests	Foreword
		Introduction
	2020 – Vuosilusto 13 – Metsät ja kulttuurinen kestävyys, Forests and cultural sustainability	Foreword
		Introduction
	2022 – Vuosilusto 14 - Metsät ja tulevaisuus – Forests and the future	Foreword
		Introduction
	2025 – Vuosilusto 15 - Metsien aika – Forest time	Foreword
		Introduction
Luonto / Suomen Luonnonsuojeluliitto, Finnish Association for	2020 (1, 4, 7)	
	2021 (1, 4, 7)	

Nature Conservation (SLL)	2022 (1, 4, 7)	
Sienilehti / Finnish Mycological Society	2020 – Sienilehti 72 (1, 2, 3, 4)	Editorial for each of the issues
	2021 – Sienilehti 73 (1, 2, 3, 4)	Editorial for each of the issues
	2022 – Sienilehti 74 (1, 2, 3, 4)	Editorial for each of the issues
	2023 – Sienilehti 75 (1, 2, 3, 4)	Editorial for each of the issues 'Sieninäyttely ja -neuvonta Helsingin Kaisaniemessä' – Fungi exhibition and advice in Kaisaniemi, Helsinki (Bonsdorff, Tea von, Issue 4, pp. 32-33)
		'Minun tapani sienestää' – 'My way of mushroom foraging' (Ovaska, Veli-Mikko, Issue 4, pp.26-29)
	2024 – Sienilehti 76 (1, 2, 3, 4)	Editorial for each of the issues

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Time is often taken for granted. Yet the ways in which it is perceived and expressed are never neutral. They are shaped by particular experiences, knowledges and ways of relating to the world. So how does time feel and look in the boreal forest? How do people and other species navigate different understandings of past, present and future? This thesis explores boreal forest temporalities through three settings in Finland and Sweden: a forest museum, conservation landscapes and mushroom foraging communities. It shows how time is expressed through stories, memories, embodied practices and more-than-human relations, revealing everyday and multispecies experiences that are often left out of policy debates about forests. I argue that forests are not only ecological and political landscapes, but also temporal ones. This thesis asks a crucial question for environmental governance: not only whose values and perspectives count, but whose times and temporalities are allowed to matter.



Katja Garson is an interdisciplinary social scientist with interests in critical environmental studies and multispecies relations. She holds a BA in Human Geography (Durham) and an MSc in Nature, Society and Environmental Governance (Oxford). She continues to work in environmental policy advocacy and research.

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